

THE REGULATION OF THE INTERNATIONAL ENERGY TRADE

Fuels and Electricity

Executive Summary



**THE REGULATION OF
THE INTERNATIONAL
TRADE ENERGY**

Fuels and Electricity

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**THE REGULATION OF THE INTERNATIONAL ENERGY
TRADE: FUELS AND ELECTRICITY**



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In recent years, the Federation of Industries of the State of São Paulo (FIESP) has prepared and published studies on the regional energy markets of the Americas, in collaboration with the Latin American Energy Organization (OLADE), as well as those of Africa, in collaboration with the African Development Bank (AfDB) and Eletrobras, in order to understand the effects that commercial energy integrations have in these markets.

The importance of access to energy for achieving the Millennium Development Goals of the United Nations (UN) has been underscored, especially with regard to the positive impacts that the use of modern energy sources such as electricity has had upon labor, education, and the quality of life more generally.

In fact, these conclusions were endorsed in the document “Inequality is unsustainable” presented by FIESP during Rio+20, which reiterated that it is vitally important for developing countries to provide greater availability of energy for their populations and, in doing so, opt for renewable sources such as hydroelectricity and for greater integration and energy trading among countries. These points were the same as those mentioned by the Member Countries of the UN in the document “The Future We

Want”, resulting from the same Conference, which expressed the importance of access to modern energy sources and, consequently, its role in eradicating extreme poverty.

In all our studies, as well as in the ensuing seminars and debates, the regulatory issue was pointed as one of the main obstacles to achieving greater regional energy integration and increasing the global trade in energy resources. This is because the different international regulatory frameworks related to the discipline have gaps and contradictory rules that complicate predictability and increase operational costs for the economic players involved.

“The Regulation of the International Energy Trade: fuels and electricity” aims to describe and analyze the current framework of rules applicable to energy trading, both multilaterally and regionally. The system of multilateral rules includes the World Trade Organization (WTO) agreements and the Energy Charter Treaty (ECT). At the regional level, we sought to give an overview of the major regulatory experiments in the field of energy integration, in an effort to identify models that can serve as a benchmark for future agreements and, similarly, to further enhance multilateral rules. This work emphasizes the urgent need to consider specific rules in the WTO to address issues that create conflicts and legal uncertainty because they are not addressed in a coordinated fashion,

like climate change, dual pricing, energy transmission and distribution, investment protection, and policies on subsidies for alternative energy sources (feed-in tariffs).

The growing importance of the energy sector in Brazil demands further negotiations within international forums on the subject, especially in the WTO. The country’s role as an advocate for renewable energy, as it prepares to become a major oil exporter via the exploitation of its pre-salt layer oil fields, makes it extremely important to negotiate a multilateral regulatory framework for energy, and also requires an intensification of energy regulation on the South American continent. FIESP, once again, is ready to increase its contribution to a subject that is so fundamental for the economic, social, and sustainable development of our country.

Paulo Skaf

President of the Federation of Industries
of the State of São Paulo - FIESP

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ABBREVIATIONS

AB	WTO Appellate Body
ACE	ASEAN Center for Energy
ACER	Agency for the Cooperation of Energy Regulators
AEC	African Economic Community
AERESA	Association of Energy Regulators for Eastern and Southern Africa
AFD	<i>Agence Française de Développement</i> (French Development Agency)
AfDB	African Development Bank
AFREC	African Energy Commission
ALADI	Asociación Latinoamericana de Integración (<i>Latin American Integration Association</i>)
AMU	The Arab Maghreb Union
ANDE	<i>Administración Nacional de Electricidad</i> (National Electricity Administration)
ANEEL	Agência Nacional de Energia Elétrica (Brazilian Electricity Regulatory Agency)
ANP	<i>Agência Nacional do Petróleo, Gás Natural e Biocombustíveis</i> (Brazilian Petroleum, Natural Gas and Biofuels Regulatory Agency)
AoA	Agreement on Agriculture
APAEC	ASEAN Plan of Action for Energy Cooperation
APEC	Asia-Pacific Economic Cooperation
APEDSM	ASEAN Protocol on Enhanced Dispute Settlement Mechanism
APSA	ASEAN Petroleum Security Agreement
ASA	Andean Strategic Agenda
ASCOPE	ASEAN Council on Petroleum
ASEAN	Association of Southeast Asian Nations
AU	African Union
AUC	African Union Commission
BEFSCI	Bioenergy and Food Security Criteria and Indicators
BIT	Bilateral Investment Treaty
BNDES	<i>Banco Nacional de Desenvolvimento Econômico e Social</i> (Brazilian Development Bank)
BTA	Border Tax Adjustments
BTU	British Thermal Unit

CAF	<i>Corporación Andina de Fomento</i> (Andean Development Corporation)
CAMMESA	<i>Compañía Administradora del Mercado Mayorista Eléctrico</i> (Wholesale Electricity Market Administration Company)
CAN	Andean Community of Nations
CAPP	Central Africa Power Pool
CASAREM	Central Asia - South Asia Regional Electricity Market
CCT	Technical Coordination Committee
CDM	Clean Development Mechanism
CDMER	Governing Board of the Regional Electricity Market
CEAC	<i>Central American Electrification Council</i>
CEER	Council of European Energy Regulators
CEL	<i>Comisión Ejecutiva Hidroeléctrica Del Rio Lempa</i> (Lempa River Executive Hydroelectric Commission)
CERM	Coordinated Emergency Response Measures
CIER	Regional Energy Integration Commission
CIS CEM	Common Electric Power Market of the Commonwealth of Independent States
CMC	Common Market Council
CNE	National Energy Commission
COFINS	<i>Contribuição para o Financiamento da Seguridade Social</i> (Contribution to Social Security Financing)
COMELEC	<i>Comité Maghrébin de L'Electricité</i> (Maghreb Electricity Committee)
COMESA	Common Market of Eastern and Southern Africa
COSIPLAN	Infrastructure and Planning Council
CPC	Central Product Classification
CRIE	Regional Electric Interconnection Commission
CUSFTA	Canada-United States Free Trade Agreement
DAM	Day Ahead Market
DOE	U.S. Department of Energy
DSB	Dispute Settlement Body
DSO	Distribution System Operators
EAPP	Eastern Africa Power Pool
ECCAS	Economic Community of Central African States
ECOWAS	Economic Community of West African States
ECSC	European Coal and Steel Community

ECT	Energy Charter Treaty
EEC	European Economic Community
EGS	Environmental Goods and Services
EIA	US Energy Information Administration
EMI	Energy Market Integration in East Asia
ENATREL	<i>Empresa Nacional de Transmisión Eléctrica</i> (National Electricity Transmission Company)
EnC	Energy Community
ENEE	<i>Empresa Nacional de Energía Eléctrica</i> (National Electrical Energy Company)
ENTSO	European Network of Transmission System Operators
EOR	Regional Operator Entity
EPA	Environmental Protection Agency
EPR	<i>Empresa Proprietaria Regional</i> (Regional Owner Enterprise)
ERERA	ECOWAS Regional Electricity Regulatory Authority
ERGEG	European Regulator's Group for Electricity and Gas
ESI	Energy Security Initiative
ETESA	Empresa de Transmisión Eléctrica S.A
EU ETS	EU Emissions Trading System
EURATOM	European Atomic Energy Community
EWG	Energy Working Group
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
FERC	Federal Energy Regulatory Commission
FOCEM	MERCOSUR Structural Convergence Fund
FONPLATA	Financial Fund for the Development of the River Plate Basin
GASBOL	Bolivia-Brazil Pipeline
GASENE	Southeast Northeast Interconnection Gas Pipeline
GATS	General Agreement on Trade in Services
GATT	General Agreement on Trade and Tariffs
GECOL	General Electricity Company of Libya
GHG	Greenhouse Gases
GMC	Common Market Group
GPA	Government Procurement Agreement
GSA	Gas Supply Agreement

GTB	Gas Transboliviano
HLRCC	High-Level Regulatory Cooperation Council
HS	Harmonized System
IAEA	International Atomic Energy Agency
ICE	<i>Instituto Costarricense de Electricidad</i> (Costa Rican Institute of Electricity)
ICSID	International Centre for Settlement of Investment Disputes
ICTSD	International Centre for Trade and Sustainable Development
IDB	Inter-American Development Bank
IEA	International Energy Agency
IEC	International Electrotechnical Commission
IIA	International Investment Agreement
IIRSA	Initiative for the Integration of the Regional Infrastructure in South America
INDE	<i>Instituto Nacional de Electricidad</i> (National Institute of Electricity)
INOGATE	Interstate Oil and Gas Transport to Europe
IPI	International Peace Institute
ISO	International Organization for Standardization
ISO	Independent System Operator
ITO	Independent Transmission System Operator
ITU	International Telecommunication Union
LNG	Liquefied Natural Gas
LPA	Lagos Plan of Action
MAI	Multilateral Agreement on Investments
MERCOSUR	Southern Common Market
MFN	Most Favoured Nation Clause
MME	<i>Ministério de Minas e Energia do Brasil</i> (Brazilian Ministry of Mines and Energy)
MTC	MERCOSUR Trade <i>Commission</i>
NAEWG	North American Energy Working Group
NAFTA	North American Free Trade Agreement
NEEAP	National Energy Efficiency Action Plans
NEPAD	New Partnership for Africa's Development
NGMA	Negotiating Group on Market Access
NGO	Non-Governmental Organization
NGTF	Negotiating Group on Trade Facilitation

NPR	Non-product-related PPM
NPT	Treaty on the Non-Proliferation of Nuclear Weapons
NRA	National Regulatory Authorities
OAU	Organization of African Unity
OECD	Organisation for Economic Co-operation and Development
OFID	OPEC Fund for International Development
OLADE	Latin American Energy Organization
ONE	<i>Office National de l'Electricité du Maroc</i> (National Institute of Electricity of Morocco)
OPA	Ontario Power Authority
OPEC	Organization of the Petroleum Exporting Countries
OPPEGASUR	South American Organization of Gas Producers and Exporters
OSCE	Organization for Security and Co-operation in Europe
OU	Ownership Unbundling
PEMEX	Petróleos Mexicanos
PIDA	Programme for Infrastructure Development in Africa
PIS/PASEP	Programa de Integração Social (Social Integration Program) and <i>Programa de Formação do Patrimônio do Servidor Público</i> (Civil Servants' Savings Program)
PPMs	Process and Production Methods
PSA	Partial Scope Agreement
PSNR	Principle of Permanent Sovereignty over Natural Resources
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
REC	Regional Economic Communities
REEEP	Renewable Energy and Energy Efficiency Partnership
REIO	Regional Economic Integration Organisation
REM	Regional Electricity Market
REMIT	Regulation on Transparency and Integrity in the Energy Market
RERA	Regional Electricity Regulators Association of Southern Africa
RFS2	Renewable Fuel Standard Program for 2010 and Beyond
RMER	Regional Electric Market Regulation
RSA	Regional Scope Agreement
SADC	Southern African Development Community
SAPP	Southern Africa Power Pool
SCM	Agreement on Subsidies and Countervailing Measures

SCO	Shanghai Cooperation Organization
SET Plan	Strategic Energy Technology Plan
SIEPAC	Central American Electrical Interconnection System
SIN	<i>Sistema Integrado Nacional</i> (National Integrated System)
SOE	State Owned Enterprise
Somelec	<i>Société Mauritanienne d'Electricité</i> (Mauritanian Electric Company)
SONELGAZ	(National Electricity and Gas Company)
SPP	Security and Prosperity Partnership of North America
SPS	Agreement on the Application of Sanitary and Phytosanitary Measures
SS	Substation
SSO	Storage System Operator
STE	State Trading Enterprises
STEG	<i>Société Tunisienne de l'Electricité et du Gaz</i> (Tunisian Electricity and Gas Company)
STEM	Short Term Energy Market
TBG	Transportadora Brasileira Gasoduto Bolívia-Brasil S.A.
TBT	Agreement on Technical Barriers to Trade
TES	South American Energy Treaty
TFEU	Treaty on the Functioning of the European Union
Toe	Tons of Oil Equivalent
TPR	Trade Policy Review
TRIMS	Agreement on Trade-Related Investment Measures
TRIPS	Trade-Related Aspects of Intellectual Property Rights
TSO	Transmission System Operators
UN	United Nations
UNASUR	Union of South American Nations
UNCITRAL	United Nations Commission on International Trade Law
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNGA	United Nations General Assembly
UNIDO	United Nations Industrial Development Organization
UNSC	United Nations Security Council
UPDEA	Union of Producers, Transporters and Distributors of Electric Power in Africa

UTE	<i>Administración Nacional de Usinas y Trasmisiones Eléctricas</i> (National Administration of Power Plants and Electricity Transmission)
W/120	Services Sectoral Classification List
WAPP	Western Africa Power Pool
WCED	World Commission on Environment and Development
WHO	World Health Organization
WMO	World Meteorological Organization
WTO	World Trade Organization
YPFB	<i>Yacimientos Petrolíferos Fiscales Bolivianos</i> (Bolivian Fiscal Oil Fields)

Symbol	Text	Factor
V	Volt	-
W	Watt	-
Wh	Watt.hour	-
T	tera	$1000000000000 (10^{12})$
G	giga	$1000000000 (10^9)$
M	mega	$1000000 (10^6)$
k	kilo	$1000 (10^3)$

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Executive Summary

INTRODUCTION

This Executive Summary provides the overall conclusions of the study “*Regulation of International Trade in Energy*”, which introduces the Multisystemic Regulation of Global Trade and Investments in the Energy field, specifically within the fuels and electricity sectors.

The existing regulatory frameworks, in the multilateral system as well as in regional systems, were analyzed based on the major issues that have been identified in the international energy trade. Both systems generate a complex regulatory structure, which can offer constructive solutions to issues related to energy shortages and high operating costs, as well as a mechanism for the settlement of disputes.

In the multilateral realm, the analysis proceeds by identifying the issues and challenges presented by the rules of the international energy trade. At the regional level, the emphasis is on the solutions offered by regional agreements for the deficiencies and shortcomings of existing multilateral regulation.

It should be noted that the study focuses on analyzing the rules governing the international trade in energy, thus dispensing with the analysis of soft law instruments, which are statements of principles and intentions and as such do not demand compliance. In addition, there were other international initiatives, which despite affecting the energy sector, do not relate to the international trade in energy goods and services and therefore are not analyzed in this study.

SECTION I

MULTILATERAL ENERGY REGULATION

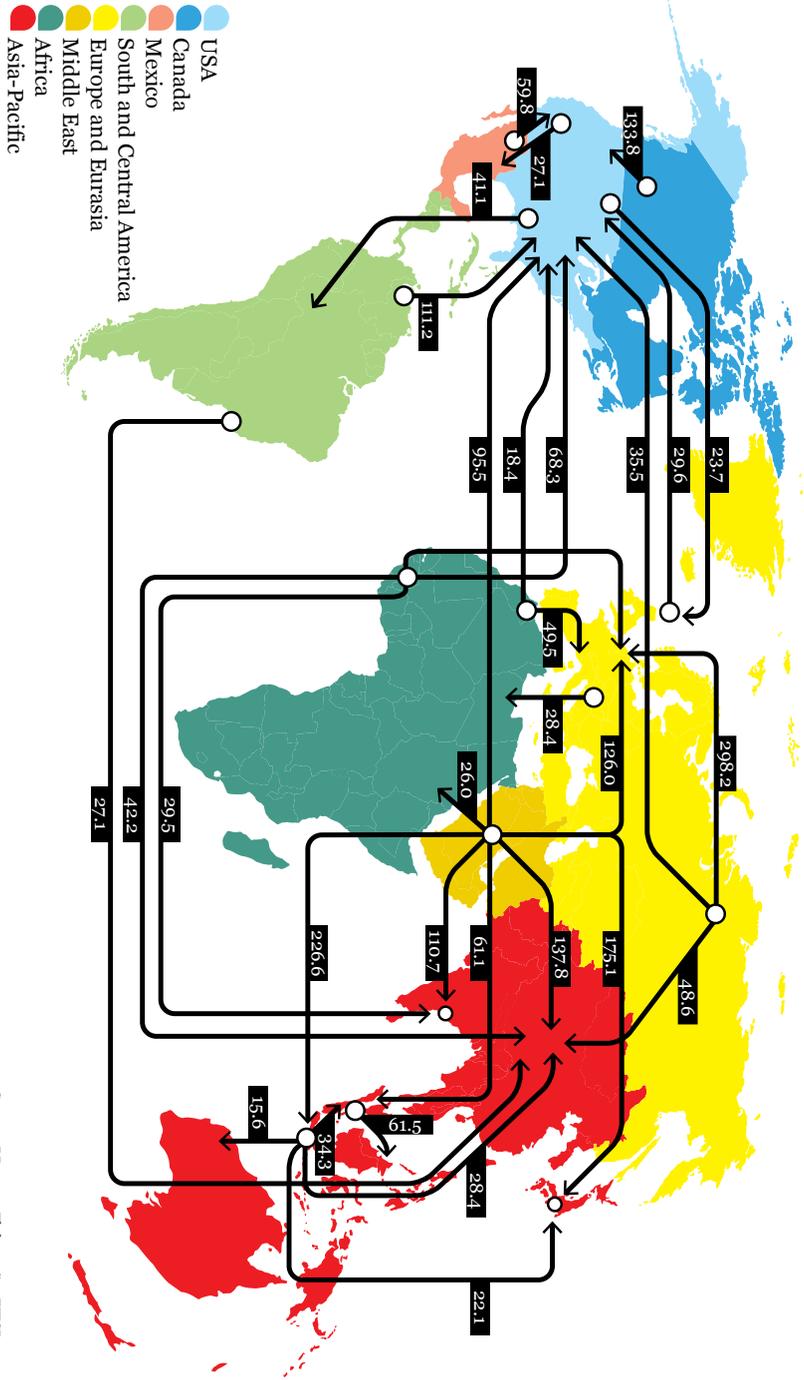
1. THE TRADE IN ENERGY GOODS AND SERVICES

Because of differences in the availability of natural resources in every country and region in the world, trade becomes fundamental for energy access, both with regard to trade in fuel and electricity, as well as for the purchase and sale of equipment related to the sector.

The international energy trade has become increasingly important to the export and import bases of many countries, surpassing traditional trade and presenting diversification among the various energy goods.

The production of energy goods is no longer guided solely by domestic demand; international trade has, in fact, become an important tool for satisfying the energy demands of many countries.

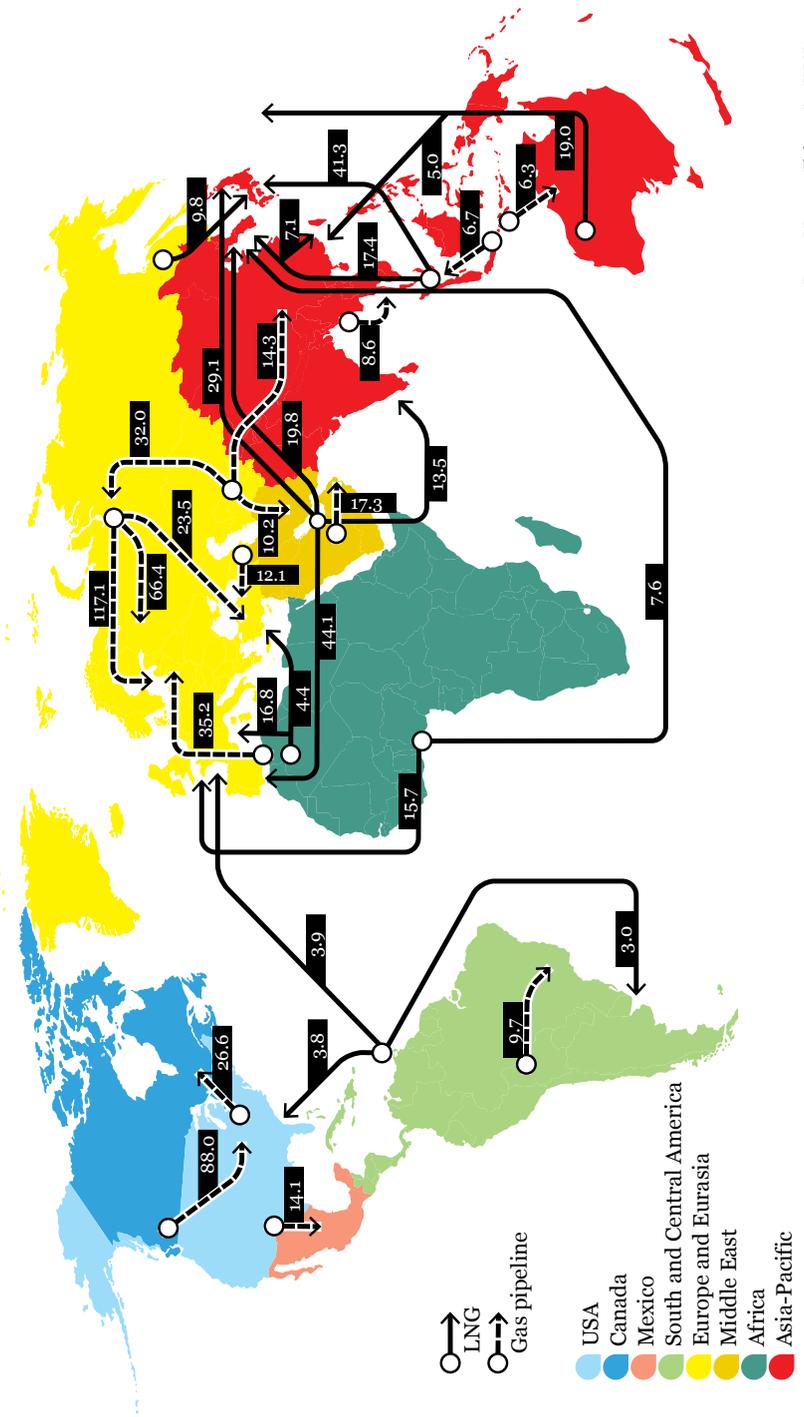
To illustrate the importance of the regulation of international trade in energy, the maps below show, firstly, the flows of the global oil trade, a relevant export product that spans all regions of the world, and, secondly, the flows of the global natural gas trade. It should be emphasized that, initially, natural gas was traded only regionally. It was only after technological developments enabled the transportation of liquefied natural gas (LNG) that gas trade attained a global reach.



Source: BP, 2012. Elaboração: FIESP.

Map 1 - Key World Trade Flows of Oil in 2011
(in million tons)

Map 2 - Key World Trade Flows of Natural Gas in 2011
(in billions of cubic meters)



Fonte: BP, 2012. Elaboração: FIESP.

Electricity trading, for its part, depends on power lines, a fact which often limits it to the regional level. A significant increase of regional integration projects in energy infrastructure has been observed, which aim to ensure energy security, more efficiently utilize resources, and consequently reduce costs.

Despite being advantageous, trade can bring about energy dependence on foreign sources and insecurity for importing countries, since the disruption of supply would cause huge losses to the dependent countries. Thus, an international regulatory framework is required that can offer greater predictability for energy trading, seeking to provide assurances to importing countries and subsequent reductions in transaction costs.

Multilateral Sources of Energy Trade Regulation

The energy trade is treated with special emphasis because of its geopolitical and strategic importance. For a long time there has been a common notion that the rules of the World Trade Organization (WTO) are not applicable to the energy trade. Despite this perception, it has been observed that its legal framework applies to many of the problems that the sector presents.

In efforts to focus specifically on energy trading, there is a second relevant source of multilateral regulation of trade: the Energy Charter Treaty (ECT). This is a European initiative open to any interested parties. Strongly inspired by the WTO rules regarding trade regulation, the ECT makes advances by establishing specific regulations for the energy sector, in areas such as investment and transportation.

The Regulation on Trade in Goods

The General Agreement on Tariffs and Trade (GATT) 1994¹²³, a base Agreement of the WTO, sets out the principles governing the regulation of international trade. The most important principle is that of non-discrimination, and the GATT 94 refers to the subject by two other principles arising from it: (i) the Most Favored Nation (MFN) Principle, and (ii) the Principle of National Treatment.

The MFN principle, laid down in Article I of the GATT 94, prohibits discrimination between trading partners, so that all WTO Members are required to ensure that the outcome of negotiations between two Parties are immediately and unconditionally extended to similar products from other Member States of the WTO. With regard to energy producing countries, the application of this Article requires that similar energy products and materials will not suffer any discrimination based on their origin (in the case of imported products and/or materials) or destination (in the case of exported products and/or materials), establishing equality among the Members.

¹ The General Agreement on Tariffs and Trade (GATT 47) was adopted in 1947, as an interim agreement with the purpose of regulating international trade by reducing tariffs and barriers to trade in goods and the elimination of preferences. The original intention of the agreement was to act provisionally, until an institution was created to regulate the commercial aspect of the international economic cooperation established after the Second World War (International Trade Organization - ITO), which would supplement the Bretton-Woods institutions – the World Bank and the International Monetary Fund (IMF). The institution failed to materialize, making its Contracting Parties opt for maintaining the GATT 47. During the Uruguay Round (1986-1994), the Contracting Parties resumed discussions for creation of a body with international legal status to regulate international trade not only in goods but also in services and other areas. Thus, the WTO was established. This Organization has incorporated the GATT 47 and presented a series of agreements that seek to better regulate trade. Included was a new Agreement on Tariffs and Trade, which maintained the rules of the GATT 47 and was named GATT 94.

² The negotiation periods for the liberalization of trade in goods and services among the Contracting Parties / WTO Members are called “rounds”. The latest round of negotiations was launched in 2001 in Doha, Qatar (the Doha Round). The main theme of the negotiations is development, aiming to lower barriers to trade, increase access to markets, and negotiate and adjust WTO rules— by presenting important proposals that may affect trade in the energy sector.

³ The Uruguay Round (1986-1994) was the eighth round of multilateral trade negotiations, the last conducted under the GATT 47. The main result of this round was the establishment of the WTO, which incorporated the GATT 47 and presented a series of agreements that seek to better regulate trade.

The Principle of National Treatment prohibits the occurrence of regulatory and fiscal discrimination between imported products and similar ones of national origin (Article III, GATT 94). Once National Treatment occurs between similar products only, differential treatment may be accorded to imported and national energy products and materials. Furthermore, the application of this principle does not preclude implementation of internal tariffs related to the transportation of these products, provided they are based exclusively upon the economic transaction and not on their nationality. Within the energy sector this means, for example, it is possible that different tariffs are applied in relation to similar products due to the distance and the number of pipelines used for transportation.

Another principle that deserves attention is the prohibition of quantitative restrictions on trade. This refers to instruments that limit the value or volume of imports of a particular product or indicate the amount that each country can import individually, such as import quotas and voluntary export restraints, among others. Article XI of GATT 94 refers to the general elimination of quantitative restrictions on trade in goods, curbing both the ban on imports and exports and the imposition of quantitative restrictions designed to impede the flow of trade. Tariffs, in general, are allowed since they are considered restrictive only when their level is so high as to prevent any export and/or import transactions at all, with effects similar to those caused by measures that limit exports and/or imports.

With regard to the restrictions applied to the energy sector, it can be stated that those related to the export of energy products are more frequent than restrictions on imports. This is because energy importing nations have a tendency to keep low import barriers for this sector in order to ensure ample supply, while energy exporting nations tend to restrict exports through fiscal and non-fiscal measures as a means to increase their income, and indirectly encourage domestic industry⁴.

Moreover, general exceptions under Article XX of the GATT 94 should also be noted. The article in question makes reference to situations in

⁴ EHRING, L.; CHIANALE, G. F. Export Restrictions in the Field of Energy. In: SELIVANOVA, Y. (ed.). Regulations of Energy in International Trade Law: WTO, Nafta and Energy Charter. EUA: Kluwer Law International. p. 109-147, p. 109.

which States can legally justify the introduction of measures that prioritize public policies considered to be inconsistent with WTO rules. If those situations materialize, there is the possibility that a member may exclude the application of the principles of MFN and national treatment and the conditions of similarity, quantitative restrictions on trade, and tariff reduction, provided the two requirements below are met simultaneously: (i) the condition contained in one of the paragraphs of Article XX is met, and (ii) such measure does not constitute a means of arbitrary or unjustifiable discrimination between countries with the same conditions, or a disguised restriction on international trade, according to the 'chapeau' of this Article. For the energy sector, the most suitable provisions to justify the adoption of restrictive measures on exports of energy products are paragraphs (b), (g), (h), (i) and (j) of Article XX⁵.

Access to Markets

Among the topics that deserve greater emphasis, the issues relating to market access and the adoption of technical barriers to trade in energy goods and services should be studied more carefully.

The imposition of tariffs on energy primarily reflects the energy policy goals of each State. These goals often prevail over ones related to trade policy, since the former aim to ensure energy supplies nationwide. It is important to highlight that, because it is in the best interests of importing States to keep the costs of energy materials and products at low levels to ensure appropriate supply for the domestic demand, the tariffs applied to energy imports are generally low, even in sectors where tariffs are generally not consolidated, such as in the electricity sector.

⁵ GATT Article XX: (b) provides for the adoption of measures "necessary to protect human, animal, or plant life or health" (g) allows the adoption of measures "relating to the conservation of exhaustible natural resources if such measures are enacted in conjunction with restrictions on domestic production or consumption", (h) allows the adoption of measures in pursuance of obligations under any intergovernmental commodity agreement; (i) refers to measures involving restrictions on exports of raw materials produced in the country as is necessary to meet the demand of a certain domestic processing industry during periods when the domestic price is below the world price and when the price difference is due to a governmental stabilization plan; and (j) the measure is considered essential to the acquisition or distribution of products that, if absent, would cause general or local hardship for the population.

Export tariffs

The imposition of export tariffs, in turn, presents a different logic than that applied to import tariffs. Export tariffs are neither prohibited by the WTO nor do they have a maximum level negotiated, as usually occurs with import tariffs. These tariffs represent an important source of income for exporting States, as well as having the effect of increasing the cost of goods exported, resulting in lower export volumes and reflecting a tendency to conserve exhaustible natural resources within those States.

Because the lack of consolidated export tariffs might lead to distortions in international trade, this issue became an important factor for the admission of new Members to the Organization, such as Russia and China.

For new members to be admitted, all WTO Members must agree to the terms of its accession. Since the accession of new Members is accomplished through direct negotiations with other WTO Members, it is possible to include among the accession protocols certain obligations regarding matters beyond the regulatory scope of the Organization, which can be classified as WTO-plus obligations. However, such provisions are binding only for those countries that accede to the organization through their respective protocols, and are not applicable to other Members.

In its accession protocol, Russia consolidated export tariffs on approximately 700 tariff lines, including mineral fuels. China, likewise, made commitments aimed at the elimination of all tariffs and charges related to exports, with some exceptions.

Agricultural Products

The opening of markets for agricultural products is a sensitive matter and is hard to negotiate at the multilateral level. On the one hand, on the side of importing countries, there is a persistent concern for the stability of the rural sectors of the economy, particularly small-scale farmers and family farms, who need to be protected from international competition. Exporting countries, on the other hand, argue that it is possible to regulate the supply of food at more competitive prices and that the stimulus to domestic production, sometimes inefficient, would not be a sound basis

for achieving development.

Due to the sensitivity of the sector, the WTO provides special treatment for agricultural products. The Agreement on Agriculture (AoA) is also extended to the energy sector and brings with it more flexible rules than those applicable to non-agricultural products.

Goods regulated by the AoA are listed in Annex I of the Agreement, in accordance with the Harmonized System (HS; Chapters 1-24)⁶. Ethanol and biodiesel were treated as agricultural products until 2005 and were subject to AoA's regulation. However, starting in 2005, biodiesel became classified as a non-agricultural product (Chapter 38, referring to products of chemical and allied industries), while ethanol has remained classified as agricultural produce (Chapter 22).

Such a classificatory difference results in two products with similar purposes receiving different treatments. This is because the negotiations to reduce tariffs on agricultural and non-agricultural products occurred at different paces within the WTO, resulting in average bound tariffs that are higher for agricultural products. In general, these products are subject to higher fees and may receive more subsidies than manufactured products⁷. Thus, biodiesel would be favored by facing lower tariffs when exported, while ethanol would be subject to higher tariffs and the specific provisions of the AoA on subsidies.

Technical Barriers

According to WTO's definition, technical barriers are those derived from the use of technical standards or regulations which are neither transparent nor grounded in internationally accepted standards, or even

⁶ The HS of the World Customs Organisation is a nomenclature that standardizes and classifies marketable products. The products are divided into 97 chapters, which correspond to sectors such as beverages, spirits and vinegar (Chapter 22); mineral fuels, mineral oils and products of their distillation (Chapter 27), chemical products (Chapter 38), machinery (Chapter 85), among others.

⁷ ICTSD. *Biofuel Production, Trade and Sustainable Development*. Switzerland, 2008, p. 38: "For example, the EU tariff duties are relatively low for biodiesel (6.5 percent), whereas tariffs on ethanol are to an ad valorem equivalent (AVE) tariff of 40–100 percent, depending on the price of ethanol; the lower the price of ethanol, the higher the AVE."

from the adoption of conformity assessment procedures that are either not sufficiently transparent and/or too expensive, as well as from excessively stringent inspections.

The Agreement on Technical Barriers to Trade (TBT) was adopted at the WTO with the aim of regulating the subject, assisting Members in identifying the best course for implementing standards and technical regulations, and avoiding the adoption of procedures that would unnecessarily restrict international trade. TBT rules apply to both the product and its related Processes and Production Methods (PPMs), seeking to avoid the imposition of unnecessary or discriminatory technical barriers based on the manner in which a good is produced.

TBT also applies to the imposition of labels that aim to provide consumers with information about products sold, which may influence their preferences and thus modify the conditions of competition within the market. In the energy sector, it has been common to use seals related to the energy efficiency of some products, called ecolabels.

WTO Members generally agree that the use of labels, when voluntary, is a fair, transparent, and legal means of product differentiation. However, according to the preamble of the TBT Agreement, labeling cannot merely serve as deceptive pretext for creating unnecessary obstacles to international trade. Thus, it is important to monitor how the ecolabels created affect the energy sector, in order to identify any labels that may constitute unjustified barriers to international trade.

In general, the adoption of technical barriers related to trade in the energy sector and the proliferation of measures taken under the exceptional circumstances provided in the TBT and in accordance with the exceptions set out in Article XX of the GATT 94 represent a source of uncertainty for the international community. These rules may affect, even if indirectly, the production, storage, transportation, and marketing of energy goods and services, primarily through measures to ensure energy security and to protect human health and the environment. In addition, technical requirements, whether voluntary or mandatory, can be used as a disguised means of protecting domestic markets, which proves to be an important factor for limiting the free movement of goods and services.

In order to avoid the multiplication of technical rules that rely on dif-

ferent scientific bases and hinder trade flows, TBT encourages the use of international standards as a basis for technical regulations and standards applied by Members. However, if these standards do not achieve the appropriate level of protection that a WTO Member determines to be necessary in order to achieve its objectives, such as protection of human health or national security, such Member is allowed to establish a rule or technical regulation that goes beyond internationally established standards. Accordingly, discussions are held on the impact that can be caused by the implementation of technical standards and regulations that exceed those set internationally, since adaptation to imposed rules can be highly costly and can influence changes in regulations for the admission of chemicals in other States as well.

ECT

The ECT applies all WTO rules, except for those listed in its Annex W. Under the ECT, the Contracting Parties endeavored to promote access to international markets on commercial terms while also to develop a competitive market for energy products and materials. Contracting Parties to the ECT⁸ should provide the Secretariat with a list of tariffs and charges for the import and export of energy materials and products at the time of their accession and communicate any subsequent changes to such tariffs and charges. The Parties to the ECT which are also WTO Members will be required to apply tariffs for energy products up to the limit as indicated by their lists with the WTO. The ECT provides for a best endeavors article, non-mandatory, according to which the Contracting Parties shall respect their bound tariffs in the WTO also in relation to non-Member States of the Organization. The Parties that are not Members of the WTO should limit their tariffs to the level applied upon their accession to the ECT or last notification.

The following categories of WTO rules are listed in Appendix W as non-applicable to the Contracting Parties to the ECT: (i) institutional ar-

⁸ The primary role of the ECT Secretariat is to provide technical and administrative support to the Contracting Parties.

rangements, (ii) final provisions, including those relating to entry into force, accession and withdrawal of Members, (iii) provisions related to dispute settlement, (iv) all provisions regarding tariff commitments and tariff negotiations, since the ECT merely establishes a soft law regime regarding import tariffs, (v) all provisions ensuring special and differential treatment in relation to developing countries, except for those related to the Generalized System of Preferences⁹, (vi) the AoA and the Sanitary and Phytosanitary Measures Agreement (SPS), because their content is beyond the scope of the ECT, and (vii) the General Agreement on Trade in Services (GATS) and the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS). Further, the rules contained in the WTO Plurilateral Agreements are likewise non-applicable to the Contracting Parties to the ECT.

The Regulation of Trade in Energy Services

The international trade in energy services, essential for ensuring national energy security, may also be subjected to restrictions similar to those found in other service industries, such as: barriers relating to restrictions on foreign investment; the existence of exclusive rights and monopolies; discriminatory tariff treatment against foreign service providers; tax treatment etc. In the energy sector, such restrictions may result in limiting access to transportation networks and power lines, restricting transit rights, and the imposition of unjustified transmission and transport tariffs, among other measures for restricting free trade.

The GATS was designed in order to ensure and enhance the transparency and predictability of rules and regulations relevant to the services sector, while aiming to promote the liberalization of the sector through successive rounds of negotiations among WTO Members.

The liberalization of services in the GATS occurs in a progressive manner, exclusively through a positive list of commitments. In other words,

⁹ The Generalized System of Preferences refers to the promotion of preferential access for developing countries through full or partial tariff reduction, granted unilaterally by more countries, so that goods from developing countries may enjoy privileged access to the markets of developed countries at the preferential tariffs granted to developing countries unilaterally.

countries place on their list of commitments only sectors that will be subjected to trade liberalization, and those that are not present cannot be covered by any other agreement they will sign. Trade in energy services, however, is not the subject of a significant number of commitments by WTO Members.

Aiming to increase the number of commitments related to energy services, some WTO members have proposed the creation of a Reference Paper for the sector. This set of regulatory principles would be binding only for States that have committed themselves to the document, which would include a regulatory framework to ensure transparency in the adoption and implementation of rules, regulations and technical standards, non-discriminatory access by third parties to transport networks and other infrastructure essential to the trade in energy services, the establishment of independent supplier regulators, non-discriminatory and timely availability of relevant data on energy transportation and transmission, and requirements that would prevent the implementation of anticompetitive practices within the energy services trade. The proposal, however, is still under negotiation.

The obligations under the GATS can be classified into two major groups: (i) general obligations that apply directly and automatically to all members and service sectors (MFN and transparency obligations), and (ii) obligations applicable only to the sectors expressly specified in the lists of individual commitments of each Member (obligations on market access and National Treatment).

For the trade in services, WTO uses the Sectoral Classification List (W/120)¹⁰, which consists of a list composed of 12 sectors and 150 sub-sectors based on the UN Central Product Classification (CPC)¹¹ whose purpose is to serve as a reference tool to Members and give homogeneity to sectoral commitments made¹². However, none of the instruments men-

¹⁰ WTO. Services Sectoral Classification List. Note by the Secretariat. MTN.GNS/W/120, 10 de Julho de 1991.

¹¹ COSSY, M. Energy Services under the General Agreement on Trade in Services. In: SELIVANOVA, Y. (ed.). Regulations of Energy in International Trade Law: WTO, Nafta and Energy Charter. EUA: Kluwer Law International, 2011. P.149-179, p. 152.

¹² Ibid.

tioned above present an exclusive chapter for the classification of energy services, and only three subsectors of the CPC and the W/120 refer explicitly to energy: (i) mining [W/120 (1.Fh) CPC (883 +5115)], (ii) energy distribution [W/120 (1.Fj), CPC (887)], and (iii) transportation of fuels [W/120 (11.Ga), CPC (7131)].

In addition to services inherent to the energy sector, there is also a wide range of services related to the sector (energy-related services) that can be found in other subsectors of the W/120 and CPC Classifications, such as those pertaining to commercial, environmental, financial, engineering, construction, management consulting, distribution, and transportation services.

Although these classifications cover most services relevant to the energy supply chain, some energy services still do not fit into any of the existing categories in the W/120 and CPC classification lists, such as the wholesale trade of electricity, retail services relating to electricity, and services related to the measurement and billing of energy.

Considering that the energy sector consists of a chain of interconnected activities, some practical problems arise from the fragmentation and non-exhaustive classification of this sector. For example, a provider of energy services may require access to the markets of various industries in order to adequately provide its services. Since these services are scattered among the classification systems in place, the actual conditions of access to certain markets may be uncertain, creating unpredictability regarding the possibility of providing energy services efficiently¹³. Given this framework of linked services, there is a need to review and update the W/120 List regarding market developments.

2. ENERGY TRANSIT AND TRANSPORTATION

Energy transit often occurs through pipelines and electricity transmission lines, which extend for thousands of kilometers and can cross a number of countries in a process that involves players of different na-

¹³ ZARRILLI, S. International Trade in Energy Services and the Developing Countries. In: UNCTAD, Energy and Environmental Services: Negotiating Objectives and Development Priorities. UNCTAD/DITC/TNCD/2003/3, 2003, pp. 23-79; pp. 47-48.

tionalities. Thus, it becomes necessary to regulate the issue at the multilateral level so that investment and trade can move forward without the presence of uncertainties and risks to stakeholders.

The WTO Agreements apply to all forms of trade in goods and services. Thus, despite not treating the energy sector differently, Article V of the GATT 94, which regulates the transit of all goods covered by the WTO multilateral system, also applies to the transit of energy goods. However, because it is a sector with characteristics that distinguish it from the trade in goods in general, the rules contained in Article V insufficiently regulate the energy sector, leaving significant gaps in the continuity of energy transit, for example, the uncertainty about the appropriateness of energy transit routes chosen by international players, about the limitations applicable to the freedom of transit, and about the definition of available capacity for energy transit. The topic has been included within agreements for accession of new members to the WTO, providing a good opportunity for the provisions of Article V to be clarified and strengthened, particularly by consolidating the regulation of the sector and explicitly including the transit of goods carried under fixed structures, by encouraging increased transparency and coordination of formalities and legal requirements, and by limiting the application tariffs restricting the transit of goods.

One of the themes on the agenda for negotiation during the Doha Round was trade facilitation, which aims to revise, improve and clarify Articles V, VIII and X of GATT 94, discussing possible changes to the regulatory framework on energy transportation. The version under negotiation, in addition to reaffirming the principles of non-discrimination (MFN and national treatment) and transparency already contained in Article V of the GATT 94, innovates by making reference to goods that are transported via fixed infrastructure, such as pipelines and electricity transmission lines, thus unmistakably including the transportation of energy commodities within the GATT 94. Article 11 proposed in the current version also submits State Owned Enterprises (SOEs) to the provisions contained in the draft Agreement.

In turn, the ECT explicitly refers to the transportation of energy commodities and equipment related to the energy market. Although it con-

tains rules to regulate the transit flows of energy in a way that is more incisive than the rules observed in the WTO, the need to regulate the activity more thoroughly still persists. To that effect, the Contracting Parties to the ECT began negotiating a Protocol on Transit. Although negotiations are currently suspended, the Protocol innovates by proposing the creation of standards for reducing risks related to the transit of energy goods, by recommending better terms to finance projects for the production and transportation of energy resources, and by increasing energy security regarding the stages of energy production (production, supply, demand, and infrastructure). In addition, the parties to the ECT developed, in parallel with the negotiation of said Protocol, non-binding models related to the transportation of energy, recommending the adoption of various measures to harmonize rules on energy transit and transportation operations.

3. SUBSIDIES

WTO's Agreement on Subsidies and Countervailing Measures (SCM) considers that subsidies can be understood as the granting of a benefit based on two assumptions: (i) the existence, in the exporting country, of some form of income or price support that may contribute directly or indirectly to increase exports or reduce imports of any product, or (ii) the existence of financial assistance granted by a government or public body within the territory of a Member, which can be made through loans, grants, financing, tax incentives, provision of goods or services other than those earmarked for infrastructure, among others (Article 1 SCM).

Although the term subsidy is comprehensively defined and covers a full list of government support, it is important to note that not all subsidies may be subject to challenges under the WTO. In order to be challenged, a subsidy must meet the criterion of specificity.

A subsidy is considered specific when the granting authority, or the legislation, explicitly limits its access to only one company or group of companies, or when the subsidy is circumscribed regionally or by sectors

(Article 2 SCM)¹⁴.

For the SCM, subsidies are distinguished among the categories of prohibited, actionable and non-actionable.

Prohibited subsidies are always considered specific, and generally come in two forms: (i) export subsidies, and (ii) subsidies linked to the use of domestic products – local content (Article 3, SCM).

Actionable subsidies are those that cause adverse effects to the interests of other Members through their mere application (Article 5, SCM)¹⁵. In this case, should these effects be demonstrated by the plaintiff Member(s), the defendant Member shall remove the negative effects that stem from the action it has taken or withdraw the subsidy.

The category of non-actionable subsidies was divided between non-specific subsidies and specific subsidies, following the conditions laid down in Article 8.2(a)(b)(c)¹⁶. However, this category was due to expire in 2000, when it was scheduled to be reviewed by WTO Members. Members did not reach a conclusion regarding the renewal or modification of non-actionable subsidies and thus they became inoperative.

The issue of subsidies in the energy sector has been discussed internationally. The justification often used to subsidize the energy sector is that countries seek to expand their sources of energy supply, since greater access to and consumption of energy are closely linked to economic growth and improved social and economic conditions of the population.

Energy subsidies may aim to reduce costs, for both industrial producers and domestic consumers, and also keep the price paid for a particular

¹⁴ When the authority or the legislation establishes the criteria or conditions to regulate the eligibility for subsidy and its amount, provided that the choice is automatic, with strict observance of such criteria and conditions, the criterion of specificity does not apply.

¹⁵ The WTO believes that there are three types of “adverse effects”: (i) injury to the domestic industry of another Member; (ii) nullification or impairment of benefits accruing directly or indirectly to another Member, or (iii) serious prejudice to the interests of another Member.

¹⁶ Article 8.2 of the SCM determined that specific subsidies that fulfill one of the following three criteria would be considered non-actionable: (a) assistance for research activities conducted by firms or by higher education or research establishments on a contract basis, (b) assistance to an economically disadvantaged region within the territory of a Member, given pursuant to a general framework of regional development and non-specific (within the meaning of Article 2, SCM) within eligible regions, and (c) assistance to promote adaptation of existing facilities to new environmental requirements imposed by law and/or regulations which result in greater constraints and financial burden on firms.

energy source above market value for the producers of the sector (price support).

From the use of subsidies one can seek: to reduce carbon emissions; to encourage the development of national industry and stimulate the creation of jobs in the high technology sector; to reduce dependence on foreign energy; to reduce costs of technologies, especially those related to the production of renewable energy; to change and diversify the energy mix; to grant incentives for local production, among others.

Subsidies for the energy sector are generally granted to upstream producers and industries and include, for example: direct payments to finance production; subsidies relating to taxation; policies to reduce the cost of inputs; subsidies related to investments (such as loans at preferential rates, debt forgiveness, loan guarantees, among others); and policies that generate transfer pricing through the market. In addition to traditional modalities, it is possible to identify two specific types of subsidies applied to the energy sector: dual pricing and feed-in tariffs (FIT).

Dual Pricing

Dual pricing refers to the charging of one price for a product on the domestic market and a different one for the same product when destined for export. The adoption of a dual pricing policy has positive and negative aspects. In the energy sector, this policy is usually implemented through price controls or price ceiling set by the government, or even through the sale of energy resources by state enterprises to domestic consumers at preferential rates¹⁷.

Under these circumstances, energy used as raw materials for production will be cheaper for domestic producers than for the foreign producers who rely on the exported energy product, thus favoring domestic producers because their costs are lower than those of foreign producers not established in the territory of the Member.

During the Uruguay Round negotiations, the participating countries

¹⁷ POGORETSKY, V. Energy Dual Pricing in International Trade: Subsidies and Anti-dumping Perspectives. In: SELIVANOVA, Y. (ed.). Regulation of Energy in International Trade Law. Global Trade Law Series, Wolters Kluwer, 2011, p. 183.

were already calling for an analysis and regulation of this subject. In the context of the Doha Round, the U.S. resumed the discussion when addressing the topic of natural resources, understanding that dual pricing would be a government intervention in the energy sector that could, among other effects, cause distortions in the market since it created benefits for domestic producers, unfairly improving comparative advantages that should be determined by market forces and productive efficiencies. In response to the claim of the United States, Venezuela said it was necessary to clarify what Americans meant by dual pricing and fair market value. They even questioned if the establishment of preferential prices for natural resources, including energy, would have the effect of distorting trade, claiming there were no studies available on the matter.

WTO negotiations did not show further developments, and the Members had doubts about the definition of dual pricing, about the possibility of a relationship between this policy and distorting effects on the energy market, and also about whether the SCM would be applicable¹⁸.

Given the silence on the WTO Agreements concerning the nature of dual pricing, Members have decided to suspend additional protocols of accession of new Members, especially when it comes to energy producing countries.

Feed in Tariffs

Subsidies aimed at renewable energy can be manifested in several ways, such as investment in research and development, tax exemptions, specific regulations, or even far-reaching programs such as FIT programs. Given that some forms of renewable energy have high production costs, incentives for the development of new technologies and the maintenance of existing power generation facilities are often required to make those forms economically viable.

¹⁸ WTO. Negotiating Group on Rules, U.S. Release: Subsidies Disciplines Requiring Clarification and Improvement. TN/RL/W/78, p. 3; WTO. Negotiating Group on Rules, Notice of Venezuela: Observations and Comments by Venezuela on Document TN/RL/W/78 Submitted by the United States Concerning prohibited subsidies and other subjects under the WTO Agreement on Subsidies and countervailing Measures. TN/RL/W/107, p. 2.

FIT programs are generally designed to accelerate investments in technology and encourage the use, production, and sale of renewable energy. These programs usually require that public utilities (especially electricity distributors) purchase electricity from renewable energy producers for a higher price than the market price.

It is important to highlight that the mere existence of a FIT program is not enough to make a certain subsidy program prohibited by or actionable under WTO rules. In the WTO, there is not a clear definition of whether FIT Programs are considered subsidies, and their legal nature depends on the project and the implementation model used and the effects caused by them.

4. RENEWABLE ENERGY, ENVIRONMENT, AND CLIMATE CHANGE

Climate change and environmental impacts have brought to the forefront the necessity of reorienting the rules of the international energy trade. It is noted, in this context, an increasing pressure to find an international response to climate change and the possible consequences this change may have on the relationships among trade, environment, and sustainable development.

Although they have not been formulated to respond to issues related specifically to the trade in energy, various rules contained in the GATT 94 and the other WTO Agreements are relevant and can be applied in cases where it is necessary to harmonize measures related to the environment and the possible impacts they may have on the international trade in energy.

The approach generally adopted by the WTO recognizes that a certain level of trade restriction may be necessary for the fulfillment of certain policy objectives, provided that two conditions are met: (i) the measure must be covered by one of the exceptions in Article XX of the GATT 94 and (ii) the measure should not involve the practice of arbitrary, unjustifiable discrimination or a disguised restriction on international trade. If both conditions are met, measures related to policies to combat climate change could be accepted as exceptions to the provisions of GATT 94.

As nations have begun to pay closer attention to the problems of greenhouse gas (GHG) emissions, there has been a progressive raising of consciousness on the question of increasing energy production from renewable resources. Thus, the regulation of international trade in Environmental Goods and Services (EGS) plays a significant role in this context. The first difficulty faced in this scenario is the lack of definition of the concept of EGS, a topic that is being discussed by WTO Members in the context of the Doha Round.

It is also observed that tariff barriers are generally imposed by means of carbon tariffs and Border Tax Adjustment (BTA).

Carbon emission tariffs can be defined as environmental tariffs imposed by governments on the production, distribution, or use of fossil fuels. One can understand the imposition of tariffs on carbon emissions as a way to price the negative externalities¹⁹ caused by them. The positive aspects arising from such pricing are the reduced consumption of fossil fuels and the incentives for developing environmentally friendlier products.

However, companies located in countries that have environmental regulation may face economic disadvantages due to the imposition of carbon tariffs. This is because carbon emission tariffs can affect their production costs, forcing companies that intensively use energy from fossil fuels to relocate their operations to other countries that have a lower level of environmental regulation, a phenomenon known as carbon leakage.

BTAs are fiscal instruments used to offset the tax burden carried by products destined for export in relation to similar domestic products sold to the final consumers in the domestic market of a particular country. Furthermore, BTAs can also be imposed on imported products in order to prevent imports from becoming overly competitive in relation to domestic production.

¹⁹ Externalities are the effects of production and consumption activities that do not directly reflect the market and may be the cause of economic inefficiency. Negative externalities occur when the action of a Party imposes costs on the other. According to Pindyck, when a company does not consider the harms associated with negative externalities, the result is an excessive production and unnecessary social costs, which may distort investment decisions and consumption. Pindyck, R. S.; Rubinfeld, D. L. *Microeconomics*. 7th ed. São Paulo: Pearson Education do Brasil, 2010, pp. 575-577.

These measures are often used by countries that adopt carbon emission tariffs in order to respond to situations of carbon leakage and loss of competitiveness within domestic industry, since the BTAs tend to reduce the incentive to send production abroad. The application of BTAs, however, can be considered a barrier to trade and should be analyzed in the light of WTO rules.

Article 19 of the ECT provides that Contracting Parties shall act to minimize environmental impacts from operations carried out within the energy cycle. This Article refers also to the problem of cross-border pollution, stating that polluters should bear the costs generated by pollution so as not to distort international trade.

In addition, the ECT has provided its members with a forum for discussion intended to boost the exchange of experiences related to national strategies on energy efficiency, especially with regard to tariffs, pricing policies applied to the energy sector, subsidies related to the environment, and other mechanisms for funding initiatives related to energy efficiency.

5. INVESTMENTS IN THE ENERGY SECTOR

The issue of investment is relevant to the study of international regulation of energy due to the capital intensity of energy production and distribution activities. The high cost and complexity of works to exploit energy resources often make it necessary to use foreign investment to fund these projects.

The International Law of Investment assumes that it is necessary to promote a safe environment for foreign investment. Therefore, it provides a number of mechanisms to protect the investor, so that States can attract the investment they need. In the energy sector, the ability to attract foreign investment has been of particular importance due to the high cost of the projects and the urgent need for the States to expand their energy mixes.

WTO's Agreement on Trade-Related Investment Measures (TRIMs) prohibits the use of investment measures requiring the purchase or use of products of domestic origin, restricting the purchase or use of imported

products, limiting imported products through quantitative restrictions, or limiting access to foreign currencies, among others. Therefore, it seeks to ensure that the rules applicable to trade in goods are not circumvented by investment measures with the same effect as trade measures, such as quantitative restrictions or the use of domestic products.

The ECT goes beyond the provisions on investment established in the WTO and, in conjunction with the International Investment Agreements (IIAs), is the main source of regulation of investment for the energy sector.

One of the greatest protections afforded to investors by the ECT is protection against discriminatory practices by the State receiving the investment. The principle of National Treatment states that foreign investors should be accorded treatment no less favorable than that accorded to national investors of each State in similar conditions. The aim is to ensure competitiveness among domestic and foreign investors. The MFN principle, in turn, states that investors originating from Contracting Parties to the ECT should be accorded treatment no less favorable than that accorded to other investors.

The principle of fair and equitable treatment aims to remedy deficiencies in the regulatory framework of investment, ensuring investor protection. Although there is no precise definition of this principle, jurisprudence has established what is meant by fair and equitable treatment: protection of the legitimate expectations of the investor with respect to the maintenance of a stable and predictable environment in the State where the investment is made; the principle of transparency; good faith; the principle of abuse of rights; due process; proportionality and the prohibition of arbitrariness.

The ECT also has provisions on measures relating to expropriation, compensation and capital movement. Moreover, it provides that the Contracting Parties may resort to a state-to-state or investor-to-state arbitration²⁰ mechanism for the settlement of investment-related disputes.

²⁰ Arbitration is a system of extrajudicial settlement of disputes of voluntary character. In arbitration, the free will of the parties involved prevails: it is up to them to define the procedures used during the process, stipulate the deadline for it, appoint the arbitrators who will hear and settle the dispute etc..

However, a number of difficulties are still found in the sector, since the rules are not yet able to suppress significant insecurities faced by investors.

The scant regulation that exists in the pre-investment phase also distorts the sector. Exploitation licenses and concessions, which are frequent in the energy sector, are often granted arbitrarily, without a proper assessment of who would be the most efficient investor. The principle of non-discrimination, already recognized for the post-investment phase, could be relevant to make sure the State obtains the best possible return with respect to the resource exploited, especially given the high costs involved in prospecting and exploring for reserves of energy goods.

6. ENERGY SECURITY

The concept of energy security has different definitions and approaches. On the one hand, some argue that energy security is a policy linked to national security and, therefore, is only a strategic issue. On the other hand, there are authors who state that energy security corresponds to the challenge of providing citizens with access to a sufficient amount of energy at reasonable prices, for the current and forecasted demand, minimizing the risk of disruptions in the power supply for domestic consumption. In this sense, there are also those who argue that energy security represents one of the most important areas for achieving sustainable development and eradicating extreme poverty.

The energy interdependence between countries is a reality that can also bring about certain security risks. For the energy sector, it is necessary to discuss both access to the product as well as assurances of energy supply, provisioning, and distribution.

The current international regulation on the sector provides minimal guidelines on energy security and does not respond fully to the needs of the States. However, the implementation of some general principles from the multilateral trading system can facilitate the process of attaining energy security policies. Among these general principles, one that stands out is the principle of transparency, as evidenced by the Members' obligation to communicate their trade laws and any changes thereto and adopt poli-

cy positions based on consensus, which ensures the compliance of energy security policies with trade laws. The principles of National Treatment (Article III, GATT 94) and MFN (Article I, GATT 94) are also applicable.

Energy security also provides a pretext for applying the exceptions under GATT 94, such as Article XX (g), which deals with exhaustible resources, or even Article XXI, on the exceptions relating to national security.

The issue of energy security is addressed in the ECT from two perspectives, both related to the goal of security of supply: (i) defense against short-term crises in the supply of oil and gas (transit security of supply) and (ii) investment in infrastructure and energy efficiency. The applicability of the principle of energy security as an assurance of the energy supply can also be excluded when compliance with it may endanger the energy security of the country in question.

The International Energy Agency (IEA), aiming to resolve possible tensions arising from the energy interdependence of states, provides for the adoption of measures that could contribute to ensuring energy security: (i) diversifying and ensuring the efficiency and flexibility of the energy sector; (ii) responding promptly and flexibly to energy emergencies; (iii) ensuring that the provision and use of energy are environmentally sustainable; (iv) encouraging the adoption of more environmentally acceptable energy sources; (v) improving energy efficiency; (vi) continuously researching, developing, and marketing new energy technologies; (vii) maintaining policies to ensure undistorted energy prices (e.g., energy prices should not be held below the costs of supply to promote social or industrial goals); (viii) keeping markets more open and free; and (ix) encouraging cooperation among all countries participating in the energy market.

Energy security influences a number of national policies and contributes to trade liberalization. Since energy security is closely linked to other issues such as investment and energy transportation and transit, the standardization of export controls and freedom of transit could bring about positive results for the trade in energy goods and services. Debates at multilateral level could also bring some solutions and suggestions that would serve as a support.

SECTION II

REGIONAL REGULATION OF TRADE IN ENERGY

1. OVERVIEW OF THE REGIONAL REGULATION OF ENERGY

Agreements on the subject of energy bring with them important geopolitical considerations. In this area, some regional initiatives have sought to establish increasingly objective and clear rules, in order to guarantee investment security, competition standards, energy security, as well as incentives for developing new technologies, discovering sources of clean and/or renewable energy, among other practices.

It cannot be ignored that the rules established at the regional level end up exerting a material influence over future negotiations within the multilateral domain and, therefore, could be the basis for a future energy agreement, for example, within the WTO.

When dealing with the regulation of the regional trade in energy, it has been observed that regions present different degrees of integration and energy regulation. Faced with such diversity, this study seeks to respect the specificities presented by each one of them. On the one hand, regions that are most notably marked by strong regulations, such as the European Union (EU), are approached with greater detail, including reference to specific plurilateral and bilateral initiatives. On the other hand, those that present integration of a more basic or less-consolidated level, such as Africa and Asia, are dealt with in a less comprehensive fashion. Regarding Latin America, being the region in which Brazil is included, greater em-

phasis is placed on integration initiatives, taking up some bilateral and trilateral agreements as well.

2. EUROPEAN UNION (EU)

The EU offers a quite advanced model for regional energy integration. By relying on a limited number of foreign suppliers to meet its domestic demand for energy, the diversification of routes and sources of energy supply becomes a strategic priority for the whole of Europe, as a means to ensure energy security and hence a stable economy.

The EU, guided by the multilateral rules of the WTO and the ECT, promoted the gradual opening of national energy markets through liberalization packages in the sector, aimed at dismantling monopolistic enterprises, consumer protections, non-discriminatory access by third parties to energy transmission and distribution systems, and the creation of independent regulators, in order to maintain transparency and competition within the industry. Additionally, the services sector was liberalized in order to ensure the efficient and economical distribution of energy to consumers, and new rules related to investment were introduced, strengthening the protection of foreign investors against risks such as discriminatory treatment, expropriation, nationalization, unjustified restrictions on remittances of capital abroad, among other actions that can make the relationship between investors and host States of investments unstable.

Moreover, the EU has promoted cross-border energy integration, using political and legal instruments to establish cooperative and/or regulatory frameworks with non-Member States, which are strategic for the maintenance of energy supply in the region.

Europe's third energy package, currently in effect, is composed of Directives 2009/72/EC and 2009/73/EC, laying down common rules for domestic markets in electricity and gas, respectively, and Regulations (EC) 713/2009, establishing the Agency for the Cooperation of Energy Regulators (ACER), and 714/2009 and 715 /2009, on conditions for access to transportation networks for cross-border electricity and natural gas trading.

The package seeks to stimulate competition in the European energy

market by separating transport and distribution networks, generally constituted by natural monopolies²¹, from the activities of the Transmission System Operators (TSOs) and Distribution System Operators (DSOs). This structural separation is considered essential for ensuring non-discriminatory access to energy networks. To ensure the independence of TSOs and DSOs from the legal, administrative, and financial structure of vertically integrated undertakings (VIUs) allows for, at the same time, the creation of a competitive market among suppliers and the development of a healthy environment ready to receive new investments, based on an efficient and transparent regulatory regime.

The European experience shows that coordination between energy policies and regulatory policies for the energy sector in a region seeking integration is fundamental to ensuring, for this segment, a competitive, secure, and environmentally sustainable market.

3. NORTH AMERICAN FREE TRADE AGREEMENT (NAFTA)

Energy trading in the NAFTA region is both intensive and geographically favorable. Most trading comes from Canada and Mexico destined for the USA, trade flows between Mexico and Canada being virtually non-existent.

NAFTA is considered a milestone among the preferential trade agreements, particularly with regard to the pioneering innovation of offering special treatment to the trading of energy goods and the investment and cross-border transit policies involving these goods²². Moreover, the presence of a chapter on the energy sector shows an interest in creating a commitment to ensure the continued integration of the energy sector in the region.

²¹ Monopoly describes a situation in which two characteristics are observed: (i) the non-existence of close substitutes, and (ii) barriers to the entry of similar products on the market. The non-existence of close substitutes causes the lack of competition between substitute goods, while barriers to entry are the natural or legal restrictions that protect a company from potential competitors. There is a natural monopoly when the natural barriers to the entry of a new product allow the existence of an industry where economies of scale make a single company supply the entire market at the lowest cost possible. PARKIN, M. *Economia*. 8th ed. São Paulo: Addison Wesley, 2009, pp.258-259.

²² *Ibid.*, p.335

Based on the provisions of the GATT 94, NAFTA has incorporated the principles of non-discrimination and national treatment (Article 301), as well as the intention of progressively eliminating tariffs, to be applicable to the trade in all goods covered by the Agreement and including those not expressly included, such as energy goods (Article 302). NAFTA also imposes obligations on its signatories that exceed those existing under the WTO Agreements. These additional obligations focus on balancing the interests of energy importing and exporting countries, with emphasis placed on questions of resource access and security of energy supply.

Imposing restrictions, fees, and other measures concerning the import and export of goods follows the provisions contained in Article XI of the GATT 94 regarding the prohibitions and quantitative restrictions on the import or export of energy goods and petrochemicals. However, the Parties are allowed to apply restrictions to the energy trade when the goods originate from or are destined for a non-Member State; that is, imports of energy goods coming from a Non-Member State via a Party to the Agreement may be limited or prohibited²³.

NAFTA adds an innovation with respect to GATT 94, by preventing the Parties from adopting duties, taxes, and other charges for the export of any energy or petrochemical good to the territory of another Party, unless such tariffs, taxes, or charges are applied to the exports to all Parties in an equitable manner, as well as to any such goods when consumed domestically.

By adopting provisions that authorize the designation of monopolies and the establishment of state undertakings by the Parties, NAFTA once again goes beyond the multilateral regulatory framework. By establishing that the Parties shall ensure, principally by means of administrative control and regulatory supervision, that the monopolies act in accordance with the obligations assumed by the Party, it defines concepts and rules designed to prevent major disturbances to trade.

Despite containing innovative features related to the energy regulations

²³ HORLICK, G.; SCHUCHHARDT, C.; MANN, H. NAFTA Provisions and the Electricity Sector. Background Paper prepared for the Commission for Environmental Cooperation of North America Secretariat in support of the Electricity and Environment initiative, 2002. Available at: http://www.cec.org/Storage/46/3844_nfta5-final-e2.pdf.

adopted in the multilateral ambit, the series of reservations adopted in the energy sector by the Contracting Parties to NAFTA testifies to the topic's sensitivity and the difficulty of its regulation, even in the regional ambit. Furthermore, the harmonization of market regulations and technical standards related to the trade in energy goods and services also becomes necessary in order to avoid differences that could lead to the creation of new barriers to trade in the sector.

4. AFRICA

The African continent is comprised of 54 countries with great diversity in terms of culture, language, economy, and society. Despite the complexities related to its development, some integration initiatives are found on the continent. In the energy sector, they have resulted in the formation of five regional electrical systems that aim to completely integrate the continent.

One of the greatest obstacles to economic and social advancement in Africa is the lack of infrastructure, which prevents the formation of productive structures and, consequently, the development of a labor market. In order to break this vicious cycle, in 2010 the initiative known as PIDA (Programme for Infrastructure Development in Africa) was launched. In the energy sector, the Program covers the supply, demand, generation, and commercial transport of energy, taking into account the regional dimension and distribution of energy goods throughout the territory.

Furthermore, the 1991 Abuja Treaty established the African Economic Community (AEC), through which it was possible to create sub-regional markets. The AEC, in turn, introduced the concept of Regional Economic Communities (RECs), which are, for the most part, commercial blocs that support the activity of the AEC.

Currently, the main existing RECs are: (i) The Arab Maghreb Union (AMU), (ii) the Economic Community of West African States (ECOWAS), (iii) the Economic Community of Central African States (ECCAS), (iv) the Common Market of Eastern and Southern Africa (COMESA), and (v) the Southern African Development Community (SADC).

The RECs also promote regional projects in the realm of energy and

trade through their Power Pools²⁴: (i) Maghreb Electricity Committee (*Comité Maghrébin de L'Electricité – COMELEC*), (ii) ECOWAS – West African Power Pool (WAPP), (iii) Central African Power Pool (CAPP), (iv) Eastern Africa Power Pool (EAPP), and (v) Southern African Power Pool (SAPP).

Among the regional projects identified in Africa, SADC²⁵ stands out. In 2010, electricity generation from the southern region reached just over 260 TWh— the highest aggregate generation among all power pools. In this context, South Africa is emerging as the main actor in the system, both in its role as a generator and also as a consumer and supplier of energy. Exports of electricity from South Africa reached a total of 13,754 GWh in 2010, with the main importers being Swaziland, Zimbabwe, Mozambique, Namibia and Botswana, this last country importing virtually all of the energy it consumes domestically..

Besides creating the SAPP, a specialized agency that aims to increase the supply of energy from its members through the integration of national systems into a unified electricity market, the SADC advocated for the signing, in 1996, of an Energy Protocol. The Protocol aims to ensure that regional energy policies and programs are in harmony with the policies of the SADC and the strategies of its other sectors.

To ensure the proper functioning of the Short Term Energy Market (STEM) and the Day Ahead Market (DAM), the STEM Book of Trading and Financial Rules and the DAM Governing Document defined the rules to be followed for the closing of agreements among all participants and the market operator.

Finally, it was established in 2002 the Regional Electricity Regulators Association of Southern Africa (RERA). RERA aims to facilitate the harmonization of regulatory policies, legislation, standardization, and practices, and also seeks to act as a platform for effective cooperation among energy regulators in the region covered by the SADC.

²⁴ Power pools can be defined as a group of two or more public operators of electric energy that coordinate their activities in generation and transmission of electricity within a certain region or country.

²⁵ SADC Members are: South Africa, Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, the Democratic Republic of Congo, Swaziland, Zambia, Zimbabwe and Tanzania.

In general, each in its own way, the power pools point to the integration of the electricity industry in the region by means of: (i) mechanisms of cooperation, (ii) regulatory frameworks that promote and assure investments and regional trade in the electricity sector, and (iii) the creation of regional regulatory authorities for the sector.

5. ASIA

The Asian region presents a wide array of economic, demographic, and physical conditions and natural resources. Energy resources are geographically dispersed, with different potential for extraction in each region.

The challenges faced by the energy sector in Asia are linked to need for providing an ample supply of energy in a reliable and affordable way, in order to realize the economic growth predicted for the coming decades. In order to achieve an environment of energy security, it is desirable to establish a regional energy market that is integrated and harmonized.

Some regional organizations have worked towards the prospect of adopting rules to promote energy integration, or to establish a minimum regulatory framework, such as: the Shanghai Cooperation Organization (SCO), the Asia-Pacific Economic Cooperation (APEC), the Association of Southeast Asian Nations (ASEAN); the Energy Market Integration in East Asia (EMI), the Central Asia/South Asia Regional Electricity Market - CASAREM, and the Common Electric Power Market of the Commonwealth of Independent States (CIS CEM).

The CASAREM, for example, was created with the objective of developing an efficient electricity market between two neighboring regions, Central Asia and Southern Asia²⁶. The project is likely to increase the prospects for growth in the two regions involved and, through the Intergovernmental Council, its Members are working to decide on its implementation, the establishment of common policies and rules, and the use of technical and environmental standards.

²⁶ CASAREM Members are: Kyrgyzstan and Tajikistan, exporters of Central Asia; Afghanistan and Pakistan, importers of Southern Asia.

The Agreement establishing the CIS CEM, adopted in 2007, provides, among other things, on the harmonization of national legislation in relation to the electricity sector; the creation of a common information space; greater regulation and transparency regarding monopolized activities; and non-discriminatory access to power lines and other services subjected to natural monopolies. Its Contracting Parties take into account the experiences of the EU in its energy integration efforts as well as the provisions of the ECT, so that their integration project prioritizes standards that guarantee equal rights, engendering mutual benefits and fair competition among market participants.

It can be said that what the initiatives in Asia have in common is the purpose of creating a stable environment for the trade in energy through coordination of the States' energy policies, in order to combine the interests of exporting and importing countries and thereby form a unified regional energy field. There are also some projects related to the creation of memorandums of understanding designed to regulate the trade in natural gas and electricity; these memoranda, however, are not binding.

Despite the effort to create regional forums for the coordination of these policies, most of the initiatives involving countries in the region are still carried out bilaterally.

6. LATIN AMERICA AND THE CARIBBEAN

Since the second half of the twentieth century, Latin American nations have adopted certain mechanisms for the purpose of facilitating trade integration. Initially, they were treated as comprehensive projects, through which forums were established to stimulate the dialogue among countries in the region. Subsequently, these projects ultimately leveraged sub-regional initiatives for various purposes, including energy integration.

Among the initiatives that comprise the Latin American continent, the following stand out: the Latin American Integration Association (ALADI), the Latin American Energy Organization (OLADE); the Regional Energy Integration Commission (CIER) and the Regional Association of Oil, Gas and Biofuels Companies in Latin America and the Caribbean (ARPEL).

In general, these organizations establish mechanisms for cooperation,

coordination and advising, in order to assist the formulation of energy policies and the development of a framework that can be applied to movements of integration within regional energy sectors.

OLADE

The OLADE is a technical support organization in which Member States act in conjunction to pursue regional energy integration. It fosters, among other things: the combination of efforts to enable the independent development of energy resources and capabilities; the promotion of an effective and rational policy for the extraction, processing, and marketing of energy resources; the coordination and facilitation of direct negotiations between States; the encouraging the transformation of energy resources and the expansion of their corresponding industries; the facilitation of cooperation; the promotion of the means to ensure the free movement and use of different means of transport for energy resources; and the search for common energy policies as a means of integration.

CIER

The CIER, in turn, seeks to promote the integration of regional electrical sectors. In order to provide alternative analyses of the electricity sector and thereby contribute to the solution of issues that impact the provision of energy services in the region, the CIER has several projects supporting the formulation of energy policies and the development of legislation that may be applied to initiatives to integrate power lines. The most relevant project in the context of regional energy integration is the "CIER 15 – Study of Energy Transactions between the Andean, Central American and MERCOSUR markets: Feasibility of their integration," which was developed to show that it is possible to create electrical interconnection projects that comply with the internal policies of each country and allow the final users to maximize their benefits.

Central America

The regulatory framework and the integration of the energy market in Central America mainly cover the electricity market. Its rules govern a broad spectrum of subjects, ranging from free transit to competition regulation, with institutions responsible for the supervision and disciplining of market participants, be they public or private.

Among the notable integration initiatives observed in this sub-region are: (i) the Central American Electrification Council (ECAC), organized as a body for cooperation, coordination and integration, whose purpose is “achieving a better utilization of the energy resources of Member States,”²⁷ and (ii) the Central American Electrical Interconnection System (SIEPAC), whose founding Treaty (Framework Treaty of Central American Electricity Market, 1979) became the legal basis for the formation and consolidation of the Regional Electricity Market (REM), through the establishment of infrastructure for electrical interconnection and the creation of legal, institutional, and technical mechanisms designed to regulate the exchange of energy among the countries participating in the REM.

South America

The process of energy integration in South America was initiated in response to the need to ensure the development of a regional energy infrastructure, involving different initiatives. Among the projects that aim to include all of the countries in the region (or that are open to accession by other South American candidates), the key examples are the Union of South American Nations (UNASUR), the Andean Community of Nations (CAN) and the Southern Common Market (MERCOSUR).

To UNASUR, an international organization that aims to boost regional integration in various aspects (energy, health, education, environment, infrastructure, security and democracy), the energy strategy of the region

²⁷ CIER. Estudio de Transacciones de Electricidad entre las Regiones Andina, América Central y MERCOSUL. Factibilidad de su Integración. Primera Fase. Informe Final. November 2006, p. 54. Available at <http://www.cacier.com.ar/Institucional/Proyectos/Documentos/FaseI-Informe%20Final.pdf>. Last accessed July 03, 2013.

should be focused on integration as the most adequate way to promote energy security among Member States. In the ambit of UNASUR, the South American Energy Council stands out, which is considered fundamental for the development of initiatives for regional energy integration.

The Council devised guidelines for the South American Energy Strategy, an Action Plan for Regional Energy Integration, and the framework of the South American Energy Treaty (SAET).

The guidelines for the South American Energy Strategy propose instructions that will enable the fulfillment of the objectives needed to achieve energy integration in South America, based primarily on the need for energy security, for strengthening regional energy infrastructure, for boosting regional energy trade, among others. The Action Plan for Regional Energy Integration, in addition to seeking an efficient energy balance for the South American region that draws on energy complementarity and integration opportunities among countries, establishes specific purposes for each of the energy sources found in the region. Among them are: (i) ensuring the availability of supplies in the short, medium, and long term, and (ii) encouraging the creation of regulatory frameworks for promoting and protecting international investments.

The suggested structure for the SAET seeks to fulfill UNASUR’s purpose of promoting energy integration oriented towards the full, sustainable and solidary utilization of resources of the region. Among the hallmarks of energy integration efforts are: (i) the adoption of principles that enable the regulatory harmonization of the countries in the region, (ii) the regulation of the treatment of transnational companies, (iii) the monitoring of energy flows and the adoption of mechanisms to be used in emergencies, (iv) the principles of free transit and non-discrimination; (v) freedom of access, in a regulated manner, to the remaining installed capacity; (vi) the regularity and continuity in the supply of energy, (vii) the regulation of cross-border aspects for the movement of energy, and (viii) the environmental aspects of energy integration.

In the ambit of MERCOSUR, the regulation of the energy market is not explicit; most of the texts produced, although binding, do not present detailed obligations, but rather guidelines and principles that are to be followed by the Member States. Among the actions of a regulatory nature

developed within the bloc are: (i) the activities of the Sub-Working Group on Energy (SGT No. 09)²⁸, (ii) the projects undertaken under the auspices of the Fund for the Structural Convergence of MERCOSUR (FOCEM), and (iii) the terms adopted by the Member States under the Framework Agreement on Regional Energy Complementation.

SGT No. 9 produced some guidelines and resolutions that were adopted by the Common Market Council (CMC) and the Common Market Group (GMC), such as the Memorandum of Understanding on Electric Exchanges and Electrical Integration in MERCOSUR and the Memorandum of Understanding on Gas Exchanges and Gas Integration among Member States of MERCOSUR. These memoranda establish principles to help ensure competitive conditions within the markets for electricity generation and natural gas production, the transparency of operations and the supply of energy, among other factors.

The FOCEM was created with the purpose of acting as a means to finance projects for the benefit of the smaller economies of MERCOSUR. Its objectives are to promote structural convergence, develop competitiveness, promote social cohesion--particularly for the smaller economies and less developed regions-- and to support the operation of the institutional framework and strengthen the integration process of MERCOSUR. Its funds can also be used for the financing of energy projects, thus contributing to energy integration within the bloc.

The focus of the Framework Agreement on Regional Energy Complementation is to contribute to the advancement of regional energy integration in relation to systems for the production, transportation, distribution, and marketing of energy products in the Member States so as to ensure energy inputs and create the necessary conditions for minimizing the costs of energy trading transactions between the Contracting Parties. Although it does not contain binding obligations, its Article 6 establishes some priority areas that should be observed by the Parties in order

²⁸ = The sub-working groups were created by the Internal Rules of the Common Market Group, MERCOSUR/CMC/DEC No. 4/91, of 1991, which, in its Chapter VI, Articles 17-25, provide this possibility for the discussion of specific, technical issues. Decisions are made by consensus, and the subgroup is generally formed by officials of the governments of the States Parties, and the conclusions of the subgroup must be submitted to the GMC.

to deepen integration, such as: (i) the commercial exchange of hydrocarbons (notably oil and gas), (ii) the interconnection of electric transmission lines, (iii) the interconnection of pipelines for gas and other hydrocarbons; (iv) cooperation in the prospecting, exploitation, extraction, and processing of hydrocarbons, and (v) sources of renewable energy and alternative energy²⁹.

MERCOSUR also has an Action Plan for Cooperation on Biofuels, with the purpose of developing a proposal on the criteria and instruments, from which are to be developed the activities and objectives for cooperation within the field of biofuels. In addition, it adopts the principle of freedom of transit within the territory of the Member States related to goods and means of transportation by land and water.

As part of the electrical integration in South America, some bilateral initiatives for the construction of large hydroelectric plants are noteworthy, such as Itaipu (Brazil and Paraguay), Yacyreta (Argentina and Paraguay) and Salto Grande (Argentina and Uruguay).

In the South American region there are also projects to promote the integration of natural gas infrastructure (e.g. the URUPABOL Agreement, the Brazil-Bolivia Pipeline - Gasbol, the Great Southern Gas Pipeline, the Opegasur, and initiatives such as those developed by Argentina and Chile) and electric transmission lines (such as agreements between Brazil and Uruguay, Brazil and Peru, among others).

The legal framework for integration initiatives in South America generally has mechanisms to facilitate cooperation and settle disputes among its Members; reaffirms the principles of sovereignty over natural resources, non-discrimination and free access to energy infrastructure; and, in some cases, also regulates the use of subsidies and energy transit, among other peculiarities specific to each of the agreements and the regulated industries.

²⁹ The Agreement at issue does not define what alternative energies or renewable energies would be.

SECTION III

CURRENT REGULATORY FRAMEWORK IN THE ENERGY SECTOR

The energy policy adopted by countries comprises another important aspect, shaped by the international context. Several economic activities are linked to the import or export of goods, services, and investments in the energy sector, compelling countries to depend on the interplay with their main trade partners in the international energy market.

As analyzed in this study, the diversity of international regulation systems, which include rules negotiated mainly at the multilateral and regional levels, reveals a significant degree of complexity that must be examined for an understanding of the vastness of the sector.

Among the main products of foreign trade bases are energy goods such as oil, coal, natural gas and electric power, which are indispensable for the economic development of countries. According to a recent WTO report, only considering fuels, these accounted for 18% of goods traded among countries. By also including minerals, this figure reaches 22.5%. In this sense, understanding and mastering international trade rules governing the matter are indispensable for the public and private agents involved in the articulating the public policies of each State.

The current challenges related to the sustainable development of most States necessarily involve the safety of a continuous supply of energy that promotes economic growth, ensuring the indispensable security of energy. For this to happen, it is estimated that countries will rely increasingly on importing other sources and diversifying their energy production

chains. However, the promotion of energy integration is hindered by the absence of a comprehensive regulatory framework that promotes transparency and predictability of rules, which would prevent conflicts from resulting in limitations or disruptions of the supply or transport of energy, in addition to serious diplomatic issues.

In addition, investors in the sector do not have a clear regulatory framework and protection mechanisms that allow a technical resolution of disputes arising from possible government measures.

International trade has undergone intense changes, being increasingly guided by patterns of consumption that are determined by consumer preferences in developed and developing countries. These consumers have begun to appreciate issues related to the protection of the environment and concerns over the effects of climate change. These principles are now reflected in their consumption choices, and standards of sustainability begin to be established in order to respond to these desires. These paradigms, however, not only are not limited to the impacts caused by the consumption of the product itself, but also take into account their respective production processes, and perhaps even taking into consideration the choice of energy sources. In this context, several standards of sustainability have been adopted in international forums. However, these discussions often suffer from the strong influence of non-governmental organizations and multinational corporations, and there is not always an active role played by States in the formulation of these patterns, which may ultimately harm the interests of the States in future energy integration projects.

Given the many conflicts related to the energy sector that were triggered in recent years, we can see the difficulties brought about by the absence of a broader agreement that complements existing regional projects and provides the necessary assurances for national supply, without risks stemming from the political instability of neighboring countries or policies that nationalize foreign investments.

As presented in this paper, the multilateral regulation of trade in energy is insufficient to address various problems that are emerging or that may arise in the context of a seemingly inevitable energy integration.

In the regional ambit, there is a proliferation of integration agreements,

which take on important issues concerning the security of supply and transit of energy goods. This regulation, however, proves to be fragmented, and still resents the need for greater coordination of the different regulatory frameworks.

Strengthening the several regulatory systems already in place at the multilateral and regional levels of the energy sector has proven to be crucial for overcoming the difficulties that are currently being experienced. Therefore, a greater presence of countries at the several negotiating tables, not only of representatives of governments, but also of the main sectors involved, is advisable. The current need for the internationalization of trade in the area of energy requires the creation of a regulatory framework with international rules, enabling better integration with greater security.

**THE REGULATION OF
THE INTERNATIONAL
TRADE ENERGY**

Fuels and Electricity

INTRODUCTION

The topic of energy, due to its relevance in the international ambit, has always been linked to strategic, geopolitical, social, and economic issues. Due to its direct relation to security and development, it has played and still plays a predominant role in the area of foreign policy for each country.

Thus, due to its very specificity, the sector is governed by principles and instruments of various kinds, such as security and external, economic, and international trade relations.

Several initiatives have been developed at the multilateral and regional levels in order to provide an appropriate institutional framework for the organization of debates, policy harmonization, and the overcoming of common challenges. In these international forums, the countries have the opportunity to exchange experiences, discuss proposals for framework agreements on specific issues, seek assistance in overcoming technological challenges, and resolve disputes.

The initiatives also provide regulatory frameworks with different degrees of bindingness, so as not to restrict the spaces for public policy available to participating countries. Many of them focus on negotiation and harmonization efforts and result in non-binding declarations of principles and intentions known as *soft law*.

The theme of energy involves everything from the production of inputs, to generation and distribution, issues related to technology transfer, the development of new energy sources, energy safety and efficiency, climate change, social issues of access to energy goods, political conflicts, as well as the impact the trade in energy goods has on international food prices.

In the international context, the subject began to receive attention from various multilateral organizations. For instance: the United Nations (UN), the United Nations Industrial Development Organization (UNIDO), the Food and Agriculture Organization (FAO), the United Nations Environment Programme (UNEP), the World Health Organization (WHO), the World Meteorological Organization (WMO), the United Nations Framework Convention on Climate change (UNFCCC), the International Energy Agency (IEA), among others.

Since this study is concerned with the regulation of the international energy trade, it is important to note that energy goods and services such as oil, coal, gas, biofuels, electric, wind and solar power, as well as equipment related to power generation or the provision of services related to the sector, such as power distribution and transmission, are tradable. Thus, the first multilateral source relevant for this work is the World Trade Organization (WTO).

The most important functions of the WTO are: to act as a forum for international negotiations and supervise the terms negotiated. To this effect, it has a Dispute Settlement Body (DSB), an efficient legal-diplomatic “court” designed to settle disputes between its members.

WTO rules related to trade in goods include tariffs, non-tariff barriers (technical, sanitary and phytosanitary measures), trade protection (anti-dumping, subsidies and safeguards), rules of origin, trade-related investment measures, in addition to trade in services and trade-related aspects of intellectual property rights.

The Energy Charter Treaty (ECT) is a European initiative that is currently in the process of becoming multilateral by virtue of the accession of several countries located outside of the European continent. In this report it is considered the second multilateral source relevant to the analysis of the subject. Strongly inspired by the WTO trade regulation rules, the ECT innovates by establishing specific regulation for the sector, particularly in areas such as investment and transportation.

The energy trade is also regulated in the regional context, as the European Union (EU), the North American Free Trade Agreement (NAFTA), and the Union of South American Nations (UNASUR), among other regional initiatives, have set their own rules.

Box 1: Bilateral, Multilateral, Plurilateral, and Regional Agreements

In international relations, the term “bilateral agreement” is commonly used when dealing with agreements between two states that regulate and facilitate trade. Multilateral agreements, *lato sensu*, are agreements involving several states. According to the definition used by the WTO, which is more restrictive, multilateral agreements are those that demand adherence from all its Member States¹.

The WTO uses the term “plurilateral agreements” for those only involving some of its members. These agreements can be understood as an exception to the principle of single undertaking² since, by allowing Members to voluntarily bind themselves, it creates greater flexibility for accession. Currently, the WTO has three plurilateral agreements: the Agreement on Trade in Civil Aircraft, the Agreement on Government Procurement (GPA), and the Information Technology Agreement (ITA).

The ECT is considered a multilateral agreement *lato sensu*, limited to regulating the energy sector.

Regional agreements, as per the definition adopted in this study, are those made between two or more partner States of the same region, aiming to foster trade in goods and services among them.

ects, which may point to models to be incorporated into future multilateral initiatives. First, an overview of regional energy markets is presented and then specific projects in Europe, North America, Africa, Asia, Central America, the Caribbean, and South America are addressed.

Topics in energy trade

This study was divided into two sections: (i) multilateral regulation of the energy trade, and (ii) regional regulation.

The chapters of the first section present the main issues and challenges of the energy trade and relevant multilateral regulation, with emphasis on the WTO and ECT rules, divided into the following topics: (i) trade in energy goods and services, (ii) energy transit and transportation, (iii) subsidies, (iv) renewable energies, the environment, and climate change, (v) investments in the energy sector, and (vi) energy security.

We opted for an analysis based on issues and challenges presented by the energy trade, to which multilateral regulation could offer constructive solutions by reducing inefficiencies and transaction costs. This decision was based on the fact that different sources of regulation sometimes offer conflicting solutions to the same challenge.

The second section covers the major regional energy integration proj-

SECTION I
THE MULTILATERAL REGULATION OF ENERGY

The objective of this section is to present a comprehensive vision of multilateral rules applicable to international energy trade. Chapter (1) will present the general provisions of the WTO and the ECT that are applicable to the trading of energy goods and services.

The remaining chapters will offer a detailed analysis of existing regulations and the negotiations on the agenda of both organizations, as well as in other specific forums, divided as follows: energy transit and transport; (2), subsidies (3); renewables, the environment, and climate change (4); investments in the energy sector (5), and energy security (6).

1. TRADE IN ENERGY GOODS AND SERVICES

Due to differences in the availability of natural resources in each country and region of the planet, trade becomes an important element for allowing access to energy, both in respect to the purchase and sale of equipment related to the sector and regarding trade in fuels and electricity.

The international energy trade has become increasingly important within the export and import bases of countries, presenting different characteristics when compared to other traded goods.

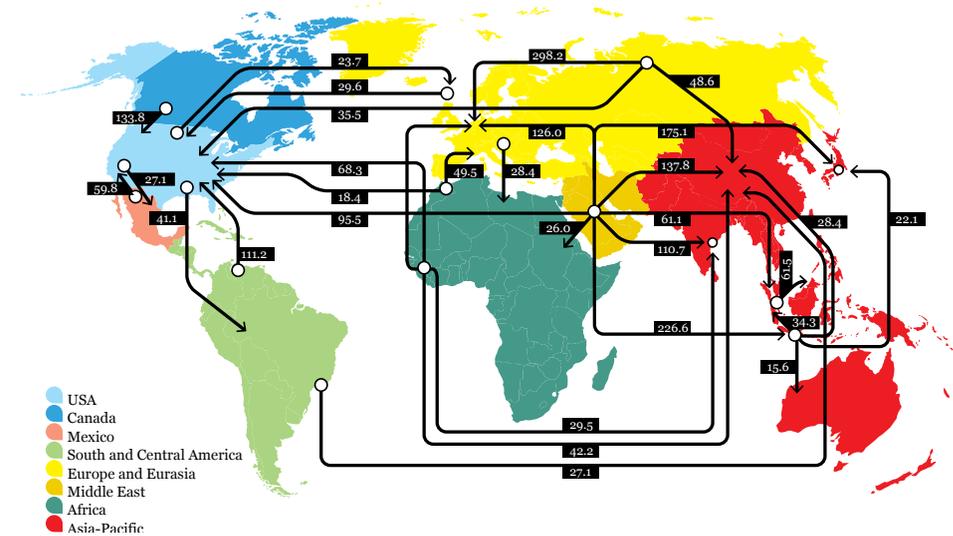
Box 2: Energy Goods

Energy goods are all those that are related to the production, storage, distribution, and use of energy³. They can be capital goods, raw materials, transportation pipelines, and transmission cables, among others.

The production of energy goods is not driven exclusively by domestic demand, and international trade has become an important tool for meeting the energy demand of countries.

As an example of the importance of the regulation of the international energy trade, the map below shows the global flows of oil, a relevant export product that spans all regions of the world:

Map 1 - Key World Trade Flows of Oil in 2011 (in Million Tons)

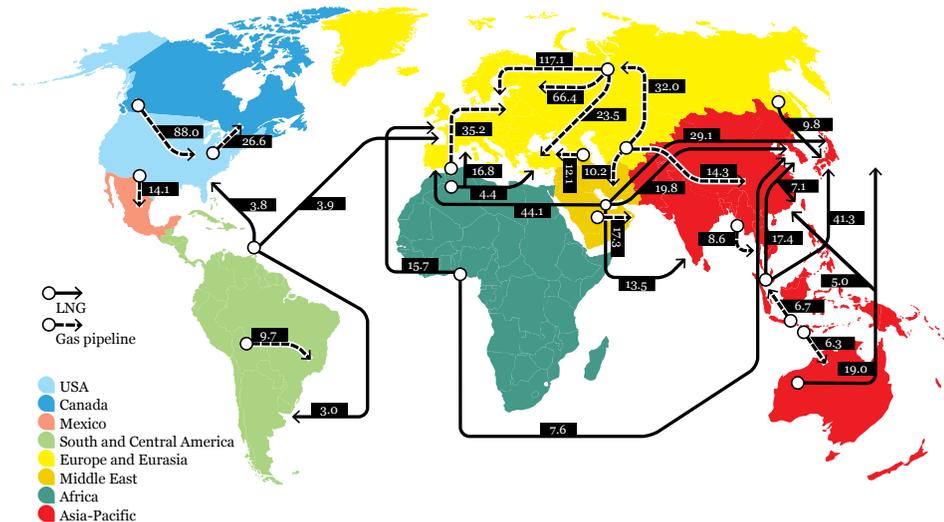


Source: BP, 2012. Elaboração: FIESP

In contrast, natural gas was initially traded only regionally. It was only after technological developments enabled the transportation of liquefied

natural gas (LNG)³⁰ that gas trade attained a global reach. The map below shows the global flows of natural gas in 2011:

Map 2 - Key World Trade Flows of Natural Gas in 2011 (in billions of cubic meters)



Source: BP, 2012. Elaboração: FIESP

Electricity trading depends on power lines, a fact which often limits it to the regional level. A progressive increase in regional integration projects concerning electric power infrastructure has been observed, which aim to ensure energy security, more efficiently utilize resources, and consequently reduce costs.

Despite being advantageous, trade can bring about external dependence on energy goods and insecurity for importing countries, since the disruption of supply would cause huge losses to the dependent countries. Thus, an international regulatory framework is required that can offer greater predictability for energy trading, seeking to provide assurances to importing countries and subsequent reductions in transaction costs.

³⁰ Liquefaction is a thermodynamic process that promotes a phase transition from gas to liquid. Thus, LNG is essentially a natural gas which, after its purification, is condensed to the liquid phase by reducing its temperature to -163 degrees Celsius.

Box 3: Energy Services

Energy services are those related to the process of production, storage, and distribution⁴, such as mining, exploration and production (E&P) of oil and gas, energy engineering, transport via pipelines and cables, technical testing, analytical services, among others.

This chapter presents an overview of the regulation of trade in energy goods and services. The chapter is divided into three parts that show, respectively, the multilateral sources of regulation of trade in energy goods and services; rules and general principles that apply to trade in energy goods; and, finally, those that apply to trade in energy services.

Box 4: The exception of the regulatory framework applicable to nuclear power

Due to the possibility of developing weapons based on the use of nuclear energy, this resource has been the subject of extensive and complex regulation.

Over the past 60 years, since the end of World War II, the major world powers have developed a specific regulatory system involving the production, transportation, and marketing of nuclear energy products. The regulatory framework includes the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) of 1968, its additional protocols, as well as other related international agreements. The International Atomic Energy Agency (IAEA), an independent organization linked to the UN, is responsible for the inspection and monitoring of this source of energy and should report directly to the UN Security Council (UNSC) in the event of a breach of international rules and evidence of military use of nuclear energy.

Accordingly, the regulatory framework applicable to nuclear power differs from the overall regulatory framework applicable to the marketing, production, and transportation of energy from other sources, bringing specific mechanisms related to international security issues.

For this reason, and due to the scope of the present work, this study does not cover the specific regulatory framework involving nuclear energy. The regulation involving this type of resource will only be analyzed when it has a material impact on the trade of energy from other sources.

1.1. OVERVIEW OF THE INTERNATIONAL ENERGY REGULATION

The regulatory framework for the energy sector is broad and multifaceted. Due to its importance, the sector was the subject of negotiation in numerous international organizations, which, over time, developed a complex structure of rules, among which the UN-Energy and the Club of Vienna stand out.

In 2004 the UN launched UN-Energy, a mechanism for cooperation among agencies within the UN which, to some extent, perform activities related to the sector. This mechanism involves 22 international agencies and organizations linked to the UN, including the World Bank³¹.

In 2009, the Vienna Energy Club was created, in order to ensure greater coherence among the nine international institutions in the sector headquartered in the city through discussions and information exchange: Energy Community (EnC)³², International Atomic Energy Agency (IAEA), International Institute for Applied Systems Analysis (IIASA); Organization of the Petroleum Exporting Countries (OPEC); Renewable Energy and Energy Efficiency Partnership (REEEP); UNIDO, International Peace Institute (IPI), the Organization for Security and Co-operation in Europe (OSCE), and the OPEC Fund for International Development (OFID).

However, since the aim of this study is to present the regulatory framework applicable to the international energy trade, focusing primarily on

³¹ UN-Energy Members are: (i) access to energy: UNDESA, UNDP, World Bank; (ii) renewable energy: FAO, UNESCO, UNEP; (iii) energy efficiency: IAEA, UNIDO; and (iv) other Members: GEF, IFAD, UNCTAD, UNESCAP, UN-ESCWA, UNECA, UNECE; UNECLAC; UNFCCC, UN-HABITAT, UN-INSTRAW, CEB, WHO, WMO. For further information, see: <http://www.un-energy.org/>.

³² The energy community will be analyzed in greater detail in Section II of this study, in the chapter on the European Union (EU).

binding rules, most of these initiatives will not be addressed.

The multilateral sources of Energy Trade regulation

Energy is treated as a special case due to its geopolitical and strategic importance. For a long time there has been a common perception that the theme of energy is excluded from the WTO³³. However, the truth is that its legal framework applies to many of the challenges presented by the energy market.

Among the goods and services regulated by the WTO are energy goods and services related to the energy sector. However, since the WTO rules were designed by thinking of international trade in a comprehensive manner, there are many peculiarities in the energy sector that are not properly addressed in its normative system³⁴.

Pascal Lamy, WTO Director-General (2005-2013), points out some aspects of the energy market that distinguish it from other markets, e.g.: (i) energy goods, mainly from fossil fuels, are concentrated in some geographic locations, thus decreasing their range of supply. Unlike what occurs in the market in general, their comparative advantages tend to be more stable, since the trade pattern observed from the supply side is, to a large extent, predetermined. Moreover, energy demand tends to be inelastic³⁵ and widely diversified, since all countries need energy; and (ii) the natural resources sector tends to have high price volatility due to several factors, including the uncertainty in supply, inelastic demand in the short term, speculation and political instability in some producing

³³ SELIVANOVA, Y. The WTO and Energy: WTO Rules and Agreements of Relevance to the Energy Sector, Issue Paper n. 1. In: ICTSD. Trade and Sustainable Energy Series. Geneva: ICTSD, 2007, p. 4.

³⁴ MARCEAU, G. The WTO in the Emerging Energy Governance Debate. In: PAUWELYN, J. (ed.). Global Challenges at the Intersection of Trade, Energy and the Environment. Geneva: Centre for Trade and Economic Integration, 2010, p. 25.

³⁵ The quantity demanded of a good or service is the amount that consumers plan to buy during a certain period at a certain price. When the percentage variation in the quantity demanded is less than the percentage variation of its price, it is said that the good presents an inelastic demand. Food and housing are examples of goods with inelastic demand. For further information, see: PARKIN, M. *Economia*. 8th ed. New York: Addison Wesley, 2009.

countries³⁶.

Specifically targeting the energy market, a second relevant source of multilateral trade regulation can be found in the international scenario, which applies to a certain group of countries, but is open to any interested Parties: the ECT.

Next, in order to ensure understanding of the topics analyzed in this study, the main characteristics and rules of the WTO and the ECT will be presented.

1.1.1. WORLD TRADE ORGANIZATION (WTO)

The WTO is an international organization, composed of States and separate customs territories³⁷, whose decisions are made by consensus among its members, during ministerial conferences and in other councils and committees of the Organization. This institution also has a Secretariat, whose functions include, among others, administrative and technical support to the States and, at their request, the preparation of studies and analyses on trade-related issues.

The Multilateral Trade System stems from the General Agreement on Tariffs and Trade (GATT), established in 1947, with the aim of liberalizing international trade, reducing barriers to trade and encouraging the economic development of Contracting Parties.

Through multilateral negotiation rounds³⁸, held in the framework of GATT 47, the Contracting Parties negotiated maximum limits for tariffs on imported goods (bound tariffs), which were then considered to be the main barrier to international trade. Thus, a Contracting Party could not apply to a particular product a higher rate than the rate indicated in its list of commitments resulting from the negotiation round.

³⁶ LAMY, P. Energy, Trade and Global Governance. In: PAUWELYN, J. (ed.). *Global Challenges at the Intersection of Trade, Energy and the Environment*. Geneva: Centre for Trade and Economic Integration, 2010, pp. 15-16

³⁷ Separate Customs Territory: any State that has full autonomy in the conduct of its external commercial relations. An example is Chinese Taipei, which comprises the separate customs territories of Taiwan, Penghu, Kinmen and Matsu.

³⁸ The term “rounds” within the ambit of GATT 47/WTO refers to periods of trade liberalization negotiations among the Contracting Parties/Members.

In addition to the consolidation of tariffs, the GATT 47 provided for a number of rules aiming to regulate the international trade of goods and prevent unfair or discriminatory practices, so as to avoid distortions in international trade.

With the development of international trade, multilateral rounds started to include, in addition to tariff reduction, the negotiation of new rules that would be applied to international trade. The last round of negotiations in the framework of the GATT 47 was the Uruguay Round, completed in 1994, which culminated in the creation of the WTO in 1995.

Box 5: The GATT 47 and the GATT 94

The General Agreement on Tariffs and Trade (GATT 47) was adopted in 1947, as an interim agreement for the purpose of regulating international trade by reducing tariffs and barriers to trade in goods and eliminating preferences. The original intention of the agreement was to act provisionally until an institution was created (the World Trade Organization - WTO) to regulate the commercial aspect of the international economic cooperation established after the Second World War, which would supplement the Bretton Woods Institutions: the World Bank and the International Monetary Fund (IMF)⁵. The institution failed to materialize, making its Contracting Parties opt for maintaining the GATT 47.

During the Uruguay Round (1986-1994), the Contracting Parties resumed discussions for creation of a body with international legal status to regulate international trade not only in goods but also in services and other areas. Thus, the WTO was established. This organization has incorporated the GATT 47 and presented a series of agreements that seek to better regulate trade. Included was a new Agreement on Tariffs and Trade, which maintained the rules of the GATT 47 and was named GATT 94.

This work uses the term “GATT 47” when referring to the period the Agreement was in force before the creation of the WTO. When the period used is subsequent to the creation of the WTO, the term “GATT 94” is used.

The WTO incorporated the rules established throughout the GATT 47 negotiations and extended the regulation of international trade to services and trade-related aspects of intellectual property rights. Moreover, it introduced

a sophisticated mechanism for the settlement of disputes and presented a series of agreements that seek to better regulate the trade of goods.

Due to the lack of a consensus amongst WTO Members³⁹, the Doha Round is in a political deadlock. In December 2013, the Ninth Ministerial Conference of the WTO⁴⁰ will be held in Bali, Indonesia. There are high expectations that significant results will be achieved during that meeting, especially in relation to trade facilitation and issues related to developing countries and least developed countries^{41,42}.

1.1.2. ENERGY CHARTER TREATY (ECT)

The ECT stems from the European Energy Charter, a political declaration signed in 1991, whose goal was to establish a regulatory framework that pro-

³⁹ The WTO has 159 members and 25 observer governments. WTO Members are: Albania; Angola; Antigua and Barbuda; Argentina; Armenia; Australia; Austria; Bahrain; Bangladesh; Barbados; Belgium; Belize; Benin; Bolivia; Botswana; Brazil; Brunei; Bulgaria; Burkina Faso; Burundi; Cameroon; Cambodia; Canada; Cape Verde; Central African Republic; Chad; Chile; China; Colombia; Congo; Costa Rica, Côte d'Ivoire; Croatia; Cuba; Cyprus; Czech Republic; Democratic Republic of the Congo; Denmark; Djibouti; Dominica; Dominican Republic; Ecuador; Egypt; El Salvador; Estonia; European Union; Fiji; Finland; France; Gabon; Gambia; Georgia; Germany; Ghana; Greece; Grenada; Guatemala; Guinea; Guinea-Bissau; Guyana; Haiti; Honduras; Hong Kong, China; Hungary; Iceland; India; Indonesia; Ireland; Israel; Italy; Jamaica; Japan; Jordan; Kenya; Korea; Kuwait; Kyrgyzstan; Latvia; Laos; Lesotho; Liechtenstein; Lithuania; Luxembourg; Macau, China; Madagascar; Malaysia; Malawi; Maldives; Mali; Malta; Mauritania; Mexico; Moldova; Mongolia; Montenegro; Morocco; Mozambique; Myanmar; Namibia; Nepal; Netherlands; New Zealand; Nicaragua; Niger; Nigeria; Norway; Oman; Pakistan; Panama; Papua New Guinea; Paraguay; Peru; Philippines; Poland; Portugal; Qatar; Romania; Russia; Rwanda; Saint Kitts and Nevis; Saint Lucia; Saint Vincent and the Grenadines; Samoa; Senegal; Sierra Leone; Singapore; Slovakia; Slovenia; Solomon Islands; South Africa; Spain; Sri Lanka; Suriname; Swaziland; Sweden; Switzerland; Taiwan; Tajikistan; Tanzania; Thailand; Togo; Trinidad and Tobago; Tunisia; Turkey; Uganda; Ukraine; United Arab Emirates; United Kingdom; United States of America; Uruguay; Vanuatu; Venezuela; Vietnam; Zambia; Zimbabwe.

⁴⁰ The Ministerial Conference is WTO's top decision-making body. Therein are represented all Members of the Organization, who meet regularly every two years and can make decisions on all matters included under any of the Multilateral Trade Agreements. WTO. Ministerial Conferences. Available at: www.wto.org/english/thewto_e/minist_e/minist_e.htm.

⁴¹ Least Developed Countries (LDCs) are those which, according to the UN, have the lowest socioeconomic development indicators and human development indices among all countries of the world.

⁴² LAMY, P. Members approaching last petrol station before Bali. Speech at the Trade Negotiations Committee of the WTO in June 2013. Available at www.wto.org/english/news_e/news13_e/tnc_infstat_03jun13_e.htm.

notes cooperation in the field of energy. The Treaty affirms the principles of non-discrimination, respect for sovereignty over natural resources, and recognizes the importance of energy efficiency policies and environmentally sustainable policies, also covering energy trade, investment, miscellaneous provisions, settlement of disputes and institutional issues.

The Treaty was signed in 1994 and went into effect in 1998. It currently has 46 Contracting Parties⁴³. Russia, despite having signed the Treaty, did not ratify it, and opted for its provisional application until 2009, when it announced that it did not intend to proceed with the ratification process. It should be noted that Brazil is not a Contracting Party or observer Member of the ECT.

The provisions of the regulatory framework are applicable to energy materials and products⁴⁴, including nuclear energy, mineral coal, natural gas, oil and its derivatives, electrical energy, firewood and charcoal, as well as energy-related equipment, such as pipes, turbines, furnaces, platforms, processors, among others. It is important to note that the ECT does not cover biofuels.

The part related to trade incorporates WTO's rules on goods (Annex IA of the Agreement Establishing the WTO). This is relevant since the Contracting Parties to the ECT only correspond partially to the WTO Members. By extending the application of its rules to non-WTO Members, the ECT uses an approach called WTO "by reference"⁴⁵ (ECT, Article 29)⁴⁶.

The ECT also innovates by introducing rules relating to competition, transit through fixed facilities, technology transfer, and access to capital. The energy products regulated by the Treaty are listed in Annex EM, following the classification used in the Harmonized System (HS).

⁴³ The ECT Members are: Albania, Armenia, Austria, Azerbaijan, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, EU, Finland, France, Georgia, Germany, Greece, Hungary, Ireland, Italy, Japan, Kazakhstan, Kyrgyzstan, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Moldova, Mongolia, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tajikistan, Turkey, Turkmenistan, Ukraine, United Kingdom, Uzbekistan and the former Yugoslav Republic of Macedonia.

⁴⁴ Energy materials and goods, within the ambit of the ECT, correspond to the items included in Annex EM. Energy materials are those that are in primary state, such as crude oil, natural gas, and wood used as fuel. Energy goods are those that have undergone some degree of transformation and are in their final stage, such as refined oil and electricity.

⁴⁵ Energy Charter Secretariat. The Energy Charter Treaty: A Reader's Guide, p. 12. Available at: www.encharter.org/fileadmin/user_upload/Publications/ECT_Guide_ENG.pdf. Last accessed June 18, 2013.

⁴⁶ WTO rules that were not incorporated into the ECT are provided for in Annex W to the Treaty.

Box 6: The Harmonized System and ECT's List of Energy Goods

The Harmonized System (HS)

The HS of the World Customs Organization (WCO) is a nomenclature that standardizes and classifies marketable products. The products are divided into 97 chapters that correspond to sectors such as beverages, spirits and vinegar (Chapter 22); mineral fuels, mineral oils and products of their distillation (chapter 27); chemical products (chapter 38); machinery (chapter 85), among others.

Lists of tariff commitments of each WTO Member, as well as the list of products regulated by the ECT, use the HS, pointing the code for each good.

ECT's List of Energy Goods

1. Annex EM

Energy Materials and Products

Nuclear Energy

26.12 Uranium or thorium ores and concentrates.

28.44 Radioactive chemical elements and radioactive isotopes and their compounds; mixtures and residues containing these products.

28.45 Heavy water (deuterium oxide).

Coal, Natural Gas, Petroleum and Petroleum Products, Electrical Energy

27.01 Coal, briquettes, ovoids and similar solid fuels manufactured from coal.

27.02 Lignite, whether or not agglomerated.

27.03 Peat, whether or not agglomerated.

27.04 Coke and semi-coke of coal, of lignite or of peat, whether or not agglomerated; retort carbon.

27.05 Coal gas, water gas, producer gas and similar gases, other than petroleum gases and other gaseous hydrocarbons.

27.06 Tar distilled from coal, from lignite or from peat, and other mineral tars, whether or not dehydrated or partially distilled, including reconstituted tars.

27.07 Oils and other products of the distillation of coal tar; similar products in which the weight of the aromatic constituents exceeds that of the non-aromatic constituents (e.g., benzole, toluole, xylene, naphthalene and other aromatic hydrocarbon mixtures, phenols, creosote oils and others).

27.08 Pitch and pitch coke, obtained from coal tar or from other mineral tars.

27.09 Petroleum oils and oils obtained from bituminous minerals, crude.

27.10 Petroleum oils and oils obtained from bituminous minerals, other than crude.

27.11 Liquefied petroleum gases and other gaseous hydrocarbons: natural gas, propane, butanes, ethylene, propylene, butylene, butadiene and others.

27.13 Petroleum coke, petroleum bitumen and other residues of petroleum oils or oils obtained from bituminous minerals.

27.14 Bitumen and asphalt, natural; bituminous or oil shale and tar sands; asphaltites and asphaltic rocks.

27.15 Bituminous mixtures based on natural asphalt, on natural bitumen, on petroleum bitumen, on mineral tar or on mineral tar pitch.

27.16 Electrical energy.

Other Energy

44.01.10 Fuel wood, in logs, in billets, in twigs, in faggots or in similar forms.

44.02 Charcoal (including charcoal from shells or nuts), whether or not agglomerated.

The Contracting Parties to the ECT should provide the Secretariat with a list of duties and charges imposed on importing and exporting energy materials and products at the time of their accession, as well as report any changes to them. The Treaty provides for a non-binding best efforts clause, stating that Parties that are also WTO Members should not impose tariffs above their bound tariffs under said Organization. Non-Member States of the WTO, in turn, cannot impose tariffs above the levels applied upon their last notification to the ECT.

The part on investments is more extensive than the regulation brought by the WTO, covering both trade-related investments measures as well as other types of foreign investments.

The part related to miscellaneous provisions includes: issues of sovereignty over natural resources, environmental aspects, transparency, taxation, rules on state enterprises and economic integration agreements.

The chapter dedicated to dispute settlement establishes a mechanism for the settlement of disputes related to the trade of energy materials, energy products and energy-related equipment, similar to the DSB, applicable when one of the parties is not a WTO Member. For investment-related disputes, the Treaty foresees the possibility of arbitration, which may take place both between States and between the investor and the State where the investments were made.

Box 7: Dispute Settlement System in the WTO and in the ECT

WTO

The Dispute Settlement Body (DSB) can be invoked whenever a Member considers that any benefit from the WTO Agreements is being nullified or impaired as a result of an action by another Member.

The procedure for dispute settlement begins with a formal request for consultations made by the complainant Member through the DSB. The purpose of the consultation procedure is to allow Members to talk in order to reach a consensual solution to the dispute.

If this procedure fails, the complainant Member may request the establishment of a Panel. Panels are formed, for each case, by three or five experts who must examine the evidence brought by the Members and decide who is right. The Panel's report is taken to the DSB for adoption and can only be rejected if there is negative consensus among the Members.

After the adoption of the Panel's report, the Members involved in the dispute may appeal to the Appellate Body (AB), which is composed of seven judges appointed by the DSB for a term of four years, renewable once. Appeals must refer only to issues of law; reexamination of evidence or examination of new issues is not permitted. The report of the AB may uphold, modify or reverse the arguments and conclusions contained in the Panel's reports.

To ensure that disputes are resolved effectively, the Members must abide by the decisions and recommendations of the DSB within a reasonable period of time. Should this not occur, the Members should commence negotiations to decide on compensation, for instance, tariff reductions in areas of interest to the complainant Member. If an agreement on compensation cannot be reached, the complainant Member may request authorization from the DSB to impose trade sanctions (suspension of concessions or obligations) against the respondent Member.

The DSB, consisting of all WTO members, is responsible for establishing panels, monitoring the implementation of decisions and recommendations made by the AB until the case is resolved, and authorizing retaliation when a Member fails to comply with a particular decision.

ECT

The ECT has several dispute settlement mechanisms, and all begin with the initial process of conciliation between Parties. For disputes between States concerning the interpretation and/or application of almost all aspects of the Treaty and those between investor and State on issues related to investments, the ECT provides for the application of an arbitration procedure (Articles 26 and 27). Arbitration is an extrajudicial system for settling disputes in a voluntary manner. In arbitration, the free will of the parties involved prevails: it is up to them to define the procedures used during the process, stipulate the deadline for it, appoint the arbitrators who will hear and settle the dispute etc.

For trade-related disputes, the ECT has a mechanism modeled after the WTO dispute settlement system. This mechanism is applied only if at least one of the Parties in controversy is not a WTO Member. Otherwise, the dispute settlement system of the WTO is mandatory between them (Article 29 and Annex D of the ECT).

Disputes related to energy transit have a special conciliation mechanism, which allows a faster, less formal procedure, given the need for urgent resolution of threatened disruptions in energy supply. It is important to note that, in such cases, the Contracting Party through whose territory energy goods transit cannot interrupt or reduce the flow of energy before the conclusion of the dispute resolution procedures set out in the Treaty (Article 7).

Issues related to competition and the environment do not have a dispute settlement mechanism that issues a binding decision. The parties only agreed to use the consultation procedure (Articles 6 and 19).

1.2. ENERGY REGULATION IN THE GATT 94

The GATT 94 presents the governing principles of international trade regulation. The most important is the principle of non-discrimination, and the GATT 94 refer to the subject through two items: (i) the Most Favored Nation Principle (MFN), on non-discrimination between nations, and (ii) the Principle of National Treatment, on non-discrimination be-

tween domestic and imported goods.

1.2.1. THE MOST FAVORED NATION PRINCIPLE (MFN)

One of the basic concepts of the multilateral trade system is set forth in Article I, which refers to the MFN. This Principle prohibits discrimination between trading partners, and all WTO Members must ensure that:

Any advantage, favor, privilege or immunity granted by any contracting party to any product originating in or destined for any other country shall be accorded immediately and unconditionally to the like product originating in or destined for the territories of all other contracting parties. (Article I.1, GATT 94).

This means that the outcome of negotiations between two Members must be immediately and unconditionally extended to similar products from other Member States of the WTO. The provision in question is applicable to tariffs, charges, rules and formalities of any nature imposed on imports and exports, including on international transfer of payments for imports or exports (Article I.1). The objective is to prevent one country from being favored over another, which would cause deviations in the flows of international trade.

With regard to energy producing countries, the application of this Article requires that similar energy materials and products will not suffer any discrimination based on their origin (in the case of imported products and/or materials) or destination (in the case of exported products and/or materials), with symmetrical application.

Box 8: Similar Products

Products are considered similar when they are equal in all respects, or when, although not exactly alike in all respects, they exhibit very similar characteristics to the product that is being considered. In general, the determination is made based on the ratio of the level of competition between two products, taking into account their properties, nature, quality, purpose, tastes and habits of consumers, and tariff classification under the HS⁶.

The determination of how similar the products are is always made on a case-by-case basis, and the concept can be interpreted more broadly or narrowly according to the scope of the article referring to it. Because of the difficulty in determining what are similar products, the theme is frequently subject to disputes between Members of the Organization.

It remains to be determined whether energy efficient products would be similar to products that are not energy efficient, a condition that is necessary for the implementation of the MFN and that is drawn upon by several other WTO rules. Unprecedentedly, the Panel understood, in the *US - Auto Taxes* case⁴⁷ that vehicles with greater fuel consumption efficiency could not be considered similar to vehicles with inefficient fuel consumption, although the opinion on this subject has not yet been settled.

1.2.2. EXCEPTIONS TO THE MFN PRINCIPLE

The first exception to the MFN principle observed in the normative sphere of the WTO is the possibility of offering more favorable treatment to States with whom a free-trade area or customs union has been established, provided these areas of favorable tariffs are created in accordance with the rules contained in Article XXIV of the GATT⁴⁸.

Article XXIV, by allowing the formation of free-trade areas and customs

⁴⁷ WTO. Panel Report: United States – Taxes on Automobiles, DS31/R.

⁴⁸ Article XXIV of GATT 94 permits the granting of advantages in order to facilitate trade between neighboring countries and also the formation of customs unions. All information pertaining to the formation of economic preference zones should be notified to WTO Members.

unions, requires that tariffs and other restrictive regulations are eliminated for a substantial part of the trade of the signatories. These agreements, called preferential, may also contain tariff reductions on energy goods.

The second exception to the application of the MFN principle arises from the application of the Enabling Clause. This clause allows differential and more favorable treatment to be granted in relation to developing countries. Accordingly, preferences may be granted to developing countries without the latter being required to respect the principle of reciprocity, and developing countries may also grant preferences to each other without the need to include a substantial part of the trade.

1.2.3. NATIONAL TREATMENT

Article III of the GATT 94 provides the second fundamental principle of the multilateral trading system: National Treatment.

Said Article states that:

The products of the territory of any contracting party imported into the territory of any other contracting party shall be accorded treatment no less favorable than that accorded to like products of national origin in respect of all laws, regulations and requirements affecting their internal sale, offering for sale, purchase, transportation, distribution or use (...) (Art. III.4, GATT 94).

The application of this principle does not prohibit the imposition of import tariffs and other customs duties. It prohibits regulatory and fiscal discrimination between imported products and similar ones produced domestically.

Once National Treatment occurs between similar products only, differential treatment may be accorded to imported and national energy products and materials. As previously mentioned, the determination of similar products is made on a case-by-case basis.

Paragraph III.4, while ensuring the application of the principle of National Treatment to similar products imported from another Member State, does not preclude implementation of internal tariffs related to the

transportation of these products, provided they are based exclusively upon the economic transaction and not on their nationality. Within the energy sector this means, for example, it is possible that different tariffs are applied in relation to similar products due to the distance of transportation.

1.2.4. QUANTITATIVE RESTRICTIONS ON TRADE

The regulatory regime of the WTO was established in order to facilitate and liberalize trade. Among the principles established for this purpose, there is a prohibition on quantitative measures that restrict the trade of goods because, from the perspective of free trade, this is considered to be the most restrictive and distorting instrument of trade policy.

Box 9: Quantitative Restrictions on Trade

Quantitative Restrictions on Trade are considered instruments that limit the value or volume of imports of a particular product or indicate the amount that each country can import individually.

Examples of quantitative restrictions are: (i) import quotas, (ii) tariff quotas, (iii) voluntary export restrictions, among others. Tariff quotas, however, represent a special situation and may be used provided they are included in the countries' Lists of Commitments.

It should be noted that, under the Agreement on Agriculture, Members can impose prohibitive restrictions on the export of food products. In doing so, they should observe Article XI.2 (a) of the GATT 94 and, especially: (i) consider the effects of restrictions on the food security of importing Members, and (ii) notify the Committee on Agriculture about the nature and duration of the measure and consult, upon request, with any other Member having a substantial interest, as an importer, in the measure imposed, as well as provide all necessary information⁷.

Article XI of GATT 94 refers to the general elimination of quantitative restrictions on trade, curbing both the ban on imports and exports and the imposition of quantitative restrictions designed to impede the flow of trade in goods. Tariffs, in general, are allowed since they are considered restrictive only when their level is so high as to prevent any export and/

or import transactions, with effects similar to those caused by measures that limit exports and/or imports.

According to Article XI.1:

No prohibitions or restrictions other than duties, taxes or other charges, whether made effective through quotas, import or export licences or other measures, shall be instituted or maintained by any contracting party on the importation of any product of the territory of any other contracting party or on the exportation or sale for export of any product destined for the territory of any other contracting party.

This means that any restrictive trade measure should be implemented by imposing tariffs (tariff measures) and not by imposing measures that directly affect the volume imported and/or exported (quantitative measurements), as the former can cause less distorting effects to the market when compared to the latter.

With regard to restrictions on trade in the energy sector, it can be stated that those related to the export of energy products are more frequent than restrictions on imports. This is because energy importing nations have a tendency to keep low import barriers for this sector in order to ensure the energy supply, while exporting nations tend to restrict energy exports through fiscal and non-fiscal measures as a means to increase their income and indirectly promote domestic industry⁴⁹.

Box 10: Energy Production

Due to the strategic importance of energy production and extraction projects in countries whose economy depends on the exploitation and exportation of energy products, the regulation and control of these activities are generally found in the field of public policy.

⁴⁹ EHRING, L.; CHIANALE, G. F. Export Restrictions in the Field of Energy. In: SELIVANOVA, Y. (ed.). *Regulations of Energy in International Trade Law: WTO, Nafta and Energy Charter*. USA: Kluwer Law International. p. 109-147, p. 109.

Because the international regulation of the energy sector is closely linked to sovereignty and national security, it has made little progress, being characterized by the presence of conflicting principles and interests, opposing energy producing and consuming countries in the international market. WTO rules do not apply to the States' decisions on the amount, timing and regulation of the production of natural resources and energy goods⁵⁰. The reasoning behind it is that, while still in the ground, that is, before being extracted, these energy goods would not be marketable: there is no market, and the rules of the multilateral trading system do not apply. Likewise, the specific regulation of energy production has also been absent from the scope of the ECT.

It is important to note that services related to energy production would normally be regulated by both the WTO and the ECT, since they can be traded. However, the challenge lies in distinguishing between a service linked to energy production, which is restricted by state sovereignty, and a service related exclusively to production and, therefore, subject to the rules of the WTO.

To the extent that the Multilateral Trading System does not apply to energy production activities, this subject will not be covered by this study. However, when the deliberations of States over their energy production affect other States on issues of energy security, environmental protection and climate change, they may be regulated. In such cases, energy production will be examined incidentally.

In this regard, the *Colombia - Ports of Entry* case⁵⁰ is quite illustrative. The Panel considered that the prohibition of establishing or maintaining export restrictions applies extensively and covers “measures which create uncertainties and affect investment plans, restrict market access for imports or make importation prohibitively costly, all of which have implications on the competitive situation of an importer⁵¹.”

Ehring and Chianale listed five measures that can be qualified as restricting the export of energy products:

- (i) Discretionary or non-automatic export licensing system: the approval of export requests would not be guaranteed in all cases, and the export of products would be restricted, which

⁵⁰ WTO. Panel Report: *Colombia - Indicative Prices and Restrictions on Ports of Entry*. WT/DS366/R, para. 7.240

⁵¹ *Ibid.*, para. 7.240.

- could violate Article XI.1 94 of the GATT 94;
- (ii) Minimum export price system;
- (iii) Restrictions implemented in the ports of exit of goods: limiting the locations through which exports are made also violates the rule contained in Article XI.1;
- (iv) Voluntary restrictions on exports;
- (v) Restrictions on exports imposed by State Trading Enterprises (STEs)⁵².

Despite the broad scope of Article XI, Cottier et al. argue that there should be limitations to its application. The interpretation that a WTO Member may rely on Article XI.1 to force another Member to commit to increase its production of natural resources would exceed this limit by violating the Principle of Permanent Sovereignty over Natural Resources (PSNR).

Box 11: Principle of Permanent Sovereignty over Natural Resources (PSNR)

The PSNR establishes that nations retain ownership of their natural resources and permanent sovereignty over their regulation and exploitation.

Connected to the concept of economic sovereignty, the principle was legitimized by resolutions of the United Nations General Assembly (UNGA)⁹, adopted in the historical context of decolonization - the 1950s and 1960s, mainly - due to the tension between former metropolises and former colonies over the right to exploit natural resources.

⁵² EHRING, L.; CHIANALE, G. F. Export Restrictions in the Field of Energy. In: SELIVANOVA, Y. (ed.). Regulations of Energy in International Trade Law: WTO, Nafta and Energy Charter. USA: Kluwer Law International. p. 109-147, pp. 129-130.

At that time, developed countries such as England and France defended that their national exploration companies had the vested right, acquired through formal contracts, to continue exploiting natural resources in the territories of their former colonies. Relying upon their majority in the UNGA, the former colonies began to pass resolutions which provided an international legal framework (although in the form of *soft law*¹⁰) for expropriation of the companies and ensured their sovereignty over natural resources, linked to the right to self-determination of peoples¹¹ and conditioned by the economic development and welfare of the nationals of the country.

Initially, the sovereignty over natural resources should be exploited in the ‘interest of their national development and of the well-being of the people of the State concerned¹².’ In a subsequent resolution, the UNGA identified the economic importance of natural resources for the newly independent countries and recommended they maximized their exploitation through total control of the supply chain and sales¹³. In these terms, the principle of permanent sovereignty would reflect a State’s inherent, comprehensive right to control the production and use of its natural resources.

In the Multilateral Trading System, the principle was recognized upon Mexico’s accession to GATT 47 in 1986. Mexico was the first exporter of energy goods to gain access to the GATT 47, and its accession provided the first opportunity to discuss some of the challenges arising from the interaction between energy importing and exporting countries¹⁴.

The ECT included the PSNR in its Article 18. In the first three paragraphs, the Treaty recognizes the wide sovereignty of the Contracting Parties over the exploration, management, ownership and control of their energy assets, including the rate of exploration and the collection of royalties and other financial contributions¹⁵. The ECT does not regulate national legislation relating to the structure of the domestic energy market in general or access to it by third parties. Paragraph 4 of Article 18, however, contains a *best efforts* provision requiring Contracting Parties to endeavor to respect the principle of non-discrimination when authorizing, licensing, or granting concession rights for the exploration of their natural resources¹⁶.

The PSNR can be considered today as part of customary international law, applicable even when not expressed in any international legal instrument to which the relevant Parties are signatories. This was the understanding of the International Court of Justice (ICJ) in the “Armed Activities on the Territory of the Congo” case in 2005¹⁷.

In the energy sector, quantitative restrictions on exports of goods are usually related to production choices made by exporting countries. As a prime example of state resolutions that can affect the energy market, the measures adopted by OPEC can be considered to be quantitative restrictions on exports.

**Box 12: Organization of the
Petroleum Exporting Countries - OPEC**

The Member States are: Algeria, Angola, Ecuador, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, and Venezuela.

Between the 1940s and 1960s, the production and worldwide marketing of oil had been conducted by multinational companies, known as the Seven Sisters⁴⁸. These companies controlled the oil market, imposing lower prices for producing countries and ensuring high profits for themselves. Furthermore, they prevented the entry of other companies in the industry, making it difficult, for example, for new countries to access large oil reserves, such as those found in the Middle East, and preventing the governments of countries in the region from directly controlling their reserves.

The international oil price was considered low by oil-producing countries, who held meetings in an effort to coordinate their policies on production and marketing of the product aiming to increase its price in the world market. With the creation of OPEC in 1960, the Member States intended to ensure: (i) fair and stable prices for petroleum producers; (ii) efficient, economical, and regular supplies to consumer nations, and (iii) fair financial returns for investors⁴⁹. At the same time, it strengthened the right of all States to exercise permanent sovereignty over their natural resources in the interest of their development.

This concerted policy, coupled with geopolitical issues, led to the occurrence of two oil crises during the 1970s. Earlier that decade, producing nations began to regulate the flow of oil production. In 1973, the value of a barrel tripled in a period of three months. In the same period, the crisis between Eastern producers and the capitalist bloc worsened with the outbreak of the Yom Kippur War. This was one of several conflicts between Arabs and Jews involving the territories of Palestine. Disagreeing with the Israeli attack, neighboring Arab oil-producing nations organized a boycott against every nation that supported the cause of the Israelis. Unable to bear the rising price of oil, many countries abandoned the war.

The second oil crisis was triggered by the 1979 Iranian Revolution. The protests of Iran's population also reached the Iranian oil industry, responsible for much of the world's oil at the time: production was strongly reduced and exports were suspended. When Mohammad Reza Shah Pahlavi was finally replaced by Ayatollah Khomeini, the volume of oil exports was not promptly restored, which pushed for the price increase. In 1980, after the invasion of Iran by Iraq, oil production in both countries suffered a sharp drop; it was only after the stabilization of Iranian and Iraqi production that oil prices normalized.

Those shocks changed the structure of the international oil market, influencing the energy goods sector and exponentially increasing the price of these products. OPEC achieved worldwide reach and received strong criticism from oil consuming countries— especially the more developed ones.

To examine whether the Multilateral Trading System would prohibit such measures, it is necessary to specifically define what are the measures implemented by OPEC. The legal framework of the WTO does not provide rules relating to competition law. In this sense, the WTO does not prevent the formation of cartels among private companies and, likewise, does not rule on similar activities by producer countries of natural resources. Melaku Desta⁵³ affirms that, since the WTO does not have the means to neutralize concerted practices among private operators of various countries, such as the arrangements among enterprises for market allocation or price fixing, the legal structure of the organization does not preclude the reproduction of similar results to those obtained by OPEC.

In theory, if a country exports all or a large part of its production of a particular good, restrictions on production would amount to export restrictions. According to Cottier, activities employed by OPEC would have the same motivations and effects as quantitative export restrictions, as they seek to limit the amount of oil available on the market⁵⁴. However, Worika affirms that the measures taken by OPEC are not mandatory for the States,

⁵³ (I)n as long as the WTO does not have any way of counteracting concerted practices among cross-border private operators, such as market-sharing or price-fixing arrangements between companies, the WTO does not necessarily exclude OPEC-like results. DESTA, M. G. The Organization of Petroleum Exporting Countries, the World Trade Organization, and Regional Trade Agreement. In: *Journal of World Trade*, v. 37, issue 03, 2003, p. 548.

⁵⁴ COTTIER, T. et al. Energy in WTO law and policy. In: *WTO. World Trade Forum 2010*. May 7, 2010, p. 17.

and the Organization only coordinates production management policies with a view to “stabilizing the international oil market⁵⁵.” It is worth noting that OPEC is not a WTO Member, and thus, only the actions of its members who belong to the WTO could be analyzed within the framework of the multilateral trading system.

The measures adopted by OPEC members may have effects equivalent to quantitative restrictions on exports under Article XI. However, the limitation of the production of an energy good is not, by definition, a discriminatory measure against exports, since it would have an impact on both the domestic market as well as the foreign market. Therefore, one cannot say that they violate Article XI of GATT 94.

Exceptions to the prohibition of quantitative restrictions on trade

Article XI.2 (a) of the GATT contains 94 exceptions to prohibitions or restrictions temporarily imposed on exports to prevent or relieve a critical situation due to shortages of foodstuffs or other products essential to the exporting member⁵⁶.

This item is relevant in events where it is necessary to prevent or relieve a serious shortage of energy products. It prevents the application of Article XI.1 to prohibitions or restrictions temporarily imposed on exports to cope with critical situations caused by shortages of foodstuffs or other products essential to the exporting Member.

1.2.5. ACTIVITIES OF STATE TRADING ENTERPRISES (STES) IN TRADE

The WTO Agreement, as an agreement subject to public international law, creates rights and obligations only for its Members, and not for

⁵⁵ WORIKA, I. L. Production, Management, OPEC and the WTO. In: PAUWELYN, J. (ed.), *Global Challenges at the Intersection of Trade, Energy and the Environment*. Geneva: Centre for Trade and Economic Integration, 2010, p 88.

⁵⁶ Article XI.2: The provisions of paragraph 1 of this Article shall not extend to the following:

(a) Export prohibitions or restrictions temporarily applied to prevent or relieve critical shortages of foodstuffs or other products essential to the exporting Contracting Party.

private entities. This assertion, however, applies in a restrictive manner to STEs. Article XVII governs their activities, requiring them to comply with the general principles of non-discrimination contained in the GATT 94 and prohibiting them, therefore, from introducing restrictions on imports and exports. Considering that the energy sector is the subject of governmental strategic planning, the international regulation of the activities of STEs is essential to avoid trade distortions.

The energy production sector is characterized by the massive presence of State Owned Enterprises (SOEs) in the extraction, production, management, and regulation of energy goods. From the moment an energy producing SOE sells its production, it is considered an STE. These companies generally have mechanisms that allow direct action on the price of some of their energy products and also the collection and dissemination of commercial and industrial information. Hence the concern about the transparency of these companies and the benefits arising from their statutory condition, since it is possible that these companies may be favored over their private sector peers.

STEs activities are governed by Article XVII of the GATT 94, which states:

1. (a) Each contracting party undertakes that if it establishes or maintains a State enterprise, wherever located, or grants to any enterprise, formally or in effect, exclusive or special privileges, such enterprise shall, in its purchases or sales involving either imports or exports, act in a manner consistent with the general principles of non-discriminatory treatment prescribed in this Agreement for governmental measures affecting imports or exports by private traders.

(b) The provisions of sub-paragraph (a) of this paragraph shall be understood to require that such enterprises shall, having due regard to the other provisions of this Agreement, make any such purchases or sales solely in accordance with commercial considerations, including price, quality, availability, marketability, transportation and other conditions of purchase or sale, and shall afford the enterprises of the other contracting parties adequate opportunity, in accordance with customary business practice, to compete for participation in such purchases or sales.

In these terms, purchases made for the production of energy goods to be subsequently traded, and the trading of these products itself, must be carried out by STEs focusing only on the term ‘commercial considerations.’ Although this rule partly prevents some actions related to energy production from being taken by STEs, it does not focus on the amount, timing, and form of the production of energy goods by SOEs.

It is important to note that there is no precise definition of what the criteria are to determine whether a company is actually commercial and State-controlled, thus leaving room for interpretation about what these companies with special rights and privileges would be⁵⁷.

1.2.6. GENERAL EXCEPTIONS

Article XX of the GATT 94 on General Exceptions foresees situations where Members may legally justify the introduction of measures that prioritize public policies considered to be inconsistent with WTO rules.

If those situations materialize, there is the possibility that a member may exclude the application of the principles of MFN and national treatment and the conditions of similarity, quantitative restrictions on trade, and tariff reduction, provided that the two requirements below are met simultaneously: (i) the condition contained in one of the sub-paragraphs of Article XX is fulfilled, and (ii) such measure does not constitute a means of arbitrary or unjustifiable discrimination between countries with the same conditions, or a disguised restriction on international trade, according to the ‘chapeau’ of this Article.

For the energy sector, the most suitable provisions to justify the adoption of restrictive measures on exports of energy products are sub-paragraphs (b), (g), (h), (i) and (j) of Article XX.

Article XX (b) provides for the adoption of measures “necessary to protect human, animal, or plant life or health.”

Article XX (g), in turn, allows the adoption of measures “relating to the

⁵⁷ POGORETSKY, V. Energy Dual Pricing in International Trade: Subsidies and Anti-dumping Perspectives. In: SELIVANOVA, Y. (ed.). Regulation of Energy in International Trade Law. Global Trade Law Series, Wolters Kluwer, 2011, pp. 195-196.

conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption”.

Article XX (h) is about measures in pursuance of obligations under any intergovernmental commodity agreement.

Article XX (i) refers to measures involving restrictions on exports of raw materials produced in the country as is necessary to meet the demand of a certain domestic processing industry during periods in which the domestic price is below the world price and when the price difference is due to a governmental stabilization plan.

Article XX (j) addresses measures considered essential to the acquisition or distribution of products that, if absent, would cause general or local hardship for the population. The measures covered are of temporary application and should be removed once the circumstances that motivated their imposition have ceased to exist.

Similarly to Article XX, Article XXI provides for security exceptions. According to this Article, a WTO Member is not prohibited from taking any action it deems necessary for the sake of its own security. According to Selivanova, when considering the importance of the energy sector, it is very likely that the application of this exception will be justifiable when trade restrictions are imposed on energy goods and services⁵⁸. These exceptions will be discussed in more detail in Chapter 6, on Energy Security.

1.2.7. ECT

The ECT applies to all WTO rules, except for those listed in its Annex W.

The following are not applicable to the Contracting Parties to the ECT: (i) institutional arrangements; (ii) final provisions, including those relating to entry into force and the accession and withdrawal of Members; (iii) provisions related to dispute settlement; (iv) all provisions regarding tariff commitments and tariff negotiations, since the ECT merely establishes a soft law regime regarding import tariffs; (v) all provisions ensur-

⁵⁸ SELIVANOVA, Y. The WTO and Energy: WTO Rules and Agreements of Relevance to the Energy Sector, Issue Paper n. 1. In: ICTSD. Trade and Sustainable Energy Series. Geneva: ICTSD, 2007, p. 17.

ing special and differential treatment in relation to developing countries, except for those related to the Generalized System of Preferences⁵⁹; (vi) the Agreement on Agriculture (AoA) and the Sanitary and Phytosanitary Measures Agreement (SPS), because their content is beyond the scope of the ECT; and (vii) the General Agreement on Trade in Services (GATS) and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). Further, the rules contained in the WTO Plurilateral Agreements are likewise non-applicable to the Contracting Parties to the ECT.

1.3. MARKET ACCESS

When it comes to access to goods, direct reference is made to the tariff and non-tariff measures applied by States with regard to the entry of goods into their markets.

In the ambit of the WTO, the tariff commitments agreed by each Member are contained in their lists of commitments on goods and represent an obligation not to apply tariffs above the bound limit.

Box 13: Bound and Applied Tariffs

During negotiations, the countries enter into reciprocal commitments to reduce their tariffs to a combined level, also known as bound tariff. However, the tariff used on a daily basis by each country may be less than this level and is called applied tariff.

Once tariffs still represent a barrier to trade, WTO Members, upon the Doha Ministerial Declaration (2001)⁶⁰, stressed the importance of continuing the negotiations to reduce tariff barriers (including the reduction

⁵⁹ The Generalized System of Preferences refers to preferential access for developing countries granted unilaterally by developed countries through partial or full tariff reductions.

⁶⁰ WTO. Doha Ministerial Declaration. 2001. WT/MIN(01)/DEC/1, Paras. 16 and 31.

of the occurrence of tariff peaks⁶¹ and tariff escalation⁶²) and non-tariff barriers, in order to, where possible, eliminate them for all non-agricultural products. Non-agricultural products, for the WTO, are all those not covered by Annex 1 of the Agreement on Agriculture (Chapters 1-24 of the HS), i.e., manufactured goods, fuels and mining products, fish and fishery products, forestry products and environmental goods. The access of these products to markets is negotiated in the Negotiating Group on Market Access (NGMA)⁶³.

Although negotiations on the issue have not yet been completed, the classification of so-called environmental goods is relevant to the proposed tariff reduction under negotiation in the Doha Round. The WTO Secretariat, in a note to the NGMA, presented a list of environmental goods that includes, among others, renewable energy plants (solar, geothermal, wind, tidal, methanol and ethanol) and energy and heat savers and managers⁶⁴. The difficulties are found mainly in the definition of 'environmental goods,' not contained in the Doha Ministerial Declaration, and the extent of liberalization of these goods⁶⁵. The topic will be dealt with in depth further below in this work.

The elimination of tariff and non-tariff barriers to trade in environmental goods aims to achieve sustainable development through the creation of a win-win situation both for trade and for the environment and development. According to the WTO, these negotiations can reduce the cost of environmental technologies, encouraging their use by private and public consumers. Moreover, these negotiations can be beneficial to the environment by increasing the capacity of States to acquire quality environ-

⁶¹ Tariff peaks: imposition of relatively high tariffs on sensitive products for the concerned Member.

⁶² Tariff escalation: imposition of higher import duties on semi-processed products than on raw materials, and higher still on finished products, in order to protect domestic industry and discourage processing activity in the countries where raw materials originate.

⁶³ WTO. A simple guide – NAMA Negotiations. Available at http://www.wto.org/english/tratop_e/markacc_e/nama_negotiations_e.htm. Last accessed June 18, 2013.

⁶⁴ WTO. Negotiating Group on Market Access –Market Access for Non-Agricultural Products. Note by the Secretariat. TN/MA/S/6, 2002, pp. 16-17.

⁶⁵ COSBEY, A. et al. Environment Goods and Services Negotiations at the WTO: Lessons from multilateral environmental agreements and ecolabels for breaking the impasse. IISD, Canada, 2010, p. 12.

mental goods, positively impacting the quality of life for their citizens and reducing the side effects arising from activities that are potentially harmful for the environment. Finally, the liberalization of trade in these goods can assist developing countries in obtaining the necessary mechanisms to address environmental initiatives within their development processes⁶⁶.

The imposition of tariffs on energy products primarily reflects the energy policy goals of each State. These goals often prevail over ones related to trade policy, since the former aim to ensure energy supplies nationwide.

In the energy sector, the key question that arises concerns the imposition of export tariffs. These tariffs are neither prohibited by the WTO nor do they have a maximum level negotiated, as occurs with import tariffs. However, as seen earlier, depending on the shape and volume of application of these tariffs, measures can be considered as quantitative restrictions on exports, a situation that, as seen above, would violate Article XI of GATT 94.

With regard to States exporting energy resources, the World Trade Report 2010⁶⁷, when analyzing the Trade Policy Reviews (TPRs)⁶⁸ published by the WTO between the years 1995 to 2009, showed a high incidence of export tariffs in the energy sector, especially when compared to other sectors. These tariffs represent an important source of income for exporting States, as well as having the effect of increasing the cost of goods exported, resulting, in principle, in lower export volumes. These measures, coupled with the control of production, reflect a tendency to conserve exhaustible natural resources within those States⁶⁹.

Some Members expressed concerns over the application of export tariffs as a means of restricting access to raw materials, while other States have argued that tariffs are legitimate tools to foster economic development. Because the lack of consolidated export tariffs might lead to distor-

⁶⁶ WTO. Eliminating trade barriers on environmental goods and services. Available at: http://wto.org/english/tratop_e/envir_e/envir_neg_serv_e.htm.

⁶⁷ The World Trade Report is an annual publication of the WTO aimed at deepening the knowledge about trends in world trade, trade policies adopted by States, and the Multilateral Trading System.

⁶⁸ The Trade Policy Review mechanism aims to contribute that commitments made under the WTO are met. Thus, it enables Members to evaluate their commercial practices and policies, as well as their impact on the functioning of the Multilateral Trading System.

⁶⁹ WTO. World Trade Report 2010: Trade in Natural Resources. Geneva, 2010, pp. 116-117.

tions in international trade, this issue became an important factor for the admission of new Members into the Organization.

Box 14: Accession of new Members to the WTO

According to Article 12.1 of the WTO Agreement: Any State or separate customs territory possessing full autonomy in the conduct of its external commercial relations and of the other matters provided for in this Agreement and the Multilateral Trade Agreements may accede to this Agreement, on terms to be agreed upon by it and the WTO. Such accession shall apply to this Agreement and the Multilateral Trade Agreements annexed thereto.

In order for new Members to be admitted, all WTO Members must agree to the terms of their accession. This is done by means of prior negotiations with the Members of the Organization, when lists of commitments on market access for goods and services are discussed, as well as other commitments that Members may consider necessary, which are set out in the protocols of accession and the related reports of the working party established for such purpose.

The protocols of accession often contain obligations on matters beyond the regulatory scope of the WTO, which can be classified as WTO-plus or WTO-extra obligations.

Ehring and Chianale observed three categories of commitments made by new Member States in relation to the regulation on the imposition of export tariffs without their accession protocols: (i) commitments reaffirming the provisions of the GATT 94; (ii) commitments to minimize the use of export taxes; and (iii) specific commitments requiring new States to reduce or abstain from applying export tariffs on certain products⁷⁰.

The consolidation of export tariffs, for example, was part of the negotiations of Russia's accession to WTO. Russia consolidated export tariffs on

⁷⁰ EHRING, L.; CHIANALE, G. F. Export Restrictions in the Field of Energy. In: SELIVANOVA, Y. (ed.). Regulations of Energy in International Trade Law: WTO, Nafta and Energy Charter. USA: Kluwer Law International. p. 109-147, p. 121.

about 700 tariff lines, including mineral fuels⁷¹. Accordingly, the country cannot impose export tariffs on these products at levels higher than those indicated in its list of commitments.

China, likewise, made commitments aimed at eliminating all tariffs and charges related to exports, except for eighty-four products listed in Annex 6 to its protocol, to which tariffs with limited values could be applied. It is noteworthy that energy products are not included among those products⁷².

In 2009, the U.S., Mexico, and the EU challenged before the DSB of the WTO the application of four types of restrictive measures imposed on Chinese exports of raw materials, including rare earth elements⁷³: (i) export taxes, (ii) export quotas, (iii) minimum export prices, and (iv) requirements to obtain export licenses. According to the plaintiff Members, such measures would be inconsistent with the commitments made by China in its accession protocol. Their application, besides creating shortages of raw materials and increase their price in the world market, would also favor the Chinese industry, which would have greater access to these products.

When justifying that some of the measures were related to the conservation of exhaustible natural resources, while others would be linked to the health of its citizens, China failed to demonstrate that those measures were being accompanied by internal restrictions to production and consumption. Both the Panel and the AB decided that, even though China was allowed to use certain exceptions available in the Agreements to justify the restrictions adopted, it had not met the requirements for the application of these exceptions. China was then obliged to implement the recommendations of the DSB, so as to make its export tariff policy compliant with the WTO rules⁷⁴.

⁷¹ WTO. News Item. November 10, 2011. Available at: http://www.wto.org/english/news_e/news11_e/acc_rus_10nov11_e.htm. Last accessed January 11, 2013.

⁷² WTO, Report of the Working Party on the Accession of the People's Republic of China, WT/ACC/CHN/49, Para. 11.3 and Annex 6.

⁷³ China accounts for 97% of global production of 17 rare-earth metals, which are crucial for global electronics production and the defense and renewable energy sectors.

⁷⁴ WTO. Appellate Body Report: China – Measures Related to the Exportation of Various Raw Materials. WT/DS394/AB/R, 2012.

Disputes like these have presented an opportunity to revisit the appropriateness of restrictions on exports and production for countries producing natural resources and energy goods. On the one hand, it is understood that, by limiting production, these States would cause less impact on international trade than if they applied export restrictions, since the restriction of production would also affect the domestic productive sectors that use oil as an input⁷⁵. On the other hand, if restrictions of production are not regulated, any decision contrary to measures restricting the exportation of natural resources will be ineffective, given that the State may choose to restrict their production.

The opening of markets for agricultural products is hard to negotiate at the multilateral level. In a simplified way, on the side of importing countries there is a persistent concern for the stability of the rural sectors of the economy, particularly small-scale farmers and family farms, who need to be protected from international competition. Exporting countries, on the other hand, argue that it is possible to regulate the supply of food at more competitive prices and that the stimulus to domestic production, sometimes inefficient, would not be a sound basis for achieving development.

Due to the sensitivity of the sector, the WTO provides special treatment for agricultural products. The AoA is also extended to the energy sector and brings with it more flexible rules than those applicable to non-agricultural products.

The objective of the negotiation in the agricultural sector is to establish a fair, market-driven trading system. The AoA allows governments to stimulate their agricultural sector through subsidies, but preference is given to policies that cause less trade distortions. Thus, the specific commitments to be consolidated should include three areas: greater market access, reduction of domestic support, and greater export competition by reducing export subsidies.

Before the AoA entered into force, the importation of some agricultural products were restricted by quotas and other non-tariff measures. As the

⁷⁵ See: In Victory for the West, W.T.O. Orders China to Stop Export Taxes on Minerals. In: International Herald Tribune. New York January 30, 2012. Available at <http://www.nytimes.com/2012/01/31/business/wto-orders-china-to-stop-export-taxes-on-minerals.html?pagewanted=all>. Last accessed May 25, 2012.

Agreement became effective, these non-tariff measures were replaced by equivalent tariffs⁷⁶, aiming to even out the protection applied to markets.

The main theme related to the energy sector discussed in the framework of the AoA is the tariff treatment of biofuels.

Box 15: Biomass and Biofuels

The term biomass refers to any organic compound derived from plants or animals, such as wood, agricultural crops, manure, and organic waste, among others.

Biofuel is the name given to fuels derived from biomass and, in accordance with the IEA/OECD, can be segregated as follows:

a) Primary Solid Biofuels

Are defined as solid biomass used directly as fuel or converted into other solid forms before combustion. This definition includes, for example, firewood (wood, sawdust, bark, chips, etc.), charcoal, black liquor, animal waste, among others.

b) Liquid Biofuels

Include ethanol, methanol, biodiesel and other liquid biofuels derived from biomass.

Ethanol is obtained mainly from sugar cane, corn, and sugar beet, among others. Most of the biodiesel production is derived from vegetable oils, such as soybean, castor bean and jatropha, and can even be produced from the treatment of organic waste²⁰.

c) Biogases

Are defined as gases from the anaerobic fermentation or direct gasification of biomass.

They are produced based on a gaseous mixture of carbon dioxide and methane gas, which result from anaerobic fermentation, or else from Synthesis Gas, a gaseous mixture of carbon monoxide and hydrogen, which, after processing, can result in various liquid and gaseous fuels. It is important to highlight that biogas can be used to replace mineral gases, for example, liquefied petroleum gas (LPG) and natural gas²¹.

The production of biofuels has been increasing. It is important to note that between 2008 and 2010 over 90% of biofuels in the world came from agricultural inputs⁷⁷.

According to FAO data, it is estimated that, by 2021, ethanol production will reach 180 billion liters, and biodiesel will reach 42 billion liters⁷⁸.

The international trade flow of biofuels is also predicted to increase by billion liters.

Goods regulated by the AoA are listed in Annex I of the Agreement, in accordance with the HS (Chapters 1-24). Until 2005, ethanol and biodiesel were treated as agricultural products, in the chapter referring to beverages, spirits, and vinegar. Both were subject to regulation under the AoA.

However, since 2005, biodiesel has been classified in the HS as a non-agricultural product (Chapter 38 relating to products of the chemical or allied industries), while ethanol has remained classified as agricultural produce (Chapter 22). This differentiation affects not only the tariff treatment given to both products, but also the application of WTO provisions related to subsidies. In practice, this means that ethanol production is subject to AoA's rules on subsidies, as well as to bound and applied tariffs, aimed at agricultural products, which are usually higher than those on industrial products.

Such a classificatory difference results in two products with similar purposes receiving different treatments. The negotiations to reduce tariffs

⁷⁶ Equivalent tariffs (tariffication) correspond to the conversion of non-tariff measures that restrict imports into tariff equivalents; the former include minimum prices, quantitative restrictions, discretionary licensing, measures by state enterprises, voluntary export restrictions, non-tariff border measures, and levies or variable rates which offset the difference between domestic prices (higher) and external prices (lower). The equivalent tariff is calculated based on the difference between the guaranteed domestic prices for importing countries and the average prices of the world market.

⁷⁷ According to the OECD-FAO report, non-agricultural inputs for the production of biofuels are those obtained from animal fat and tallow, reused oils, and by-products and waste from ethanol production. OECD-FAO Agricultural Outlook 2011-2020, p. 85.

⁷⁸ OECD-FAO, Agricultural Outlook 2011-2020, p. 85 et seq.

on agricultural and non-agricultural products occurred at different paces within the WTO, resulting in average bound tariffs that are higher for agricultural products. According to the International Centre for Trade and Sustainable Development (ICTSD), agricultural products, on average, are subject to higher tariffs and may receive more subsidies than industrial products⁷⁹. Thus, biodiesel would be favored by facing lower tariffs when exported, while ethanol would be subject to higher tariffs and the specific provisions of the AoA on subsidies.

The classification of biofuels as an agricultural or non-agricultural product directly interferes with the protective mechanisms of markets, and tariffs are usually the first mechanism to be used. According to José Caiado⁸⁰, an analysis of the List of Commitments⁸¹ of major producers and consumers of biofuels reveals that tariffs on ethanol, except the one applied by Brazil, are considerably higher than those applied to biodiesel. The U.S., by the end of 2011, has applied a bound tariff of 2.5% plus a specific tariff (already in place before the Uruguay Round and not harmonized during negotiations) of US\$ 0.54 on each gallon of imported ethanol.

However, this tariff ceased to be applied in 2012, and the non-renewal of subsidies to U.S. corn and trade barriers on imported ethanol was the result of Brazilian commercial diplomacy and efforts by FIESP, the Sugarcane Industry Association (*União da Indústria de Cana-de-Açúcar* – UNICA) and those made by the Brazilian Ministry of Foreign Affairs at the Congress of the United States.

⁷⁹ ICTSD. Biofuel Production, Trade and Sustainable Development. Switzerland, 2008, p. 38: “For example, the EU tariff duties are relatively low for biodiesel (6.5 percent), whereas tariffs on ethanol are to an ad valorem equivalent (AVE) tariff of 40–100 percent, depending on the price of ethanol; the lower the price of ethanol, the higher the AVE.”

⁸⁰ CAIADO, J. G. M. Bioenergy Development and Trade in the WTO. In: SELIVANOVA, Y. (ed.) Regulation of Energy in International Trade Law: WTO, Nafta and Energy Charter. USA: Kluwer Law International, 2011, p. 235.

⁸¹ Lists of Commitments, or Schedule, are documents produced at the end of the Uruguay Round containing the timetable for countries to adjust to WTO’s standards, as well as deadlines for the reduction and consolidation of tariffs.

1.3.1. ECT

Under the ECT, the Contracting Parties have agreed to promote access to international markets on commercial terms, while also to develop a competitive market for energy products and materials (Article 3, ECT). As previously mentioned, the Parties to the ECT which are also WTO Members will be required to apply tariffs for energy products up to the limit as indicated by their lists with the WTO. The ECT provides for a best endeavors article, non-mandatory, according to which the Contracting Parties shall respect their bound tariffs in the WTO also in relation to non-Member States of the Organization. The Parties that are not members of the WTO should limit their tariffs to the level applied upon their accession to the ECT or last notification.

1.4. TECHNICAL BARRIERS

According to WTO’s definition, technical barriers are those derived from the use of technical standards or regulations which are neither transparent nor grounded in internationally accepted standards, or even from the adoption of conformity assessment procedures that are either insufficiently transparent and/or too expensive, as well as from excessively stringent inspections.

The Agreement on Technical Barriers to Trade (TBT) was adopted at the WTO with the aim of regulating the subject, assisting Members in identifying the best course for implementing standards and technical regulations, and avoiding the adoption of procedures that would unnecessarily restrict international trade.

The main objective of the TBT is to ensure that regulations and other technical specifications do not act as unnecessary barriers to trade and are not more trade restrictive than necessary to fulfill its legitimate objectives.

Box 16: Technical Standards and Regulations

A Technical regulation determines what the characteristics of a product or its processes and production methods should be. It is established by the governments of WTO members and is binding in nature. Technical regulations relate to requirements on terminology, symbols, packaging, marking or labeling.

Technical standards stem from a document approved by a national or international standard-setting institution, establishing rules, guidelines, and characteristics related to a product or the processes and methods of its production. Technical standards are non-binding and may also be related to terminology, symbols, packaging, marking, or labeling. Within international standard-setting institutions, such standards are adopted by consensus, such as in the International Organization for Standardization (ISO), the International Electrotechnical Commission (IEC), and the International Telecommunication Union (ITU).

Several barriers are imposed on the trade in energy products under the provisions of the TBT. According to Selivanova⁸², technical regulations and standards are applied to trade in energy materials and products and are also related their transport. In addition, they can be important tools for encouraging the efficient use of energy and the reduction of greenhouse gases (GHG), among others.

Technical standards and regulations may aim at protecting the environment, ensuring safety, and providing consumers with information, which are legitimate objectives that justify them. All technical standards and regulations adopted by Member States must be notified to the WTO's Committee on the TBT. Data from the Secretariat of the WTO show that, out of all notifications made in 2011, 11.1% were related to environmental protection, while those related to safety and protection of human health accounted for 46.4% of the total⁸³.

⁸² SELIVANOVA, Y. The WTO and Energy: WTO Rules and Agreements of Relevance to the Energy Sector, Issue Paper n. 1. In: ICTSD. Trade and Sustainable Energy Series. Geneva: ICTSD, 2007, p. 30.

⁸³ WTO. Seventeenth Annual Review of the Implementation and Operation of the TBT Agreement. Note by the Secretariat, Committee on Technical Barriers to Trade. G/TBT/31, p. 04.

Table 1 – Notifications in 2011 (by objective)

Objectives and Rationales	Number of times that the objective was mentioned as the first, second or third objective in 2011
Protection of human health and safety	782
Prevention of deceptive practices and consumer protection	253
Protection of environment	188
Quality requirements	154
Consumer information, labelling	112
Harmonization	44
Lowering or removal of trade barriers	41
Adoption of new domestic law and technology	32
Protection of animal or plant life or health	22
National security requirements	15
Trade facilitation	15
Cost saving and increasing productivity	7
Not Specific	1
Others	23
Total	1684

Source: WTO, *Seventeenth Annual Review of the Implementation and Operation of the TBT Agreement*, Note by the Secretariat, Committee on Technical Barriers to Trade, 02.03.2012 (G/TBT/31)

Among the principles contained in the TBT Article 2.2 brings some definitions relevant to trade in energy, such as applications and limitations related to technical regulations and legitimate objectives, concepts that are essential for understanding the operation of technical barriers in international trade⁸⁴.

The issues of technical barriers and unnecessary trade restrictions

⁸⁴ Article 2.2: Members shall ensure that technical regulations are not prepared, adopted, or applied with a view to or with the effect of creating unnecessary obstacles to international trade. For this purpose, technical regulations shall not be more trade-restrictive than necessary to fulfill a legitimate objective, taking account of the risks non-fulfillment would create. Such legitimate objectives are, inter alia: national security requirements; the prevention of deceptive practices; protection of human health or safety, animal or plant life or health, or the environment. In assessing such risks, relevant elements for consideration are, inter alia: available scientific and technical information, related processing technology or intended end-uses of products.

within the energy sector have come to the fore in the *U.S.-Gasoline* case. The case was filed by Brazil and Venezuela against an American law that restricted imports of fuels that failed to meet certain parameters of purity in order to reduce levels of air pollution in certain regions of the country; however, such parameters were not applicable to domestic fuels. The Appellate Body ruled that the measure in question violated the principle of National Treatment and did not fall under the exceptions in Article XX of the GATT 94 because, although related to the conservation of exhaustible natural resources, the measure constituted non-justifiable discrimination and represented a disguised restriction on trade.

In order to avoid the multiplication of technical rules that use different scientific bases and hinder trade flows, the TBT encourages the use of international standards as a basis for technical standards and regulations implemented by the Members. In accordance with Article 2.4 of the TBT, a technical regulation may take international standards into account, unless those standards do not achieve the appropriate level of protection the WTO Member determines to be necessary to achieve the legitimate objective intended (such as protecting human health or national security). As previously mentioned, the international standards upon which technical regulations must be based are defined by specialized international organizations, and the TBT also provides for, in its Annex III, the Code of Good Practice for the Preparation, Adoption, and Application of Standards, intended for state agencies and organizations.

An example that goes beyond international standardization is the European regulation related to Registration, Evaluation, Authorisation, and Restriction of Chemicals (REACH). This regulation has been divided into two phases: (i) pre-registration of all chemical substances marketed in the European territory, including petroleum and its derivatives, under the penalty of prohibiting trade for non-compliance, and (ii) registration of these substances based on two criteria: the amount placed on the market (produced or imported) and the risk to health and the environment. Further, it is necessary to provide information concerning the registered chemical substance, such as physical and chemical characteristics, associated risks, accidental release measures, form of handling, visual signaling of hazards of substances, among others.

By requiring European producers and importers of substances, products or articles containing chemical substances used in Europe to adapt to various safety, environmental, and health requirements, foreign manufacturers and exporters to this continent are also affected by the regulation⁸⁵. The impacts that may be caused by the implementation in other countries of technical standards that exceed internationally established standards are discussed, since adaptation can be highly costly and influence changes in regulations for the entry of chemical substances in other States as well.

Normally, when a WTO Member adopts a standard in the absence of, or not in accordance with, international standards, it must in advance: (i) notify other Members through the Secretariat, (ii) provide, if requested, details or copies of the proposed technical regulation to other Members, (iii) allow, without discrimination, reasonable time for other Members to make comments in writing, and (iv) discuss these comments, in accordance with the provisions of Articles 2.9 and 5.6 of the TBT.

Apart from the general rule, some circumstances allow, according to criteria listed in the Agreement, the establishment of technical regulations unilaterally and without respecting the notification and international discussion procedures⁸⁶. This adoption of unilateral measures must follow a specific process and allow other States the opportunity to express their opinion, although in cases of emergency some procedures may be temporarily removed.

The TBT uses the so-called necessity tests⁸⁷ to ensure that the measures adopted are appropriate for the intended purpose. These tests, in practice, act as checks on the autonomy of States to impose technical regulations, primarily by preventing the creation of unnecessary obstacles to

⁸⁵ Petrobras, for example, has pre-registered 83 chemicals and intends to start a new phase of registrations involving substances destined for the European territory in smaller quantities, since those involving larger quantities have already been registered. Petrobras. Petrobras and REACH. Available at <http://www.petrobras.com.br/minisite/reach/pt/>.

⁸⁶ For further information, please refer to Articles 2.10, 5.4 and 5.7 of the TBT.

⁸⁷ Necessity tests within the WTO are mechanisms used to determine the consistency of a measure adopted by a Member based on the “necessity” of its adoption to achieve legitimate objectives. These tests are used as a way to counterbalance two important goals of the WTO: (i) preserve the freedom of Members to establish and achieve regulatory goals, and (ii) discourage States from adopting measures that are unnecessarily restrictive to trade.

trade and keeping the implementation of the adopted measures from resulting in arbitrary or unjustified discrimination, or, further, in disguised restrictions on trade⁸⁸.

1.4.1. PPMS

Process and Production Methods (PPMs) refer to the way a product is manufactured, the techniques, equipment, and materials used, among other things.

The regulation of the subject under the TBT showed progress in relation to the Standards Code, in effect at the time of the GATT 47, which was applicable only to products, excluding PPMs. It was noticed that regulating only technical barriers on goods enabled countries to circumvent the rules, so the TBT also began to regulate the way in which a good is produced⁸⁹. PPMs may be divided into two categories: (i) product-related PPMs, i.e. those whose characteristics are reflected in the final product, and (ii) non-product-related (NPR) PPMs, which are those that do not alter the physical characteristics of the final product.

It is a consensus that the TBT applies to product-related PPMs, but there is a discussion about whether this could also be extended to NPRs. The discussion is relevant to the energy sector, given that, currently, some barriers based on NPRs are being discussed, such as changes in land use and preservation of areas of high conservation value for planting biofuel crops, in addition to rules regarding emissions of GHGs, which might take into account emissions during the production process, including the type of energy used, in the calculation of total emissions.

In this sense, Jose Caiado affirms, NPRs can be an efficient trade instrument to ensure compliance with environmental protection rules and standards, especially in the field of biofuels⁹⁰.

⁸⁸ WTO. Necessity Tests in the WTO. Working Party on Domestic Regulation. S/WPDR/W/27, p. 5.

⁸⁹ PRAZERES, T. Comércio Internacional e Protecionismo – As barreiras técnicas na OMC. São Paulo: Aduaneiras, 2003, p. 110.

⁹⁰ CAIADO, J. Bioenergy Development and Trade in the WTO. In: SELIVANOVA, Y. (ed.). Regulations of Energy in International Trade Law: WTO, Nafta and Energy Charter. USA: Kluwer Law International, 2011, p. 251.

According to the WTO's 2004 Report on Trade and Environment⁹¹, the question of NPRs gave rise to many discussions in the TBT Committee about the compliance of the measures with the rules of the Agreement. Several developing countries stated that measures based on NPRs should be considered inconsistent with WTO rules.

On the other hand, the WTO-UNEP joint report on Trade and Climate Change 2009⁹² states that the second sentence of the definition of technical regulation in Annex I to the TBT has been interpreted by some as causing NPRs to be covered by the TBT, since, unlike the first phrase, which refers to product-related PPMs, the second sentence leaves out the term “related”⁹³. According to this understanding, measures that, for example, reduce GHG emissions in production without changing the characteristics of the final product could be covered. Yanovich says that the similarity test should be relaxed so as to incorporate NPRs and comply with the principles of MFN and National Treatment⁹⁴.

In a decision of the DSB in 2011, in U.S. - Tuna II⁹⁵, the Panel circumvented the discussion on NPRs stating that the dolphin-safe label - awarded to tuna harvested through the use of techniques that promote the protection of dolphins - was applicable to the product and would be classified as a technical regulation, without discussing whether or not the fishing method is reflected in the final product. Thus, according to the interpretation of the Panel, it is sufficient that the technical measure “applies to the product,” and that it is not necessary to analyze whether it is a product-related PPM or an NPR. This interpretation may have a major

⁹¹ WTO. Trade and Environment at the WTO. 2004, p. 17-18.

⁹² WTO-UNEP Report. Trade and Climate Change. Geneva, 2009, p. 126

⁹³ Annex I defines technical regulations as: “Document which lays down product characteristics or their related processes and production methods, including the applicable administrative provisions, with which compliance is mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labeling requirements as they apply to a product, process or production method.” Similar construction appears in the definition of technical standard (standard).

⁹⁴ YANOVICH, A. WTO Rules and the Energy Sector. In: SELIVANOVA, Y. (ed.). Regulations of Energy in International Trade Law: WTO, Nafta and Energy Charter. USA: Kluwer Law International, 2011, p. 12.

⁹⁵ See: WTO. Panel Report: United States – Measures Concerning the Importation, Marketing and Sale of Tuna and Tuna Products. WT/DS381/R, para. 7.66 et seq.; WTO. Appellate Body Report: United States – Measures Concerning the Importation, Marketing and Sale of Tuna and Tuna Products. WT/DS381/AB/R, para. 337 et seq.

influence when assessing compliance of technical standards and regulations with the TBT.

1.4.2. LABELLING

Labels aim to ensure that consumers are provided with further information about marketed products. In the energy sector, it has been common to see labels highlighting the energy efficiency of some products, showing, for example, the energy consumption of certain appliances or the GHG emission levels of a vehicle. Another example of labeling is the Classification, Labelling and Packaging Regulation (EC 1272/2008), a European standard that complements the REACH and affects the entry of oil and fuel derivatives into the EU.

By providing consumers with more information, labels can influence their preferences, thus modifying the conditions of competition in the market. Hence, labels are also regulated by the TBT Agreement, and may be mandatory (based on technical regulation) or voluntary (based on technical standard). With the growing environmental concerns, the use of ecolabels by governments, industries, and non-governmental organizations is growing, thus raising concerns about the barriers to trade that these labels may cause.

Box 17: Ecolabels

Ecolabels are labeling systems generally intended for foodstuffs and consumer products, including energy. It is a kind of sustainability measure targeted at consumers, and aims to facilitate the identification of environmental criteria applied to foodstuffs and products. This type of labeling may contain information on GEE emissions, use of renewable energy in production, among others.

Private initiatives already accept ecolabeling as a product differentiation criterion targeting the final consumer. Some European shoe companies already adopt seals attesting to production based on the use of renewable energy in their facilities and renewable energy supplies in distribution

centers. Such measures may be followed also by governments, as in the English initiative called the Carbon Reduction Label. This initiative was launched in the United Kingdom in 2007, with the goal of helping consumers identify companies that adopt policies to reduce GHG emissions in their production and in the provision of services, and is reproduced today by at least 19 countries⁹⁶.

WTO Members generally agree that labeling, when voluntary, is a fair, transparent, and legal means of product differentiation, in addition to achieving the objective of informing consumers. However, according to the preamble of the Agreement on TBT, labeling cannot serve as deceptive pretext for creating unnecessary obstacles to international trade.

Thus, it is important to monitor how the ecolabels created affect the energy sector, in order to identify any labels that may constitute unjustified barriers to international trade.

1.4.3. ECT

As seen earlier, the ECT applies, in general, WTO rules on goods. However, the Treaty provides for some exceptions to the incorporation of WTO rules with respect to technical barriers:

ANNEX W – Exceptions and rules governing the application of the provisions of the WTO Agreement (in accordance with article 29(2)(A))

(A) Exceptions to the Application of the Provisions of the WTO Agreement. The following provisions of the WTO Agreement shall not be applicable under Article 29(2)(a):

(...)

(v) Agreement on Technical Barriers to Trade Preamble (paragraphs 1, 8, 9)

1.3 General Provisions

(...)

11 Technical assistance to other Parties

12 Special and differential treatment of developing countries

⁹⁶ More information available at: <http://carbon-label.co.uk/>.

The exceptions listed in the ECT in relation to TBT only deal with provisions related to the institutional structure of the WTO, the Contracting Parties' reciprocal commitment to provide technical assistance, and special treatment of developing countries. Therefore, it can be said that the main rules of the TBT apply also to Contracting Parties to the ECT.

1.5. TRADE IN ENERGY SERVICES

The multilateral regulation of services was only agreed upon at the conclusion of the Uruguay Round (1986-1994), with the GATS.

The GATS was designed in order to ensure and enhance the transparency and predictability of rules and regulations relevant to the services sector, while aiming to promote the liberalization of the sector through successive rounds of negotiations among WTO members⁹⁷.

The obligation under the GATS can be classified into two major groups: (i) general obligations that apply directly and automatically to all members and service sectors (MFN and transparency obligations), and (ii) obligations applicable only to the sectors expressly specified in the lists of individual commitments of each Member (obligations on market access and National Treatment).

The provisions of the GATS apply to measures affecting trade in services (Article I.1). The concept of services includes those provided in any sector, except for public services, which, in turn, include services provided on a non-commercial, non-competitive basis [Article I.3 (b) (c)].

Market access under the GATS is divided into four modes:

- Mode 1 - cross-border trade, when the service is provided from the territory of one Member into the territory of another Member;
- Mode 2 - consumption abroad, when the consumer moves from the country of origin to the territory of a Member where the service provider is;

⁹⁷ UNESCAP. The General Agreement on Trade in Services: An Introduction. Document 3776.4, March 2006. Available at: http://www.unescap.org/tid/projects/negoservice_introgats.pdf. Last accessed June 18, 2013.

- Mode 3 - commercial presence abroad, when a legal entity settles in a foreign country to provide the service, and
- Mode 4 - temporary movement of natural person, when an individual moves, for a limited time, to a foreign country to provide a service.

In the framework of the WTO Agreements, there are two types of lists that the Parties may submit upon negotiations on a particular sector: positive and negative. In the positive list, only the sectors indicated by each Member are subject to the negotiated rules. In the negative one, on the contrary, the rules apply to all sectors not indicated by the Members on their lists.

The liberalization of services in the GATS occurs in a progressive manner, exclusively through a positive list of commitments. In other words, countries place on their list of commitments only sectors that will be subjected to trade liberalization, and those that are not present cannot be covered by any other agreement they will sign. It is emphasized that market access (Article XVI) and National Treatment (Article XVII) obligations must be observed according to the terms, limitations and conditions agreed in those lists of commitments⁹⁸.

Once commitments regarding market access are made, and unless exceptions have been included in the List of Commitments, Members are prohibited from adopting limitations on: (i) the number of service suppliers, (ii) the total value of transactions carried out, (iii) the total number of service operations, (iv) the total number of natural persons that may be employed in a particular service sector, (v) measures which restrict or require specific types of contractual arrangements or joint ventures through which a service supplier may supply a service, and (vi) the participation of foreign capital (Art. XVI.2).

Aiming to increase commitments related to energy services, some Members have proposed the preparation of a *Reference Paper*⁹⁹ in the

⁹⁸ In the negative list, in turn, countries only present sectors that will not be subject to the rules applied in the energy sector. This means that the rules are automatically applied to all sectors, activities, or measures that are not included in a given list of commitments.

⁹⁹ Reference paper: set of regulatory principles binding only upon members who commit themselves to the document by attaching it, whether fully or partially, to their List of Commitments.

same manner as already adopted in the telecommunications industry¹⁰⁰. The Reference Paper for the service sector would include a regulatory framework to ensure: (i) transparency in the adoption and implementation of rules, regulations and technical standards, (ii) non-discriminatory access by third parties to transport networks and other infrastructure essential to the trade in energy services, (iii) the establishment of independent supplier regulators, (iv) non-discriminatory and timely availability of relevant data on energy transportation and transmission, and (v) requirements that would prevent the implementation of anticompetitive practices within the energy services trade¹⁰¹.

Although there still is not a Reference Paper for the energy sector, Members remain free to assume additional commitments in connection with energy services, as it has already been noted in the List of Commitments agreed to by Ukraine in its accession protocol.

The National Treatment obligation should apply to services and service providers originating from other Members in respect to all measures related to trade in services in the sectors included in the List of Commitments of each Member (Art. XVII.1).

Regarding the ownership of natural resources, it is widely recognized that States have sovereignty over natural resources located within their territory, including those found in their territorial sea¹⁰². In regards to energy resources, only the government has the final say on the exploration, production, and development of resources, on whether there will be participation of private actors, and regarding which contractual arrangements will be used in the development of the resource.

A monopoly supplier of a service, within the context of the GATS, re-

fers to any person, public or private, which in the relevant market¹⁰³ of a Member is authorized to act as the sole supplier of that service [Article XXVIII (h)]. Article VIII (1) provides that monopoly suppliers cannot act in a manner inconsistent with MFN and other specific obligations, while Paragraph 2 stipulates that Member States shall ensure that such a supplier does not abuse its dominant position¹⁰⁴ in other sectors that are open to competition.

Article IX, in turn, refers to business practices that may be restrictive of competition but do not fall under Article VIII. Should trade restrictive practices be identified, the Article provides that Members shall enter into consultations, but does not establish any other obligations related to anti-competitive business practices.

For trade in services, the WTO uses the Services Sectoral Classification List (W/120)¹⁰⁵, which consists of a list of 12 sectors and 150 subsectors based on the UN Central Product Classification (CPC)¹⁰⁶, with the purpose of serving as a reference tool for Members, who are encouraged to use it in order to give homogeneity to sectoral commitments made¹⁰⁷.

None of the above instruments provides a single section on the classification of energy services. At the time of the Uruguay Round, because the energy sector was an area dominated by the presence of the State, it was not considered a priority, mainly due to the fact that it involved

¹⁰⁰ Additional commitments were attached to the GATS through two different documents: the Annex on Telecommunications and the Regulatory Reference Paper on Basic Telecommunications.

¹⁰¹ See proposals submitted by the U.S. (S/CSS/W/24), Japan (S/CSS/W/42/Suppl.3) and Norway (S/CSS/W/59) to the Council on Trade in Services.

¹⁰² Territorial sea is a belt of coastal waters that extends 12 nautical miles (22 km) from the coast of a State and that is considered part of the sovereign territory of that State. Within the territorial sea, the coastal State has sovereign rights identical to those enjoyed within its territory and internal waters to exercise jurisdiction, apply its laws and regulate the use and exploitation of resources. However, foreign civilian and military vessels have a “right of innocent passage” through the territorial sea, provided they do not violate the laws of the coastal State or constitute a threat to its security.

¹⁰³ A market is determined by a product and the geographical area in which it is produced or marketed. The relevant market of a product comprises all those products and/or services the consumer and/or user considers interchangeable or substitutable by reason of their characteristics, price or intended use. The relevant geographic market comprises all areas in which producers or sellers of the product compete under equal competition conditions. The sum of the two elements corresponds to the relevant market of a Member.

¹⁰⁴ It is understood that a company abuses its dominant position when it behaves in such a way as to influence the structure of a market where, as a result of the very presence of the company in question, the degree of competition is weakened, with the resulting effect of hindering, through methods different from those which condition normal competition in products or services, the maintenance of the degree of competition still existing in the market, or the growth of that competition.

¹⁰⁵ WTO. Services Sectoral Classification List. Note by the Secretariat. MTN.GNS/W/120, July 10, 1991.

¹⁰⁶ COSSY, M. Energy Services under the General Agreement on Trade in Services. In: SELIVANOVA, Y. (ed.). Regulations of Energy in International Trade Law: WTO, Nafta and Energy Charter. USA: Kluwer Law International, 2011. P.149-179, p. 152.

¹⁰⁷ *Ibid.*

sensitive activities for all Members, such as those related to energy distribution and transportation via pipelines. Only three subsectors of the CPC and the W/120 explicitly refer to energy: (i) mining [W/120 (1.Fh), CPC (883 +5115)], (ii) energy distribution [W/120 (1.Fj), CPC (887)], and (iii) transportation of fuels [W/120 (11.Ga), CPC (7131)].

Services related to mining were covered by services supplied in oil and gas fields; also included are services incidental to the provision and exploitation of mineral resources, as well as mineral exploration techniques and geological surveying.

Energy transportation, transmission and distribution services are those related to the transport of crude oil, refined petroleum products, gaseous fuels, electricity, steam and hot water for domestic, industrial, and commercial use, among others. Activities in this sector include power management and monitoring services and central network control services¹⁰⁸.

In addition to services inherent to the energy sector, there is also a wide range of energy-related services that can be found in other subsectors of the W/120 and CPC Classifications, such as those pertaining to commercial, environmental, financial, engineering, construction, management consulting, distribution, and transportation services. In some cases, the definitions contained in the UN Classification explicitly refer to related activities, such as construction of long-distance pipelines and power lines; construction, installation and/or maintenance of drilling equipment; services for pumping stations; liquid or gas storage services; services related to testing and analysis of chemical and biological properties of soils and minerals; management consulting services; repair services incidental to metal products, machinery and equipment etc¹⁰⁹.

Although the W/120 and CPC classification lists include most of the relevant services to the energy supply chain, some energy services still do not fall under any of their existing categories, for example, wholesale electricity trade, retailing services related to electricity, natural gas, steam and hot water, and services related to energy metering and billing¹¹⁰.

¹⁰⁸ WTO. Energy Services. Council for Trade in Services, Background Note by the Secretariat. S/C/W/311, 2010, Para. 44.

¹⁰⁹ Ibid., Para. 46

¹¹⁰ Ibid., Para. 47.

Zarrilli highlights a few practical problems arising from the fragmentation and non-exhaustive classification of the energy services sector. According to him:

First of all, considering that the energy sector consists of a chain of interrelated activities, an energy services supplier may need market access in a number of relevant services sectors to adequately provide his/her service. As these services are spread throughout the classification system, the actual access conditions in a given market may be unclear and create unpredictability regarding the actual possibility of delivering the energy service effectively.¹¹¹

Given the framework of linked services, there is a need for reviewing and updating the W/120 list in view of the evolution of the market.

In the absence of an official classification relating to energy services, WTO Members have established a framework for cooperation that includes the need to agree on significant commitments, based on the CPC list, in all activities related to the sector, including oil and gas. Furthermore, they stressed the need to ensure access to energy, security of energy supply, and protection of consumers and the environment¹¹².

Members emphasized the need to compile classifications relating to the energy service chain (both those contained in the existing classification mechanisms - W/120 and CPC - as well as the new classifications proposed during the round of negotiations) to facilitate negotiation in the energy services sector¹¹³.

¹¹¹ ZARRILLI, S. International Trade in Energy Services and the Developing Countries. In: UNCTAD, Energy and Environmental Services: Negotiating Objectives and Development Priorities. UNCTAD/DITC/TNCD/2003/3, 2003, pp. 23-79; pp. 47-48.

¹¹² WTO. Report by the Chairman to the Trade Negotiations Committee. TN/S/23, November 28, 2005, p. 17.

¹¹³ See: WTO. Communication from the European Communities and their Member States, Council for Trade in Services – Special Session, S/CSS/W/60; Communication from Canada Council for Trade in Services – Special Session, S/CSS/W/58; Communication from Venezuela, Council for Trade in Services – Special Session, S/CSS/W/69; Communication from Japan, Council for Trade in Services – Special Session, S/CSS/W/42 e S/CSS/W/42/Suppl.3; Communication from the United States, Council for Trade in Services – Special Session, S/CSS/W/24; Communication from Norway, Council for Trade in Services – Special Session, S/CSS/W/59.

1.5.1. ENERGY TRANSMISSION AND TRANSPORTATION

The energy sector, strategic for guaranteeing national security, has been traditionally dominated by state-owned enterprises and heavily regulated by the State. Cross-border energy transportation and distribution services have long been considered natural monopolies¹¹⁴, due to the impossibility of being carried out in a competitive context. The high investments required for the activity made competition economically unfeasible, and the sector had to be operated by a single company as a way to increase economic efficiency and benefit consumers without considering State interests of any other kind¹¹⁵.

Recently, there has been a gradual change in the tradition of vertical integration of the energy sector. This is because, in addition to technological advances relevant to the sector, added to the context of economic globalization and regional integration, only in recent decades has it been demonstrated that the unbundling of the energy sector was not only possible, but could also be advantageous from the economical standpoint, especially in terms of energy security, flexibility, and quality of power supply¹¹⁶.

As Melly mentions, the unbundling of the energy sector must be accompanied by structural adjustments involving regulatory reforms, introduction of competition in the energy segment, and changes in the market structure. Structural changes, in turn, must be made by breaking up vertically integrated firms into various smaller components, so that new entrants may stand on equal footing with them, in addition to limiting the potential for

¹¹⁴ Monopoly describes a situation in which two characteristics are observed: (i) the non-existence of close substitutes, and (ii) barriers to the entry of similar products on the market. The non-existence of close substitutes causes the lack of competition between substitute goods, while barriers to entry are the natural or legal restrictions that protect a company from potential competitors. There is a natural monopoly when the natural barriers to the entry of a new product allow the existence of an industry where economies of scale make a single company supply the entire market at the lowest cost possible. PARKIN, M. *Economía*. 8th ed. New York: Addison Wesley, 2009, pp.258-259.

¹¹⁵ WÄLDE T. W.; GUNST, A. J. *International Energy Trade and Access to Energy Networks*. In: UNCTAD. *Energy and Environmental Services: Negotiating Objectives and Development Priorities*. UNCTAD/DITC/TNCD/2003/3, 2003, pp. 118-163; p. 124.

¹¹⁶ *Ibid.*, p. 119.

abuses by a monopoly¹¹⁷.

According to the author, unbundling brings about a shift from a market characterized by few service providers to one with a favorable environment for private sector participation. The removal of price controls and the introduction of a greater number of participants and diversified sources of investment in the sector generally lead to increased competition and the provision of services of higher quality at lower prices.¹¹⁸

One of the criteria that leads to the success of regulatory reform programs is a large number of potential new entrants, with domestic and foreign participation. In order to avoid foreign companies from being subjected to discriminatory treatment in relation to national companies operating in the same area, it is necessary to create exclusive international regulations for the energy sector so as to ensure balance in the industry, consistently with this new reality.

1.5.2. SERVICES RELATED TO THE ENERGY SECTOR

It is not always easy to distinguish between trade in goods and in energy services, as previously seen, and a consensus on what the comprehensiveness of the so-called “energy services” would be has not been reached so far. The energy production chain, which includes all services involved from the extraction of raw feedstock or the construction of hydroelectric plants to the distribution of the final product, is not homogeneous for all energy goods, since the production process of each one of them requires the performance of different types of activities.

Energy services can be divided into core energy services, which are considered to be an essential part of the supply chain of the industry, and non-core energy services, which support the value chain but are not inherent within it¹¹⁹.

¹¹⁷ MELLY, C. *Electric Power and Gas Market Reform and International Trade in Services*. In: UNCTAD. *Energy and Environmental Services: Negotiating Objectives and Development Priorities*. UNCTAD/DITC/TNCD/2003/3, 2003, pp. 164-177, p. 167.

¹¹⁸ *Ibid.*

¹¹⁹ TACOA-VIELMA, J. *Defining Energy Services for the GATS: An Issue Under Discussion*. In: UNCTAD. *Energy and Environmental Services: Negotiating Objectives and Development Priorities*. UNCTAD/DITC/TNCD/2003/3, 2003, pp. 70-83, pp. 78-79.

Services relevant to the value chain of the main energy products will be defined below, according to definitions in authoritative sources of international regulation.

1.5.2.1. ELECTRICITY

Regarding the generation of electricity, differentiating between goods and services is particularly complex, since it is a product that exhibits characteristics inherent both in goods, once it has a similar function to products such as oil and gas, and in services, given the impossibility to store the power generated and, therefore, the need to produce it on demand.

Although there is no consensus on their classification, some Contracting Parties to the GATT 47 and, later, WTO members came to recognize electricity as good, also assuming tariff commitments in the sector. It should be emphasized, however, that the classification of electrical energy in the HS under heading 27.16 remains an optional sector, and it is up to States alone to decide on the classification of the electrical energy sector as a good for tariff purposes.

It should be noted further that the WTO jurisprudence, in the *Canada - Periodicals*¹²⁰, *EC - Bananas III*¹²¹, and *China - Publications and Audiovisual Products*¹²² cases, points to the understanding that the same commercial activity may be regulated by both the GATT 94 and the GATS¹²³.

Box 18: Electricity Generation, Transmission and Distribution

The electric energy sector consists of three interrelated functions: generation, transmission and distribution.

¹²⁰ WTO. Appellate Body Report: Canada – Periodicals. WT/DS31/AB/R, Para. 449-465.

¹²¹ WTO. Appellate Body Report: EC – Regime for importation, Sale and Distribution of Bananas (EC – Bananas III). WT/DS27/AB/R, Para. 221.

¹²² WTO. Appellate Body Report: China – Publications and Audiovisual Products. WT/DS363/AB/R, Para. 193-194.

¹²³ MARCEAU, G. The WTO in the Emerging Energy Governance Debate. In: PAUWELYN, J. (ed.). *Global Challenges at the Intersection of Trade, Energy and the Environment*. Geneva: Centre for Trade and Economic Integration, 2010, p. 26.

Generation is the conversion of primary energy into electrical energy, while transmission and distribution are activities performed from high or low voltage grids.

Transmission refers to the transportation of electricity through high voltage wires, also including the management of dispersed generators on the grid, so as to maintain the appropriate frequency and voltage for proper functioning of the system, from generators to distribution companies and large end-users (industry). The transmission function also includes the interconnection of electricity grids, which can occur even in cross-border transactions.

Distribution refers to the transport of energy through low-voltage grids, including marketing and distribution to final consumers. Electricity supply corresponds to the sale of electric energy to final consumers, including metering, billing and marketing, at both wholesale and retail levels²². Because transmission and distribution are considered as services, they are subject to the Agreement whenever they are performed independently, i.e. not by an exclusively State-owned company.

Until the mid-1980s, the electricity sector was comprised of vertically integrated state-owned enterprises that held a monopoly position in a particular region and were responsible for all activities related to the sector. Several countries then began fostering competition in their electricity sectors; these reforms were facilitated mainly by technological innovations that decreased the fixed costs of power generation and by the development of communication technologies that facilitated coordination among electricity suppliers¹²⁴.

The unbundling and privatization of the electricity sector allowed the creation of ancillary services, provided by private suppliers, related to the construction, maintenance and operation of generation plants; the construction, expansion, maintenance and operation of transmission and distribution networks; the creation of wholesale and retail electricity markets; the installation, metering and billing of electricity etc.¹²⁵

¹²⁴ WTO. Energy Services. Council for Trade in Services, Background Note by the Secretariat. S/C/W/311, 2010, Para. 30.

¹²⁵ WTO. Energy Services. Council for Trade in Services, Background Note by the Secretariat. S/C/W/311, 2010, Para. 32.

Electrical energy transmission and distribution activities are still considered natural monopolies in certain regions, which makes access to transmission networks, where available, essential to allow the entry of new suppliers into the market. According to Zarrilli, planned reforms for the sector should include some degree of separation between management of transmission networks and electricity generation, since the absence of mechanisms for the separation of sectors encourages monopolistic players to keep the privileges of access to transmission networks reserved for their own transactions.

The lack of transparency of national regulatory systems, coupled with monopolistic market structures, can create obstacles to trade in electricity-related services. Barriers concerning the cross-border supply of electricity are usually those related to lack of access, or discriminatory access, to transmission and distribution networks. With regard to barriers related to commercial presence, the following can be identified: exclusive rights and monopolies; legal restrictions on doing business; restrictions on foreign investment; obscure licensing and request approval systems; restrictions on primary energy imports; restrictions on the entry of equipment and tools necessary to provide the service, etc. As to the presence of foreigners in the territory, barriers can be found both in relation to the entry of service managers and professionals in general as well as in the formulation of arbitrary criteria for the approval of residency and nationality applications¹²⁶.

1.5.2.2. OIL AND GAS

Among the services relevant to the value chain of oil and derivatives are upstream services, required for oil E&P, and downstream services, related to processing, refining, storage, transportation, supply and distribution¹²⁷.

The value chain starts with exploration management services and

¹²⁶ Ibid.

¹²⁷ MUSSELLI, I.; ZARRILLI, S. Oil and gas services: market liberalization and the ongoing GATS negotiations. In: *Journal of International Economic Law*, Vol. 2. Oxford: Oxford University Press, 2005, pp. 551-581, p. 554.

geological and geophysical surveying, with the purpose of locating and accessing resources. Next, the well drilling phase begins, followed by cementing, casing and pipe laying services, construction of drilling equipment, engineering services, among others. Finally, there are also services related to waste management and control, repair and decommissioning of wells¹²⁸.

The exploration and production of natural gas are closely linked to the exploration and production of oil, involving similar production structure and activities. The gas transport and distribution sectors, however, differ from the oil sector, being more similar to the electricity sector.

Gas is usually transported through pipelines. But when it comes to overseas transportation, it may take the form of LNG, which allows it to be transported by ships.

Gas transportation activities involve: (i) the bulk purchase of natural gas, normally under long-term contracts with gas suppliers, (ii) the transport of gas via high-pressure, high-capacity pipelines from the point of purchase to the main areas of demand, (iii) the storage of natural gas, and (iv) the bulk sale of gas to distribution companies. Gas distribution activities, in turn, involve the transportation of gas through low-pressure distribution networks to final consumers¹²⁹.

Considering that gas transmission and distribution are still subject to natural monopolies, the regulation of the sector started to focus on preventing abuses of monopoly position, which means that companies responsible for pipelines must assure suppliers open, non-discriminatory access to transportation networks. Other elements necessary for creating a competitive policy in the sector include the establishment of an independent regulator, regulatory transparency, safeguards to prevent the adoption of anti-competitive behavior, and an institutional dispute settlement mechanism¹³⁰.

¹²⁸ WTO. Energy Services. Council for Trade in Services, Background Note by the Secretariat. S/C/W/52, 1998, Para. 10.

¹²⁹ WTO. Energy Services. Council for Trade in Services, Background Note by the Secretariat. S/C/W/52, 1998, Para. 23.

¹³⁰ Energy Services. Council for Trade in Services, Background Note by the Secretariat. S/C/W/311, 2010, Para. 15.

1.5.2.3. COAL

Coal is the most abundant fossil fuel, and is also the cheapest and most used energy source in many countries.

Coal production involves services related to overburden removal, drilling, tunneling, well drilling, installation of ventilation control equipment etc. Coal transportation and distribution can be carried out by means of highways, railways, pipelines and ships, the choice generally being dependent on the distance to be traveled. The transmission and distribution stage represents a significant part of the final price of coal; having a competitive and highly regulated transportation sector is an important factor to be considered to foster trade in the coal sector¹³¹.

1.5.2.4. RENEWABLE ENERGY

Renewable energy sources are those resulting in the production of energy from sunlight, wind, geothermal heat, tides, biomass and hydropower. The renewable energy sector involves different types of services, such as those related to architecture, engineering, construction, technical testing and analysis, management consulting, research and development, environmental monitoring and environmental impact assessment, among others¹³².

Renewable energy sources often are not considered competitive when compared to conventional sources, and their development may depend on public support, mainly in the area of research and development (R&D). This imbalance can be mitigated through mechanisms such as regulation, supervision, and imposition of restrictions designed to reverse the implicit and explicit incentives to their use, enabled mainly by the offering of subsidies and the “internalization” of the negative externalities arising from

¹³¹ WTO. Energy Services. Council for Trade in Services, Background Note by the Secretariat. S/C/W/52, 1998, Para. 16.

¹³² WTO. Energy Services. Council for Trade in Services, Background Note by the Secretariat. S/C/W/311, 2010, Para. 19-24.

the production of other energy sources¹³³. However, the means listed herein may result in barriers to trade in Environmental Goods and Services (EGS), and even violate the rules devised to regulate multilateral trade.

Because of the importance of the adopted environmental policies that can directly influence international trade in EGS, the main problems related to the topic, as well as the rules applicable to the renewable energy sector, will be discussed in greater depth in a separate chapter.

1.5.3. ECT

During negotiations on an amendment to the ECT, the incorporation of the provisions of the GATS was discussed. Given that the issue was too complex and would require more time for reflection, the Contracting Parties to the ECT did not adopt any of the provisions of the GATS.

Despite the fact that no rules were designed to regulate the energy services sector, it is not outside the scope of the Treaty. Article 1(5) of the ECT gives a broad definition of “Economic Activity in the Energy Sector”, which includes activity concerning the exploration, extraction, refining, production, storage, land transport, transmission, distribution, trade, marketing, or sale of Energy Materials and Products¹³⁴.

Moreover, it can be said that, through its provisions on investment and movement of skilled workers, the ECT also regulates, though indirectly, two of the four Modes of trade in energy services: through commercial presence and through presence of natural persons (Modes 3 and 4 of GATS, respectively)¹³⁵.

¹³³ Externalities are the effects of the activities of production and consumption that are not reflected directly in the market, and so becoming the possible cause of economic inefficiency. Negative externalities occur when the action of a Party imposes costs on the other. According to Pindyck, when a company does not consider the harms associated with negative externalities, the result is an excessive and unnecessary social costs, which can distort investment decisions and consumption. PINDYCK, R. S.; RUBINFELD, D. L. *Microeconomia*. 7th ed. São Paulo: Pearson Education do Brasil, 2010, pp. 575-577.

¹³⁴ ECT, Energy Charter Treaty: A Reader’s Guide, Brussels, p. 17

¹³⁵ ECT, Energy Charter Treaty: A Reader’s Guide, Brussels, p. 17

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2. ENERGY TRANSIT

Energy transit often occurs through pipelines and electricity transmission lines, which extend for thousands of kilometers and can cross a number of countries in a process that involves players of different nationalities. Thus, it becomes necessary to regulate the issue at the multilateral level so that investments and trade can move forward without the presence of uncertainties and risks to stakeholders.

2.1. ARTICLE V OF THE GATT 94

Article V of the GATT 94 does not refer specifically to the transit of energy goods, but to the transit of all goods covered by the WTO multilateral system. Because energy goods are mostly contained in Chapter 27 of the HS (mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes), they are considered goods in the context of the GATT 94, thus being subject to the provisions of Article V^{136,137}.

Freedom of transit is one of the guiding principles of the international economic system, and Article V.2 expressly ensures the exercise of such right through the territory of each WTO Member “via the routes most convenient for international transit, for ‘traffic in transit’ to or from the territory of other contracting parties”.

¹³⁶ Sectors 27.09 (Petroleum oils and oils obtained from bituminous minerals, crude), 27.10 (Petroleum oils and oils obtained from bituminous minerals, other than crude), 27.11 (Petroleum gases and other gaseous hydrocarbons), 27.16 (Electrical energy - optional heading), 2844.50 (Spent - irradiated - fuel elements, cartridges - of nuclear reactors), 38.26 (Biodiesel and mixtures thereof, not containing or containing less than 70% by weight of petroleum oils or oils obtained from bituminous minerals).

¹³⁷ As previously mentioned, electricity is classified in the HS as an optional sector, which makes the application of Article V to this sector less obvious. The proposals made during negotiations on trade facilitation in the Doha Round specifically mention goods transported via fixed infrastructure, including electricity transmission lines. This suggests that Members consider, in general, that electricity is a good, a fact that allows the interpretation that Article V of the GATT 94 is also applicable in this case. AZARIA, D. Energy Transit under the Energy Charter Treaty and the General Agreement on Tariffs and Trade. In: *Journal of Energy & Natural Resources Law*. Vol. 27 (4), 2009, pp. 559-596, pp. 565-566.

Box 19: Freedom of Transit

The concept covers goods, ships, and other means of transport in transit in the territory of a Member; traffic in transit of goods occurs whenever:

“(...) the passage across such territory, with or without trans-shipment, warehousing, breaking bulk, or change in the mode of transport, is only a portion of a complete journey beginning and terminating beyond the frontier of the contracting party across whose territory the traffic passes” (Article V.1).

In the *Colombia - Ports of Entry* case²³, there was a discussion about the meaning of the term ‘freedom of transit’. According to the Panel’s report, all goods originating in any Member that are in international transit should be allowed to enter the territory of the transit country whenever they are destined to the territory of a third Member. Moreover, it stated that non-discriminatory treatment should ensure identical levels of access and equal conditions to all WTO Members.

This restriction limits the obligation to guarantee freedom of transit only to routes considered most convenient for international transit. This means that the obligation resulting from said provision is not satisfied by merely ensuring access to simply any transit route: access must be granted to the route which qualifies as most the convenient one for international transit. However, determining who has the authority to define what is the most convenient route for international transit and what determines this convenience, as mentioned in Article V.2, becomes a controversial matter. Still there is no jurisprudence from the DSB defining the elements that make up such convenience, and those Members that discuss it avail themselves of the legal loophole to define the most convenient route on a case-by-case basis.

The representatives of Ukraine, during the negotiations for its accession to the WTO, argued that Article V.2 of the GATT 94 guarantees freedom of transit through the most convenient routes¹³⁸, confirming that Members have the right to impose the most convenient route. The WTO Secretar-

¹³⁸ WTO. Report of the Working Party on the Accession of Ukraine to the WTO. WT/ACC/UKR/152, January 25, 2008, Para. 362-3.

iat, in a background note produced for the Negotiating Group on Trade Facilitation (NGTF)¹³⁹, ruled that Members were not allowed to change the route after it was considered most convenient for international transit. However, this statement does not apply to cases in which transit must be suspended or diverted for humanitarian or security reasons¹⁴⁰.

It is important to note that, with regard to energy transit, the economic operator of energy transport facilities can or cannot coincide with the State itself. On the one hand, in cases in which the economic operator is a private entity, it is plausible that the State may want to retain the right to determine the most convenient route for energy transit. On the other hand, in cases where a state-owned enterprise is the economic operator, there is no reason to delegate to the State the authority to determine the route, as the enterprise already acts in its interest.

Faced with this impasse, the EU, in the context of the NGTF, proposed to operationalize the commitment to grant freedom of transit through the most convenient routes for international transit. One of the ways suggested for achieving this goal was to leave the choice of route and means of transport to the economic operator¹⁴¹. Thus, even if other routes were available in the transit territory, or if the transit State decides to change the previously established transit route, the choice would not be possible because the convenience should be evaluated from the perspective of the international transit of goods¹⁴².

It should also be considered that Article V does not require WTO Members to expand their traffic capacity or allow for the construction of infrastructure where there is limited capacity to meet all the transportation demands. It is worth asking how to proceed when facing such a limitation. According to Ehring and Selivanova, freedom of transit of energy

goods was linked both to non-discriminatory use of the existing infrastructure on a particular stretch as well as to the possibility of creating additional capacity if necessary¹⁴³.

Article V.2, however, seems to suggest that freedom of transit should be safeguarded in accordance with the installed capacity in the territory of each Member¹⁴⁴. Also, according to Ehring and Selivanova, it is possible to disagree with the affirmation of the legal provision. The authors indicate that the limitation of the capacity available in the State may be such that it becomes impossible to comply with the principle of freedom of transit. In such cases, even if the Member is not itself obliged to build the necessary additional infrastructure, it is discussed whether, by refusing the offer of an investor that has submitted a proposal to build said infrastructure, the State would also be denying freedom of transit, which should be obligatorily granted. The debate has not yet been terminated by the WTO.

The principle of non-discrimination must be observed by WTO Members also in relation to transit of goods. Article V.2 prohibits WTO Members to act in a discriminatory way based on the flag of vessels, the place of origin, departure, entry, exit or destination, or on any circumstances relating to the ownership of goods, of vessels or of other means of transport. Article V.5 strengthens the application of the MFN principle in relation to the circumstances of the transit of goods and in relation to charges, regulations and formalities in general related to transit. In this sense, the Interpretative Note to Article V.5 limits the application of this principle, making it clear that the MFN applies only to like products being transported on the same route and under similar conditions¹⁴⁵.

Each Member is also required to accord to imported products that have been in transit through the territory of any other Member treatment no less favorable than that which would have been accorded to such prod-

¹³⁹ The Negotiating Group on Trade Facilitation is a discussion forum of the European Commission whose aim is to advance proposals and guide the position of the EU in negotiations in respect of the Doha Round on the reform of Articles V, VIII and X of the GATT 94.

¹⁴⁰ WTO. Article V of the GATT 1994 - Scope and Application. Note by the Secretariat. TN/TF/W/2, January 2005, p. 6.

¹⁴¹ WTO. Communication from the European Communities. Negotiating Group on Trade Facilitation. TN/TF/W/35, 2005. Available at: http://trade.ec.europa.eu/doclib/docs/2005/may/tradoc_123454.pdf. Last accessed June 18, 2013.

¹⁴² WTO. Article V of the GATT 1994 - Scope and Application. Note by the Secretariat. TN/TF/W/2, January 2005, p. 5-6

¹⁴³ EHRING, L.; SELIVANOVA, Y. Energy Transit. In: SELIVANOVA, Y. (ed.). Regulations of Energy in International Trade Law: WTO, Nafta and Energy Charter. USA: Kluwer Law International, 2011, pp. 49-107, p. 51.

¹⁴⁴ *Ibid.* p. 70.

¹⁴⁵ Interpretative Note regarding paragraph 5: With regard to transportation charges, the principle laid down in paragraph 5 refers to like products being transported on the same route under like conditions.

ucts had they been transported from their place of origin to their destination without going through an intermediate country (Article V.6). However, the transit State is allowed to charge fees related to shipping costs, administrative expenses and other services provided during the transport of energy materials and products.

Since the WTO Agreements are binding only on its signatories, it may be inferred that energy transit relations between Members and non-members are not covered by the provisions of Article V, i.e., it is not possible to invoke freedom of transit or use the dispute settlement system of the WTO against non-Members of the Organization.

However, in Ehring's and Selivanova's opinion, the belief that all members involved in the transport journey should be WTO Members, so that Article V can be applied, does not correspond to reality¹⁴⁶. The opinion is based on the interpretation of paragraphs 2-5 of Article V, under which only two members are required to be involved in the transport of goods: the transit country and the State of origin or destination of the goods. Thus, it would be possible to interpret the situation described in the sense that the State of origin or destination of the goods in transit does not need to necessarily be a WTO Member to benefit, though indirectly, from the protection guaranteed by the Organization¹⁴⁷.

Although the GATT 94 does not expressly regulate energy transit, the procedures for the admission of new members resulted in accession protocols that contain WTO-plus obligations also in this sector.

In the case of Ukraine's accession protocol, as this is an energy transit State, especially regarding gas pipelines connecting Russia to Europe, obligations were assumed in addition to those in Article V of the GATT 94. The commitments undertaken by Ukraine go beyond the provisions of Article V: they refer explicitly to "energy goods" and include laws and regulations relating to charges for transportation of goods in transit¹⁴⁸.

Russia, unlike Ukraine, is a State that mainly exports energy, primarily

¹⁴⁶ EHRING, L.; SELIVANOVA, Y. Energy Transit. In: SELIVANOVA, Y. (ed.). Regulations of Energy in International Trade Law: WTO, Nafta and Energy Charter. USA: Kluwer Law International, 2011, pp. 49-107, p.56.

¹⁴⁷ Idem, p. 56.

+ WTO. Report of the working party on the accession of Ukraine to the WTO. WT/ACC/UKR/152, p. 92, para. 367.

gas, and oil. In its accession protocol, it undertook to enforce laws, regulations and other measures relating to the transit of goods (including energy) by rail, road and air, in accordance with Article V of the GATT 94. It undertook also to apply charges and customs fees related to transit in accordance with said article, besides publishing all regulations governing the application of charges in this sector¹⁴⁹.

2.2. THE DOHA ROUND - NEGOTIATIONS ON TRADE FACILITATION

As previously mentioned, one of the themes on which an agreement may be reached during the Ninth Ministerial Conference of the WTO is trade facilitation, which is part of the Doha Round agenda and aims to revise, improve and clarify Articles V, VIII, and X of the GATT 94, discussing possible changes to the regulatory framework for energy transportation. It also focuses on developing provisions that encourage cooperation among Members in this sector, while ensuring special and differential treatment to developing countries as well as less developed countries¹⁵⁰.

The numerous proposals listed by Members participating in the NGTF resulted in a 2009 report, "Draft Consolidated Negotiating Text," which is currently in the 11th revised version¹⁵¹.

As to the content of Article V, the draft provides for, in its latest version, measures that increase the transparency of information related to transit of goods, directing States to publish, in a non-discriminatory manner, information relating to: (i) procedures and required forms and documents; (ii) duties and taxes imposed; (iii) restrictions or prohibitions; (iv) penalties against breaches of formalities; (v) procedures for appeal applicable

¹⁴⁹ WTO. Report of the working party on the accession of Russia to the WTO. WT/ACC/RUS/70, p. 302, para. 1161.

¹⁵⁰ EGLIN, R. The Doha Round Negotiations on Trade Facilitation. In: World Economic Forum. The Global Enabling Trade Report, 2008, pp. 35-39, p.36.

¹⁵¹ WTO. Draft Consolidated Negotiating Text. Negotiating Group on Trade Facilitation. TN/TF/W/165/Rev.11, October 7, 2011. Available at: http://docsonline.wto.org/GEN_highLightParent.asp?qu=&doc=D%3A%2FDDFD%2FDOCUMENTS%2FTF%2FTN%2FTF%2FW165R11%2E-DOC%2EHTM&curdoc=3&popTitle=TN%2FTF%2FW%2F165%2FRev%2E11. Last accessed June 18, 2013.

in response to the decisions of a given Member; and (vi) other agreements existing on the subject. Moreover, they must also make available on the internet information about the procedures related to the transit of goods, forms and documents, and other duties and charges applied in order for transit to occur through the territory of the State.

The transport of energy goods, in general, has little flexibility in relation to the maximum capacity of its infrastructure. In cases where the required transit capacity exceeds the available capacity in terms of volume or duration, a situation of capacity congestion¹⁵² ensues.

The text under negotiation also addresses ways to protect Members against overburdening transport infrastructure, a sensitive subject for the States through whose territories goods are transported.

To prevent overloading, Members generally impose restrictive measures or tariff barriers to transit, in efforts to keep their infrastructure from collapsing¹⁵³. With the objective of avoiding restrictions on the transit of goods, but given the concerns regarding the issue of congestion, the text under negotiation contains provisions suggesting cooperation among States to achieve coordination on tariffs, formalities, legal requirements and practical operations of the transit regime.

Finally, the draft states that Members are required neither to expand their transit capacity nor to allow the building of infrastructure where there is limited capacity to meet the total demands of transit of goods. Further, they will not be forced to provide access to any existing infrastructure in their territory, unless such infrastructure is open to general use¹⁵⁴, as proposed in Article 11.1(b). This article does not define what is considered general use, a subject still under debate in discussions of the Round.

¹⁵² EHRING, L.; SELIVANOVA, Y. Energy Transit. In: SELIVANOVA, Y. (ed.). Regulations of Energy in International Trade Law: WTO, Nafta and Energy Charter. USA: Kluwer Law International, 2011, pp. 49-107, pp. 97-98.

¹⁵³ EGLIN, R. The Doha Round Negotiations on Trade Facilitation. In: World Economic Forum. The Global Enabling Trade Report, 2008, pp. 35-39, p.37

¹⁵⁴ The term “general use” does not include access to infrastructure granted to third parties on a contractual basis.

2.3. ECT

In the ECT, transit is a term defined as the transport of energy goods exported from one country, crossing at least a second country, bound for a third country (so long as the transit State or the third State are Parties to the ECT) or destined for the same country of origin.

The provisions contained in the ECT related to the transit of energy goods are pioneers in the framework of international agreements for energy cooperation and extend beyond the provisions contained in the GATT 94¹⁵⁵. While the definitions contained in Article V of the GATT 94 cover all kinds of goods and means of transport, giving rise to divergences about the delimitation of energy goods, the definitions contained in Article 7(10) of the ECT are more accurate, since they refer specifically to the transportation of energy products through fixed installations¹⁵⁶, including transmission lines for electric energy, as well as equipment related to energy trading. Furthermore, Article 4 of the ECT provides on non-derogation of the provisions contained in the GATT 94 with regard to WTO Members that are also Contracting Parties to the ECT, and this is also confirmed by Article 7(8) on the treatment given to energy transit.

Article 7 of the ECT reaffirms the necessity to observe the principles of free transit, non-discrimination between the Contracting Parties, energy cooperation, and National Treatment. The obligation that there be no unjustified delays, restrictions, and excessive tariffs¹⁵⁷ is also foreseen, with the objective of establishing a balance between the sovereign interests of the States and the necessities of security and stability inherent to energy transit. Article 7(5) also defines the reach of the expression ‘transport facilities’, through which energy transit occur: high-pressure gas transmission pipelines; high-voltage electricity lines; pipelines for the transport of crude oil and oil products; pipelines for the transport of coal; and other fixed facilities for energy.

¹⁵⁵ Energy Charter Secretariat. The Energy Charter Treaty: A Reader’s Guide. Available at: http://encharter.org/fileadmin/user_upload/Publications/ECT_Guide_ENG.pdf. Last accessed June 18, 2013, p. 10.

¹⁵⁶ FATOUROS, A. An international legal framework for energy. In: Collected Courses of the Hague Academy of International Law 332. Martinus Nijhoff Publishers, 2008, p. 432.

¹⁵⁷ Articles 7(1), 7(2) and 7(3), ECT.

Another great advance of the ECT in relation to the GATT 94 is the obligation contained in Article 7(4), whereby the Parties are required to not create obstacles to the construction of new infrastructure to facilitate energy transit, in the event that the existing structure is limited. Naturally, the obligation contains exceptions. The transit state is not obligated to permit the construction or modification of equipment if this conflicts with the existing energy transport infrastructure. Furthermore, if the activity compromises the safety or efficiency of its energy system, the State will not be obligated to permit new transit or additional transit [Article 7(5)].

Even though the States have committed to use all the necessary measures to facilitate the transport of energy, a State is not obliged to make facilities available for the transport of a certain energy good if such facilities do not already exist in the territory in question. Article 7(9) guarantees the transit States discretion by permitting, within their territory, facilities, constructions, and operations for energy transport.

In relation to energy transport, Article 7(6) of the ECT foresees a fast and relatively informal conciliation mechanism. This procedure is innovative in that it forbids the transit State from interrupting or reducing—directly, or through other entities—the flow of energy materials and products during the dispute period, until the conciliation and dispute resolution efforts foreseen in Article 7(7)¹⁵⁸ are concluded.

Article 7(7), in turn, should only be applied after all relevant contractual or other dispute resolution remedies previously agreed upon by the Parties have been exhausted. The referred dispute resolution procedure has not yet been used by the Contracted Parties, which renders a deeper analysis of its practical application impossible.

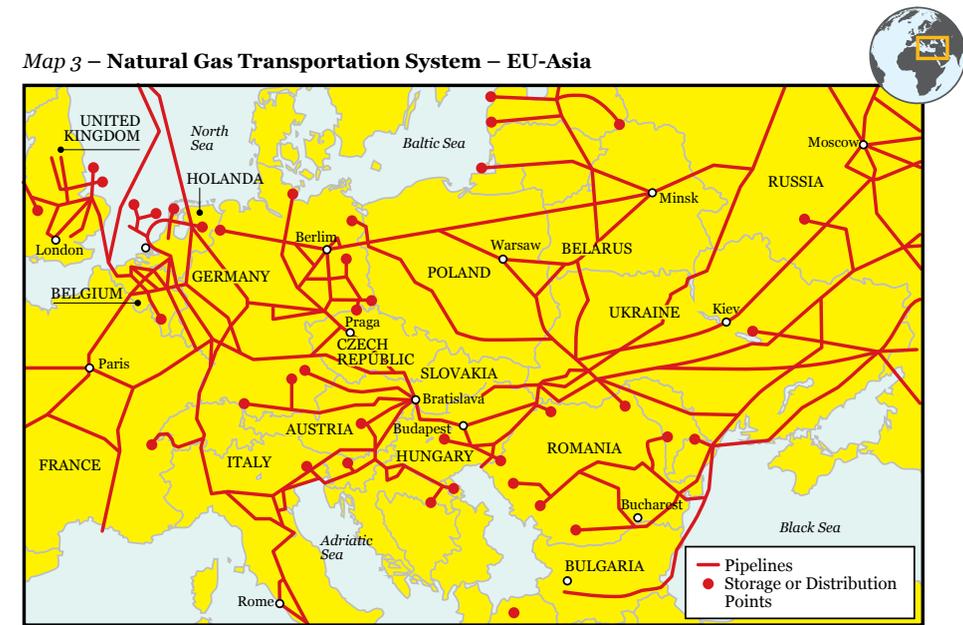
2.3.1. PROTOCOL ON TRANSIT

As seen above, Article 7 of the ECT represents the most sophisticated set of rules directed to regulate the flow of energy transport. However, after the coming into effect of the ECT, in 1998, the Contracting Parties

¹⁵⁸ Unless the contract or original agreement between the Parties expressly permits the adoption of such measures or its adoption is permitted by the conciliator appointed to resolve the dispute [Article 7(7)].

saw the necessity to elaborate new rules and deepen those already in existence. The decisive factors for this perception were the growth of strategic importance of energy transport based on fixed transportation infrastructure in the Eurasian Continent and the necessity to reduce the economic and political risks associated with energy projects that involve cross-border transit in the region¹⁵⁹.

Map 3 shows the complexity of the natural gas transport networks on the Eurasian Continent:



Source: Inogate (EU oil and gas transport co-operation programme). Prepared by FIESP.

The negotiations for the creation of a new instrument destined to regulate energy transport in a deeper manner began in 2000 and, until the present moment, have not been finalized. The Protocol on Transit, subject of the negotiations, contains a set of operating principles that covers

¹⁵⁹ KONOPLIANIK, Andrei. Transit Provisions of the Energy Charter Treaty and draft Transit Protocol. In: Energy Charter Secretariat's Conference – Energy Transit in Eurasia: Challenges and Perspectives. Brussels, October 19-20, 2004. Available at: http://www.encarter.org/fileadmin/user_upload/Conferences/2004_Oct/Konoplyanik.pdf. Last accessed June 18, 2013.

the transit of energy flows (hydrocarbons¹⁶⁰ and electricity) that cross at least two borders, looking to guarantee the security and non-interruption of this transit.

The Parties defined the available capacity of each State as:

(...) the total physical operating capacity of the Energy Transport Facilities, less the physical operational capacity (a) necessary for the fulfillment of obligations by the owner or operator of the Energy Transport Facilities under any valid and legally binding agreement relating to the transportation of Energy Materials and Products; (b) necessary for the fulfillment of any other binding obligations pursuant to laws and regulations to the extent those laws and regulations are intended to ensure the supply of Energy Materials and Products within the territory of a Contracting Party; (c) (...) necessary to account for the reasonable requirements, including forecasted requirements, for the transportation of Energy Materials and Products which are owned by the owners or operators of the Energy Transport Facilities or their Affiliates; and (d) necessary for the efficient operation of the Energy Transport Facilities, including any operating margin necessary to ensure the security and reliability of the system¹⁶¹.

Also decided was that each Contracting Party should ensure that the owners or operators of the energy transport facilities, acting within their jurisdiction, observe the principles of good faith when negotiating with other Contracting Parties or with their entities¹⁶² that request access and the use of available capacity for the transit of energy goods.

The Parties should ensure that the owners or operators of the energy

¹⁶⁰ Petroleum and natural gas are hydrocarbons.

¹⁶¹ See Article 1(2) of the Protocol on Transit, Preliminary Draft from January 2010. Available at: http://www.encharter.org/fileadmin/user_upload/document/TTG_87_ENG.pdf.

¹⁶² Article 1.3 of the Protocol gives the definition of Entities for the future treaty: "Entity" means: (a) with respect to a Contracting Party: (i) a natural person having the citizenship or nationality of or who is permanently residing in that Contracting Party in accordance with its applicable law; (ii) a company or other organization organized in accordance with the law applicable in that Contracting Party; (b) with respect to a "third state," a natural person, company or other organization which fulfils, mutatis mutandis, the conditions specified in subparagraph (a) for a Contracting Party.

transport infrastructure take the necessary measures to minimize the risks of interruption, reduction, or accidental disruption of transit; that they promptly reestablish the normal operations and immediately notify the interested Contracting Parties.

With the intention of solving the issue of regulation of access to infrastructure and to the available transit capacity, the Parties to the ECT developed, in parallel with the Protocol, non-legally binding models related to the energy transit. The Model Intergovernmental and Host Government Agreements for Cross-Border Pipelines, in its Article 25, recommends the adoption of measures that encourage investors, shippers, and operators to negotiate access to their pipeline systems with interested third-parties, should there be available capacity in these pipelines¹⁶³.

The explanatory note to the above-mentioned Article highlights that the granting of access to the energy transmission system is not always possible, thus revealing the non-binding nature of the suggested norm. It serves as an instrument for obtaining the desired result and guarantees to investors only the right to negotiate access to the transit capacity available in other States¹⁶⁴.

In the same way, there is the Model Intergovernmental and Host Government Agreements for Cross-Border Electricity Projects. In addressing the access to electric energy transmission infrastructure and its available capacity, the model proposes a text adaptable to three different situations in relation to the rights of the investor: (i) the right to negotiate third party access to the available capacity in the electricity transmission infrastructure; (ii) if there exists regulation, access guaranteed to adequate infrastructure, in accordance with the terms defined therein; and (iii) in the case of access to available capacity being administered by the entities responsible for the operation of the electricity systems and the electricity

¹⁶³ Energy Charter Secretariat. Model Intergovernmental and Host Government Agreements for Cross-Border Pipelines. 2nd edition, 2008, p.67.

¹⁶⁴ Explanatory note: The Legal Advisory Task Force (LATF) is aware that an obligation to negotiate access to available capacity is not suitable for all projects. For this reason, no such obligation has been provided here. Nevertheless, it seems to the LATF important that the Parties (particularly the Host Government) should be aware of the issue and of the various options. As an alternative, some Project Investors may wish to ensure that they have the right to negotiate access to available capacity with third parties. This is reflected in the Model host Government Agreement (HGA).

markets, the right to receive compensation in accordance with the national regulation¹⁶⁵.

In relation to situations of system congestion, Article 10 *bis* of the Protocol on Transit proposes mechanisms to aid in its management, which includes the principles of *First Come – First Served*¹⁶⁶ and *Pro Rata*¹⁶⁷, in addition to auctions, all aimed at distributing the transit capacity. The Article also proposes the creation of tariffs applied only to the congested sections, so long as they are fair, transparent, and non-discriminatory. If the system congestion lasts for an extended time, it is further recommended that investment be made in construction, expansion, extension, and/or reconstruction of facilities for the transport of energy.

The Protocol has provisions regarding the prohibition of any unauthorized removal of Energy Materials and Products in transit (Art. 6) and a strengthened system of energy metering across borders (Article 14), in addition to foreseeing the protection of international energy swap agreements.

The Protocol also has a dispute settlement mechanism analogous to that provided for in Article 27 of the ECT (Article 21), which provides States in dispute with the possibility of recourse to interstate arbitration.

¹⁶⁵ Energy Charter Secretariat. Model Intergovernmental and Host Government Agreements for Cross-Border Electricity Projects. 2nd Edition. 2008. p. 74.

¹⁶⁶ The First Come – First Served principle refers to the allocation of available capacity in the order of receipt of requests by the owner or operator of the respective energy transport infrastructure.

¹⁶⁷ The Pro Rata principle refers to the allocation of available capacity among prospective users in proportion to the transport volumes requested by them. AZARIA, D. Energy Transit under the Energy Charter Treaty and the General Agreement on Tariffs as Trade. In: Journal of Energy & Natural Resources Law. Vol. 27(4), 2009, pp. 559-596, p. 564. About the Pro Rata principle, see Article 1(6) of the Transit Protocol, Preliminary Draft, January 2010. Available at: http://www.encharter.org/fileadmin/user_upload/document/TTG_87_ENG.pdf.

Box 20: Themes in Negotiation

A few points of the Protocol on Transit are still in negotiation, consequently making adoption difficult. The most controversial themes regard: (i) the method for imposing tariffs on energy transit; (ii) the guarantee of the right of first refusal to States that have long-term contracts in the energy sector; and (iii) the clause that brings Regional Economic Integration Organizations – REIOs²⁴ into the system.

Transit tariffs are payments required by the owners or operators of the Energy Transport Facilities to permit the transit of energy materials and products²⁵. It is taken for granted in the negotiations that the tariffs should be charged in an objective, reasonable, transparent, and non-discriminatory manner, so as not to be affected by market distortions. They should also be based on operational and investment costs, including a reasonable rate of return. What does get discussed, however, is the method that should be used to determine the tariffs on energy transit.

The inclusion of the right of first refusal for energy producers that have to fulfill long-term obligations is also a subject of controversy. Contracts for supply and transit of energy are different documents that generate distinct obligations, generally of a long duration, and that do not necessarily expire on the same date. Aiming to avoid the limitation of energy supply in cases of transit capacity deficit, Russia showed itself to be favorable to the creation of a right of first refusal if the energy supply contracts do not coincide with the energy transit contracts. The EU, in general, is in favor of short-term contracts that favor competition. This deadlock between the Parties is one of the causes of the postponement in the signing of the Protocol on Transit²⁶.

Article 20 proposed on the Protocol addresses the REIOs and determines what should be understood as “area” by the Contracted Parties that are also members of a certain REIO: an area in which the treaty establishing the Regional Organization is applicable. This determination represents, for some of the States in negotiation, a relative difficulty in the distinction between the concepts of international transit and domestic transit, leading to the aforementioned difficulty in tariff determination. Furthermore, owners and operators of energy transport facilities feel insecure about the suggested scope of application of the ECT and the Protocol.

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Report of the Working Party on the Accession of Ukraine to the WTO. WT/ACC/UKR/152, January 25, 2008.

Report of the working party on the accession of Ukraine to the WTO. WT/ACC/UKR/15.

3. SUBSIDIES

WTO's Agreement on Subsidies and Countervailing Measures (SCM) considers that subsidies can be understood as the granting of a benefit based on two assumptions: (i) the existence, in the exporting country, of some form of income or price support that may contribute directly or indirectly to increase exports or reduce imports of any product; or (ii) the existence of financial assistance granted by a government or public body within the territory of a Member, which can be made through loans, grants, financing, tax incentives, provision of goods or services other than those earmarked for infrastructure, among others (Article 1, SCM).

Although the term subsidy is comprehensively defined and covers a full list of government support, it is important to note that not all subsidies may be subject to challenges under the WTO. In order to be challenged, a subsidy must meet the criterion of specificity.

A subsidy is considered specific when the granting authority, or the legislation, explicitly limits its access to only one company or group of companies, or when the subsidy is circumscribed regionally or by sectors (Article 2, SCM)¹⁶⁸.

For the SCM, subsidies are distinguished among the categories of prohibited, actionable, and non-actionable.

Prohibited subsidies are always considered specific, and generally come in two forms: (i) export subsidies, and (ii) subsidies linked to the use of domestic products – local content (Article 3, SCM). The former consist of subsidies linked, *de facto*¹⁶⁹ or *de jure*¹⁷⁰, to export performance. The latter are those linked to the preferential use of national products to the

¹⁶⁸ When the authority or the legislation establishes the criteria or conditions to regulate the eligibility for subsidy and its amount, provided that the choice is automatic, with strict observance of such criteria and conditions, the criterion of specificity does not apply.

¹⁶⁹ De facto specificity: it is possible that a subsidy, at first glance, is not specific but works in fact as specific. If there are reasons to believe that this is the case, other factors can be considered, including the use of subsidy programs for a limited number of companies, the predominant use by certain companies, the disproportional concession of large amounts of subsidies to certain companies, the way in which discretion has been utilized by the granting authority in the decision to grant a subsidy, among others.

¹⁷⁰ De jure specificity: when a subsidy is explicitly limited to a region or sector, either by the granting authority or the legislation.

detriment of imported products. It is worth noting that the condition of preferential use of national products commonly assumes the form of local content requirements, that is, a determined proportion of goods and services acquired from local suppliers for the activities of the company or industry, usually utilized with the objective of protecting or stimulating domestic industry.

Prohibited subsidies are analyzed by the DSB under a shorter deadline (fast track) and, if confirmed, should be removed, granting the Member that was harmed the right to apply retaliations. Countermeasures can also be applied to compensate for the damage caused to national producers by the import of subsidized products.

Actionable subsidies are specific subsidies whose application cause adverse effects¹⁷¹ to the interests of other Members (Article 5, SCM). In this case, should these effects be demonstrated by the plaintiff Member(s), the defendant Member shall remove the negative effects that stem from the action it has taken, or withdraw the subsidy.

The category of non-actionable subsidies was divided between non-specific and specific subsidies, following the conditions laid down in Article 8.2(a)(b)(c)¹⁷². However, this category was due to expire in 2000, when it was scheduled to be reviewed by WTO Members. Members did not reach a conclusion regarding the renewal or modification of non-actionable subsidies and thus they became inoperative.

In the energy sector, there are two main subsidy programs currently being used by governments, which will be discussed in this chapter: (i) dual pricing, applied mainly to gas and oil; and (ii) renewable energy subsidies, mainly represented by feed-in tariff (FIT) programs.

¹⁷¹ “Adverse effects” are understood as: (i) injury to the domestic industry of another Member; (ii) nullification or impairment of benefits accruing directly or indirectly to another Member; or (iii) serious prejudice to the interests of another Member.

¹⁷² Article 8.2 of the SCM determined that specific subsidies that fulfill one of the following three criteria would be considered non-actionable: (a) assistance for research activities conducted by firms or by higher education or research establishments on a contract basis; (b) assistance to an economically disadvantaged region within the territory of a Member, given pursuant to a general framework of regional development and non-specific (within the meaning of Article 2, SCM) within eligible regions; and (c) assistance to promote adaptation of existing facilities to new environmental requirements imposed by law and/or regulations, which result in greater constraints and financial burden on firms.

The AoA foresees specific rules for subsidies destined for the agricultural sector. The regulation applied to this sector will be analyzed in the following section.

3.1. SUBSIDIES IN THE ENERGY SECTOR

The rationale used to subsidize the energy sector is that countries seek to expand their sources of energy supply, given greater access to and consumption of energy are closely linked to economic growth and improved social and economic conditions of the population.

According to IEA¹⁷³, the amount of subsidies going to fossil fuels (for consumption), after the financial crisis in 2008, diminished considerably, while subsidies for renewable energy maintained an upward trend, as shown by the following table:

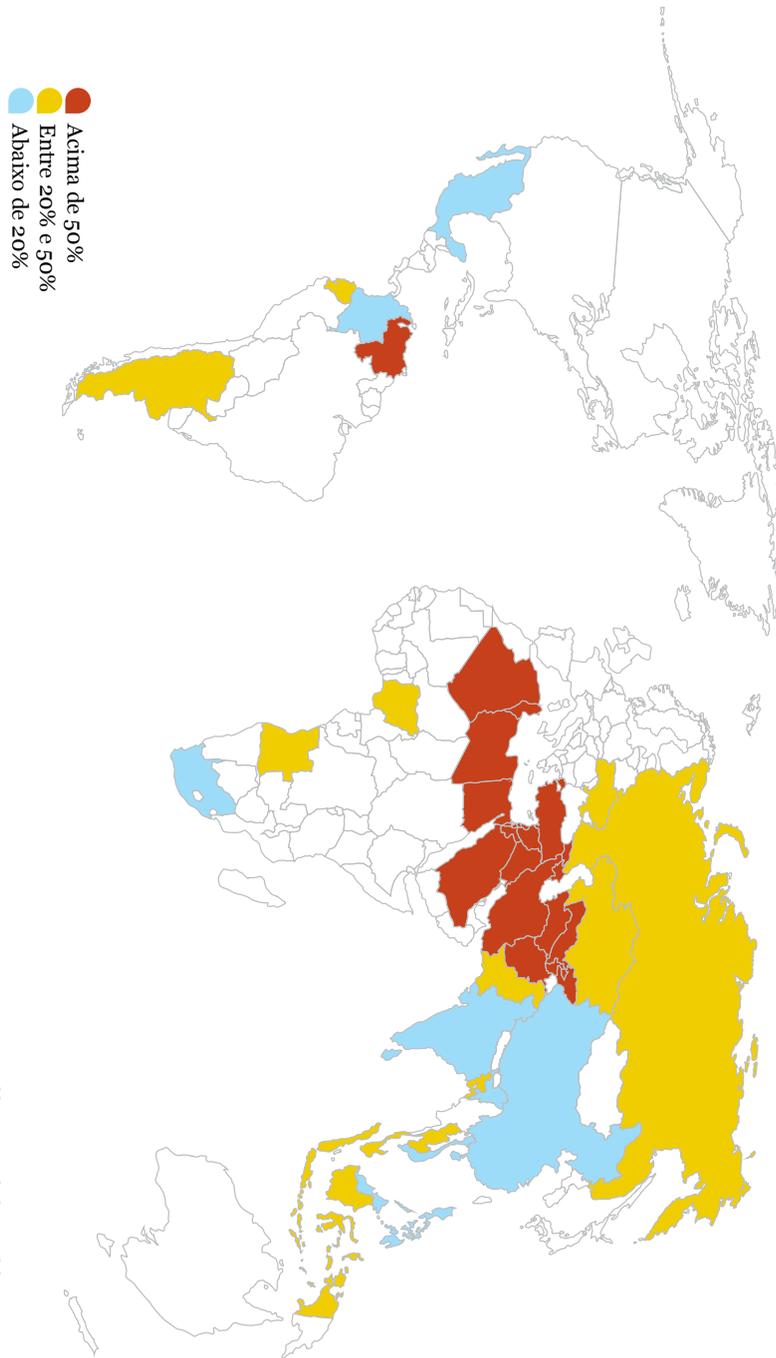
Table 2 – Estimated subsidies for the energy sector (2007-2010), in billions of dollars

	2007	2008	2009	2010
Fossil Fuels (consumption)	342	554	300	409
Oil	186	285	122	193
Natural Gas	74	135	85	91
Coal	0	4	5	3
Electricity*	81	130	88	122
Renewable Energy	39	44	60	66
Biofuels	13	18	21	22
Electricity	26	26	39	44

Source: *World Energy Outlook, 2011*.

*The consumption of fossil fuels classified as electricity represents the subsidies responsible for the reduction of tariffs for energy generated from these sources, excluding the part relating to nuclear energy and renewable energy.

¹⁷³ IEA, *World Energy Outlook, 2011*, p. 508.



Mapa 4 - Nível de Subsídios para Consumo de Combustíveis Fósseis em 2010*

Energy subsidies may aim to reduce costs, for both industrial producers and domestic consumers, and also keep the price paid for a particular energy source above market value for the producers of the sector (price support).

From the use of subsidies one can seek: (i) to reduce carbon emissions and local pollution (through the increased use of renewable energy and nuclear energy); (ii) to encourage the development of national industry and stimulate the creation of jobs in the high technology sector; (iii) to reduce dependence on foreign energy; (iv) to reduce costs of technologies, especially those related to the production of renewable energy; (v) to change and diversify the energy mix; (vi) to grant incentives for local production, among others¹⁷⁴.

Governments have adopted subsidy programs of diverse natures, and the classification given to this instrument does not always correspond to that adopted by the WTO¹⁷⁵. In 2008, UNEP classified these programs according to the table below:

¹⁷⁴ KITSON, L. et al. Subsidies and External Costs in Electric Power Generation: A comparative review of estimates. In: Research Report: Global Subsidies Initiative. Geneva: International Institute for Sustainable Development (IISD), September 2011, p. 7.

¹⁷⁵ According to Koplow, the characteristics contained in subsidy programs could be: (i) access to natural resources; (ii) cross-subsidy; (iii) direct government spending; (iv) nationalization of an energy producer or service provider company; (v) provision of information related to the energy market that would otherwise have to be purchased; (vi) loans at lower interest rates; (vii) price controls; (viii) specific requirements for the purchase of commodities, regardless of whether better choices are available in the private sector; (ix) investments in research and development, with partial or full government funding; (x) specific regulations for the sector, altering the rights and obligations of the various Parties that make up the energy market, seeking mainly to exempt some Parties of taxes; (xi) the government takes on part of the risks by providing insurance and indemnification at below-market prices; and (xii) special tax levies or exemptions for energy-related activities. See: KOPLOW, D. Subsidies to Energy Industries. In: Encyclopedia of Energy. Vol. 5, ed. Cutler Cleveland, Amsterdam: Elsevier, p. 752.

Table 3 - Main Types of Energy Subsidies

Government Intervention	Example	How the subsidy usually works		
		Lowers cost of production	Raises price to producer	Raises price to consumer
Direct financial transfer	Grants to producers	X		
	Grants to consumers			X
	Low-interest or preferential loans	X		
Preferential tax treatment	Rebates or exemptions on royalties, sales taxes, producer levies and tariffs			X
	Tax credit	X		
	Accelerated depreciation allowances on energy-supply equipment	X		
Trade restrictions	Quotas, technical restrictions and trade embargos		X	
Energy-related services provided directly by government at less than full cost	Direct investment in energy	X		
	Public research and development	X		
	Liability insurance and facility decommissioning costs	X		
Regulation of the energy sector	Demand guarantees and mandated deployment rates	X	X	
	Price controls		X	X
	Market-access restrictions		X	

Source: UNEP, *Reforming Energy Subsidies: Opportunities to Contribute to the Climate Change Agenda*, Geneva: UNEP, 2008, p. 12.

One can deduce that subsidies for the energy sector are granted to upstream producers and industries and include, for example: direct payments to finance production; subsidies related to taxation; policies to reduce the cost of inputs; subsidies related to investments (such as loans at preferential rates, debt forgiveness, loan guarantees, among others); and policies that generate transfer pricing through the market¹⁷⁶.

+ SELIVANOVA, Y. The WTO and Energy: WTO Rules and Agreements of Relevance to the Energy Sector, Issue Paper n. 1. In: ICTSD. Trade and Sustainable Energy Series. Geneva: ICTSD, 2007. p. 23.

3.1.1. DUAL PRICING

Dual pricing refers to the charging of one price for a product on the domestic market and a different one for the same product when destined for export¹⁷⁷.

In the energy sector, a dual pricing policy is usually implemented through price controls or a price ceiling price set by the government, or even through the sale of energy resources by state enterprises to domestic consumers at preferential rates¹⁷⁸.

The imposition of dual pricing in the sector can be justified based on several policies adopted for the sector, such as: (i) supplying energy at accessible prices as a means to subsidize industrial production or domestic energy generation; (ii) guaranteeing food security by maintaining low energy prices, fulfilling the needs of crops that depend on the use of pesticides whose manufacture is energy intensive; (iii) maintaining competitive prices for energy-intensive products¹⁷⁹; and (iv) stimulating economic development.

Under these circumstances, energy that is used as an input for production will be cheaper for domestic producers than for foreign producers who rely on the exported energy product, thus favoring domestic producers because their costs are lower than those of foreign producers not established in the territory of the Member.

The adoption of a dual pricing policy has positive and negative aspects. On the one hand, it is possible to observe the spread of cleaner energy usage, such as natural gas instead of coal or oil, especially with regard to the energy generation sector. On the other hand, the inadequate use of this policy can result in inefficient consumption of energy, even causing trade distortions¹⁸⁰.

¹⁷⁷ MARCEAU, G. The WTO in the Emerging Energy Governance Debate. In: Global Trade and Customs Journal, Vol. 5, issue 3. New York/Netherlands: Kluwer Law International, 2010, p. 89.

¹⁷⁸ POGORETSKY, V. Energy Dual Pricing in International Trade: Subsidies and Anti-dumping Perspectives. In: SELIVANOVA, Y. (ed.). Regulation of Energy in International Trade Law. Global Trade Series, Wolters Kluwer, 2011, p. 183.

¹⁷⁹ Such as, for example, energy generation, non-ferrous metals, steel, chemicals and petrochemicals, non-metallic minerals, paper, among others.

¹⁸⁰ POGORETSKY, V. Energy Dual Pricing in International Trade: Subsidies and Anti-dumping Perspectives. In: SELIVANOVA, Y. (ed.). Regulation of Energy in International Trade Law. Global Trade Series, Wolters Kluwer, 2011, p. 185.

During the Uruguay Round negotiations, the participating countries were already calling for an analysis and regulation of this subject. In the negotiation group on natural resources, some delegations recommended that the appropriateness, or even the existence, of regulation in the GATT 47 about the energy sector be verified¹⁸¹. Despite these recommendations, there is still no consensus on the compatibility of dual pricing with the rules of the WTO.

In the context of the Doha Round, the U.S., in dealing with the topic of natural resources, understood that dual pricing would be a government intervention in the energy sector that could, among other effects, cause distortions in the market since it created benefits for domestic producers, unfairly improving comparative advantages that should be determined by market forces and by productive efficiencies.

In response to the claim of the United States, Venezuela said it was necessary to clarify what the Americans meant by dual pricing and fair market value. They even questioned if the establishment of preferential prices for natural resources, including energy, would have the effect of distorting trade, claiming there were no studies available on the matter.

WTO negotiations did not show further developments, and the Members had doubts about the definition of dual pricing, about the possibility of a relationship between this policy and distorting effects on the energy market, and also about whether the SCM would be applicable¹⁸².

Dual pricing can be considered a subsidy that grants benefits, but this does not mean that its use will necessarily be incompatible with the provisions of the SCM. Dual pricing could be admitted under three circumstances: (i) if access to the lowest price is not conditioned to the export of a product (therefore, it would not be an export subsidy); (ii) if it is not

¹⁸¹ The discussions about this theme were addressed to NG3 (Negotiation Group 3, relating to natural resources). See: GATT. Summary of Statements and Proposals made concerning negotiations on natural resource-based product. Note by the Secretariat. MTN.GNG/NG3/W/8. Multilateral Trade Negotiations of the Uruguay Round, November 13, 1987, p. 7, Para. 35-36.

¹⁸² WTO. Negotiation Group on Rules, USA Communication: Subsidies Disciplines Requiring Clarification and Improvement. TN/RL/W/78, p. 3; WTO. Negotiation Group on Rules, Venezuela Communication: Observations and Comments by Venezuela on Document TN/RL/W/78 Submitted by the United States concerning prohibited subsidies and other subjects under the WTO Agreement on Subsidies and Countervailing Measures. TN/RL/W/107, p. 2.

specific; and (iii) if it is specific, that it does not cause damaging effects to the interests of another Member¹⁸³.

This instrument can also be considered a prohibited subsidy if national content is required for the more advantageous price to be granted, or if only exporting companies are benefited.

Given the silence on the WTO Agreements concerning the nature of dual pricing, Members have been including provisions in protocols of accession of new Members prohibiting such measures, especially when it comes to energy producing countries.

Saudi Arabia, for example, was pressured to take on an explicit commitment to eliminate its dual pricing program for the natural gas sector. However, the country chose not to do it, limiting itself to the commitment of acting in accordance with normal trade considerations that take into account the full recovery of costs and reasonable profits¹⁸⁴.

The discussions of Russia's protocol of accession followed the same reasoning. Nevertheless, Russia adopted some exceptions to the criteria already established in Saudi Arabia's protocol¹⁸⁵. In its accession process to the WTO, Russia defended that dual pricing could not be considered a specific subsidy (Article 2, SCM), since lower prices for natural gas in the internal market would be granted unconditionally within the whole economic sector and would be available to all individuals and entities established within the Russian territory, making its application widespread (that is, not specific) and eliminating, in this way, the possibility of qualifying in the category of prohibited or actionable subsidies¹⁸⁶.

¹⁸³ Before determining the nature of dual pricing, the panel of the case US – Export Restraints determined that: (i) proof be shown that dual pricing is a subsidy both factually and legally; and (ii) it be verified if its application is incompatible with the rules of the SCM and/or other WTO agreements.

¹⁸⁴ WTO. Report of the Working Party on the accession of the Kingdom of Saudi Arabia to the World Trade Organization. WT/ACC/SAU/61, November 1, 2005, pp. 11-14 and 99, Para. 26-33 and 315.

¹⁸⁵ SELIVANOVA, Y. The WTO and Energy: WTO Rules and Agreements of Relevance to the Energy Sector, Issue Paper n. 1. In: ICTSD. Trade and Sustainable Energy Series. Geneva: ICTSD, 2007, p. 42, n. 117.

¹⁸⁶ WTO. Report of the working party on the accession of Russia to the WTO. WT/ACC/RUS/70; WT/MIN(11)/2. November 17, 2011, §124, p. 30.

3.1.2. RENEWABLE ENERGY

The development and use of renewable energies are often related to government interventions and subsidies¹⁸⁷. Renewable energies frequently need incentives that permit the development of new technologies and the maintenance of existing power generation facilities, to make them economically viable and competitive in relation to fossil energies. In this way, it can be noted that the concentration of subsidies with the objective of promoting renewable energies is greater than that for fossil fuels¹⁸⁸.

The States have concerned themselves with adopting policies to reach environmental and climate change-related goals. As such, they have searched for alternatives to fossil fuels in order to reduce GHG emission rates and adopt measures to achieve sustainable development. In addition, they seek a guarantee of access to energy supply¹⁸⁹.

Considering that Article 3 of the SCM, on prohibited subsidies, would only apply if a determined subsidy program had the objective of benefiting export companies of a certain sector or established the requirement of national content to grant financing, it is possible to conclude that renewable energy subsidies *per se* would not be prohibited. However, it would be possible to qualify them in the category of actionable subsidies if it were demonstrated that the challenged subsidy is specific and generates adverse effects as a result of its application.

Revisiting discussions on non-actionable subsidies seems relevant for evaluating the application of these renewable energy programs. For example, consider the fact that the industries that produce electric energy from fossil fuels are, in this sector, the main GHG emitters; to stimulate energy efficiency and the reduction of GHG emissions, a government decides to grant a benefit for the production of electric energy from re-

¹⁸⁷ *Ibid.*, p. 23.

¹⁸⁸ IEA; OECD; OPEC; World Bank. Analysis of the Scope of Energy Subsidies and Suggestions for the G-20 Initiative. In: Joint report prepared for submission to the G-20 Summit Meeting. Toronto: IEA/OPEC/OECD Publishing/World Bank, June 26-27, 2010, p. 22.

¹⁸⁹ *Ibid.*, pp. 6-7. The same author also adds that: "The reference to taxes applied 'indirectly' to like domestic products is seen, by some, as supporting the position that it is permissible to apply border adjustments for taxes on inputs that are physically incorporated into the final product, such as the consumption of energy." (p. 8).

newable and clean sources. This measure could be considered a *de facto* specific subsidy and, therefore, actionable, since it would favor one sector (renewable energies) over another (fossil energies)¹⁹⁰.

Among the main programs directed towards renewable energies, FIT programs are a highlight and will be discussed in the following section.

3.1.2.1. FEED-IN TARIFF (FIT) PROGRAMS

FIT programs are generally designed to accelerate investments in technologies and encourage the use, production, purchase, and sale of renewable energy¹⁹¹. These programs usually require that public utilities (energy distributors) purchase electricity from renewable energy producers for a higher price than the market price. In this way, the government makes the investment in renewable energy safe and profitable for the producer, because it: (i) offers long-term contracts; (ii) guarantees the purchase of the produced energy for a price that is in line with the production costs, normally above market value; and (iii) determines the access of the renewable energy produced to the transmission network so it can reach the final consumer.

In the WTO, there is not a clear definition of whether FIT Programs are considered subsidies. Their legal nature depends on the project and the implementation model used and the effects caused by them. Furthermore, even if it is considered a subsidy, it will not necessarily be deemed an illegal measure: government support for the production of renewable energy can only be considered incompatible with the rules of the SCM if it involves prohibited or actionable subsidies, that can cause distortions in international trade and damages to the interests of other Members. In addition, it is discussed whether a FIT Program adopted as a measure to combat climate change can be justified under Article XX of the GATT 94.

The DSB had the opportunity to express its opinion on the nature of these programs in the *Canada-Measures Relating to the Feed-in Tariff*

¹⁹⁰ GREEN, A. Trade rules and climate change subsidies. In: World Trade Review. Vol. 5, issue 3, Cambridge: Cambridge University Press, 2006, p. 400.

¹⁹¹ WILKE, M. Feed-in Tariffs for Renewable Energy and WTO Subsidy Rules, Issue Paper n. 4. In: ICTSD. Programme on Trade and Environment. Geneva: ICTSD, November 2011, p. vii.

*Program case*¹⁹².

The FIT Program adopted by the territory of Ontario determined that only those that used at least 60% of equipment produced in its territory in the production of renewable energies (goods and services) could participate in the incentive program. In light of this, Japan and the EU filed requests for consultations to evaluate possible inconsistencies between the adopted FIT program and the provisions of Articles III.4 and III.5 of the GATT 94, Article 3 of the SCM, and Article 2.1 of the TRIMs. According to the arguments of these countries, the requirement of the territory of Ontario was contrary to the National Treatment obligation foreseen in Article III of the GATT 94 and could also be classified as a prohibited subsidy, as set forth in Article 3 of the SCM, since it required a determined percentage of national content for the benefit to be granted.

In the first place, it would be necessary to determine if the nature of the FIT programs, regardless of the national content criterion, corresponded in fact to a subsidy, thereby being subject to the rules of the SCM, since its main characteristics were aimed at guaranteeing the purchase of electricity from renewable sources and guaranteeing distribution networks access to the power generated.

Given the questions proposed, the arguments presented by Canada addressed the Government Procurement Agreement (GPA). In the Canadian understanding, the *Ontario Power Authority* (OPA) is a government agency that follows orders and regulations from the Ministry of Energy. In submitting itself to regulations, laws, and requirements dictated by the government, the purchases carried out by the OPA would have government purposes. Therefore, they would not be covered by the GATT 94, but rather by the GPA, to which Canada is a party. Yet in observing that its list of obligations did not include the territory of Ontario, the question would be outside of the jurisdiction of the WTO¹⁹³.

However, unilaterally classifying an internal action as government pro-

curement is not sufficient to prevent the application of the GATT 94. In this sense, the resale carried out by the OPA – whose classification as a government agency would be discussed if analyzed through the prism of the definition of a public body by the AB¹⁹⁴ – could have commercial objectives, since the public interest in this resale would not be definitively proved.

If Canada's allegation were upheld and the Ontario FIT Program were put under the scope of the GPA, Wilke points out that this program would be free to discriminate other products due to the normative structure of the WTO. However, the SCM can be applied to government procurement if the price paid is above the usual market value because, otherwise, the application of the SCM relative to the purchase of goods and the supply of goods and services would be practically nullified¹⁹⁵.

The Panel understood that the FIT Program of the province of Ontario was not in conformity with Article 2.1 (about National Treatment and quantitative restrictions) of the TRIMs, and that it was also inconsistent with Articles III.4 and III.8 of the GATT 94. Nevertheless, in relation to the classification of the FIT program as a subsidy, the Panel diverged and presented a majority decision that did not recognize the granting of benefits in the terms of Article 1.1(b) of the SCM, since the contracts for the sale of energy were made in a government-controlled market, not one of free competition, and, if it were otherwise, it would not reach the objectives foreseen by the province in question. The dissenting opinion considered that the Ontario FIT program would be a subsidy because the price offered to the generators, who had high costs and low levels of efficiency, through FIT contracts allowed them to enter the general electricity market in a suitable condition to compete, which would not be possible without the program adopted by the government of Ontario.

¹⁹² WTO. Canada-Measures Relating to the Feed-in Tariff Program. DS426.

¹⁹³ WTO. Canada – Certain Measures Affecting the Renewable Energy Generation Sector (Japan). First Written Submission of Canada, WT/DS412, December 22, 2011, pp. 27-34, para. 69-88; WTO. Canada – Measures Relating to the Feed-in Tariff Program (European Union). First Written Submission of Canada, WT/DS426, March 6, 2012, pp. 3-14, para. 11-34.

¹⁹⁴ According to the DSB, “A public body within the meaning of Article 1.1.(a)(1) of the SCM Agreement must be an entity that possesses, exercises or is vested with governmental authority.” WTO. Appellate Body Report: United States – Definitive Anti-Dumping and Countervailing Duties on Certain Products from China. WT/DS379/AB/R, March 11, 2011, p. 122, para. 317. This is a very restrictive definition when compared to the interpretation of the Panel on the same case or with the various diverging arguments, presented by the USA or other interested third parties.

¹⁹⁵ WILKE, M. Feed-in Tariffs for Renewable Energy and WTO Subsidy Rules, Issue Paper n. 4. In: ICTSD. Programme on Trade and Environment. Geneva: ICTSD, November 2011, p. 12.

In February of 2013, Canada, the EU, and Japan appealed the decision and, in May of 2013, the Appellate Body released its report modifying some understandings reached by the Panel. First, it considered that the condition of national content in the Ontario FIT program was not in accordance with Article III.8(a) of GATT 94 and, therefore, could not be analyzed as a law, a regulation, or a requirement within the scope of government procurement (public bids) of the involved regulatory bodies of electric energy. In this way, the violation of Articles 2.1, TRIMs, and III.4, GATT 94, was upheld.

In relation to the question of defining the program as a subsidy, the AB understood that the Japanese claim for classifying the FIT program as a direct transfer of funds was baseless and maintained the classification as “purchase of goods”, under the terms of Article 1.1(a)(1)(iii) of the Agreement on SCM. However, the AB considered that it was a benefit, under the terms of Article 1.1(b), opposing the determination of the relevant market made by the Panel in its analysis. Finally, the AB claimed that it did not have relevant information to determine whether the Ontario FIT Program was a prohibited subsidy, under the terms of Article 3 of the Agreement on SCM.

Despite not having decided if the Ontario program was a prohibited subsidy, the discussion raised by the AB about the interpretation of the SCM Agreement can be important for other cases in which there is government support as a way of encouraging development in the national renewable energies sector. Two other cases were taken to the DSB: (i) *India – Certain Measures Relating to Solar Cells and Solar Modules*¹⁹⁶, in which the USA challenge some measures adopted by India relating to the requirement of domestic content in the Jawaharlal Nehru National Solar Mission for solar cells and modules; and (ii) *European Union and certain Member States – Certain Measures Affecting the Renewable Energy Generation Sector*¹⁹⁷, in which China challenges measures adopted by the EU in its FIT Program (including local content) that influence the renewable energy generation sector. It is necessary to accompany the

¹⁹⁶ WTO. DSB: India – Certain Measures Relating to Solar Cells and Solar Modules, DS456.

¹⁹⁷ WTO. DSB: European Union and certain Member States – Certain Measures Affecting the Renewable Energy Generation Sector, DS452.

development of both cases since the positioning of the WTO on FIT programs tends to settle based on the decisions issued by the AB.

Box 21: Applicability of Article XX of the GATT 94 to the SCM

As previously seen, Article XX of the GATT 94 provides on general trade exceptions, recognizing that certain measures inconsistent with WTO norms can be justified if there is a necessity to reach public policy objectives when applied in a non-discriminatory way.

In relation to the subsidies for the energy sector, it is discussed whether Article XX can be invoked as a means of defense in relation to claims made outside the scope of the GATT 94, even when the provisions of the Agreement at issue do not make explicit reference to this Article, as is the case of the SCM.

The AB had an opportunity to express its opinion on this subject in two cases. In the *China – Audiovisuals* case, the AB considered that the use of Article XX to justify violations of some provisions of China’s Accession Protocol was permitted, despite there not being explicit reference to Article XX as a means of justifying the adoption of incompatible measures with the Protocol. However, in the *China – Raw Materials* case, the AB denied the possibility of China having recourse to Article XX to justify a new violation of its Accession Protocol, avoiding any declaration that could imply that Article XX would be a appeal that could be adopted in all cases of violation of WTO Agreements, even if these do not make any reference to this Article.

Since there is still no settled position from the AB on the matter, two streams stand out on the subject. The first, which is wider in scope, justifies the generalized application of Article XX of the GATT 94, claiming that, since WTO special Agreements are a single undertaking, they should be understood together with the GATT, making it such that Article XX can be invoked even in the event of disputes related to the SCM.

The second, more restrictive, claims that the silence of the SCM in relation to the use of Article XX as a form of justifying measures inconsistent with the provisions of the Agreement indicates that this was not its initial intention, mainly considering that other Agreements, such as the SPS, refer specifically to the possibility of Members having recourse to Article XX²⁷.

It is therefore necessary to follow the evolution of the discussion within the WTO.

3.2. SUBSIDIES IN THE AoA

The rules for subsidy grants in the agricultural sector are more flexible than those that apply to the non-agricultural sector, being the object of certain specific rules present in WTO's AoA.

The AoA presents two different categories of subsidy: Domestic support measures and export subsidies. The first includes measures that seek to guarantee that a product's minimum price in the domestic market will be comparable to those offered abroad, along with direct payment to producers. The second category pertains to all subsidies that apply to exports.

Box 22: Domestic support measures in the AoA

The domestic support measures that impact international trade in the agricultural sector, designated "amber box" subsidies, should be reduced according to the commitments made by each Member in their lists of commitment. On the other hand, domestic support measures which cause minimal impact to international trade, named "green box" subsidies, may be freely employed. Some direct payments to producers, when a decrease in production is demanded of the latter, can also be employed without limitations and are called "blue box" subsidies. Finally, support measures that aim to encourage rural and agricultural development and are inserted into programs for developing countries are also not limited by the AoA, being defined as "S&D (Special and Differential Treatment) box" subsidies.

When it comes to domestic support measures, the general rule is that any subsidies that have a distorting effect on international trade should be reduced, in keeping with the commitments made by each Member. No other domestic support measures are limited by the AoA.

Box 23: Agricultural subsidies that affect the energy trade

Among the "green box" subsidies focused on the environment are those intended for research on environmental programs; infrastructure services associated with environmental programs; and producer subsidies through state environmental programs²⁸.

Equally relevant to the production of biofuels, the "green box" subsidies encompass direct payments to producers (Annex II, paragraphs 5 and 6), as well as a financial participation by the government in revenue protection insurance programs and programs that establish a security device for revenue. Said programs cannot be aimed at specific products and include revenue support with no ties to the level of prices or production (Annex II, Paragraph 6). It also includes regional development programs.

Under the heading of "S&D box" subsidies, agricultural input subsidies generally available to low-income producers are permitted and also important to biofuels. These incentives can be found in Article 6.2 of the AoA.

The US and the EU both have biofuel incentive programs. The US Environmental Protection Agency (EPA) released in 2010 the *Renewable Fuel Standard Program for 2010 and Beyond (RFS2)*¹⁹⁸, which sets production volume goals for first- and second-generation biofuels. In January 2011, the EPA increased the percentage of blending from 10% to 15% of volume. With that, the implementation of RFS2 and the stimuli defined within it are expected to raise agricultural income by 13 billion dollars by 2022, while raising the cost of food per capita by US\$ 10 in the same time period.

The European Council has edited two Directives on the development of biofuels: Directive 2003/30/EC and Directive 2009/28/EC, which substituted the former and was edited after the release of 2008's *European Union Climate Change Package*. The goal set for 2020 determines that 10% of the energy spent on transportation and 20% of the total energy consumption must come from renewable sources, and that local and cen-

¹⁹⁸ More information on the program can be found in the EPA's official website at www.epa.gov/otaq/renewablefuels/420f10007.htm. Last accessed January 11, 2013.

tral governments must act towards promoting this increase in production. Producers who properly conform to the standards defined in these Directives may even apply for subsidies defined in a specific legislation (2009/73/EC), which establishes equal rules for direct producer support regimes within the spectrum of the common agricultural policy. Aside from that, new proposals for stimulating production of advanced biofuels¹⁹⁹ and lowering the environmental impact caused by biofuels have been observed. Chief among these is the proposed amendment to Directive 2009/28/EC, which includes incentives to the production of biofuels with low emission of GHG associated with indirect changes in land use²⁰⁰.

3.3. ECT

The ECT, while emphatic on the importance of subsidies and other mechanisms aimed at financing energy efficiency goals, does not regulate the question of subsidies in its normative text.

¹⁹⁹ According to the EU, advanced biofuels are those made from non-food materials (such as agricultural and forestry residues, algae, waste, etc.), considered more sustainable than those made from materials that can also be used in food. For more information, see European Biofuels. Advanced Biofuels in Europe. Available at <http://www.biofuelstp.eu/advancedbiofuels.htm>. Last accessed June 18, 2013.

²⁰⁰ EU. Proposal for a Directive of the European Parliament and of the Council amending Directive 98/70/EC relating to the quality of petrol and diesel fuels and amending Directive 2009/28/EC on the promotion of the use of energy from renewable sources. SWD(2012) 343 final, SWD(2012) 344 final. Available at http://ec.europa.eu/clima/policies/transport/fuel/docs/com_2012/595/en.pdf.

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European Union and certain Member States - *Certain Measures Affecting the Renewable Energy Generation Sector*, DS452.

India - *Certain Measures Relating to Solar Cells and Solar Modules*, DS456.

4. RENEWABLE ENERGY, THE ENVIRONMENT AND CLIMATE CHANGE

Despite not being created with the intent of responding to questions specifically related to energy trade, several rules contained in the GATT 94 and other WTO Agreements are relevant and can be applied in cases where it is necessary to balance measures related to the environment and any possible impact the latter may have in the international energy trade.

According to Hertel, it is evident that unilateral measures adopted in relation to climate change could translate to violations of the fundamental principle of non-discrimination found in Articles I (MFN Principle), III (National Treatment principle) and XI (prohibition on quantitative restrictions) of the GATT 94, as the purpose of adopting these measures would be precisely to isolate countries which do not yet adopt mechanisms for limiting their GHG emissions²⁰¹.

WTO's generally adopted *modus operandi* recognizes that a certain level of restriction on trade may be necessary for some goals to be reached, as long as two conditions are fulfilled: (i) the measure must be covered by one of the exceptions in Art. XX; and (ii) the measure must not constitute a means of arbitrary or unjustifiable discrimination, or a disguised restriction on international trade. In case both conditions are present, measures related to policies for fighting climate change could be accepted as exceptions to the GATT 94's provisions.

WTO's jurisprudence is settled in the sense that these exceptions have as an objective ensuring the space of each WTO Member in determining their own national domestic policies regarding the environment (see the AB reports in the *US-Gasoline*²⁰² and *Brazil - Retreaded Tyres*²⁰³ cases).

As seen previously, in order to be considered permissible, a trade measure related to climate change must be considered necessary for the protection of human, animal or plant life or health, or related to the conser-

²⁰¹ HERTEL, M. Climate-Change-Related Trade Measures and Article XX: Defining Discrimination in Light of the Principle of Common but Differentiated Responsibilities. In: *Journal of World Trade*, Vol. 45, No. 3, 2011, pp. 653-678, p. 668

²⁰² WTO. Appellate Body Report: United States - Standards for Reformulated and Conventional Gasoline, DS2.

²⁰³ WTO. Appellate Body Report: Brazil - Measures Affecting Imports of Retreaded Tyres, DS332.

vation of exhaustible natural resources (Art XX (b) and (g)).

To determine the necessity of each measure, the AB analyzes its contribution to the environmental policy's goals, the importance of the protected values, and its impact on international trade, while also comparing it to possible alternatives that could be less restrictive to trade and, at the same time, provide an equal contribution to the achievement of the intended goals.

In turn, when related to the conservation of natural resources, in case it would affect imports, it must be applied together with restrictions to internal production or consumption²⁰⁴.

From an environmental perspective, an increase in the use of renewable, low carbon emission energies is desirable, as well as an increase in the efficiency of fossil fuel use. Renewable energy sources include hydroelectric, biomass, solar and wind power, and nuclear power can be considered a low-emission source. Fossil sources are oil, natural gas and coal.

Box 24: Environmental Conferences and the Concept of Sustainable Development

In 1972, in Stockholm (Sweden), the United Nations Conference on the Human Environment was held. Its main results were the creation of the UNEP and the approval of the Declaration on the Human Environment. The Conference was marked by the dispute between supporters of “zero development” and defenders of “development at any cost”. The former, represented by industrialized countries, proposed a freezing of economic growth as a way to avoid an environmental tragedy caused by increasing damage to the environment. This solution was not backed by countries in the second group, mostly unindustrialized, who believed said development would be the key to giving their population a better quality of life.

²⁰⁴ WTO - UNEP. Trade and Climate Change. 2009, pp. 107-108.

The expression “sustainable development” was first coined in *Our Common Future*, also known as the Brundtland Report, published in 1987 by the World Commission on Environment and Development (WCED), an organ created by the UN in 1983 with the objective of consolidating a strategy for dealing with the relations among governance, development, and the environment. The Report established the concept of sustainable development as that which properly answers the needs of the present without compromising the capacity of future generations to fulfill their own demands²⁹.

Sustainable development is based upon the idea of not risking the natural systems that sustain life on Earth: atmosphere, water, soil, and living beings. Moreover, it refers to a process of transformation in which the exploitation of resources, the targeting of investments, the direction of technological developments, and institutional change come together to reinforce present and future potential, with the goal of fulfilling humanity's needs and desires.

The United Nations Conference on Environment and Development (also known as RIO-92 or ECO-92), which took place twenty years after the first conference, cemented the concept of sustainable development and contributed to opening the world's eyes to the major share of responsibility held by developed countries in the damaging of the environment, at the same time as it acknowledged developing countries' need for financial and technological support in order to advance toward sustainable development. This concept came to be known as the Common but Differentiated Responsibility Principle³⁰.

The different classifications attributed to countries with different levels of development represent the practical application of this principle, which recognizes the historical differences related to the contribution of developed and developing countries to the environmental questions faced, while at the same time taking into consideration each country's economic and technological ability to face the environmental issue³¹. The Principle accentuates the fact that States all have common responsibilities when it comes to protecting the environment and promoting sustainable growth, however, due to social, economic and environmental differences, each take on different responsibilities.

The Earth Charter, official document of Rio-92, created three conventions (Biodiversity, Desertification and Climate Change³²), a declaration of principles on forests and Agenda 21 (a framework upon which each country can base their environmental preservation plan).

In the year 2002, in Johannesburg, the World Summit on Sustainable Development (WSSD) took place. Its main objectives were to broaden people's access to basic sanitation, reduce attacks against biodiversity and encourage the use of renewable energy sources. However, the final document was considered a letter of good intentions due to its failure to establish clear, achievable goals regarding the objectives stated.

In 2012, the 20th anniversary of Rio-92 was celebrated with the United Nations Conference on Sustainable Development (UNCSD or Rio+20), a conference intended to renew political commitment to sustainable growth through an evaluation of the advances and gaps in the implementation of decisions made by the main summits on the subject and also by engaging new, emerging topics such as (i) economic decisions in the context of sustainable growth and the eradication of poverty; and (ii) the institutional structure for sustainable development³³. Among the results obtained was a recognition of the role of energy in securing sustainable development and eradicating poverty, as well as a highlighting of the challenge that is securing access to energy³⁴.

4.1. BARRIERS TO TRADE IN ENVIRONMENTAL GOODS AND SERVICES

As nations become more aware of the problems that come with GHG emissions, an increased movement for awareness about renewable energy sources can be observed. Thus, the regulation on international EGS trade plays an important role in the present context.

The first difficulty observed in this panorama is the absence of a common definition of EGS among the international community. The OECD and Eurostat²⁰⁵ were the first to define EGS as those that aid environmental protection in different sectors: water, solid waste, air, soil, noise, natural resources and other services²⁰⁶.

In the context of the Doha Round, at least three other possible classifications were identified that could be designated as environmental goods,

²⁰⁵ Eurostat is the EU's statistics database.

²⁰⁶ Those which provide environmental protection in different domains: water, solid waste, air, soil, noise, natural resources, and miscellaneous services. OECD. Environmental Goods and Services: The Benefits of further Global Trade Liberalization. 2001, pp. 11-13.

but none proved definitive²⁰⁷. Existing classifications will be more fully approached further in this chapter.

Tariff barriers are generally enforced through creation of policies that increase taxes related to environmental goods, the imposition of carbon tariffs, and adoption of Border Tax Adjustment (BTA) measures, analyzed below.

4.1.1. CARBON EMISSION TARIFFS

Carbon tariffs fall into the category of domestic policies aimed at reducing GHG emission. They can be defined as government-imposed environmental taxes on production, distribution or use of fossil fuels. The amount is generally proportional to each fuel's carbon emission level. According to Assunção and Zhang²⁰⁸, the imposition of tariffs on carbon can be seen as a way to price the negative externalities caused by its emission. The positive outcomes of this pricing are presented as reductions in fossil fuel consumption and incentives to the development of more energy-efficient products, which could result in a boost to the competitiveness of renewable energies in the market.

When it comes to competitiveness, companies located in countries with environmental regulations might find themselves at an economic disadvantage due to the imposition of carbon tariffs. Said tariffs might affect their production costs, meaning companies who rely on intensive use of energy from fossil fuels might relocate to countries with less environmental regulations.

This phenomenon, known as *carbon leakage*, can be noticed mainly in two situations. The first refers to the imposed control of GHG emissions only in a certain group of nations, which may result in a relocation of production dependent on intensive use of fossil fuels to regions with looser controls on emissions. The second refers to the consequences of

²⁰⁷ COSBEY, A. et al. Environment Goods and Services Negotiations at the WTO: Lessons from multilateral environmental agreements and ecolabels for breaking the impasse. IISD, Canada, 2010, p.12.

²⁰⁸ ASSUNÇÃO, L.; ZHANG, Z. Domestic Climate Change Policies and the WTO. UNCTAD Discussion Paper series, No. 164, November 2002, p. 14.

controlling carbon emissions, as if one State lowers its use of fossil fuels, it might cause a decrease in their global prices, often encouraging their use in countries without such tariffs²⁰⁹.

4.1.2. BORDER TAX ADJUSTMENT (BTA)

BTAs are fiscal instruments used to counterbalance the tax burden borne by products for export in comparison to similar domestic products sold to the final customers in a country's domestic market. Moreover, BTAs can also be imposed on imports, in order to stop them from being too competitive in comparison to domestic products.

According to the OECD's definition, used by the WTO, BTAs can be described as:

"(...)any fiscal measures which put into effect, in whole or in part, the destination principle (i.e. which enable exported products to be relieved of some or all of the tax charged in the exporting country in respect of similar domestic products sold to consumers on the home market and which enable imported products sold to consumers to be charged with some or all of the tax charged in the importing country in respect of similar domestic products)"²¹⁰.

These measures are generally used by countries that adopt carbon taxing with the goal of responding to *carbon leakage* and a loss of competitiveness in local industries, as BTAs tend to reduce incentives to relocate production abroad. The employment of BTAs, however, can be considered a barrier to trade, which necessitates an analysis of their compliance with Article II of the GATT 94.

The question now raised is which measures could be qualified as tax adjustments under GATT 94's Article II.2(a). The provision allows a country to apply an additional tax to similar imported products as long as it

²⁰⁹ ELLIOT, J. et al. Unilateral Carbon Taxes, Border Taxes Adjustments, and Carbon Leakage. Institute for Law & Economics Working Paper No. 600 (2D series), University of Chicago, June 2012. Available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2072696&download=yes###. Last accessed March 23, 2013.

²¹⁰ WTO. Border Tax Adjustments. Report of the Working Party adopted on December 2nd 1970, L/3464, Paragraph 4.

matches an equivalent internal tax, with the objective of equalizing the internal tax burden in relation to imported goods:

Article II.2(a)

2. Nothing in this Article shall prevent any contracting party from imposing at any time on the importation of any product:

(a) a charge equivalent to an internal tax imposed consistently with the provisions of paragraph 2 of Article III in respect of the like domestic product or in respect of an article from which the imported product has been manufactured or produced in whole or in part.

According to a report issued at the time the GATT 94 was in force²¹¹, if a country were to apply a carbon tax to an internally produced product, Article II.2(a) allows for an equivalent tax to be imposed on similar imported products. It is necessary, however, to determine how far Article II allows carbon taxes to be applied to imported goods aimed at fulfilling the goals set by the Kyoto Protocol or other national GHG reduction policies²¹².

The *Trade and Climate Change* Report, a joint publication of the WTO and UNEP, sought to solve the problem of fluctuating carbon prices by suggesting that, in such cases, implementation of BTAs should abide by the following rules to be consistent with WTO standards: (i) a close connection between the means employed and climate change policy; (ii) non-discriminatory application, so as not to constitute a disguised restriction on international trade; and (iii) respect for WTO's administrative due process for BTA designation and implementation²¹³.

4.2. DOHA ROUND PROPOSALS

The first multilateral negotiations on trade and the environment were

²¹¹ GATT. Report of the Working Party on Border Tax Adjustments, 1970.

²¹² HERMAN L. Energy Trade, Carbon Emissions and the WTO. In: *Journal of World Energy Law & Business*, Vol. 2, No. 3, 2009, p. 202

²¹³ KEOHANE, R; VICTOR, D. The Regime Complex for Climate Change. Discussion Paper 2010-33. Cambridge, Mass.: Harvard Project on International Climate Agreements, January 2010, p. 22.

launched in the Doha Round. The Doha Ministerial Declaration, adopted in November 2001, instituted in its paragraph 31(iii) the negotiation mandate for reduction or elimination of tariff and non-tariff barriers applied to EGS trade:

31. With a view to enhancing the mutual supportiveness of trade and environment, we agree to negotiations, without prejudging their outcome, on:

(...)

(iii) the reduction or, as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services²¹⁴.

According to Amaral Jr., economic incentives from the elimination of tariff and non-tariff barriers in the sector might result in a lowering of EGS prices as well as an expansion in their production and exporting, hypotheses that would aid in the diffusion of cheaper and more energy-efficient technologies at a universal scale²¹⁵.

The commitment to reduce and eliminate tariff and non-tariff barriers is further reinforced by Paragraph 13 of the Doha Ministerial Declaration:

13. We recognize the work already undertaken in the negotiations initiated in early 2000 under Article 20 of the Agreement on Agriculture (...). Building on the work carried out to date and without prejudging the outcome of the negotiations we commit ourselves to comprehensive negotiations aimed at: substantial improvements in market access; reductions of, with a view to phasing out, all forms of export subsidies; and substantial reductions in trade-distorting domestic support. We agree that special and differential treatment for developing countries shall be an integral part of all elements of the negotiations and shall be embodied in the schedules of concessions and commitments and as appropriate in the rules and disciplines to be negotiated, so as to be operationally effective and to enable developing countries to effectively take account of their development needs,

²¹⁴ WTO. Doha Ministerial Declaration. WT/MIN(01)/DEC/1, 2001, Para. 31(iii) Available at http://www.wto.org/english/thewto_e/minist_e/min01_e/mindecl_e.htm#tradeenvironment. Last accessed June 19, 2013.

²¹⁵ AMARAL JR., A. Comércio Internacional e a Proteção do Meio Ambiente. São Paulo: Atlas, 2011, pp. 282-283.

including food security and rural development. We take note of the non-trade concerns reflected in the negotiating proposals submitted by Members and confirm that non-trade concerns will be taken into account in the negotiations as provided for in the Agreement on Agriculture.

Negotiations on environmental services, so far, have shown greater achievements than those on environmental goods. The Services Sectoral Classification List (MTN.GNS/W/120), developed during the Uruguay Round and based on the CPC, already included the definition of environmental services, which encompass services such as sewage services (CPC 9401)²¹⁶, refuse disposal services (CPC 9402)²¹⁷, sanitation and similar services (CPC 9403), and other environmental services, including remnants of other categories such as cleaning of exhaust gases (CPC 9404)²¹⁸, noise abatement services (CPC 9405), nature and landscape protection services (CPC 9406) and other environmental protection services not included elsewhere (CPC 9409)²¹⁹.

Due to the limitations of the previously presented list, new negotiations were held in the context of the GATS which would later fall under the mandate of the Doha Round, so the new list could reflect the current structure of the international services trade. In order to fulfill the greatest number of commercial commitments in the environmental sector, proposals have been made to include all involved environmental elements in the value chain²²⁰.

²¹⁶ Sewage services are closely related to waste water treatment services that aim essentially to speed up the natural processes which reduce contaminants to an acceptable level for discharge into the environment. See: UNCTAD. Trade and Environment Review 2003. UNCTAD/DITC/TED/2003/4.

²¹⁷ Refuse disposal and sanitation services are virtually synonymous with solid waste management which includes services to collect, transport, treat and dispose waste from homes, municipalities, commercial establishments and manufacturing plants. See: UNCTAD. Trade and Environment Review 2003. UNCTAD/DITC/TED/2003/4.

²¹⁸ Cleaning of exhaust gases closely resembles air quality control services designed to remove pollutants from a gaseous stream or to convert pollutants to a non-polluting or less polluting form prior to discharge into the atmosphere. See: UNCTAD. Trade and Environment Review 2003. UNCTAD/DITC/TED/2003/4.

²¹⁹ WTO Council for Trade in Services. Environmental Services. Background Note by the Secretariat. S/C/W/46, July 6, 1998.

²²⁰ UNCTAD. Trade and Environment Review 2003. UNCTAD/DITC/TED/2003/4.

It is possible to identify the adoption of more expressive commitments related to environmental services in modes 2 (consumption abroad) and 3 (commercial presence) of the GATS, while those made within modes 1 (cross-border supply) and 4 (movement of natural persons) are more modest. Commitments made include sanitation services, reducing GHG emissions in vehicles, protection of nature and the environment, reduction of sound pollution, among others. They often present restrictions on liberalization, particularly related to limitations on market access and National Treatment. Moreover, there are, as of yet, no registered adoption of commitments related to renewable energy production and maintenance services.

As seen before, negotiations on environmental goods are held within the context of the WTO's NGMA.

Before beginning a discussion on environmental goods that should be in the liberalization list, two decisions have to be made on the form said negotiations will take. The first is about the definition of environmental goods for purposes of preferential treatment; the second refers to the method of trade liberalization to be adopted by Members. Both shall be further analyzed ahead.

To answer the first question, at least three kinds of goods that could receive the designation of "environmental" have been identified, as seen before²²¹:

Type I: Goods that are environmentally superior in end use;

Type II: Goods for which environmental improvement is a primary purpose;

Type III: Goods that are environmentally superior in production and processing.

As for the second question, about the method of trade liberalization to be employed, a few hybrid proposals have been identified, with three main approaches: liberalization through lists of environmental goods; liberalization based on presentation of environmental projects; and lib-

²²¹ Ibid.

eralization through the request/offer method²²².

The first approach suggests the establishment of lists of environmental goods for tariff reduction based on the two lists of environmental goods adopted by the Asia-Pacific Economic Cooperation (APEC) and by the OECD²²³. Most of the over 400 goods listed by the WTO Secretariat is contained in the HS.

The categories of environmental goods discussed so far encompass air pollution control, renewable energy, waste, water and sewage treatment, environmental technologies and carbon capture and storage, aside from a hybrid category that encompasses Environmentally Preferable Products (EPPs), protection of natural resources, renewable products and energy sources, resource and pollution management, among others²²⁴.

Some countries, like Brazil, claim that ethanol should also be classified as an environmental good²²⁵. The US and the EU, conversely, defend the notion that it should be considered an agricultural good. Supporting this opinion, a joint proposal from the US and the EU submitted in 2007 did not list ethanol as one of the products classified as environmental goods. Brazil contests this exclusion, on the grounds that Paragraph 31 (iii) of the Ministerial Declaration does not prevent agricultural goods from taking a place in the environmental agenda. Moreover, it also claims that biofuels are essentially environmental goods, seeing as they can be qualified as substitute or complementary goods in relation to fossil fuels and

²²² WTO. Trade and Environment: Members ready to move forward on environment negotiations. WTO 2011 News Items, January 10 and 14, 2011. Available at http://www.wto.org/english/news_e/news11_e/envir_10jan11_e.htm. Accessed May 28, 2012.

²²³ The list presented by APEC comes from a pragmatic and restrictive concept of environmental goods, considering to such effect the prevalence of environmental goods in a specific tariff line of the HS system and the goods that possess clean technology and act to control and reduce impact caused on the environment. The OECD's definition is broader and encompasses not only environmental technologies but also products and services that reduce environmental risk and minimize pollution and use of natural resources. See: OECD. Environmental Goods: A Comparison of the APEC and OECD Lists. Joint Working Party on Trade and Environment, COM/ENV/TD(2003)10/FINAL, 2003.

²²⁴ For more information see: WTO Committee on Trade and Environment in Special Session. Report by the Chairman to the Trade Negotiations Committee. TN/TE/20, April 2011.

²²⁵ According to the article Disagreement over Biofuels, Climate-friendly Products, ICTDS, Bridges, Year 11, Vol. 7, p.8, November 2007, Brazil once more brought forth the proposal to make ethanol into an environmental good, retaking document WT/CTE/W/98.

non-renewable energies.

The adoption of this approach presents some challenges that must be considered. First, the difficulty in keeping these lists constantly updated must be highlighted—keeping in mind the plethora of technological advances that can be observed in the sector, a phenomenon known as *living list*²²⁶. Second, some developing countries have questioned, among other measures, the adoption of the APEC and OECD lists as a base and the inclusion of dual use goods that would not necessarily bring benefits to the environment - aside from seeking the inclusion of agricultural goods like biofuels and organic products²²⁷.

The trade liberalization proposal based on the Environmental Project Approach, on the other hand, consists of the presentation of environmental projects by national authorities designated by each member, having as a base the criteria defined by the WTO's Trade and Environment Committee as a way to guarantee the transparency of the process. The EGS contained within the presented projects would be qualified to receive tariff concessions for the duration of the project, in order to create compatibility among national, environmental, and development goals. Since these would be temporary projects, the matter of technological innovation would theoretically be resolved, since only goods, services, and technologies relevant to the current moment would be included.

In the face of claims that this proposal would not bring new incentives to the liberalization of EGS, since Members would be allowed to unilaterally reduce tariffs for projects presented by them, India's representatives, who created the proposal, claimed that tariff concessions should be extended to all nations through the MFN principle. Some Members showed apprehension toward the potential bureaucracy implied by this proposal, and certain relevant points, such as technology transfer and the inclusion of small and medium-sized enterprises in the project, are still

226 ICTSD. Emerging Issues in the Interface between Trade, Climate Change and Sustainable Energy. ICTSD Discussion Paper, Geneva, May 2005, p. 17.

227 HOWSE, R.; VAN BORK, P. Options for Liberalizing Trade in Environmental Goods in the Doha Round. In: ICTSD Project on Environmental Goods and Services. Issue Paper No. 2, 2006, pp. 13-17.

under discussion²²⁸.

The request/offer liberalization proposal would allow each Member to suggest a list of items to be considered environmental goods and for which it would be prepared to accept liberalization commitments. Said commitments would be made upon rounds of negotiation and would be extended to all nations through the MFN principle²²⁹. The challenges presented by this initiative are deeply linked to the time allotted to carrying out said rounds, as well as what form they would take: if a single round or a continuous progressive liberalization process²³⁰.

However, as already elucidated in previous chapters, the Doha round currently faces some inflection points that have postponed its conclusion²³¹.

4.3. ECT

Article 19 of the ECT states that the Contracting Parties should act so as to minimize the environmental impact of operations within the context of the energy chain. Aside from that, the Article refers to the problem of cross-border pollution, stating that polluters must deal with the costs generated by their pollution in order to avoid distorting international trade (Article 19.1).

The Contracting Parties signed, in 1994, the Energy Charter Protocol

228 HOWSE, R.; VAN BORK, P. Options for Liberalizing Trade in Environmental Goods in the Doha Round. In: ICTSD Project on Environmental Goods and Services. Issue Paper No. 2, 2006, pp. 14-15.

229 WTO. Summary report on the twenty-first meeting of the Committee on Trade and Environment in special session. November 1-2, 2007. TN/TE/R/21, April 29, 2007, p. 3.

230 WTO Committee on Trade and Environment in Special Session. Report by the Chairman to the Trade Negotiations Committee. TN/TE/20, April 2011, p. 14.

231 Due to the difficulties found in finishing the Doha round, the Global Green Growth Institute (GGGI), the Peterson Institute for International Economics (PIIE) and the International Centre for Trade and Sustainable Development (ICTSD) released a project with the intent to analyze the possibility of creating a Sustainable Energy Trade Agreement (SETA) with the objective of accelerating development and adoption of renewable energy and clean technologies. For more information, see: HUFBAUER, G.; KIM, J. Sustainable Energy Trade Agreement: A Look at the Details. Conference Sponsored by Peterson Institute for International Economics and ICTSD, November 2011, p. 2; GGGI. A Sustainable Energy Trade Agreement Project. 2011. Available at <http://www.gggi.org/research/gggi-research-initiative-sustainable-energy-trade-agreement-project>.

on Energy Efficiency and Related Environmental Aspects, in which they all committed, as a group, to the formulation of policies to perfect energy efficiency and collaborate to reduce negative externalities that impact the environment.

Through the Working Group created within the context of the Energy Charter Protocol on Energy Efficiency and Related Environmental Aspects, the ECT provided to its members a discussion forum intended to impel trading of experiences related to national strategies on energy efficiency, particularly regarding tariffs, price policies related to the energy sector, environment-related subsidies, and other mechanisms intended to finance initiatives related to energy efficiency.

As can be noticed, the ECT provided its Contracting Parties with an environment that favors cooperation and exchanges of information on environment-related policies through binding programmatic norms. Moreover, the Contracting Parties are permitted to bring issues related to the implementation or interpretation of the provisions contained in Article 19 to the Energy Charter Conference²³² for resolution.

4.4. UNFCCC AND THE KYOTO PROTOCOL

UNFCCC, the Convention arising from Rio-92, created a space meant to encourage global action in relation to climate change, however, it didn't establish specific measures, goals, or mechanisms toward such an effect. Its main goal is the stabilization of GHG concentration in the atmosphere at a level that does not bring about changes in the natural patterns of the planet's climate processes²³³, as depicted in its Article 2:

The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, the stabilization of greenhouse gas concen-

²³² The Energy Charter Conference is the administrative, decision-making body of the ECT, with representatives from all the Contracting Parties.

²³³ For more information on human interference considered dangerous to the climate system, see: IPCC. 4th Assessment Report. Available at http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml#U.Zu9yrWyDT0.

trations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner.

UNFCCC has recommended that the Parties adopt certain general guidelines, with the purpose of encouraging, among other actions, sustainable development, cooperation, and transfer of technology and technical information regarding climate (Article 4.1). To accomplish that, the Parties were encouraged to adopt preventive measures in the sense of anticipating, predicting or minimizing the causes of climate change and mitigating its negative effects.

Box 25: Conference of the Parties (COP) - UNFCCC

The COP, an association of all the Parties to the Convention, represents the top decision-making body within the UNFCCC. Its annual meetings have as goals, among others, reviewing the implementation of the Convention and legal instruments that may be adopted by the Parties; facilitating the exchange of relevant information regarding the adopted methods related to climate change; negotiating binding obligations related to reducing GHG emissions, etc. (Article 7, UNFCCC)

The Kyoto Protocol was adopted during UNFCCC's COP 3, in December 1997, and entered into force in February 2005. The Protocol is considered a mechanism of "operationalization" of the UNFCCC, as it determines that countries listed in its Annex I (developed countries)²³⁴ make a commitment to stabilizing and reducing their GHG emissions by 5.2%, on

²³⁴ Countries in Annex I to the Kyoto Protocol are: Australia, Austria, Belgium, Canada, Denmark, European Union, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Liechtenstein, Luxembourg, Monaco, Netherlands, New Zealand, Norway, Portugal, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States of America.

average, in the period between 2008 and 2012²³⁵, with the quantification of reductions being relative to the emissions made in a predetermined base year, being 1990 the generally adopted year.

Although it doesn't establish binding obligations to reduce GHG emissions for developing countries, which are not listed in Annex I and are referred to as Non-Annex I Parties²³⁶ to the agreement, such countries also share the common responsibility of reducing their emissions, established by the Principle of Common but Differentiated Responsibilities.

So the obligations of Annex I countries could be met, the Protocol included three flexibility mechanisms intended to help Parties reduce their GHG emissions in the least expensive manner possible: (i) Emissions Trading; (ii) Joint Implementation; and (iii) Clean Development Mechanisms (CDM).

Emissions Trading allow signatories to the Protocol with a level of GHG emissions below their goal to sell the excess to countries still above the

emission limit²³⁷.

The Joint Implementation Mechanism allows Annex I countries to act together in implementing emission reduction projects in countries that present goals under the Protocol. It is permitted to accumulate Emission Reduction Units (ERU), which may be used to reach the carbon emission goal. The Joint Implementation Mechanism is clearly beneficial to both participants, seeing as it allows the investing country to make use of economically efficient mechanisms to reach the goal taken under the Protocol, while the receiving country benefits from foreign investments.

CDM is the only one among the flexibility mechanisms that applies to developing countries. Its purpose is, on one hand, to support Non-Annex I countries and, on the other, to assist Annex I countries in reaching their quantified GHG reduction goals. Developing countries may implement projects that contribute to sustainability and present a reduction or capture of GHG emissions, thus obtaining Certified Emission Reductions (CERs), which can be negotiated on the global market. Since Annex I countries have GHG Emission reduction quotas to meet, they can purchase these CERs from project developers in developing countries to aid in reaching their goals.

Thus, the reduction of one unit of GHG emitted or "captured" voluntarily from the atmosphere by a company in a developing country can be negotiated in the world market with developed countries (or companies located in them) that need those credits to achieve their goals under the Kyoto Protocol. With this flexibility mechanism it becomes possible to reduce global GHG emissions through reducing emissions in developing countries while creating an important alternative for sustainable development in developing countries.

235 Since the USA did not ratify the agreement, the new collective emission reduction goal was decreased to 4.2% within the same time period.

236 Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Azerbaijan, Bahamas, Bahrain, Bangladesh, Barbados, Belize, Benin, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Brunei, Burkina Faso, Burundi, Cambodia, Cameroon, Cape Verde, Central African Republic, Chad, Chile, China, Colombia, Comoros, Congo, Cook Islands, Costa Rica, Cote d'Ivoire, Cuba, Democratic People's Republic of Korea, Democratic Republic of the Congo, Djibouti, Dominica, Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Ethiopia, Fiji, Gabon, Gambia, Georgia, Ghana, Guinea-Bissau, Guyana, Haiti, India, Indonesia, Iran, Iraq, Israel, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kuwait, Kyrgyzstan, Laos, Lebanon, Lesotho, Liberia, Libya, Macedonia, Madagascar, Malawi, Malaysia, Maldives, Mauritius, Mexico, Micronesia, Moldova, Mongolia, Montenegro, Morocco, Mozambique, Myanmar, Namibia, Nauru, Nepal, Nicaragua, Niger, Nigeria, Niue, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Qatar, Republic of Korea, Rwanda, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Seychelles, Sierra Leone, Singapore, Solomon Islands, Somalia, South Africa, South Sudan, Sri Lanka, Sudan, Suriname, Swaziland, Syria, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkmenistan, Tuvalu, Uganda, United Arab Emirates, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zambia and Zimbabwe.

237 Carbon emission permit trading, also known as cap-and-trade system, is a system used to control the emission of polluting gases with economic incentives. The Kyoto Protocol presents two types of carbon markets: the market for credits generated by emission reduction projects (CDM and Joint Implementation projects) and the permit market. The permit market is a negotiating system aimed at developed countries, since it is related to setting limits on the total GHG emissions within a defined geographical area. For instance, the government of a particular industrialized country might establish maximum limits of emissions allowed to its various industrial sectors. In that context, companies have permission to negotiate their eventual surpluses with other companies who need those permits to accomplish their goals.

The Protocol also includes a commitment from each Party to implement policies aimed at improving energy efficiency and reducing “market imperfections” (like taxes and subsidies) in sectors with greater emissions of GEE²³⁸.

Since the effectiveness of the Kyoto Protocol is directly contingent on the fulfillment of commitments made by the Parties, it depends on a mechanism created to facilitate, promote and reinforce said fulfillment. For that purpose, it was established that:

[A]n Annex I party that fails to fulfil its emission reduction target during the first commitment period will have its amount of permitted carbon emissions reduced during the second commitment period by the amount of emissions necessary to bring it back into compliance, plus a penalty of a further reduction, equal to 30 per cent of the amount by which it exceeded its emission target²³⁹.

The first commitment period of the Kyoto Protocol expired on December 31, 2012. However, the Durban Platform for Enhanced Action²⁴⁰ approved a second period of commitments for the Protocol, which had its start in 2013 and will be extended to a period of eight years. Thirty-six countries are part of the new agreement: Australia, Norway, Switzerland, Ukraine, and all members of the EU, which means that countries who committed to reducing their emissions during Kyoto’s second period represent roughly 15% of total world emissions.

During COP 17 it was possible to create a script for the adoption of “a protocol, another legal instrument or result agreed with legal force” in 2015, which may become effective as soon as 2020. Through that instrument, all developing countries would also make a commitment to compulsory emission reduction goals. Moreover, the CDM was modified and amplified to include projects that promote stocking of carbon taken from the atmosphere.

COP 18, held in Doha, aside from confirming the second commitment

period of the Kyoto Protocol for a period of eight years, approved a text that refers to the surplus emissions of the first period. It was determined, for example, that Australia is not allowed to purchase emission rights accumulated in the first period, and the EU, Japan, Liechtenstein, Monaco, Norway and Switzerland may not make use of excesses in their energy-climate package for the whole second period, up to 2020.

In spite of the evident complexity related to the imposition of environmental policies vis-à-vis the multilateral trade regime, it is important to highlight the fact that the legal regimes defined in the WTO and UNFCCC do not operate in an isolated fashion. Clear evidence can be found in the fact that both Article 3.5 of UNFCCC and 2.3 of the Kyoto Protocol forbid the adoption of measures that translate into arbitrary or unjustified discrimination or disguised restriction on international trade, so as not to violate the provisions of the WTO Agreements:

Article 3.5, UNFCCC: The Parties should cooperate to promote a supportive and open international economic system that would lead to sustainable economic growth and development in all Parties, particularly developing country Parties, thus enabling them better to address the problems of climate change. Measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade.

Article 2.3, Kyoto Protocol: The Parties included in Annex I shall strive to implement policies and measures under this Article in such a way as to minimize adverse effects, including the adverse effects of climate change, effects on international trade, and social, environmental and economic impacts on other Parties, especially developing country Parties and in particular those identified in Article 4, paragraphs 8 and 9, of the Convention, taking into account Article 3 of the Convention. The Conference of the Parties serving as the meeting of the Parties to this Protocol may take further action, as appropriate, to promote the implementation of the provisions of this paragraph.

Furthermore, there is a growing inter-institutional cooperation, mainly between the WTO and institutions related to climate change, in order to guarantee that the provisions of the WTO and the obligations related to

238 WTO - UNEP. Trade and Climate Change. 2009, pp. 71-72.

239 WTO - UNEP. Trade and Climate Change. 2009, p. 75.

240 Durban Platform is the name of a group of agreements obtained at COP 17, held in the city of Durban (South Africa) between November 28 and December 10, 2011.

commerce, within existent agreements negotiated multilaterally for the protection of the environment, can coexist harmoniously. In this sense, one can note the participation of the UNFCCC in meetings of the Committee on Trade and Environment of the WTO to observe the negotiations, and the participation of the Secretariat of the WTO in the Conference of the Parties of the UNFCCC.

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5. INVESTMENT WITHIN THE ENERGY SECTOR

The question of investments is relevant to the study of international energy regulation due to the capital intensity demanded by the processes of energy production, generation, and distribution. The high costs and complexity of petroleum and gas exploration projects, of building large-scale hydroelectric power plants, of the high-tech equipment used to generate energy from available alternative sources, of installing power lines, among other things, often make it necessary to seek out foreign investment to fund these projects²⁴¹.

It is interesting to note that, if international trade regulation deals very little with the energy sector and, because of this, encounters difficulties adapting itself to the particularities of the matter, international investment laws, for their part, have always had strong relations with the energy sector, especially regarding petroleum and gas exploration.

Investments in the energy sector represented, in 2008, approximately 10% of the total flows of Foreign Direct Investment (FDI). The percentage experienced very little variation between 1990 and 2008. In absolute terms, the FDIs in the energy sector have been increasing²⁴²:

241 World Energy Council. Trade and Investment Rules for Energy. 2009.

242 KRAJEWSKI, M.; HERRMANN, C.; TERHECHTE, J.P. The Impact of International Investment Agreements on Energy Regulation. In: European Yearbook of International Economic Law, v. 3, 2012, p. 349

**Table 4 - FDI stocks in energy-related sectors
1990-2008 (in millions of USD)**

Sector	1990			2008			
	Developed Countries	Developing Countries	World	Developed Countries	Developing Countries	Southeast Europe and the CIS*	World
Mineral and Oil Industries	157.325	24.487	181.812	854.244	192.632	62.323	1,109.199
Electricity, Gas, and Water Services	7.145	3.231	10.376	275.438	66.954	7.299	349.691

* Commonwealth of Independent States

Source: UNCTAD, *World Investment Report, 2010, Annex Table 21*

Closely related to industrial policy, investment measures oriented towards trade can demand or stimulate certain investment behaviors, with the given aim of attending to the national interests of economic development²⁴³. The Members of the WTC recognized the impact these measures can have on trade and, within the ambit of the Uruguay Round, have adopted the Agreement on Trade Related Investment Measures (TRIMs).

Article 2 of the TRIMs establishes that:

2. Without prejudice to other rights and obligations under GATT 1994, no Member shall apply any TRIM that is inconsistent with the provisions of Article III or Article XI of GATT 1994.

The Agreement prohibits investment measures such as those that require the purchase or use of products of domestic origin, those that reduce the importing of products through quantitative restrictions, or that reduce access to foreign currencies, among others. As such, it seeks to

243 NASSER, R. Trims: A Relação entre Investimento e Comércio. In: AMARAL Jr, A.; SANCHEZ, M. R. Regulamentação Internacional dos Investimentos: algumas lições para o Brasil. São Paulo: Aduaneiras, 2007, p. 163

guarantee that the rules applicable to the trading of goods will not be circumvented by investment measures with the same effects as trade measures, such as quantitative restrictions or the use of domestic products.

The restrictions imposed by the Agreement are relevant for the energy sector since they may, for example, inhibit the promotion of alternative energy sources, which are generally more expensive than fossil sources and, thus, making their usage feasible requires incentives.

The confrontation between the prohibitions of TRIMs (export requirements or local content) and the freedom of States to pursue industrial policies has brought forth heated discussions ever since the negotiations of the Agreement. Brazil and India even presented a proposal for the renegotiation of the topic during the Doha Round²⁴⁴.

Recently, another debate has been raised: specifically, if a State, under the pretext of environmental preservation, should be able to, for instance, discriminate or favor energy products and equipment on the basis of the technology utilized in the production of the good, with the goal of promoting the utilization of cleaner forms of energy²⁴⁵.

In this sense, Canada, under its FIT Program, requires a given percentage of equipment utilized in the generation of renewable energy to be from the province of Ontario in order for the benefits of the program to be granted. The Canadian justification would be based on the necessity of developing domestic industry in order to make the generation of renewable energy feasible.

The EU and Japan have both made appeals to the DSB (Dispute Settlement Body) of the WTO (*Canada- FIT Program*, DS426) alleging that the required national content violates, among other articles, Article 2.1 of the TRIMs, since this would be a trade-related investment measure and thus incompatible with Article III of GATT 1994. The AB (Appellate Body) confirmed the conclusions of the Panel that found that the measure adopted in the province of Ontario is incompatible with Article 2.1 of the TRIMs and which held that Canada should remove the measure.

244 Proposals G/C/W/428 e G/TRIMS/W/25.

245 SELIVANOVA, Y. The WTO and Energy: WTO Rules and Agreements of Relevance to the Energy Sector, Issue Paper n. 1. In: ICTSD. Trade and Sustainable Energy Series. Geneva: ICTSD, 2007, p. ix.

It should be emphasized that the WTC does not define the concept of foreign investment, but only regulates trade-related investment measures.

5.1. DEFINITIONS

Definitions of the term “investment” vary among the International Investment Agreements (IIAs). In some cases they adopt a fairly general definition, which extends to practically any type of activity. More commonly the definition is limited to a given type of investment, for example FDI²⁴⁶.

Box 26: The Principles of International Investment Regulation in the IIAs

The main objective of the IIAs is to create a secure and stable environment for foreign investors and, as such, to increase the flow of investments. In this way, a series of mechanisms are prescribed with the hopes of protecting the investor.

The most relevant principles found within the IIAs deal with the: (i) general standards of treatment, including non-discrimination and fair and equitable treatment; (ii) issues related to expropriation and compensation rights; (iii) free movement of capital.

One of the great gaps within international regulation is the absence of a multilateral agreement that deals specifically with the question of investments. Some initiatives have been attempted, most notably the *Multilateral Agreement on Investments* (MAI). Proposed by OECD, the negotiations over the MAI began in 1995, but, owing to a lack of consensus and social support, the proceedings were interrupted in 1998. Another initiative was launched by the WTO during the Doha Round in 2001, but the topic was excluded from the Round in 2003 due to the lack of an ex-

246 UNCTAD. *International Investment Instruments: Key Issues*, v.1, Geneva, UNCTAD/ITE/IIT/2004/10, p.114. Available at: http://www.unctad.org/en/docs/iteit200410_en.pdf.

PLICIT CONSENSUS FOR CONTINUING THE NEGOTIATIONS.

International investment regulation has thus been carried out through bilateral investment treaties (BIT) or plurilateral agreements, in groups called IIAs, seeking to secure protection for foreign investments made by a State Party to the IIA.

Box 27: Investment-Related Disputes: Arbitration between Investor and State

The IIAs set out the terms of international arbitration for resolving the occasional disputes that arise from specific agreements. These arbitrations can occur between States Parties to the IIA or between a private entity and another State Party. From the investor’s point of view, an investor-to-State arbitration is always positive. Investors are offered greater protection, as they no longer need to rely on the State where they are based in order to achieve the resolution of a conflict and are placed on the same level as the challenged government. However, from the point of view of the State, there is a great debate about this question. On the one hand, it would attract more investments owing to the legal security that investor-to-State arbitration guarantees to the investor. On the other hand, States question the possible pro-investor bias that has been observed in some arbitration awards; such a situation, if it is found to exist, presents possible damages to national interests.

It is interesting to note that there is a certain stability among investments in the energy sector. Between 1990 and 2008, these investments represented about 10% of FDI flows and accounted for about one-third of the total arbitrations between investors and States within the same period³⁵.

International Center for the Settlement of Investment Disputes (ICSID)

The ICSID is an autonomous international institution, belonging to the World Bank Group, established following the Convention on the Settlement of Investment Disputes between States and Nationals of Other States in 1966.

The ICSID offers both a structure and a procedural, regulatory framework for arbitration among the Contracting States to the Convention. Its rules also permit the Secretary of the ICSID to oversee arbitrations involving at least one of the Parties that has ratified the Convention, provided there is agreement among the Parties. All the Contracting States must thereby recognize and enforce the arbitration awards issued.

One hundred and fifty eight States are signatories of the Conventions. However, it should be pointed out that Brazil is not a Member of the Convention.

United Nations Commission on International Trade Law - UNCITRAL

UNCITRAL, created in 1966, has the objective of promoting the harmonization and progressive unification of international business law. For its part, it provides a regulatory framework for the resolution of trade and investment disputes. The commission does not function as an arbitral tribunal, nor does it handle the proceedings of the arbitration; the Parties to a dispute are required to either select an arbitrator or form a tribunal that will analyze the dispute, with the proceedings being carried out in compliance with the rules laid down by UNCITRAL.

The rules of UNCITRAL can be applied to any such trade or investment arbitration, so long as there is consent from the Parties.

The Arbitration Institute of the Stockholm Chamber of Commerce (SCC)

The SCC was established in 1917 to provide a fair and efficient arbitral procedure for settling conflicts related to international trade and investments. It is today one of the world's most utilized arbitration institutions. The arbitral procedure lasts an average of six months and has its own procedural regulation. As a rule, it is not possible to appeal the arbitral award.

5.2. ECT

Article 1(6) of the ECT defines investment as any asset directly owned or indirectly controlled by an investor, including businesses, shares, or any other form of ownership interest, intellectual property rights, any rights granted by law, contract, license, or permission for the conduct of economic activity in the energy sector, among others. Investment must be related to an economic activity in the sector of energy or classified under the category of “efficiency projects,” under the terms of the ECT. As such, it offers a fairly broad definition in what concerns the type of investment, although limited to the energy sector.

The term “investor” is defined by Article 1(7) of the ECT as any natural person having the citizenship or nationality of, or who is permanently residing in, the territory of one of the Contracting Parties, or a company

or other organization organized in accordance with the law applicable in the respective Contracting Party.

The ECT, in conjunction with the IIAs, constitutes the main source of investment regulations for the energy sector, whereas the WTO, as has been explained, only regulates trade-related investment measures.

5.2.1. THE PRINCIPLES OF INTERNATIONAL INVESTMENT REGULATION WITHIN THE ECT

The ECT bases itself upon the regulation frequently found within the IIAs in order to establish the guidelines that refer to investment protection. In the following sections these principles will be addressed, along with their respective implications for investment regulation within the energy sector.

5.2.1.1. NON-DISCRIMINATION

One of the largest protections granted to the investor by the ECT is protection against discriminatory practices by the State that receives the investment.

The principle of non-discrimination is generally divided into two categories, following the same structure as international trade law: National Treatment and MFN.

It is important to emphasize that these non-discrimination rules do not define the content of the treatment investors will receive, but refer only to the regime applicable to them.

5.2.1.2. NATIONAL TREATMENT

The principle of National Treatment establishes that the treatment of foreign investors should be no less favorable than what is granted to national investors within every State under similar conditions. In this way, it seeks to assure competitiveness among foreign and national investors.

The ECT lays out, in Article 10(7), the clause referring to National Treatment, combined with the principle of MFN, which will be explained

further below:

Article 10 - Promotion, Protection and Treatment of Investments

(...)

(7) Each Contracting Party shall accord to investments in its Area of Investors of other Contracting Parties, and their related activities including management, maintenance, use, enjoyment or disposal, treatment no less favorable than that which it accords to Investments of its own Investors or of the Investors of any other Contracting Party or any third state and their related activities including management, maintenance, use, enjoyment or disposal, whichever is the most favorable.

IIAs still provide for exceptions related to National Treatment, which are most often applied to matters of public health, morality and order, and national security.

5.2.1.3. MFN (MOST-FAVORED NATION)

The principle of MNF affirms that treatment no less favorable than that granted to investors originating from Contracting Parties to the ECT should be granted to all other investors. If an investor coming from a Non-Contracting Party to the ECT receives more favorable treatment, this would have to be automatically extended to all investors within the Contracting Parties. In the opposite scenario, however, there is no obligation to reciprocate favorable treatment if the investor is not a Contracting Party to the ECT.

The ECT provides on the principle of MFN in conjunction with the clause referring to National Treatment, as set forth in article 10(7).

One of the main consequences of the principle of MFN is the phenomenon of the *free rider*²⁴⁷. The State that receives investments can be re-

²⁴⁷ The free rider phenomenon is characterized as that in which one or more economic agents finish enjoying a determined benefit without their having made a contribution for its achievement. In the WTC, the expression free rider is utilized to designate a country that does not make commercial concessions, but takes advantage of reduced tariffs and concessions accorded by other countries during a period of negotiations with the principle base of the MFN.

quired to extend, unilaterally to all other States with which it has IIAs, any additional rights that it promises to a third State upon ratification of a future agreement. In this way, the principle of MNF can diminish the field of play for States in negotiations for new IIAs²⁴⁸.

One solution that has been found in certain BITs in order to annul this phenomenon is the establishment of a MFN clause on the condition of reciprocity. As such, there would only be the obligation to extend the most-favored treatment to the investor of a third State if this treatment had been accorded, following a renegotiation, by the other State Party to the BIT. Evidently, the *free rider* becomes a more serious problem when there are considerable differences among the BITs adopted by a State. In the instance that these have a similar structure, the matter will be less sensitive²⁴⁹.

Box 28: The Pre-investment Phase of the ECT

International investment law can be applied in two distinct phases: pre- and post-investment. The pre-investment phase concerns matters that involve the investor getting established in a given country, such as licenses and authorizations. The post-investment phase concerns the treatment of the investment after the investor is already established. It remains to point out that traditionally IIAs have only dealt with the post-investment phase. The extension of this mechanism to the pre-investment phase is a more recent trend, one that is already included within various preferential agreements.

Generally speaking, non-discrimination rules are applied to the post-investment phase. In the case of ECT, Article 10(7), which deals with non-discrimination, is applied to already-established investments.

During the negotiations, there were also attempts to extend it to the pre-investment phase. If National Treatment were also applicable to this phase, it would be possible for foreign investors to solicit permission to pursue their investments under the same conditions as national investors.

²⁴⁸ UNCTAD. International Investment Instruments: Key Issues, v.1, Geneva, UNCTAD/ITE/IIT/2004/10. p.191. Available at: http://www.unctad.org/en/docs/iteit200410_en.pdf.

²⁴⁹ Ibid.

Nevertheless, within the negotiations there was no consensus for the applicability of the non-discrimination principle to this phase. The negotiators only managed to agree upon an intermediate solution through Article 10(2), which provides on best efforts to extend non-discrimination to the pre-investment phase. Article 10(5) provides also that efforts will be made to progressively remove restrictions affecting foreign investors during the pre-investment phase. The Parties may, still yet, voluntarily decide to grant non-discriminatory treatment to investors during this phase (Article 10(6)).

The negotiation of binding provisions related to non-discriminatory treatment during the pre-investment phase is set forth in Article 10(4).

The extension of the non-discrimination principle to the pre-investment phase is relevant for the energy sector, since licenses or other concessions before start-up are frequently demanded of investors, thereby constituting barriers to foreign investment already in the pre-investment phase.

5.2.1.4. FAIR AND EQUITABLE TREATMENT

The principle of fair and equitable treatment attempts to fill the lingering gaps within the regulatory framework of investments, thereby securing protection for the investor.

The ECT has in its Article 10(1) a reference to this principle:

Article 10 - Promotion, Protection and Treatment of Investments

(1) Each Contracting Party shall, in accordance with the provisions of this Treaty, encourage and create stable, equitable, favorable and transparent conditions for Investors of other Contracting Parties to make Investments in its Area. Such conditions shall include a commitment to accord at all times to Investments of Investors of other Contracting Parties fair and equitable treatment. Such Investments shall also enjoy the most constant protection and security and no Contracting Party shall in any way impair by unreasonable or discriminatory measures their management, maintenance, use, enjoyment or disposal. In no case shall such Investments be accorded treatment less favorable than that required by international law, including treaty obligations. Each contracting party shall observe any obligations it has entered into with an Investor or an Investment of an Investor of any other Contracting Party.

It is important to note that, just as with the IIAs, the ECT does not present a precise definition of the concept of fair and equitable treatment. However, jurisprudence has established important clarifications that can help elucidate what fair and equitable treatment is, including within the scope of the concept principles such as: protection of the legitimate expectations of the investor with reference to the maintenance of a stable and predictable environment within the State where the investment is made; the principle of transparency; good faith; the abuse of rights doctrine; due process; proportionality and the prohibition of arbitrariness²⁵⁰.

The legitimate expectations of the investor would be based on the legal order of the State that receives the investment, as prevailing at the time the investment was made. This protection aims to recognize the concerns the investor may have concerning matters of planning and stability.

In the same sense, transparency is necessary so that investors may identify, in an adequate manner and based on the existing legislation, those measures that can potentially affect their investments, and thus facilitate planning.

The principle of good faith, as shown above, is at the root of fair and equitable treatment and remains one of its key elements, even though such treatment is much broader than the principle of good faith, so that the absence of the latter is not an essential requirement to determine a violation of the obligation to confer fair and equitable treatment upon the investor.

Due process is relevant to fair and equitable treatment since it concerns access to justice, which is essential for guaranteeing all other protections conferred by the IIA.

It remains to be pointed out that an examination of IIA practices shows that the concept of fair and equitable treatment varies in each particular case. Given the different contexts in which the term is used, the type of protection offered does not show a uniform pattern²⁵¹.

250 HOBÉR, K. Investment Arbitration and the Energy Charter Treaty. In: Journal of International Dispute Settlement, v. 1, n.1, 2010, p. 158.

251 UNCTAD. International Investment Instruments: Key Issues, v.1. Geneva, UNCTAD/ITE/IIT/2004/10. p.217. Available at: http://www.unctad.org/en/docs/iteiit200410_en.pdf.

5.2.1.5. EXPROPRIATION

Expropriation may result from legislative or administrative acts that precipitate a transfer in the ownership of an investment. It may also result from official acts that bring about a loss of administrative capacity or control, or cause a significant depreciation of the value of assets. This includes matters such as excessive taxation, which may render an enterprise unviable. Also considered here are regulations that would excessively limit the actions of the investor, for example, changes to legislation that reduce the limits to interest or control available to foreign investors. In this way, expropriation can be classified as either direct or indirect, respectively.

Expropriation will be legitimate if it meets certain conditions. In accordance with international customs, for expropriation to be considered legitimate it requires: public interest; non-discrimination; payment of compensation and due process.²⁵²

In the same sense, the ECT declares, in Article 13, that:

(1) Investments of Investors of a Contracting Party in the Area of any other Contracting Party shall not be nationalized, expropriated or subjected to a measure or measures having effect equivalent to nationalization or expropriation (hereinafter referred to as “expropriation”) except where such Expropriation is:

- (a) For a purpose which is in the public interest;*
- (b) Not discriminatory;*
- (c) Carried out under due process of law; and*
- (d) Accompanied by the payment of prompt, adequate and effective compensation.*

(...)

(3) For the avoidance of doubt, Expropriation shall include situations where a Contracting Party expropriates the assets of a company or enterprise in its Area in which an Investor of any other Contracting Party has an Investment, including through the ownership of shares.

²⁵² Ibid. P. 239.

It should be noted that, in many cases, the courts do not recognize the occurrence of expropriation, affirming that the measure has not attained a certain level of interference with the investment. They do recognize, nonetheless, that these measures are a violation of fair and equitable treatment²⁵³.

A sufficiently broad discretionary power exists for a State to determine what constitutes the “public interest,” and, in general, such discretion is not challenged. Particularly in the energy sector, in the majority of cases, investments are based on exploiting natural resources within a given State²⁵⁴. Within this context, the consensus is that the States retain sovereignty over the exploitation of their natural resources. It is thus difficult to claim that expropriation does not serve the public interest²⁵⁵.

With respect to the criterion of non-discrimination, expropriation based on an arbitrary or discriminatory measure that lacks legitimate justification is considered unlawful²⁵⁶. For example, if it were verified that within a given nationalization program a foreign investor was less favored than either domestic investors or nationals from another State, this would be a violation of the principle of non-discrimination, as long as there was not legitimate justification for this differential treatment.

5.2.1.6. COMPENSATION

Compensation is the requirement for legitimate expropriations that usually generates the most controversy. There is an enormous diversity of opinions about what is considered adequate compensation: many States assert that it is equivalent to the full market value of the expropriated

²⁵³ KRAJEWSKI, Markus; HERRMANN, C.; TERHECHTE, J.P., “The Impact of International Investment Agreements on Energy Regulation”, European Yearbook of International Economic Law, v. 3, 2012, p. 356-358.

²⁵⁴ UNCTAD. International Investment Instruments: Key Issues, v.1. Geneva, UNCTAD/ITE/IIT/2004/10. p. 239. Available at: http://www.unctad.org/en/docs/iteiit200410_en.pdf.

²⁵⁵ On this point, see: UN General Assembly Resolution 1803 (XVII). Permanent sovereignty over natural resources, adopted on December 14th, 1962.

²⁵⁶ UNCTAD, International Investment Instruments: Key Issues, v.1, Geneva, UNCTAD/ITE/IIT/2004/10. p. 239. http://www.unctad.org/en/docs/iteiit200410_en.pdf.

assets, whereas others argue that it should only be what is considered appropriate compensation, whereas others still demand that it be based on the book-value of the assets. These divergences leave much room for disputes between investor and State about what should be considered the adequate value²⁵⁷.

In Article 13, the ECT establishes that:

(...)

Such compensation shall amount to the fair market value of the Investment expropriated at the time immediately before the Expropriation or impending Expropriation became known in such a way as to affect the value of the Investment (hereinafter referred to as the “Valuation Date”).

Such fair market value shall at the request of the Investor be expressed in a Freely Convertible Currency on the basis of the market rate of exchange existing for that currency on the Valuation Date. Compensation shall also include interest at a commercial rate established on a market basis from the date of Expropriation until the date of payment.

(2) The Investor affected shall have a right to prompt review, under the law of the Contracting Party making the Expropriation, by a judicial or other competent and independent authority of that Contracting Party, of its case, of the valuation of its Investment, and of the payment of compensation, in accordance with the principles set out in paragraph (1).

In this way the ECT determines that the compensation should be based on market values. Even though the definition is a little more precise about what adequate compensation would be, there is no single method for evaluating this market value, which leads to disputes over the issue.

Another important element in the ECT is the requirement that the investor be granted the right to seek judicial or administrative review of the values and of the compensation paid. The ECT defines, in so doing, one of the elements that have constituted the requirement of due process for the legality of the expropriation measure.

257 Ibid.

5.2.1.7. MOVEMENT OF CAPITAL^L

Finally, the last important question related to energy sector investments concerns the movement of capital. Many States impose a series of restrictions on the remittance of resources abroad. Investors, however, are usually preoccupied with ensuring that repatriation, payment and remittance of amounts related to their investments will be permitted, thus allowing them to reap the respective benefits.

In Article 14, the ECT states that:

Transfers Related to Investments

- (1) Each Contracting Party shall with respect to investments in its Area of Investors of any other Contracting Party guarantee the freedom of transfer into and out of its Area, (...)*
- (2) Transfers under paragraph (1) shall be affected without delay and (except in case of a Return in kind) in a Freely Convertible Currency.*
- (3) Transfers shall be made at the market rate of exchange existing on the date of transfer with respect to spot transactions in the currency to be transferred. In the absence of a market for foreign exchange, the rate to be used will be the most recent rate applied to inward investments or the most recent exchange rate for conversion of currencies into Special Drawing Rights, whichever is more favorable to the investor.*

Exceptions are provided for the protection of creditors' rights in order to assure compliance with the law and court decisions, and so are restrictions on returns in kind under circumstances permitted by the WTO.

5.2.2. INVESTOR-TO-STATE ARBITRATION UNDER THE ECT

The ECT also provides that Contracting Parties may have recourse to a State-to-State or investor-to-State arbitration mechanism. The Parties will have recourse either to the ICSID; to a sole arbitrator or an *ad hoc* arbitral tribunal following the rules of UNCITRAL; or to the SCC. As of May 2012, 32 disputes between investors and States had arisen within

the ambit of the ECT.

In 2010 there were 2,807 BITs²⁵⁸ already in effect, the majority being fairly similar in content²⁵⁹. It should be emphasized that Brazil, despite having signed 14 BITs, has never ratified them²⁶⁰.

**Table 5 - BITs Signed and In Force
in Selected Countries (through 06/01/2012)**

Country	Signed	In Effect
Germany	136	127
Argentina	58	55
Brazil	14	0
Chile	51	39
China	127	100
South Korea	90	82
U.S.A.	47	41
France	101	90
Mexico	28	28

Source: UNCTAD, *Investment Instruments Online – Country-specific lists*

The protections most commonly guaranteed by the aforementioned agreements, as well as by the ECT, concern, among others things, the risk that investors may be discriminated against vis-à-vis other investors, the risk of expropriations and nationalization, as well as unjustified restrictions against capital remittances abroad.

258 UNCTAD. World Investment Report 2011 – Non-Equity Modes of International Production and Development. 2011, p. 100.

259 KRAJEWSKI, M.; HERRMANN, C.; TERHECHTE, J.P. The Impact of International Investment Agreements on Energy Regulation. In: *European Yearbook of International Economic Law*, v. 3, 2012, p. 353.

260 UNCTAD. Country specific list of BITs. Available at: <http://archive.unctad.org/Templates/Page.asp?intItemID=2344&lang=1>. Brazil, between 1994 and 1999, signed BITs with the following countries: Belgium and Luxembourg, Chile, Cuba, Denmark, Finland, France, Germany, Italy, the Korean Republic (South Korea), the Netherlands, Portugal, Switzerland, the United Kingdom, and Venezuela. One of the principle motives of Brazil's non-ratification of the BITs is the fact that the Congress has judged the provisions regarding investor-State arbitration to be unconstitutional.

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UNCTAD. *International Investment Instruments: Key Issues*, v.1. Geneva. UNCTAD/ITE/IIT/2004/10. Available at: http://www.unctad.org/en/docs/iteit200410_en.pdf.

UNCTAD. *World Investment Report 2011 – Non-Equity Modes of International Production and Development*. 2011.

World Energy Council. *Trade and Investment Rules for Energy*. 2009.

6. ENERGY SECURITY

For many years, energy security has been intimately related to national security, having as its primary scope the protection of facilities and the use of energy resources for military purposes.

The context of the two World Wars fostered the perception that energy was associated with national security. The same rationale was applied over the course of the Cold War, until, during the decade of the 1970's, the main oil producers threatened to cut supply to the West²⁶¹.

The measure in question, adopted by OPEC, was the fuse that precipitated the revision of policies related to energy security, also causing their international and national dimensions to be reexamined. The debate was initially characterized by a preoccupation with energy security related to oil and gas, most notoriously during the 1970's and 1980's. With the 1972 Stockholm Conference, and thereafter with the Rio-92, there was a reorientation of these questions to include approaches related to the environment and other issues.

The level of production and reserves of exhaustible resources is currently a concern in countries when dealing with the issue of energy security. At the moment, the first issue to be addressed is the assurance of energy supplies.

Certain international agreements contain the core elements for establishing rights related to the energy security of a country, such as rules to protect investments, principles governing energy transmission, and security of supply. This chapter will focus on presenting the regulatory bases of the policies for energy security, which contain principles and general rules designed to limit state action.

The general principles of the WTO and the exceptions included in Articles XX and XXI of GATT 94 are relevant to guaranteeing energy security.

Among the general principles of the WTO, the principle of transparency stands out, and this is evidenced by the fact that Member states are obligated to notify all other Members of their trade laws and any changes

²⁶¹ For more information, consult the Box concerning the Organization of the Petrol Exporting Countries – OPEC.

thereto and adopt policy positions based on consensus, all of which helps ensure that energy security policies comply with trade legislation. The principles of National Treatment (Article II, GATT 94) and MFN (Article I, GATT 94) are also applicable.

Energy security also provides a pretext for applying the exceptions set out in GATT 94, such as Article XX(g), which deals with exhaustible resources, or even Article XXI, on the exceptions regarding national security, which will be analyzed in what follows.

Article XXI of GATT establishes that:

Nothing in this Agreement shall be construed:

- (a) to require any contracting party to furnish any information the disclosure of which it considers contrary to its essential security interests; or
- (b) to prevent any contracting party from taking any action which it considers necessary for the protection of its essential security interests:
 - (i) relating to fissionable materials or the materials from which they are derived;
 - (ii) relating to the traffic in arms, ammunition and implements of war and to such traffic in other goods and materials as is carried on directly or indirectly for the purpose of supplying a military establishment;
 - (iii) taken in time of war or other emergency in international relations;or
- (c) to prevent any contracting party from taking any action in pursuance of its obligations under the United Nations Charter for the maintenance of international peace and security.

Owing to the historical context in which the initial negotiations of GATT 47 were inserted (post-World War II), the terminology used at many points of the Article adopts a discourse oriented toward national security, intimately related to questions of State military defense: Paragraph (b) (i) and (ii), expressly mentions security exceptions concerning fissile materials (i.e. a preoccupation—at the time of the negotiations—with the processes of constructing and preparing an atomic bomb); Paragraph (b)

(iii) takes up “wartime” exceptions; Paragraph (c) deals with the obligations of Members, in the wake of the UN Charter, for maintaining peace and international security.

Analysis of the applications of Article XXI (b) (ii) and (iii) should be grounded in the general principles of the WTO, including good faith, proportionality, and the principle of non-intervention²⁶². In addition, other obligations must also underlie the application of Article XXI: the obligation to inform and the obligation to justify²⁶³. Regarding the former, Members are required to notify the WTO of the trade-related measures adopted by them, thus guaranteeing the right to information for all other Members²⁶⁴. Turning to the second obligation, Members should justify the adoption of any such measures by presenting the facts and reasons that assure the compatibility of these measures with the provisions of Article XXI(b) (i) to (iii), since the wording of the Article suggests that the members have discretionary power to determine what measures can be considered to be motivated by national security²⁶⁵.

Since the creation of the WTO, there has been no case involving the interpretation of Article XXI of GATT 94 that would permit the development or updating of jurisprudence on the matter. An interpretation from the Panel and/or the Appellate Body could orient the application of these security-related exceptions in a more objective manner, to prevent it from becoming an overly inclusive concept, in such a way as to allow

262 CANN, W. Creating standards and accountability for the use of the WTO Security Exception: reducing the role of power-based relations and establishing a new balance between sovereignty and Multilateralism. In: *Yale Journal of International Law*, v. 26, 2001, pp. 439-442.

263 The International Court of Justice also stressed the condition of the terms of Article XXI, GATT 94: It is difficult to deny that self-defense against an armed attack corresponds to measures necessary to protect essential security interests. But the concept of essential security interests certainly extends beyond the concept of armed attack, and has been subject to very broad interpretations in the past. The Court has therefore to assess whether the risk run by these ‘essential security interests’ is reasonable, and secondly, whether the measures presented as being designed to protect these interests are not merely useful but ‘necessary’. See: ICJ. Case concerning military and paramilitary activities in and against Nicaragua (Nicaragua v. United States of America). Merits, judgment of 27.06.1986, §224, p. 117.

264 GATT, Decision Concerning Article XXI of the General Agreement, L/5426, BISD §29S/23-24, November 30, 1982.

265 HAHN, M.J. Vital interests and the Law of GATT: An analysis of GATT’s Security Exception. In: *Michigan Journal of International Law*, v. 12, issue 03, Spring 1991, p. 605.

any measure whatsoever to be applied. It is apparent that such an application ought to be grounded in the general principles listed here.

6.1. GENERAL CHARACTERISTICS

Every country has specific concerns regarding their energy security. Following Winzer, there are diverse risk factors, dimensions of enforcement, and other components necessary for analyzing each State’s energy security, as demonstrated by the table below²⁶⁶:

Table 6 – Dimensions of Energy Security

Sources of Risk	
Technical Risk Sources	Infrastructural interdependency; mechanical failure; thermal failure; emissions.
Human Risk Sources	Demand risk; low investment levels (Strategic Withholding and Capital Underinvestment); sabotage; terrorism; political instability; geopolitical risk.
Natural Risk Sources	Resource intermittency; resource depletion; natural disasters.
Scope of the Impacts of National Security Measures	
Continuity of the commodity supply;	
Continuity of service supply;	
Continuity of the economy; and	
Environment and Society	
Impacts of the intensity of the measures adopted	
Speed of impacts	Constant; slow changes; or fast changes.
Size of impacts	Impending change; small change; or phase changes.
Sustention of impact	Transitory; sustained; or permanent.
Singularity of impacts	Unique; seldom; or frequent.
Sureness of impact	Deterministic; Stochastic; heuristic; or unknown.

Source: WINZER, Christian (2011; p. 10).

266 WINZER, C. Conceptualizing Energy Security. CWPE 1151, EPRG 1123. Cambridge: University of Cambridge. ESRC, 2011, p. 10.

Following Oliveira, energy should be provided from reliable sources (*reliable energy*). This concept refers to the capacity that the system should possess in order to supply energy without abrupt disruptions, which may occur because of climatic circumstance or through technical or logistical failures. However, in order to guarantee a continuity of energy supplies, even in cases even when a disruption is unavoidable, it is necessary to count on alternative pathways of supplying energy²⁶⁷.

The characteristics presented allow the concept of energy security to approximate, at least within the domain of international trade, an assurance of supply²⁶⁸.

6.1.1. CONCEPT

The concept of energy security involves different definitions and approaches. On the one hand, there are those who stand by the notion that energy security is a policy associated with national security and, owing to this, treat it exclusively as a strategic question²⁶⁹. On the other hand, there are authors who affirm that energy security corresponds to the act of providing citizens with sufficient access to a given amount of energy, at reasonable prices, sufficient to meet the estimated current demand, so as to minimize the risks of an interruption in the energy supply destined for national consumption²⁷⁰. Within this current, there are also those who hold that energy security is one of the most important areas to achieving sustainable development and eradicating extreme poverty, hunger, and

267 OLIVEIRA, A. Energy Security in South America: The Role of Brazil. In: Series on Trade and Energy Security. Winnipeg: IISD, 2010, p. 2.

268 Ibid., p. 2; HOUGH, D. World Trade Organization Agreements and Principles as a vehicle for the attainment of energy security. In: Richmond Journal of Global Law and Business, v. 9, issue 2, Spring 2010, p. 202.

269 USA. Homeland Security Act of 2002. Public Law 107-296, November 25, 2002, 116 Stat. 2148-2149. Available at: http://www.dhs.gov/xlibrary/assets/hr_5005_enr.pdf. Last accessed 21/05/2012.

270 BARTON, B. et al. (eds.). Energy Security: Managing Risk in a Dynamic Legal and Regulatory Environment. Oxford: Oxford University Press, 2004, p. 5.

malnutrition in developing countries²⁷¹.

This study adopts the concept of energy security proposed by the IEA: “The uninterrupted physical availability at a price which is affordable, while respecting environment concerns.”²⁷²

Recent debates over the issue are centered around its commercial features, keeping in mind that the liberalization of trade in energy goods and services is essential for guaranteeing energy security and, toward this purpose, measures that ensure effective transport, infrastructure, efficiency, regulatory transparency, and preservation of the environment must be considered and encouraged²⁷³.

Within the energy sector, it is equally necessary to discuss access to energy products as well as the guarantees related to the supplying and provisioning of energy.

6.1.2. SECURITY OF SUPPLY

In the wake of the oil crisis of the 1970’s, the term “energy security” was applied to oil security and security of supply for importing countries. In this way, a reliable and stable source would prove to be essential for assuring the energy security of a consuming country.

Regulation designed to avoid interruptions in the energy supply chain is essential for ensuring that governments do not adopt measures that would potentially compromise the dynamics of its international trade, or that of sectors indirectly influenced by the energy trade.

Up for discussion, therefore, is what are the current regulations, at the multilateral level, that could allow the Producer State as well as the Consumer State to guarantee investments within the sector based on policies that assure energy security to both parties. Such regulations should be

271 BRICS. New Delhi Declaration, Paragraph 28: Accelerating growth and sustainable development, along with food, and energy security, are amongst the most important challenges facing the world today, and central to addressing economic development, eradicating poverty, combating hunger and malnutrition in many developing countries(...).

272 IEA. Energy Security. Available at: http://www.iea.org/subjectqueries/keyresult.asp?KEYWORD_ID=4103. Last accessed May 4, 2012.

273 MORGENTHAU, H. The new diplomacy movement: International Commentary. In: Encounter, v. XLIII, n. 02. New York: August 1974, p. 56.

sufficient so that the countries can be able to solve an eventual energy crisis, whether short, medium, or long term²⁷⁴.

6.1.3. INFRASTRUCTURE

It is important to note that measures that guarantee the infrastructure necessary for the trade in energy goods and services or for the simple transport of gas, petroleum, and/or electricity from one country to another are generally justified on the grounds of energy security.

As argued by Cottier²⁷⁵ and Marceau²⁷⁶, there are divergences of opinion

274 Energy crisis is a situation in which the nation suffers from a disruption of energy supplies (in the US case, oil) accompanied by rapidly increasing energy prices that threaten economic and national security. The threat to economic security is represented by the possibility of declining economic growth, increasing inflation, rising unemployment, and losing billions of dollars in investment. The threat to national security is represented by the inability of the US government to exercise various foreign policy options, especially with regard to countries with substantial oil reserves. For example, the recent disruption of Venezuelan oil supplies may limit US policy options toward Iraq. WILLIAMS, J.L.; ALHAJJI, A.F. Parallels with Earlier Energy Crises Underscore US Vulnerability to Oil Supply Shocks Today. In: Oil & Gas Journal, International Petroleum News and Technology. March 02, 2003. Available at: <http://www.ogj.com/articles/print/volume-101/issue-5/general-interest/parallels-with-earlier-energy-crises-underscore-us-vulnerability-to-oil-supply-shocks-today.html>. Last accessed May 18, 2012.

275 Thomas Cottier, for example, addresses the issue of distinct classification among certain energy products and services when dealing with transportation. He understands the problem in this way: Currently, some of the energy-related products and services are listed under different headings. One is 'transportation of fuel' described in the CPC as 'transportation via pipeline of crude or refined petroleum and petroleum products and of natural gas'.³⁸ This comes under the broad category of transport services, which is not strictly appropriate. Transportation of energy-related products and services requires very specific and technically complicated procedures. Concerns regarding safety and security are always associated with it. Classifying the energy services sector under a separate category would simplify the process for regulation of transmission and transportation of energy products and services. See: COTTIER, T. et al. Energy in WTO Law and Policy. Working Paper No. 2009/25. In: NCCR Trade Regulation, Bern: NCCR, May 2009, pp. 9-10.

276 Gabrielle Marceau also understands there to be a problem linked to the features of goods and services that pertain to energy transit and transport: Crude oil and petroleum products have been transported by sea tankers and in trucks for a very long time, but new methods of transporting gas are also being developed, such as specially designed ships for transporting liquefied natural gas. So it will be important to clarify what is meant by 'transportation'. (...). The Services dimension of those transportation activities is generally different: it is concerned with issues relating to who will provide the pipeline transportation services for instance, what national consumers of pipeline service transportation can do and not do. See: MARCEAU, G. The WTO in the emerging energy governance debate. In: Global Challenges at the Intersection of Trade, Energy and the Environment. Geneva: The Graduate Institute, October 14, 2009, §§49-50, p. 8.

concerning what can be considered a "means of transport" for energy goods and services, which becomes a relevant question for a country seeking an efficient program of national energy security. As previously seen, Article V of GATT 94 (concerning freedom of transit) is traditionally applied to the transportation of goods via land, railroads, roads, and maritime and lacustrine modes of transport. However, when it comes to pipelines that transport energy, some Members of the WTO argue that these should not be considered means of transport that are covered by Article V since—as opposed to trains, boats, and trucks—pipes themselves do not actually move.

Guaranteeing the operation of power lines and pipelines that transport energy or related products travelling through more than one State is the object of energy transit regulation. This guarantee of energy security pertains as much to the importing country as it does to the exporting one: the first seeks the guarantee that the product will be received, while the second seeks the guarantee that it will be able to trade its product.

6.2. ECT

The Treaty recognizes the strategic importance of energy security by making it one of its main objectives. In this way, Melaku Desta emphasizes that the original process of the ECT's formation had a dual mission: on the one hand, to facilitate the transition of the old Soviet republics; on the other, to increase Western Europe's energy security²⁷⁷.

In the ECT, the problem is approached through two perspectives, both of which are related to the objective of assuring supplies: (i) protection from short-term crises in the supplying of petroleum and gas (transit and security of supply) and (ii) investment in infrastructure and energy efficiency.

According to what has been previously mentioned, the reconciliation mechanism of the ECT prohibits the State of transit from interrupting or reducing the flows of materials and energy products during the period of the dispute, until the conclusion of the conciliation and dispute resolution process as envisioned in Article 7(7).

277 DESTA, M. The Organization of Petroleum Exporting Countries, the World Trade Organization, and Regional Trade Agreement. In: Journal of World Trade, v. 37, issue 03, 2003, p. 539.

The principle of energy security as a guarantee of energy supplies is considered in the ECT to be an exception to the obligations contained within the Treaty, in situations where compliance with the latter can jeopardize the energy security of the country in question. The Guide to the ECT²⁷⁸ states that:

CPs [Contracting Parties] must not frustrate the establishment of new capacity, if transit through existing capacity cannot be achieved on commercial terms, unless they demonstrate that such new capacity would endanger the security or efficiency of their energy systems, including the security of supply. At the same time, the ECT recognizes that there may be situations where national legislation may override the provisions of the Treaty, reflecting sovereign rights of the country in areas such as environmental protection, land use, safety, or technical standards.

In this area, some basic principles for energy security can be identified, related to questions of energy transit: (i) transit continuity; (ii) the inviolability of the resources transported; (iii) establishing a binding dispute resolution system; and (iv) freedom of transit²⁷⁹.

Box 29: Other initiatives related to Energy security

1. IEA

For the IEA, energy security is associated with two other factors: environmental protection and economic growth³⁶. In order to verify improvements in all sectors, the IEA listed nine measures that can be adopted by its member countries: (i) diversity, efficiency, and flexibility within the energy sector; (ii) the ability to respond promptly and flexibly to energy emergencies; (iii) the environmentally sustainable provision and use of energy; (iv) more environmentally acceptable energy sources; (v) improved energy efficiency; (vi) continued research, development and market deployment of new and improved energy technologies; (vii) policies to ensure undistorted energy prices (energy prices should not be held artificially below the costs of supply to promote social or industrial goals); (viii) free and open trade; and (ix) cooperation among all countries that participate in the energy market.

278 ECT. Energy Charter Treaty: A Reader's Guide. Brussels, p. 30.

279 SELIVERSTOV, S. Energy Security of Russia and the EU: Current Legal Problems. In: Note de l'Ifri – Gouvernance européenne et géopolitique de l'énergie. Paris/Brussels: IFRI, April 2009, p. 9. Available at www.ifri.org. Last accessed April 12, 2012.

Related to ensuring petroleum stocks in moments of crisis, the IEA establishes three requirements for its Members³⁷: (i) to guarantee oil stocks³⁸; (ii) to establish internal measures to decrease oil demand³⁹; and (iii) to maintain an information system among the Members to evaluate the progress of the program and the levels of oil supplies.

As of today, none of the measures adopted by the IEA Members has been an object of inquiry in the WTO.

2. The G8 Declaration⁴⁰

For the G8, energy security, economic growth, and environmental protection are interrelated topics that must be addressed in a collective fashion. The declaration, disseminated in 2006, brought together some principles and objectives designed to tackle the problem⁴¹, in addition to a plan of action for implementing it, by aiming to: (i) increase the transparency, predictability, and stability of the global energy markets; (ii) improve the investment climate within the energy sector;

(iii) increase energy efficiency and energy-saving measures; (iv) diversify energy mix; (v) guarantee the physical security of installations and infrastructure essential to the functioning of the energy sector; (vi) reduce energy poverty; and (vii) to bring discussions about the energy sector into dialogue with the issues of climate change and sustainable development⁴².

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SECTION II THE REGIONAL REGULATION OF ENERGY TRADE

The objective of this section is to present the initiatives of energy integration within the regional scope.

When dealing with the regulation of regional energy trade, it has been observed that regions present different degrees of integration and energy regulation. Faced with such diversities, this study seeks to respect the specificities manifested by each one of them. On the one hand, regions that are most notably marked by strong regulations, such as the EU, are approached with greater detail, including reference to specific plurilateral and bilateral initiatives. On the other hand, those that present integration of a more basic or less-consolidated level, such as Africa or Asia, are dealt with in a less comprehensive fashion. Regarding Latin America, being the region in which Brazil is included, greater emphasis is placed on integration initiatives, taking up some bilateral and trilateral agreements as well.

In the first chapter of the section, an overview of regional energy regulation will be presented. Subsequently, what follows is a detailed analysis of the regional initiatives, such as those that exist in the EU (2), in NAFTA (3), in the African (4) and Asian regions, and, finally, in Latin America (6).

1. OVERVIEW OF REGIONAL ENERGY REGULATION

Negotiations and the signing of energy agreements or initiatives have been more frequent at the regional level. These agreements aim to improve the energy trade and guarantee the provisioning of energy goods.

As was amply analyzed in Section I of this study, the agreements on the subject of energy bring with them important geopolitical considerations. In this area, regional initiatives have sought to establish increasingly objective and clear rules, in order to guarantee investment security, competition standards, energy security, as well as incentives for developing new technologies, discovering sources of clean and/or renewable energy, among other practices.

If, on one side of the multilateral spectrum, there exist the relevant rules for trading within various sectors, on the other side, it is evident that there is a virtual absence of rules within the energy field capable of dealing with the difficulties confronting the sector. On the regional level, in turn, there is a great variety of commercialization and integration models in the energy sector.

It cannot be ignored that the rules established at the regional level end up exerting an influence over future negotiations within the multilateral domain and, accordingly, could serve as the basis for a future energy agreement, for example, within the WTO.

2. THE EUROPEAN UNION

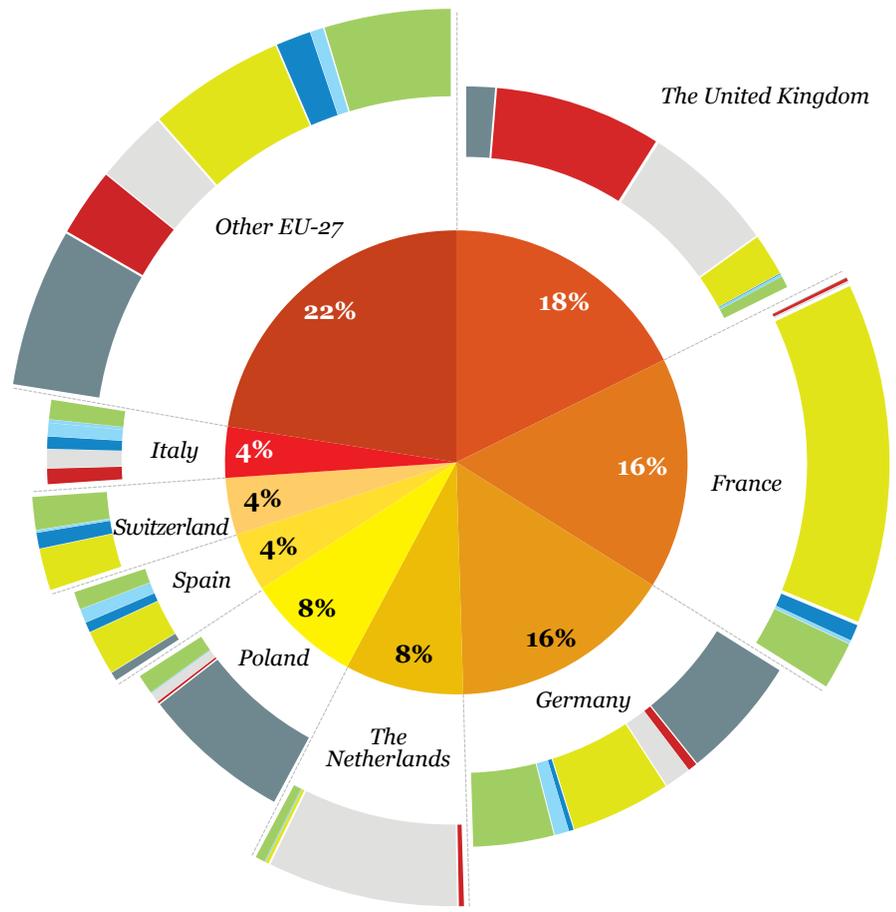
2.1. ENERGY PROFILE

2.1.1. ENERGY PRODUCTION

The production of energy within the EU demonstrates a relative diversification of sources. The most significant is nuclear energy, followed by coal; other solid fuels²⁸⁰; gas; renewable forms of energy; and oil. Considering the period between 1990 and 2009, it is interesting to note that the production of renewable energies experienced an accelerated growth relative to all other sources, principally beginning in 2002, whereas the other energy sources experienced declines within their levels of production.

280 The European Commission classifies as solid fuels: coal, anthracite, lignite, peat, coal briquettes, briquettes and lignite coke. See: European Commission. regulation (EU) No 147/2013. Available at: <http://eur-lex.europa.eu/LexUriSer/LexUriServ.do?uri=OJ:L:2013:050:0001:0058:PT:PDF>. Last accessed June 21, 2013.

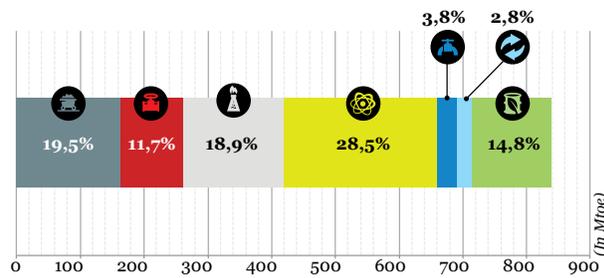
Graph 1 – Energy Production in the EU-27



The increased production of renewable energies did not compensate for the fall in the production from other energy sources, which consequently has led to an increasing reliance on imported energy products. In Graph 2 it can be observed that in 2010 the portion of energy coming from imports represented 55.5%²⁸¹ of the EU's domestic energy supply.

Source: IEA, 2013 (based on 2010). Prepared by FIESP.

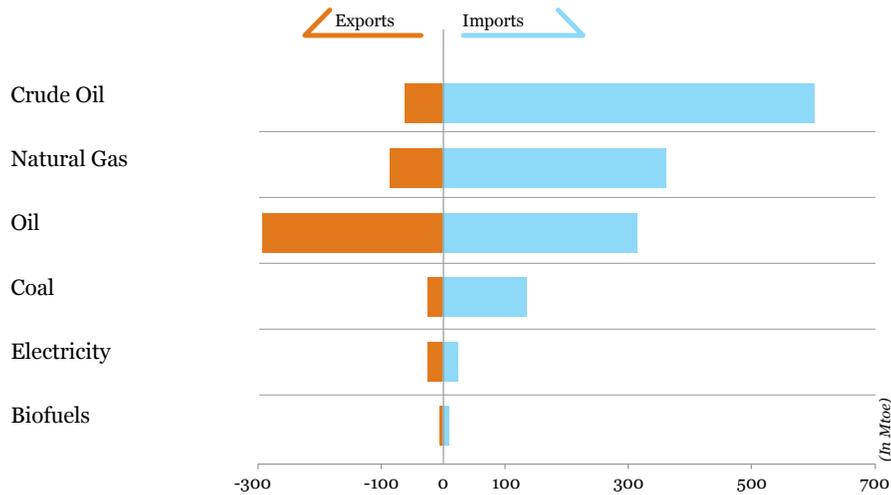
- Other
- Hydropower
- Nuclear
- Natural Gas
- Crude Oil
- Coal + Coal Products
- Biomass + Waste



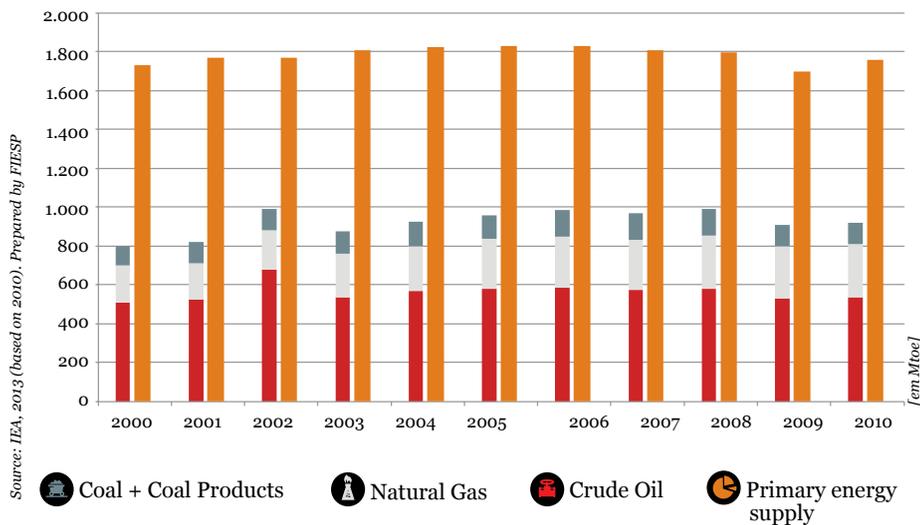
281 IEA, 2013.

2.1.2. ENERGY TRADE

Graph 2 – Imports, Exports, and Energy Dependence Within the EU-27



Energy Dependence



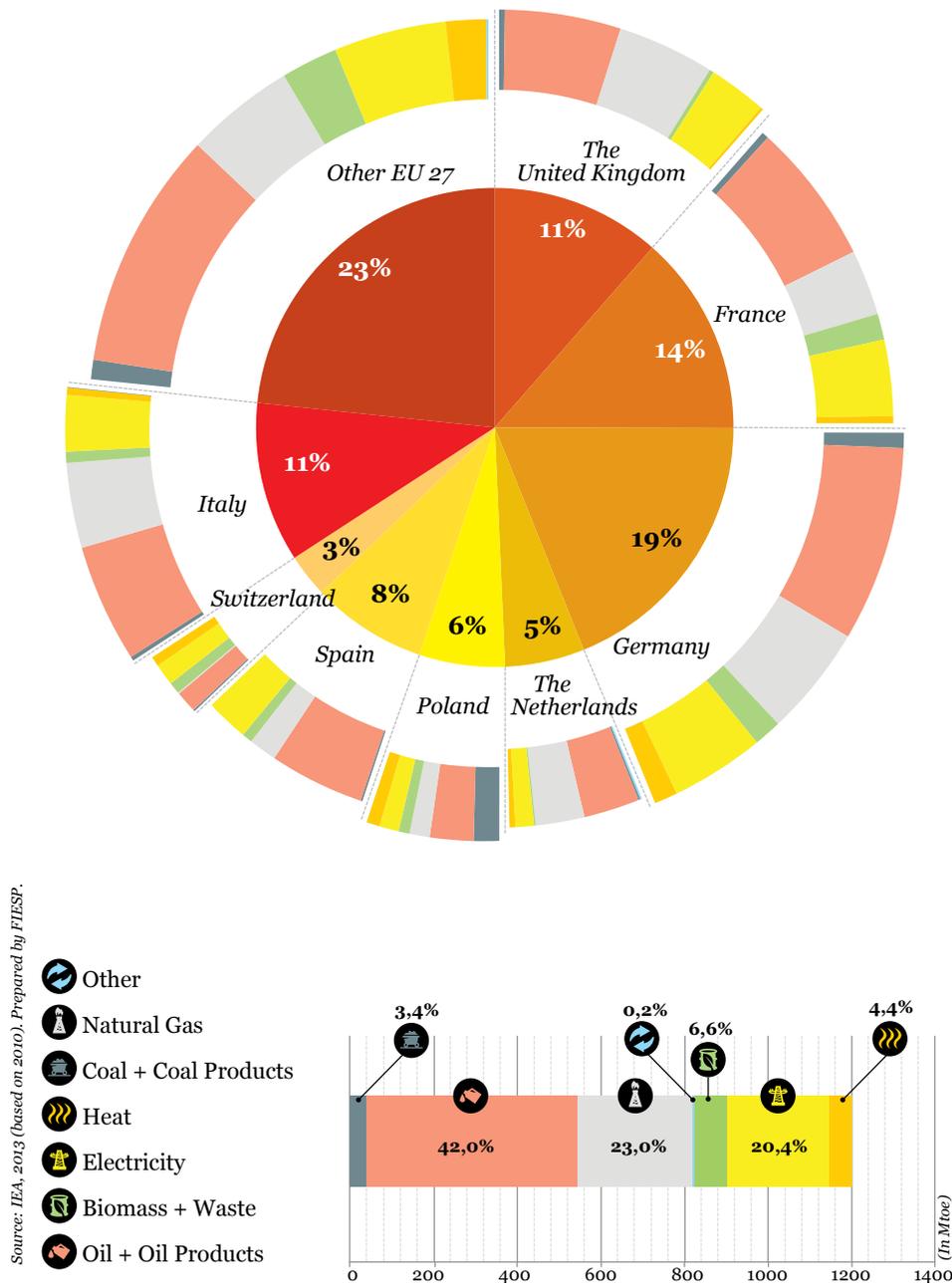
Among the more alarming fields of Europe's energy dependence is that of oil and natural gas imports. Of the total amount of crude oil consumed in 2010, 84.6% was imported; of the total natural gas supplies available, imports comprised 56.8%; for coal, the index of import dependency was 39.7%²⁸². Also observed is an increasing dependence upon solid fuels and natural gas supplies coming from countries that are non-EU Members. Since the process of supplying energy does not always occur in the most stable manner, the EU has adopted certain strategies with the objective of reducing European energy dependence, while at the same time attempting to increase their energy security by means of mechanisms that not only encourage energy solidarity among its Members but also stimulate energy efficiency and the utilization of renewable sources.

2.1.3. FINAL ENERGY CONSUMPTION

When analyzing energy consumption in each Member State, it should be noted that the structure of their energy systems, the availability of natural resources for production, along with the overall structure and development of their economies, are essential factors for determining the energy profile of each country.

282 IEA, 2013.

Graph 3 – Final Energy Consumption within the EU-27



With respect to the EU’s total energy consumption, the period analyzed (2000-2010) was marked by a gradual decline in the consumption of oil and its derivative products, solid fuels, and nuclear energy, while in the same period there was an observable increase in the utilization of natural gas and renewable energies. This scenario can be considered indicative of the results stemming from the adoption of Directive 2009/28/EC, which promotes energy utilization from renewable sources. The Directive establishes individual goals for all Members, with the aim of reaching a target of 20% of total energy consumption coming from renewable fuels by 2020.

It should be emphasized that the data relevant to final energy consumption represent the quantity of energy necessary to satisfy the internal demand of all consumers, where both internal production and energy imports are taken into account.

2.2. INTEGRATION

Because the internal energy market, established in the EU by means of successive phases of integration, has a sufficiently advanced model for regional energy integration, its analysis is relevant so that the positive and negative features of this model may be evaluated.

The EU is a region that is dependent on primary energy imports (coal, crude oil, and natural gas) to satisfy its internal demand.

The energy supply of the region depends on a restricted number of suppliers, with Russia and the countries from the Persian Gulf region being the main suppliers of gas and oil, respectively. Despite certain variations with respect to the energy dependence of each Member— some economies being entirely dependent upon energy imports while others are practically self-sufficient in some sectors²⁸³ — generally speaking it remains significant. The diversification of routes and sources of energy supplies is of strategic priority for the EU, since the energy supply is vulnerable as long as a significant part of energy imports are concentrated in

283 EUROSTAT, Energy dependence - % of net imports in Gross inland consumption. Available at: <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=t-gigs360&plugin=1>. Last accessed June 19, 2013.

the hands of a small number of suppliers²⁸⁴.

The preoccupation with the stability of the sector is accentuated following situations of oil price volatility, energy supply disruptions coming from non-EU Members, lack of energy caused by inefficient connections among national energy transmission networks, difficulties encountered by suppliers in obtaining access to gas and electricity markets, among other factors. In light of the situation of energy instability in which Members of the EU found themselves, there was an urgency to put the sector onto the European political agenda.

2.3. ENERGY POLICY

The external dimension of energy policy was formerly considered to be the direct responsibility of the member states, since the energy sector spanned issues of sovereignty and national security. However, it became apparent that coordinated actions among member states would be indispensable for economic, environmental, and strategic reasons. The absence of such coordination hindered joint negotiation on important questions, such as the actions to be taken in instances of disruptions in energy supplies and the exertion of pressure against suppliers. The energy shortage caused by issues between Russia and Ukraine in 2006 testified to these fragilities²⁸⁵. From the environmental point of view, after the ratification of the Kyoto Protocol in 2002 by the EU and its member States, it was also necessary that the EU present a coherent policy related to the position it adopted during the international forums regarding the question of climate change, in such a manner that it would be possible to attain the objectives stipulated in the Protocol. Finally, it became evident that it was imperative to protect the European economy against the pressure exerted by rising energy prices, as well as to assure its supply on firm foundations.

284 Market Observatory for Energy. Key Figures. Directorate-General for Energy, European Commission, Luxembourg, 2011, p. 7.

285 The litigation over gas between Russia and Ukraine occurred between 2005 and 2006, initially resulting from discrepancies over supplies, prices, and debts of natural gas. The climax of the conflict occurred in January 2006, with Russia cutting of its gas supply—a situation that affected those European countries that depended on Russian gas.

Box 30: EU Institutions and Other Bodies

European Council

The European Council defines the general political orientations of the EU, although it does not have the power to adopt legislation. It is directed by a President and composed of the Heads of State and/or Government and the President of the European Commission.

European Parliament, Council of the European Union and European Commission

These three institutions are connected to the European legislative process. The European Parliament is directly elected and represents the citizens of the EU. The Council of the European Union represents the national governments and its presidency is assumed via a rotation among Member States. The European Commission is responsible for defending the interests of the EU as a whole.

These institutions adopt the policies and legislation that are applicable to all of the EU. It falls to the Commission to propose new legislation while it is up to the Parliament and Council to adopt it. The Commission and the Member States are responsible for its execution, while the Commission also ensures the correct compliance of EU legislation with national legal frameworks.

Other Institutions

The Court of Justice assures compliance with European Legislation, whereas the Court of Auditors supervises the financing of EU activities.

The European Economic and Social Committee represents civil society, employers, and workers; the Committee of the Regions represents the regional and local entities; the European Investment Bank finances EU investment projects and helps small- and medium-sized businesses via the European Investment Fund; the European Central Bank is responsible for European monetary policy; the Court of Justice investigates complaints related to cases of maladministration on the part of EU institutions and bodies; the European Data Protection Supervisor safeguards the confidentiality of the personal data of European citizens; the European Personnel Selections Office recruits personnel for EU institutions and bodies; the European School of Administration has the function of providing education and training in specific areas for the staff of EU Members; the European External Action Service (EEAS) gives support to the High Representative of the Union for Foreign Affairs and Security Policy. There remains still a series of decentralized, specialized agencies and bodies with various technical, scientific, and administrative tasks.

Already in the origins of the EU, with the institution of the European Coal and Steel Community (ECSC, 1952) and the European Atomic Energy Community (EURATOM, 1957)²⁸⁶, there was a clear preoccupation with guaranteeing the free circulation of energy goods, as well as the free access to sources for energy production. In this way it can be understood that the discussion about energy policy is, in a certain form, a return to the roots of the EU. The coming into force of the Lisbon Treaty in 2009 marked the first inclusion of specifics about direct intervention of the EU within European energy policy.

The Lisbon Treaty introduced, through Article 194(1) of the Treaty on the Functioning of the EU (TFEU), clear objectives for its energy policy, in addition to providing the legal basis that enabled the EU to adopt measures for:

- (i) Assuring the functioning of the energy market;
- (ii) Assuring the security of the Union's energy supply;
- (iii) Promoting energy efficiency and energy savings, as well

²⁸⁶ The ECSC and EURATOM, conjointly with the European Economic Community (EEC, 1957), formed the basis of what would later become the EU.

- as developing new and renewable energies;
- (iv) Promoting the interconnection of energy systems.

In this way the energy sector has become part of the set of shared competences²⁸⁷ between the EU and its Members²⁸⁸, and the aforementioned objectives must be executed in agreement with the principle of solidarity²⁸⁹ (Art. 122(1), TFEU). The measures adopted by the EU, however, do not affect the right of the Members to determine the conditions of exploiting their own energy resources and selecting the sources and the structure for supplying energy that best suits them, except in instances of unanimity and for environmental reasons (Art. 192, TFEU).

Members retain the right to conduct their bilateral energy policies with non-Member States, provided these relations are subject to the obligations to cooperate and to the rules of competition (which are applied, for example, to imports and to energy transit)²⁹⁰. As has been seen through this study, the ECT also guides the EU energy policy.

2.4. EUROPEAN ENERGY MARKET

During the 1990's, the EU identified both the acute degree of energy dependency to which it was subject and the lack of competitiveness its

²⁸⁷ Shared competence means that both the EU and the Member States can adopt legally binding acts within the area in question. Nonetheless, the Member States may only do this if the EU has not yet exercised its competence or if it has explicitly decided not to exercise it. See: EU. O que significa competência partilhada? In: Perguntas frequentes sobre as competências da UE e da Comissão Europeia – Iniciativa de cidadania europeia. Available at: <http://ec.europa.eu/citizens-initiative/public/competences/faq?lg=pt#q3>. Last accessed July 11, 2013.

²⁸⁸ It is important to highlight the fact that the decision to utilize or not to utilize nuclear energy is the exclusive competence of the Member States. The nuclear illustrative program stresses the need to achieve a coherent joint action on security matters, non-proliferation, the dismantling of plants, and waste management. EU. Uma política da energia para a Europa. Available at: http://europa.eu/legislation_summaries/energy/european_energy_policy/127067_pt.htm.

²⁸⁹ One of the fundamental principles of the EU is the principle of solidarity, which advocates that the most disadvantaged regions and citizens should be supported in such way as to reduce these difficulties, since Members deserve the right to equal opportunities.

²⁹⁰ BRAUN, J. F. EU Energy Policy under the Treaty of Lisbon Rules: Between a new policy and business as usual. EPIN Working Paper No. 31, February 2011, p. 2.

industries faced on the globalized market. It was vital to guarantee energy supplies for consumers, as well as access to sustainable, secure, and diversified energy sources as a way to facilitate a reliable economic environment capable of attracting new investments²⁹¹. Within this context there emerged the first regulatory movements directed at reform of the energy market.

Box 31: Regulatory Instruments of the EU

The Council, the Commission, and the European Parliament can utilize some instruments to exercise their competence over EU Member States: regulations, directives, decisions, recommendations, and opinions.

Regulations are instruments that have a direct effect over the Member States, which are not required to integrate them into their national legislations. Directives, for their part, are binding instruments related to an intended result, although it is up to the Member States to select the best form and method for implementing the rules and incorporating them into their domestic laws (Article 189, Treaty of Rome).

The first directives related to the electricity market (96/92/EC) and the natural gas market (98/30/EC) were adopted in 1996 and 1998, respectively. The main objective was to establish common rules for the internal electricity and natural gas markets, so as to harmonize the technical standards of energy production, transport, distribution, commercialization, and storage.

At that time a large part of the national natural gas and electricity markets were monopolized. The EU, in a coordinated action with its Member States, moved to gradually open national markets. To this effect, it (i) separated the sectors considered to be competitive in the energy industry (such as the supplying of consumers) from the non-competitive ones

291 Commission of the European Communities. Communication from the Commission to the Council and the European Parliament: prospects for the internal gas and electricity market. Document COM(2006) 841 final. Brussels, 2007, pp. 4-6. Available at: http://ec.europa.eu/energy/energy_policy/doc/09_internal_gas_and_electricity_market_en.pdf.

(such as the operation of transmission networks); (ii) obligated those operating non-competitive sectors to allow third-party access to infrastructure; (iii) removed barriers to the energy supply sector; (iv) gradually removed measures that prohibited consumers from selecting their energy providers; (v) dissociated vertically integrated operators; and (vi) introduced independent regulators to monitor the sector.

The implementation of Directives 96/92/EC and 98/30/EC made patently clear the benefits of creating a domestic energy market in terms of price reductions, efficiency gains, higher standards of services rendered, and increased competition. Nonetheless, there was the necessity to establish more concrete rules with the purpose of assuring conditions of equitable competition in relation to production and to reduce the risks of the abuse of dominant market positions and other predatory behaviors²⁹².

In 2003 previous directives were thereby revoked and substituted for a second set of policies directed toward the formation of a “competitive, secure, and environmentally sustainable” European energy market (2003/54/EC and 2003/55/EC). The new normative set, in addition to guaranteeing consumers the right to select their gas and electricity providers, instituted a directive for energy consumption labeling, so that consumers would have access to the contribution of each energy source to the fuel supplied, as well as to the quantities of carbon and nuclear waste produced that are related to the consumption of the product.

These directives also established minimum standards to assure consumer protection (transparent contractual conditions, general information, mechanisms to resolve disputes, etc.), reaffirming the non-discriminatory access of third parties to the systems of energy transmission and distribution and also to the storage of natural gas, in addition to demanding that independent regulators be appointed to guarantee the maintenance of transparency and competition within the sector.

The requirement that transmission services be decoupled from energy production/supplying was also reinforced, and the complete dismantling of vertically integrated holdings (*Ownership Unbundling* – OU) was de-

292 Directive 2003/54/EC of the European Parliament and of the Council from 26 June 2003, which established common rules for the internal electricity market and revoked Directive 96/92/EC.

manded. With respect to the natural gas industry, domestic laws have come to rely on the “Storage System Operator” (SSO), which is mainly responsible for operating and maintaining gas transmissions in an efficient and secure manner, avoiding discriminating behavior among users, distributing information to coordinate gas transmission and storage in a manner compatible with the interconnected system, providing users with information as a guarantee of efficient access to the system, among others.

The annual report of the Commission on the implementation of the internal gas and electricity market, prepared in 2005, detected failures in the previous system that could be resolved with the adoption of a new regime. It was noted that the freedom offered to consumers to choose their energy providers would in itself not be enough to guarantee equitable conditions of competition if not combined with an increased integration and interconnectivity of infrastructure and improved access conditions to markets. The report also highlighted that the sector still showed high levels of concentration and a lack of transparency, underscoring the insufficient cooperation existing among the diverse Transmission System Operators (TSOs)—those responsible for the exploitation, maintenance, and development of the transport networks over a given area, as well as for their integrations with other networks—and at the same time emphasizing the difficulty of reaching full competition among natural gas suppliers, in light of the fact that only one foreign company (Gazprom, Russia) supplied the majority of the gas consumed by the European market²⁹³.

Faced with these highlighted deficiencies, in 2007 the Commission proposed a third package of energy sector liberalizations. The package offered aimed to reinforce the provisions found in the previous directives, with the objective of formalizing a truly competitive internal market. In the same period, the Member States once again experienced a shock within their natural gas supplies caused by conflicts occurring outside the EU territory among energy-producing countries and energy transit

293 Commission of the European Community. Report from the Commission – Annual Report on the Implementation of the Gas and Electricity Internal Market. Document COM(2004) 863 final, Brussels, 2005, p. 7. Available at: http://ec.europa.eu/energy/gas/benchmarking/doc/4/com_2004_0863_en.pdf.

countries. These events moved the European Parliament and the European Council to approve the third energy package in 2009, which is still in effect today, with the objective of making the European gas and electricity market completely efficient, which would contribute to the maintenance of competitive prices, to raising the standards of services rendered, and to ensuring supply security.

The third package is composed of Directives 2009/72/EC and 2009/73/EC, which establish common rules for the internal electricity and gas markets, respectively, and Regulations (EC) 713/2009, which established the Agency for the Cooperation of Energy Regulators (ACER), and 714/2009 and 715/2009, on the conditions of access to the transport networks for transnational trading of electricity and natural gas.

The availability of oil reserves and the preservation of energy supplies constitute essential elements for the public security of the Member States and of the Community. So that the security of the Community is not jeopardized during instances of disruptions in oil provisions, the Member States must guarantee, through mechanisms based on transparency and solidarity among Member States, the availability and accessibility of all permanent physical reserves held under Community law (Article 5, Directive 2009/117/EC). However, in urgent situations or local crises, the States are permitted to utilize part of the reserves to mount an immediate response.

The structural separation of transport and distribution systems, generally constituted by natural monopolies, from the activities of the TSOs and the DSOs (Distribution System Operators), is considered essential for assuring non-discriminatory access to energy networks. Guaranteeing the independence of the TSOs and DSOs from the legal, administrative, and financial structure of vertically integrated companies allows for, at the same time, the creation of a competitive market among suppliers and, along with an efficient and transparent regulatory regime, the development of a healthy environment ready to receive new investments.

Under the new regime, this separation must be accomplished on the basis of a choice among three possible modes: (i) Ownership Unbundling (OU); (ii) Independent System Operator (ISO); or (iii) Independent Transmission System Operator (ITO).

2.4.1. OWNERSHIP UNBUNDLING

The Member States that opted for the OU must observe the provisions present in Article 9 of the Directives on Gas and Electricity: to assure that every undertaking that owns a transport network, be it public or private, acts as a TSO (Transmission System Operator), without being entitled to exercise control, whether directly or indirectly; to guarantee voting rights or the holding of a majority share in undertakings engaged in energy supply and/or production, and the appointment of Members to the supervisory or administrative board. A company (or individuals involved in it) is not permitted to serve as a member of the supervisory or administrative board, or any other body that legally represents it (Article 9.1, Directives 2009/72/EC and 2009/73/EC).

The European Commission has interpreted the provisions of Article 9 of Directives 2009/72/EC and 2009/73/EC in such a way as to allow the TSO to have direct or indirect interest in the capital of a supplier and vice versa, provided that this does not constitute a majority share and that neither operator nor supplier exercise voting rights relative to their share, do not exercise power in the sense of appointing Members to the representative and administrative bodies of the undertaking, and do not exercise any form of control over the supplier or over the TSO²⁹⁴.

Finally, Article 12 of Directives 2009/72/EC and 2009/73/EC establishes the tasks of the TSOs:

- a) Ensuring the long-term ability of the system to meet reasonable demands for the transmission of electricity, operating, maintaining and developing under economic conditions secure, reliable and efficient transmission systems with due regard to the environment;
- b) Ensuring the adequate means to meet service obligations;

²⁹⁴ European Commission. Interpretative note on Directive 2009/72/EC concerning common rules for the internal market in electricity and Directive 2009/73/EC concerning common rules for the internal market in natural gas – The unbundling regime. Brussels, 2010, p. 9. Available at: http://ec.europa.eu/energy/gas_electricity/interpretative_notes/doc/implementation_notes/2010_01_21_the_unbundling_regime.pdf.

- c) Contributing to security of supply through adequate transmission capacity and system reliability;
- d) Managing electricity flows on the system, taking into account exchanges with other interconnected systems. To that end, the transmission system operator shall be responsible for ensuring a secure, reliable and efficient electricity system and, in that context, for ensuring the availability of all necessary ancillary services, including those provided by demand response, insofar as such availability is independent from any other transmission system with which its system is interconnected;
- e) Providing to the operator of any other system with which its system is interconnected sufficient information to ensure the secure and efficient operation, coordinated development and interoperability of the interconnected system;
- f) Ensuring non-discrimination as between system users or classes of system users, particularly in favor of its related undertakings;
- g) Providing system users with the information they need for efficient access to the system;
- h) Collecting congestion rents and payments under the intertransmission system operator compensation mechanism, in compliance with Article 13 of Regulation (EC) 714/2009, granting and managing third-party access and giving reasoned explanations when it denies such access, which shall be monitored by the national regulatory authorities; in carrying out their tasks under this Article transmission system operators shall primarily facilitate market integration.

2.4.2. INDEPENDENT SYSTEM OPERATOR (ISO)

Even if a transmission system belonged to a vertically integrated undertaking (VIU) at the time the Directive on Gas and Electricity was implemented (September 3, 2009), the Member State could have decided to not enforce the provisions related to ownership unbundling and appoint ISOs in its place, through a proposal from the transmission system owner, a certification from the national regulatory authority, and approval from the Commission (Article 9.8(a), Directives 2009/72/EC and 2009/73/EC).

Following Article 13.2 of Directive 2009/72/EC and 14.2 of Directive 2009/73/EC, the Member State can only approve and appoint an ISO if

the following conditions are satisfied²⁹⁵:

- a) The candidate operator complies with the rules on ownership unbundling of Article 9(1)(b), (c) and (d) Electricity and Gas Directives;
- b) The candidate operator has demonstrated that it has at its disposal the required financial, technical, physical and human resources to carry out its tasks under Article 12 Electricity Directive and Article 13 Gas Directive;
- c) The candidate operator has undertaken to comply with a ten-year network development plan monitored by the regulatory authority;
- d) The transmission system owner has demonstrated its ability to comply with its obligations under paragraph 5. To this end, all contractual clauses designed for the applicant company or for any other competent entity must be submitted.
- e) The candidate operator has demonstrated its ability to comply with its obligations under the Electricity and Gas Regulations 2009/714/EC, including cooperation among TSOs at the European and regional levels.

The ISO must act as a transmission system operator, serving the same functions. However, unlike a TSO, each independent operator is responsible: (i) for granting and managing third-party access, including charging access fees, congestion rents, and payments under the inter-transmission system operator compensation mechanism; (ii) for the exploitation, maintenance, and development of the transmission system; and (iii) for assuring the ability of the transmission system to meet a reasonable long-term demand by means of investment planning. In the development of the system, each independent operator is responsible for its own plan-

295 European Commission Interpretative note on Directive 2009/72/EC concerning common rules for the internal market in electricity and Directive 2009/73/EC concerning common rules for the internal market in natural gas – The unbundling regime, Brussels, 2010, pp. 11-12. Available at: http://ec.europa.eu/energy/gas_electricity/interpretative_notes/doc/implementation_notes/2010_01_21_the_unbundling_regime.pdf.

ning (including the authorization procedure) and for the construction and commissioning of new infrastructure (Article 13.4, Directive 2009/72/E). It is noteworthy that the transmission system owners are not responsible for granting and managing third-party access or for investment planning.

After designating an independent operator, the transmission system owner must: provide cooperation and the necessary support so that its tasks can be performed; finance the investments decided by the ISO and approved by the regulatory body; and provide assurances so as to enable the financing of eventual expansions of the system (Article 13.5, Directive 2009/72/EC).

In this model, national regulatory authorities (NRAs) will, in addition to the obligations that are normally imposed on them: (i) monitor the obligations which the TSOs and ISOs are responsible for; (ii) monitor the relations and communications between the ISO and the TSO, in order to ensure that the independent operator satisfies its obligations, and, especially, to approve contracts and act as a dispute settlement authority between the independent operator and the owner of the transmission system and, still yet, approve the investment planning and the multi-annual network development plan presented yearly by the ISO; (iv) have the powers to conduct inspections, including unannounced inspections, at the premises of the transmission system owner and the independent operator; and (v) monitor the utilization of the congestion charges collected by the ISO.

2.4.3. INDEPENDENT TRANSMISSION SYSTEM OPERATOR (ITO)

In the same way that ISOs are appointed, the transmission system should belong to a vertically integrated undertaking at the time Directives 2009/72/EC and 2009/73/EC were implemented (September 3, 2009), so that the Member State can decide on the application of the provisions concerning ownership unbundling. In the model now under consideration, the ITO continues to be part of a VIU.

The ITOs are characterized by the autonomy of their actions concerning gas and electricity transmissions, and must be equipped with all human,

technical, physical, and financial resources necessary to satisfy their obligations and carry out gas and electricity transmission activities (Article 17, Directives 2009/72/EC and 2009/73/EC). The legislation also requires that they remain completely independent vis-à-vis the VIU, mainly with respect to the resources necessary for the operation, maintenance, and development of the transmission system, the competitive performance of the ITO relative to its daily activities, the administration of the system, and the preparatory activities for the ten-year network development plan (Article 18.4, Directives 2009/72/EC and 2009/73/EC). The transmission system operator should establish a supervisory body charged with “taking decisions which may have a significant impact on the value of the assets of the shareholders within the transmission system, especially decisions regarding the approval of the annual and longer-term financial plans, the level of indebtedness of the transmission system operator, and the amount of dividends distributed to shareholders” (Article 20.1, Directive 2009/72/EC and 2009/73/EC). The supervisory body must still appoint an officer (“compliance officer”) to adequately monitor the compliance programs established by the ITOs, intended to present measures to ensure that discriminatory behaviors are excluded.

With respect to the connecting of new power plants to the transmission network, the ITO should publish transparent and efficient procedures so that the non-discriminatory connection of new power plants to the transmission system can be assured; these procedures will then have to be submitted for approval to the NRAs. Moreover, the TSO cannot refuse the connection of a new power plant on the grounds of possible future limitations to available network capacity, nor can it refuse a new connection point on the grounds of additional costs related to necessary capacity of increases of system elements.

Thus, efficient and transparent procedures should be established along with tariffs for the non-discriminatory connecting of gas storage facilities to the transmission system, not allowing the refusal of new storage facility connections on the same grounds as those concerning the connections of new power plants, there being an obligation to assure sufficient capacity for the entrance and exit of the new connection (Art. 23, Directives 2009/72/EC and 2009/73/EC).

During the implementation of an ITO, the national regulatory authority is responsible for the following²⁹⁶:

- (a) To issue penalties for discriminatory behavior in favor of the vertically integrated undertaking;
- (b) To monitor communications between the transmission system operator and the vertically integrated undertaking so as to ensure compliance of the transmission system operator with its obligations;
- (c) To act as dispute settlement authority between the vertically integrated undertaking and the transmission system operator in respect of any complaint submitted;
- (d) To monitor commercial and financial relations including loans between the vertically integrated undertaking and the transmission systems operator;
- (e) To approve all commercial and financial agreements between the vertically integrated undertaking and the transmission system operator on the condition that they comply with market conditions;
- (f) To request justification from the vertically integrated undertaking when notified by the compliance officer. Such justification shall, in particular, include evidence to the end that no discriminatory behavior to the advantage of the vertically integrated undertaking has occurred;
- (g) To carry out inspections, including unannounced ones, on the premises of the vertically integrated undertaking and the transmission system operator;
- (h) To assign all the tasks of the transmission system operator to an independent system operator in case of a persistent breach by the TSO of its obligations under this Directive, in particular in the case of repeated discriminatory behavior to the benefit of the vertically integrated undertaking.

296 Articles 37.5 and 41.5 Directives 2009/72/EC and 2009/73/EC.

2.4.4. SEPARATION OF DISTRIBUTION SYSTEM OPERATORS

The regime for unbundling DSOs remains unaltered, if compared with the regime presented in the previous Directives, focusing principally on ensuring the independence of the operator (if the latter is part of a vertically integrated undertaking) in terms of legal status, organization, administration, financial planning, and decision making (Article 26.2(d), Directives 2009/72/EC and 2009/73/EC). The DSO is responsible for assuring network capacity, meeting reasonable demands for gas and electricity distribution, and exploiting, maintaining, and developing a secure, reliable and efficient distribution system, while at the same time looking after both the environment and energy security priorities. Still, it must operate with transparency and act in a non-discriminatory manner in relation to system users (Article 25, Directives 2009/72/EC and 2009/73/EC). It falls to the operator to establish a compliance program that will contain the measures adopted to prohibit discrimination and monitor their enforcement.

It should be pointed out that, if the DSO becomes part of a vertically integrated undertaking, the Member States must ensure that the “activities of the distribution system operator are monitored by regulatory authorities or other competent bodies so that it cannot take advantage of its vertical integration to distort competition” (Art. 26.3, Directives 2009/72/EC and 2009/73/EC).

2.4.5. ACCESS TO TRANSMISSION SYSTEMS

Directives 2009/72/EC and 2009/73/EC and (EC) Regulations 714 and 715 from 2009 were established with the purpose of organizing access to gas and electricity transmission systems and of “increasing cooperation and coordination among transmission system operators to create network codes for providing and managing effective and transparent access to the transmission networks across borders, and to ensure coordinated and sufficiently forward-looking planning and sound, technical evolution of the transmission system in the Community, including the creation of

interconnection capacities, with due regard to the environment”.²⁹⁷

To assure effective access to transmission systems and to avoid trade distortions, some conditions must be observed. The first among them concerns the applicable tariffs. Articles 14 and 13 of (EC) Regulations 714 and 715, respectively, determine that charges for access to networks applied by the operators should be transparent and utilized in a non-discriminatory manner, in such a way as to improve the efficiency of energy transactions and competitiveness. They should be implemented taking into account the necessity of network security and integrity, while reflecting the costs actually borne, since it is necessary to avoid situations of cross subsidies²⁹⁸ between system users. The tariffs (or the method on which its calculation is based) must still be approved by the NRA before coming into effect.

Secondly, third party access to the energy transmission systems should be assured. For this, the provisions present in the new regulatory framework state that Member States must ensure “the implementation of a system of third party access to the transmission and distribution systems based on published tariffs, applicable to all eligible customers and applied objectively and without discrimination between system users” (Article 32, Directive 2009/72/EC). With respect to access to electricity transmission systems, the system or distribution operator may refuse access to third parties if it lacks the necessary capacity. The refusal must be based on objective criteria, technically and economically justified. Nonetheless, it is up to the Member State or regulatory body to ensure an alternative means that can be employed by the system user whose access request was refused (Art. 32.2, Directive 2009/72/EC).

297 Preamble to Regulation 714/2009 on conditions for access to the network for cross-border exchanges in electricity. Available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:211:0015:0035:PT:PDF>.

298 “Cross subsidy” refers to a market transfer induced by price discrimination practices, usually within the scope of a given enterprise or agency. Following the International Institute for Sustainable Development (IISD), this practice occurs when a state enterprise, such as a public utility, utilizes revenues obtained in a certain market segment to reduce prices charged for goods in another one. Cross subsidies can result from the adoption of a policy designed to encourage the production of a given good for more than domestic demand, to the disadvantage of countries that thereby experience difficulties competing on the international market, while also making it virtually impossible to import the heavily cross-subsidized good with a high level of market protection.

In relation to third party access to transmission systems and gas storage facilities, Article 32.2 of Directive 2009/73/EC establishes that the TSOs must have access to the transmission systems of other operators when necessary, such as in the case of cross-border gas transportation.

Concerning natural gas storage facilities, Article 33 of Directive 2009/73/EC determines that:

1. For the organization of access to storage facilities and linepack when technically and/or economically necessary for providing efficient access to the system for the supply of customers, as well as for the organization of access to ancillary services, Member States may choose either or both of the procedures referred to in paragraphs 3 and 4. Those procedures shall operate in accordance with objective, transparent and non-discriminatory criteria.

The regulatory authorities where Member States have so provide for Member States shall define and publish criteria according to which the access regime applicable to storage facilities and linepack may be determined (...).

Following what can be observed in the above-cited passage, the right of access to storage facilities is assured on the condition of being technically and/or economically necessary for the supply of the consumer, it being the responsibility of the Member States to determine the access procedure, by negotiation or by regulation.

In keeping with the Interpretative Note on Directive 2009/73/EC issued by the European Commission, the above-mentioned technical or economic necessity can be determined along the lines of certain approved criteria. The first refers to the storage system model, the question being if there are other available instruments that would allow the supplier to obtain the same level of technical or economic flexibility provided by a given storage facility, primarily with respect to the value and the availability of

transport capacity²⁹⁹. The second criterion refers to the storage facilities, where the key point is to discern if the access to only one part of the facilities satisfies the consumer needs of a given Member State.

The Third criterion refers to the preclusion of denying suppliers access to storage facilities based solely on their portfolio of customers. Finally, the possibility to invest in new facilities or the geological potential of a given region are not adequate grounds for denying access to already existent facilities, so long as it is apparent that immediate access is necessary and cannot wait for new facilities.

Still with respect to ensuring access to transmission systems, the general guidelines found in Article 16 of (EC) Regulation 714/2009 and Articles 16 and 17 of (EC) Regulation 715/2009 on managing network congestion should also be taken into consideration. In keeping with what has already been discussed, network congestion is when the capacity required for transit exceeds the available capacity in terms of volume or duration, or in cases where the unrestricted usage of the network would exceed safety limits.

The mechanisms adopted by the Regulations about the conditions of access to electricity and natural transmission systems demand that congestion problems be addressed with nondiscriminatory, market-based solutions that give efficient economic signals to the market participants and transmission system operators involved. Network congestion problems shall preferentially be solved with non-transaction based methods, i.e. methods that do not involve a selection between the contracts of individual market participants (Article 16.1, (EC) Regulation 714/2009).

In instances where capacity has been allocated to the participants, the latter shall be compensated for any potential restrictions, except in the cases of *force majeure*. The procedures for transaction restrictions should be utilized only in emergency situations, and market participants are expected to inform the TSOs of their intention to utilize allocated capacity

²⁹⁹ European Commission. Interpretative Note on Directive 2009/73/EC concerning common rules for the internal market in natural gas: Third-Party Access to Storage Facilities. Commission Staff Working Paper, Brussels, 2010, p. 11. Available at: http://ec.europa.eu/energy/gas_electricity/interpretative_notes/doc/implementation_notes/2010_01_21_third-party_access_to_storage_facilities.pdf.

or not, so that the unutilized capacity will be able to be redistributed on the market.

The Regulations also add to the European context the European Network of Transmission System Operators (ENTSO), establishing cooperation among transmission system operators at the Community level, in order to “to promote the completion and functioning of the internal market in electricity and cross-border trade and to ensure the optimal management coordinated operation and sound technical evolution of the European electricity transmission network” (Article 4, (EC) Regulations 714/2009 and 715/2009).

The ENTSO for gas and electricity, working in partnership with the ACER, is developing non-binding framework guidelines for certain areas of the gas and electricity market. The guidelines will serve as a base for establishing the binding network codes, aiming to harmonize the rules related to gas and electricity flows by means of the EU, primarily with respect to the cross-border systems and market integration.

In the electricity market, framework guidelines were adopted related to the ability to allocate resources and manage network congestion, to develop a harmonized regime of the connections to the electricity system applicable to all generators, and to coordinate the operational systems of electricity. Also up for discussion is the harmonization of the rules related to the actions of the TSOs, in order to ensure real-time equilibrium between the generation of electricity and its demand, a function that is crucial for assuring supply security and reducing costs for consumers.

Regarding the gas market, framework guidelines were adopted related to the ability to allocate resources, the procedures of managing network congestion, the equilibrium between the supply and demand of gas, the coordination the operational gas systems, and the harmonization of tariffs applicable to its transmission.

The rapid increase in European gas consumption, on top of diminished domestic production, created a still-greater dependence relative to non-EU production, which subsequently increased the necessity of creating rules on gas supply security in cases of supply disruption.

There were three crisis levels identified concerning the gas supply: early warning, alert, and emergency. The first is found when there is concrete,

serious, and reliable information suggesting that an event may occur that is capable of significantly damaging the supply situation and raising the level to an alert or an emergency. The alert level occurs following an instance that produces a disruption or an exceptional demand increase for gas that significantly damages the supply situation. In these cases, the market is still capable of overcoming the disturbance or the demand increase without necessitating recourse to non-market measures, such as cuts and rationing. Finally, the emergency level is observed when there is an exceptional increase in the demand for gas; significant interference or any other significant deterioration of its situation; and when all market-based measures have already been attempted, but even still the supply continues to be insufficient to meet the remaining gas demand, so as to necessitate additional, non-market-based measures to safeguard, above all, gas supplies for protected clients.

Having this scenario in mind, (EU) Regulation 994/2010 brings comprehensive measures to the Community that attempt to assure the supply of natural gas.

With the introduction of new norms, gas supply security becomes a responsibility that is shared among natural gas enterprises, Member States (through appointed Competent Authorities), and the European Commission.

The Competent Authorities appointed by Member States must act in accordance with the duties set forth by (EU) Regulation 994/2010, being responsible for a full assessment of the risks that affect the security of gas supplies in its Member State (Article 9.1, Regulation (EU) 994/2010) and for establishing preventive action and emergency plans. These plans must contain the necessary measures for removing or mitigating the risks identified in the assessments envisaged in Article 9 of (EU) Regulation 994/2010 (Article 4.1(a), (EU) Regulation 994/2010) and for removing or mitigating the impact of gas supply disruptions (Article 4.1(b), Regulation (EU) 994/2010), having to be submitted to an evaluation by the Commission before they can be approved (Article 4.2, (EU) Regulation 994/2010). The measure is justified by the need to maintain consistency and coordination of the actions targeted by the plans among all Community members.

(EU) Regulation 994/2010 also establishes minimum standards for assuring the security of the gas supply, involving norms related to infrastructure and supplies. So that the minimum infrastructure requirements are met, Member States (or the Competent Authorities) must ensure that, in the event of a disruption of the single largest gas infrastructure, the remaining infrastructure has the ability to satisfy the total gas demand of the calculated area during a day of exceptionally high gas demand (Article 6.1, Regulation (EU) 994/2010). In addition to this, the TSOs are required to equip all cross-border interconnections between Member States with bi-directional capacity, with the exception of cases in which there is a granted exemption or for connections to production and LNG facilities and to distribution networks (Article 6.5 (a)(b), (EU) Regulation 994/2010). For undertakings that supply natural gas, the adoption of measures that assure gas supply to vulnerable customers³⁰⁰ is required in the following cases: (i) for seven days in the instance of extreme temperatures; and (ii) for a period of at least 30 days in the instance of exceptionally high demand or disruption of the single largest gas infrastructure under average winter conditions (Article 8, (EU) Regulation 994/2010). Acting on the Community level, the European Commission must monitor and provide information about the measures adopted concerning the security of the energy supply (Article 4, (EU) Regulation 994/2010), it being able to declare an emergency situation on the regional or EU level at the request of a competent authority (Article 11, (EU) Regulation 994/2010). In these cases, it should act in order to coordinate the actions of the national authorities, ensuring an exchange of information, coherence, and efficacy of actions, and coordinating actions that concern third party countries.

To facilitate the coordination of the adopted measures among all Members, the EU established the Gas Coordination Group (Article 12, (EU) Regulation 994/2010, that can be consulted about the following issues:

- (a) Security of gas supply, at any time and more specifically in the

³⁰⁰ Each Member State can define the concept of “vulnerable clients,” that which refers to (among other criteria) energy poverty and special necessities related to the energy supply.

event of an emergency;

- (b) All information relevant for security of gas supply at national, regional and Union levels;
- (c) Best practices and possible guidelines to all the parties concerned;
- (d) The level of security of supply, benchmarks and assessment methodologies;
- (e) National, regional and Union scenarios and testing the levels of preparedness;
- (f) The assessment of the Preventive Action Plans and the Emergency Plans and the implementation of the measures foreseen therein;
- (g) The coordination of measures to deal with an emergency within the Union, with third countries that are Contracting Parties to the Treaty establishing the Energy Community and with other third countries;
- (h) The assistance needed by the most affected Member States.

Within energy markets, the monitoring of market activities falls under the competence of the Member States. However, depending on the overall global framework and on the legal conditions of each market where trading occurred, commercial activities were possibly subject to multiple jurisdictions, and they could be monitored by different authorities simultaneously. This unstable framework often led to ambiguity in determining responsibility, or situations in which the monitoring, when performed, proved to be inadequate. Moreover, it can be supposed that once wholesale energy markets tended to become increasingly interconnected across the Union, the practice of market abuse in a Member State would affect not only the prices of electricity and natural gas beyond national borders, but also the price of the retail market intended for consumers and small businesses.

Aimed at curbing such practices and providing a fully-functioning internal energy market, interconnected and integrated, in 2011 (EU) Regulation 1227/2011 was adopted, concerning the integrity and transparency of wholesale energy markets (Regulation on Transparency and Integrity in the Energy Market - REMIT). The Regulation proposes a system of dis-

closure, registration, and enforcement of standards relating to the wholesale energy markets (supply, transportation, and distribution), which must be observed and monitored by ACER in joint action with the national regulatory agencies in such a way as to ensure coordination among the applicable regimes across the Union.

One of the main contributions of REMIT for the creation of a harmonized framework able to ensure the transparency and integrity of wholesale energy markets can be seen in the obligations it established regarding the behavior of market participants.

Those with inside information³⁰¹ are prohibited from using it abusively (Article 3, (EU) Council Regulation 1227/2011). Market participants must also make them public (Article 4, (EU) Regulation 1227/2011), unless the publication of the information would adversely affect their legitimate interests. In such cases, however, the omission of information cannot mislead the public, and participants must ensure that decisions regarding the marketing of energy products will not be made based on such information (Article 4.2, (EU) Regulation 1227/2011). Actions undertaken to artificially influence price levels in ways not explained by market forces of supply and demand also remain prohibited (Article 5, (EU) Regulation 1227/2011).

To ensure that activities in the wholesale market are properly regulated and monitored, market participants must register with the national regulatory authority in the Member State in which they are established or resident or, not being established or resident in the Union, in a Member State in which they conduct economic activities (Article 9.1, Regulation (EU) 1227/2011). REMIT provides for penalties in cases that violate the established norms. To this end, Member States must establish rules on penalties and take all necessary measures to ensure their implementation. It is important that penalties are proportionate, effective, and dissuasive, and reflect the severity of the offenses, the harm caused to consumers, and

³⁰¹ '[I]nside information' means information of a precise nature which has not been made public, which relates, directly or indirectly, to one or more wholesale energy products and which, if it were made public, would be likely to significantly affect the prices of those wholesale energy products. Article 2.1, Regulation (EU) 1227/2011.

the potential gains from trading based on inside information and market manipulation (Article 18, (EU) Regulation 1227/2011). National regulatory authorities are responsible for ensuring compliance with regulations within Member States. To do so they must have the necessary investigatory powers to perform this task efficiently. ACER, in turn, should ensure that the Regulation is implemented in a coordinated manner across the Union, while the European Commission retains the authority to update technical definitions of inside information and market manipulation following the evolution of wholesale energy markets.

The implementation of REMIT, which went into effect in December 2011, is important for ensuring that consumers and other market participants have confidence in the integrity of the gas and electricity markets, that prices set on the wholesale energy markets reflect a fair and competitive interplay between supply and demand, and that no profits can be drawn from market abuse. A stable and consistent regulatory framework will contribute to promoting open and fair competition in these markets, resulting in benefits to the energy consumer.

2.5. RENEWABLE ENERGY SOURCES

The EU is significantly dependent on external energy supplies, and the development of a local electricity industry is essential for assuring the security of its energy supply. Beyond the need for energy security is the desire among European bloc members to assume a leading role within discussions on climate change. In this sense, one can observe the increasing promotion of renewable energies within Member States by means of subsidies, preferential regulatory treatment, green certificates, *feed-in tariffs*, financial instruments, etc.³⁰²

In 2007 the European Commission instituted an energy policy within the EU that translated those anxieties and the issue was brought to the center of the Community policy agenda in the EU, with its precise objectives determined by the European Council:

³⁰² EEA. *Energy subsidies in the European Union: a brief overview*. Technical Report 1/2004, Copenhagen, 2004, p.15.

- (i) Reducing, by 2020, GHG emissions by at least 20%, possibly arriving at 30% if an international agreement is reached that compels other developed countries to reach comparable emissions reductions, as well as adequate contributions from the more economically advanced developing countries in keeping with their responsibilities and respective capacities;
- (ii) Increasing the amount of renewable energies relative to total energy consumption by 20%;
- (iii) Improving energy efficiency by 20% by 2020.³⁰³

In same way, the Council adopted the Energy Roadmap 2050, proposing the long term commitment towards the decarbonization of the economy, with the goal of reaching a reduction in carbon emissions between 80% and 95% in Europe and other industrialized countries by 2050³⁰⁴.

The first EU initiative to combat carbon emissions in an effective and profitable manner was the introduction of the Emissions Trading System (EU ETS). This instrument, grounded in a system of limiting emissions and trading carbon emissions permits (*Cap -and-trade system*), established a system for assigning permits to companies by national authorities, in keeping with the national plans approved by the European Commission. Developing along with this system was a virtual market for carbon emissions permits in which companies with lower GHG emissions can sell their excess permits. In turn, companies planning to emit more than allowed by their permits can invest in technologies and other measures to reduce their emissions, or they may acquire additional permits on the market in order completely or partially cover their excess emissions.

Despite the advantages this mechanism initially offered, it suffers from certain difficulties, among which are the diminishing effect of the incentives

303 European Council. Comunicação da Comissão ao Conselho e ao Parlamento Europeu. Uma Política Energética para a Europa, COM(2007)1 Final, Bruxelas, 2007, p. 5. Available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0001:FIN:PT:PDF>.

304 European Commission. Comunicação da Comissão ao Parlamento Europeu, ao Conselho, ao Comitê Econômico e Social Europeu e ao Comitê das Regiões. Roteiro para Energia 2050. Brussels, 2011. Available at: <http://eu-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0885:FIN:PT:PDF>.

and the risk of competitive distortion due to two main factors: (i) the high number of permits granted during the initial phase of the program, and (ii) the limited effective scope of the scheme in terms of economic sectors covered and the gases included³⁰⁵.

Currently being discussed is an upgrade of the cap-and-trade system that would force companies to forfeit the amount of emissions allowances equal to their total carbon emissions. The adoption of a new regime for permits would seek to widen the operational scope of the ETS to include GHGs other than carbon gases. Also suggested is the possibility of replacing national permit allocation systems with a system for the sale of permits at auction or free allocation based on uniform standards across the EU. Revenues from auction sales would be diverted back to support the National Treasury of the Member State; it is intended that at least part of the revenue generated will be donated to accelerating the process of adapting to a low-carbon economy via investments in research, technology, and efficient energy systems³⁰⁶.

The introduction of the Strategic Energy Technology Plan (SET Plan) sets out a strategy to accelerate the development and utilization of low cost and low carbon intensity technologies, especially through promoting the development of new technologies and international cooperation³⁰⁷. The Communication on “Energy Technologies and Innovation” from 2013 aims to broaden the goals of the SET Plan, mainly by: (i) encouraging new technologies that facilitate high-energy performance with low costs and GHG emissions within the European market; and (ii) supplementing the European regulatory framework in the energy sector³⁰⁸.

305 Commission of the European Communities. Comunicação da Comissão ao Parlamento Europeu, ao Conselho, ao Comitê Econômico e Social Europeu e ao Comitê das Regiões. Duas vezes 20 até 2020: As alterações climáticas, uma oportunidade para a Europa. {COM(2008) 13, 16-19 final}, p. 6. Available at: <http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0030:FIN:PT:PDF>.

306 Ibid. p. 7

307 Commission of the European Communities. Comunicação da Comissão ao Conselho, ao Parlamento, ao Comitê Econômico e Social Europeu e ao Comitê das Regiões. Plano estratégico europeu para as tecnologias energéticas (Plano SET) – Para um futuro com baixas emissões de carbono. Documento COM (2007) 723 final. Available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0723:FIN:PT:PDF>.

308 European Commission. Energy Technologies and Innovation. SWD(2013) 157 final, SWD(2013) 158 final. Available at: http://ec.europa.eu/energy/technology/strategy/doc/comm_2013_0253_en.pdf.

Regarding the use of energy from renewable sources, Directive 2009/28/EC provides for a sustainability regime for transport fuels and bioliquids used in other sectors, such as electricity, heating and cooling. It also sets forth:

Article 1

(...) a common framework for the promotion of energy from renewable sources. It sets mandatory national targets for the overall share of energy from renewable sources in gross final consumption of energy and for the share of energy from renewable sources in transport. It lays down rules relating to statistical transfers between Member States, joint projects between Member States and with third countries, guarantees of origin, administrative procedures, information and training, and access to the electricity grid for energy from renewable sources. It establishes sustainability criteria for biofuels and bioliquids.

The European Commission, in its report on sustainability requirements applicable to utilizing solid biomass and biogas sources for electricity and heating or cooling, recognizes that the vast array of raw materials and the types of domestic biomass production (on top of the difficulties stemming from the diverse sources used in the latter's production) is an obstacle to adopting measures related to binding sustainability criteria for Member States.

For these reasons, the Commission opted to recommend criteria for sustainability to be included in national regimes. These criteria suggest the implementation of measures that ensure greater coherence between national systems based on communication requirements and control of the data on biomass usage. This ensures that the national sustainability regimes do not constitute a means of arbitrary discrimination or disguised trade restrictions.³⁰⁹

309 European Commission. Relatório da Comissão ao Conselho e ao Parlamento Europeu sobre os requisitos de sustentabilidade aplicáveis à utilização de fontes de biomassa sólida e gasosa para a eletricidade, o aquecimento e o arrefecimento. COM (2010) 11 final, 2010. Available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?Uri=COM:2010:0011:FIN:PT:PDF>.

Box 32: Principles and Criteria for Sustainability

The principle of sustainability permeates certain regional agreements and is also embedded in international treaties. This principle is of particular importance for the production of biofuels, as discussed below.

FAO has made certain observations on the principle of sustainability through the Bioenergy and Food Security Criteria and Indicators (BEFSCI) project, which lists a number of tools for assisting states seeking to develop a bioenergy policy and during the implementation process of such a policy⁴³. According to FAO, bioenergy products should be economically, socially and environmentally sustainable, and ensure and promote food security.

The principle of sustainability can also act as a technical barrier. When applied through processes or methods of production that are not in keeping with the provisions of WTO rules, it can influence the production, marketing, and consumption of energy products and services. An example of such operations can be found in the EU Directive 2009/28/EC.

This Directive, issued to promote biofuel production in the EU, highlights the sustainability criterion by prohibiting the production and commercialization of biofuels that do not meet the sustainability criteria listed in its Article 17, such as: (i) compliance with numerous labor standards, (ii) specific provisions for the environment and sustainability (such as the gradual reduction of GHG emissions), (iii) the ban on cultivation that alters the characteristics of areas with high biodiversity, whether forest or grassland, and wetlands with high levels of carbon concentration, such as marshes, and (iv) maintaining compliance with the parameters set out in the specific legislation (EC 73/2009) that establishes common rules for direct support regimes for farmers under the common agricultural policy. These parameters are used to assess the production and commercialization of biofuels originating from EU Member as well as third parties.

Initially, these sustainability provisions are in line with WTO rules. However, there are also debates about whether the fuel sustainability and certification contained in the European Directive will affect the production and export of biodiesel to Europe. It remains to ask whether the measures adopted by the EU would act as barriers to international trade, since the costs that countries like Malaysia and Indonesia must bear to adapt their infrastructure to the new European rules are high and may even make the activity economically unfeasible⁴⁴.

2.6. NATIONAL REGULATORY AUTHORITIES (NRAS)

Within the institutional EU framework there is no single, supranational regulatory body endowed with the competence to impose normative acts. This role falls to the National Regulatory Authorities (NRAs), entities appointed by the Member States following the guidelines set forth in the Directives on Electricity and Gas. NRAs must act independently in relation to political bodies and exercise their powers autonomously, impartially, and transparently. They serve the statutory function of setting and approving tariffs and the tariff methodology pertaining to energy transmission and distribution systems and monitoring the activities of TSOs, in addition to a playing key role in coordinating and harmonizing the actions of operators.

Noting that the liberalization of the energy market had a predominant feature of regional integration, in 2000 the national regulatory agencies formed the Council of European Energy Regulators (CEER) as a way to facilitate cooperation. Meanwhile, in 2003 the European Regulators Group for Electricity and Gas (EREG) was founded in order to facilitate the consultation, coordination, and cooperation among regulatory bodies and Member States, and between those authorities and the Commission, in order to consolidate the technical standards on electricity and natural gas.

Even after the establishment of EREG, there was still the need for voluntary cooperation among NRAs through a community structure, with clear competences and the power to take regulatory decisions in some specific cases. It was therefore decided to create a body independent of the European Commission, national governments, and energy companies.

Thus, Regulation (EC) 713/2009 established the ACER, which has an important role in developing an expanded European gas and electricity transmission system, along with creating market rules and coordinating regional and interregional initiatives, thereby enhancing the integration of the energy market. Furthermore, the Agency should have at its disposal the necessary powers to perform its regulatory functions in an efficient, transparent, well reasoned, and above-all independent way.

Box 33: CEER and ACER

The CEER is the representative body of the national European regulators of gas and electricity that answers to the EU and the international community. It also acts as a forum for cooperation between national regulators to facilitate the creation of a unified European energy market that is competitive, efficient, and sustainable.

The ACER is a European center for the coordination and completion of tasks of the national energy regulators. Beyond this, it coordinates regional initiatives that promote the integration of the European energy market.

The main tasks of ACER include: (i) providing the framework guidelines for operating of gas pipelines and international electricity system, from which operators may establish concrete rules, (ii) ensuring that the rules are consistent with the stated guidelines, (iii) analyzing the implementation of the Ten-Year Network Development Plan, as well as plans to develop national networks, (iv) ruling on cross-border issues, if national regulators cannot reach an agreement or opt for the non-intervention of ACER, and (v) monitoring the operations of the internal market, including the retail prices, the availability of network access for electricity produced from renewable sources, and the recognition of consumer rights.

The tasks of the NRAs and ACER are complementary in the sense that the ACER does not facilitate cooperation among NRAs. With regard to transnational infrastructure, the ACER holds residual regulatory power and can make binding decisions that includes the terms and conditions for access and operational security if the NRAs cannot reach an agreement or if there is a joint request from the competent NRAs. In these cases, the ACER will make the decisions about the allocation of limited capacity of cables and pipelines among interested market participants, about sharing of congestion revenues, and about the tariffs imposed on users of the infrastructure (Article 8, Regulation (EC) 713/2009). The Agency is open to the participation of third party countries which have reached agreements with the Community and abide by Community laws within the energy field and, where relevant, also in the areas of competition and the environment. In addition, the agreements reached must contain provisions that delimit the nature, scope, and forms of participation

of these countries within the ACER's work, including provisions on financial contributions to the Agency's budget and hiring employees (Article 31, Regulation (EC) 713/2009). By requiring the effective application of European Community regulatory framework in the energy sector for these countries, it seeks to prevent the discretionary adoption of network codes that will or will not be implemented by national legislation.

2.7. ENERGY EFFICIENCY

The EU Member States have opted for liberalization of the service sector by means of the negative list model. As previously mentioned, in this model all services and all forms of service delivery are liberalized, save for those included in the list of exceptions. However, even sectors excluded from liberalization should be regulated in order to comply with the EU principles of freedom of establishment and freedom to provide services, as established by Articles 56 to 62 of the TFEU.

Regarding the relevant services of the European energy sector, especially transportation, the imposition of transmission tariffs and ensuring access to energy markets, the applicable rules and principles are those already established in the multilateral realm as well as the regulations and directives adopted by Parliament and the Commission.

Directive 2006/32/EC partners the provisioning of energy services with end-use efficiency, in order to ensure the efficient and economical distribution of energy to the final customers.

Also covered by the Directive above are "all forms of commercially-available energy" (Article 3 (a)), since the provisions on improving energy efficiency are applicable to energy suppliers, energy distributors, DSOs, commercial energy retailers, final consumers, and the armed forces (with the exception of material used exclusively for military purposes) (Article 2). Member States shall ensure "the removal of those incentives in transmission and distribution tariffs that unnecessarily increase the volume of distributed or transmitted energy" (Article 10, Directive 2006/32/EC) and allow for the creation of funds with the purpose of subsidizing measures that improve energy efficiency (Article 11, Directive 2006/32/EC).

Directive 2006/32/EC proposes a target figure of 9% energy savings

between the years 2008 and 2016 that must be observed by all Member States through National Energy Efficiency Action Plans (NEEAPs).

In June 2011, the European Commission proposed a new directive that aims to increase energy efficiency in providing energy-related services. The directive introduces proposals to expand the scope of activities related to the policy currently in effect, ranging from power generation to final consumption.

2.8. INVESTMENTS

The enactment of the Lisbon Treaty brought about new perspectives related to the Common Commercial Policy of the EU, including those related to IEDs, as can be seen in Article 207 of the TFEU:

1. The common commercial policy shall be based on uniform principles, particularly with regard to changes in tariff rates, the conclusion of tariff and trade agreements relating to trade in goods and services, and the commercial aspects of intellectual property, foreign direct investment, the achievement of uniformity in measures of liberalization, export policy and measures to protect trade such as those to be taken in the event of dumping or subsidies. The common commercial policy shall be conducted in the context of the principles and objectives of the Union's external action.

By placing the conclusion of BITs under the exclusive competence of the EU, Member States remained unable to conclude them without prior permission from the Union. This was because, as the exclusive holder of the competence to legislate on the matter, only the Union could enact the legally binding provisions for such an endeavor. Similarly and following from the duty to take the necessary steps to phase out incompatibilities related to the EU Treaties, the BITs currently in effect must be renegotiated by the Member States and replaced with new ones under the guidance of the EU.

BITs, as already observed earlier, ensure the protection of foreign investors against risks such as discriminatory treatment, expropriation, nationalization, and unjustified restrictions on remittances of foreign

capital abroad, among other liabilities. The stable relationship between investors and the States that receive investments becomes necessary mainly in the energy sector, where projects tend to be carried out over the long term and capital flows are usually quite intensive.

Due to the legal configuration in which the EU currently operates, there are several notable incompatibilities between the provisions found in BITs and the ECT and the law applicable to the EU. Among the BIT-related incompatibilities are: (i) the possibility of imposing restrictions on capital transfers in exceptional circumstances, (ii) the implementation of performance requirements in relation to certain European products; (iii) the exceptions related to the non-discrimination requirement, with respect to the adoption of public policies (which could limit the freedom of establishment and the freedom to provide services assured to foreign investors) , and (iv) the overlap of BIT with European trade agreements with third parties that contain provisions related to investments³¹⁰ .

Since both the EU and its Member States are Contracting Parties to the ECT, two main issues related to investment regulations within the EU are observable in the implementation of ECT provisions.

The first issue concerns the inability of EU nationals or a company organized under the legislation of a Member State to lodge a complaint against the EU under the ECT, since they would not be considered “investors of the other Contracting Party,” as set out in Article 26 (1) of the ECT. This problem, however, can be easily solved by making the complaint on behalf of one EU Member State against another one.

The second issue observed entails greater difficulties, related to the possibility of the EU Member States taking advantage of the provisions of the ECT, less rigid than those of the EU, in order to reduce investor rights. As Community law assures a greater degree of investor protection than what is present in the ECT, an incompatibility issue emerges between the two investments instruments within the EU.

So that the above situations may be resolved, it becomes necessary to eliminate the two parallel structures of investor protection within the Eu-

310 For more information, see: KLEINHEISTERKAMP, J. Investment Protection and EU Law: the intra- and extra- EU dimension of the Energy Charter Treaty. In: *Journal of International Economic Law*, Vol. 15, No. 1, Oxford: Oxford University Press, 2012, pp.85-109.

ropean internal energy market through imposing general exceptions for internal EU issues under the ECT³¹¹.

2.9. BILATERAL AND PLURILATERAL INITIATIVES

Bilateral and plurilateral initiatives that favor cross-border energy integration have been employed by the EU in order to promote sustainable energy policies at competitive prices, increase coordination and information sharing between third parties and Members of the European bloc, and generate prosperity, stability, and security along Europe’s borders.

In this sense, the EU utilizes legal and political instruments to forge cooperative and/or normative frameworks with countries that are strategically important for maintaining the region’s energy supply. Among the political instruments are dialogues on energy, memoranda of understanding (MoU), joint action plans, association programs, etc. Among the available bilateral legal instruments are framework agreements, non-preferential agreements or free-trade agreements, science and technology cooperation agreements, and the agreements of the European Atomic Energy Community (EAEC or Euratom). The EU maintains relations of bilateral cooperation on energy policy with Brazil, China, India, Iraq, Norway, South Africa, Turkey, Ukraine, and the U.S.

The bilateral political dialogue aims primarily to exchange information on safety and energy efficiency, sustainability, renewable energy development, nuclear energy, clean coal-based technologies, market access, transit, energy transport, the exploitation and production of energy, among other activities of strategic importance for the sector.

The multilateral legal instruments span the Energy Community, the ECT, the WTO agreements on non-proliferation and the ITER (International Fusion Energy Organization) Agreement.

The following will analyze the bilateral and plurilateral initiatives that received greater attention within the European energy scene.

311 KLEINHEISTERKAMP, J. The Next 10 Year ECT Investment Arbitration: A Vision for the Future – From a European Law perspective. In: *SCC/ECT/ICSID Conference. 10 years of Energy Charter Treaty Arbitration*. June 2011, p. 16.

2.9.1. ENERGY COMMUNITY

The Treaty Establishing the Energy Community (TEEC) entered into force in 2006 with the goal of extending the European energy market into southeastern Europe, thereby creating an integrated energy market for the European Community and the Republics of Albania, Bosnia-Herzegovina, Croatia, Macedonia, Montenegro, Romania, Serbia, Ukraine and the territory of Kosovo. In the regulatory ambit, it was proposed to establish a stable regulatory framework through implementing key provisions via European legislation, including directives and regulations on gas and electricity. It can be considered a kind of expansion of the European energy market into countries that have concluded a free trade agreement with the EU, have the intention to negotiate one, or demonstrate the intention and willingness to implement relevant EU legislation.

The principles of the Energy Community coincide with those of the European Coal and Steel Community, showing the attempt to balance the commercial, political, and social interests of their respective parties by ensuring a continuous and stable energy supply.

The commitments made by the Parties are contained in Article 3 of the TEEC, in the so-called “concentric circles” of the Treaty. The concept of concentric circles represents the European structure consisting of subsets of countries that have attained different levels of integration. The first circle refers to the implementation of the *acquis communautaire*³¹² by non-Member States of the European Community in the areas of energy, the environment, competition, and renewable energy, as well as the adoption of the specific technical standards of the Community, for example those concerning connection or cross-border transportation of energy (Articles 9-25, TEEC).

The second circle establishes mechanisms for the operation of network energy markets, providing the interested Parties with a regulatory framework for measures related to energy security (Articles 29 and 30, TEEC),

312 The expression *acquis communautaire* refers to the normative body of the European Community, covering the objectives, norms, and policies, including primary (treaties and other agreements of similar status) and secondary (regulations, directives, decisions, recommendations, opinions) legislation.

long-distance energy transmission within the system, provision of energy to citizens (Articles 31 to 33, TEEC), the harmonization of rules (Article 34, TEEC) and the promotion of renewable energy and energy efficiency (Article 35, TEEC), in addition to ensuring the adoption of temporary safeguard measures in the event of a sudden crisis in a Member State’s energy market (Articles 36 to 39, TEEC).

Finally, the third circle proposes the creation of an energy market that is unified and without internal borders for the States and territories that fall within the scope of the Treaty. The regulations on internal energy trading prohibit the imposition of tariffs, quantitative restrictions, and other measures that have equivalent effects on the import and export of network energy among the Parties (Article 41.1, TEEC). In turn, the policy directed toward foreign energy trading states that the necessary measures should be taken to ensure equal access whether coming from or destined for third party States with respect to environmental standards and to ensure the safe operation of the internal energy market (Article 43, TEEC). The treaty also contains provisions that ensure mutual assistance in instances of supply disruption (Article 44, TEEC). The Treaty also provides a mechanism for dispute settlement, which can be used if one Party fails to fulfill an obligation contained in the Treaty or if it is necessary to implement a decision concerning the Party within the specified period. The analysis of the case and the decision on whether or not it constitutes a violation of the Treaty is the responsibility Ministerial Council (Articles 90-93, TEEC).

2.9.2. AGREEMENTS BETWEEN THE EU AND RUSSIA

Russia is the largest exporter of gas, uranium, and coal to the EU, and the EU, in turn, is the largest trading partner of the Russian Federation with respect to energy goods. Given the unequivocal interdependence and common interests within the sector, cooperation is desired especially with regard to investments, the security of continuous production energy, the expansion of transport infrastructure, and the reduction of environmental impact. It is also sought to ensure open markets and to promote energy efficiency and energy savings as Europe moves toward a low car-

bon economy.

The EU-Russia Energy Dialogue initiated in 2000 suggests greater cooperation between Member States and the Commission in order to provide improved reliability, security, and predictability of energy market relationships, while also seeking increased transparency of the energy system. In the wake of the gas supply crisis of 2009, the dialogue has been strengthened with the signing of an Early Warning Mechanism, which aims to maintain a monitoring mechanism for the structures related to energy supplies, in order to identify potential risks and problems while seeking to strengthen coordination in instances of emergencies of gas, oil or electricity supplies. Also considered was the creation of the Advisory Council on EU-Russia Gas.

The instrument that furnishes the legal basis for the political dialogue established between Russia and the EU is the Partnership and Cooperation Agreement (PCA) signed between the parties in 1994, which established a framework for dialogue and promoted trade, investment, and more harmonious relations. The intensification of discussions about the development of new infrastructure included the creation of the current regulatory framework. In this sense, a new agreement is being negotiated by these Parties, with the goal of addressing critical issues such as access to resources, networks, and export markets in the energy sector, investment protection, reciprocity, cooperation and prevention of crises, equal conditions for competition and pricing of energy resources. Furthermore, they aim to establish a framework for wide-ranging cooperation, which will open up new opportunities for cooperation over the long term.

2.9.3. INTERSTATE OIL AND GAS TRANSPORT TO EUROPE (INOGATE)

The INOGATE is a program for international energy cooperation established in 1995 between the EU and countries from Eastern Europe, the Caucasus and Central Asia (Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia - *observer status*, Turkey, Tajikistan, Turkmenistan, Ukraine and Uzbekistan).

Among the main objectives of this program are: (i) the coordination of

the energy markets of the participants based on the principles found in the EU energy market, (ii) increasing energy security, solving problems related to imports and export, diversification of the energy supply, transit, and demand (iii) promoting the development of sustainable energy, and (iv) promoting investment within the energy sector

Beyond this, the program seeks to foster initiatives for information, communication, and technical support between the Parties.

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Annex I – European Union - Legislation on Energy

European Union – Legislation On Energy				
Regulation	Title	Subject	Date of Signature	In Effect
-	Treaty of Lisbon		12/17/2007	Yes
-	Consolidated Version of the Treaty on the Functioning of the European Union		03/30/2010	Yes
96/92/EC	Directive 96/92/EC of the European Parliament and the Council	Common rules for the internal market in electricity	12/19/1996	yes
98/30/EC	Directive 98/30/EC of the European Parliament and Council	Common rules for the internal market in natural gas	06/22/1998	No
2003/54/EC	Directive 2003/54/EC of the European Parliament and Council	Common rules for the internal market in electricity	06/26/2003	No
2003/55/EC	Directive 2003/55/EC of the European Parliament and Council	Common rules for the internal market in natural gas	06/26/2003	No
2006/32/EC	Directive 2006/32/EC of the European Parliament and Council	energy end-use efficiency and energy services	04/05/2006	yes
2009/28/EC	Directive 2009/28/EC of the European Parliament and Council	Promotion of the use of energy from renewable sources	04/23/2009	Yes
2009/72/EC	Directive 2009/72/EC of the European Parliament and Council	Common rules for the internal market in electricity	07/13/2009	Yes
2009/73/EC	Directive 2009/73/EC of the European Parliament and Council	Common rules for the internal market in natural gas	07/13/2009	Yes

2009/117/EC	Directive 2009/117/EC of the Council	Includes paraffin oil as an active substance	06/25/2009	Yes
713/2009	Regulation 713/2009 of the European Parliament and Council	Established an Agency for the Cooperation of Energy Regulators	07/13/2009	Yes
714/2009	Regulation 714/2009 of the European Parliament and Council	Conditions for access to the network for cross-border exchanges in electricity	07/13/2009	Yes
715/2009	Regulation 715/2009 of the European Parliament and Council	Conditions for access to the natural gas transmission networks	07/13/2009	Yes
994/2010	Regulation 994/2010 of the European Parliament and Council	Measures to safeguard security of gas supply	10/20/2010	Yes
1227/2011	Regulation 1227/2011 of the European Parliament and Council	Wholesale energy market integrity and transparency	10/25/2011	Yes

3. NAFTA

3.1. ENERGY PROFILE

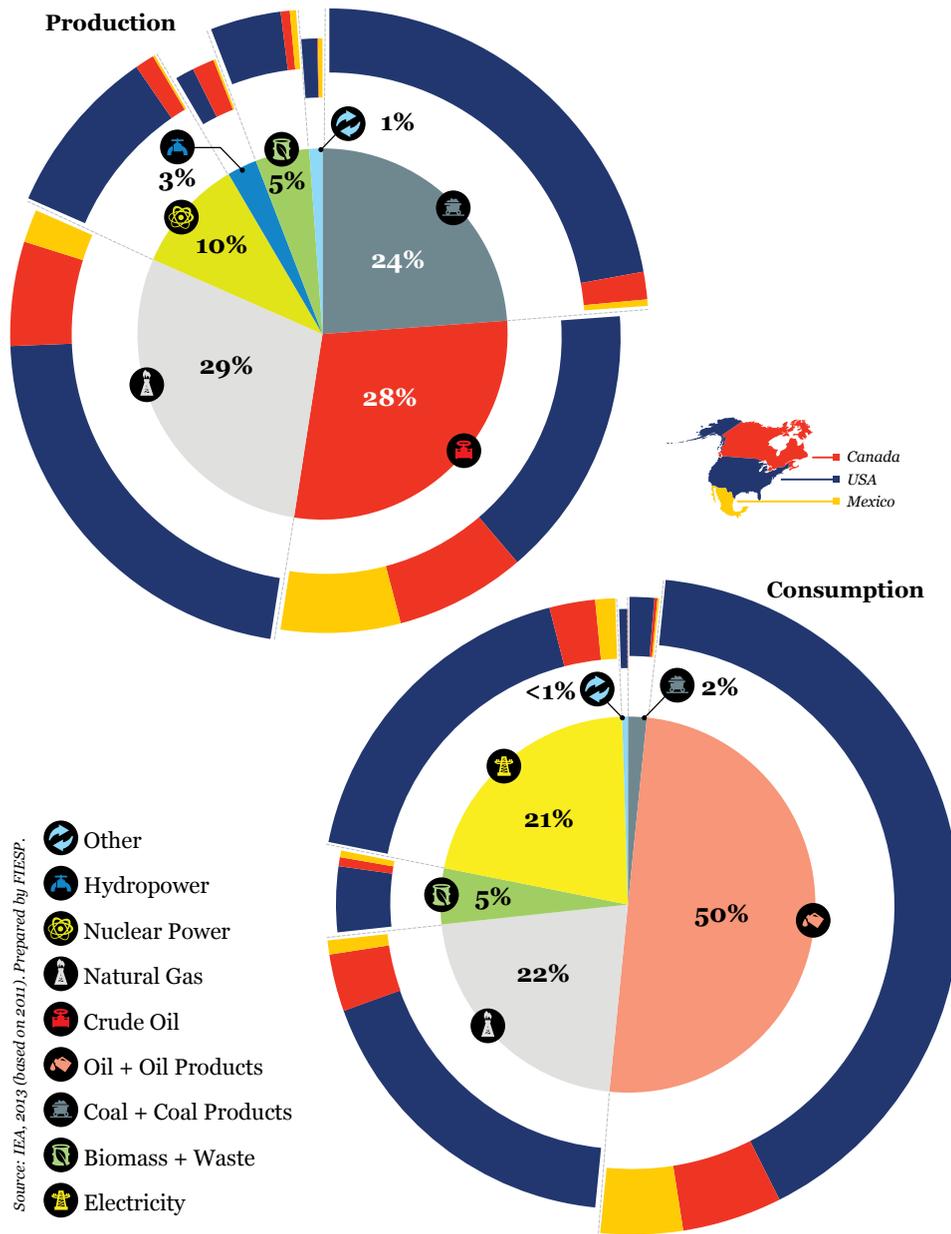
3.1.1. ENERGY PRODUCTION AND FINAL CONSUMPTION IN NAFTA

In the year 2010³¹³, the total energy production of the NAFTA Member States³¹⁴ corresponded to 18.3% of the total global energy production. Final energy consumption in the same period represented 20.8% of the worldwide total.

313 The statistics on NAFTA are available based on the year 2011, but for world totals they are available only based on the year 2010. For this reason, the statistics for comparison purposes use 2010 as a basis.

314 Its member States are the United States of America, Canada, and Mexico.

Graph 4— Energy Production and Final Consumption of NAFTA Partners



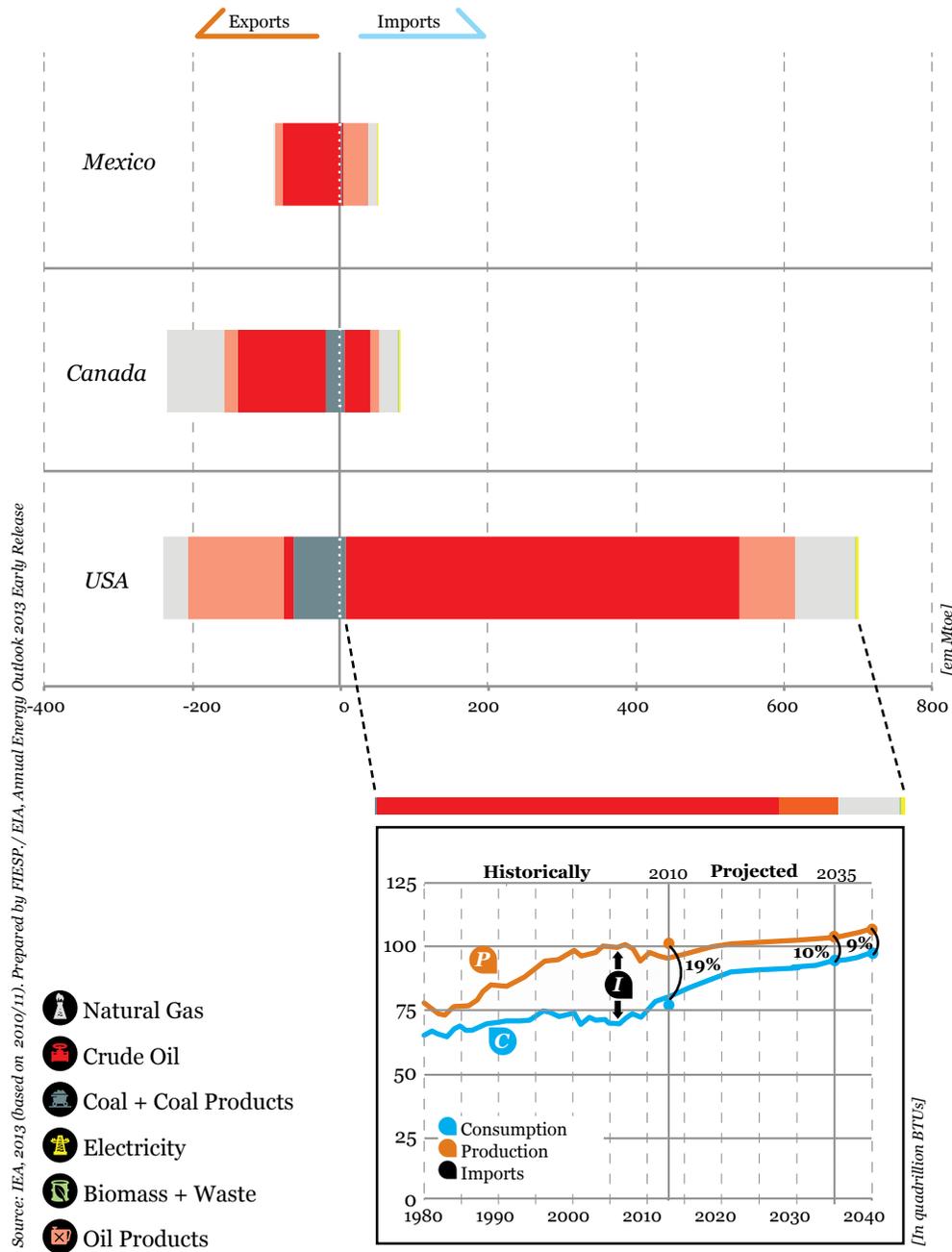
Graph 4 shows the region’s production and final consumption, specified by energy sources and Member State share in each of them. There is a large presence of fossil fuel production, responsible for 81% of the total amount. In this context, gas appears to be the most produced energy input, representing 29% of the total, followed by petroleum with 28%, and coal with 24%. After fossil fuels the most important energy source is nuclear power, which accounts for 10% of the total. Renewables account for 9%, divided among biofuels, hydropower, and other renewable primary energy sources.

The final consumption of the bloc shows a sharp reduction in the usage of coal. This can be explained by Graph 5, which shows that besides being a net exporter of coal ore the bloc imports a huge amount of oil and petroleum products. Initially, coal had accounted for 24% of production although, following shifts in the energy trade, it now represents only 2% of consumption, while oil moved from 28% of production to 50% of final consumption. This fact is also explained by the rerouting of coal production to electricity production. After exports, nearly 90% of the available coal is used in power plants, representing more than double the entire nuclear energy used for the same purpose.

3.1.2. ENERGY TRADE AND FINAL CONSUMPTION

Source: IEA, 2013 (based on 2011). Prepared by FIESP.

Graph 5 – Energy Imports and Exports Under NAFTA

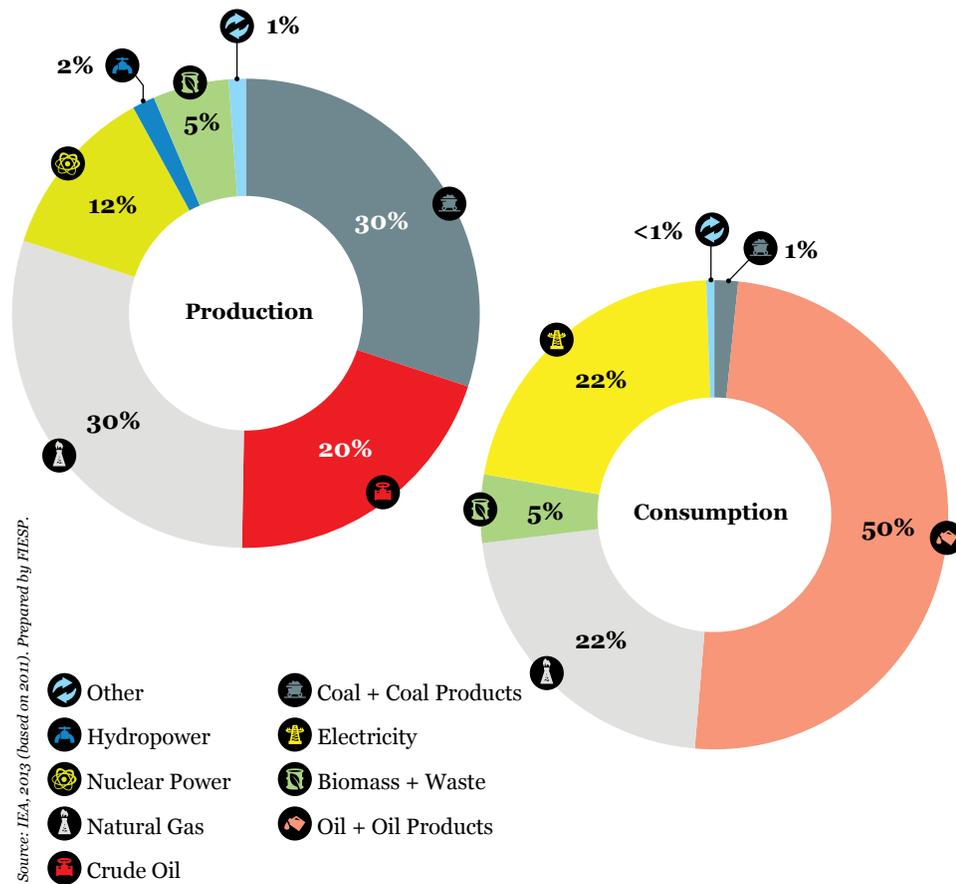


The majority of energy trading within the region is comprised of exports coming from Canada and Mexico to the USA; flows between Mexico and Canada are virtually nonexistent.

The U.S., despite having the world's second largest electricity output, is a net importer of energy, due to its high domestic energy consumption, which is currently the world's second highest behind only China. Since the early 1980s, U.S. energy consumption has increased in greater proportion to its energy production, thereby increasing the energy deficit, which is satisfied through imports. However, since the end of the 2000s, North American energy dependence has declined due to several factors, such as the growth of domestic natural gas production, increased usage of domestic biofuels, and a reduced demand for energy products as a result of implementing efficiency standards³¹⁵. According to the IEA projection on the U.S. energy balance, also shown in Graph 5, it appears that in 2011 its dependency ratio was 19% and for 2035 is projected to decrease to merely 10%.

315 EIA. Annual Energy Outlook 2012 with Projections to 2035. Available at: [http://www.eia.gov/forecasts/aeo/pdf/0383\(2012\).pdf](http://www.eia.gov/forecasts/aeo/pdf/0383(2012).pdf). Last accessed June 19, 2013.

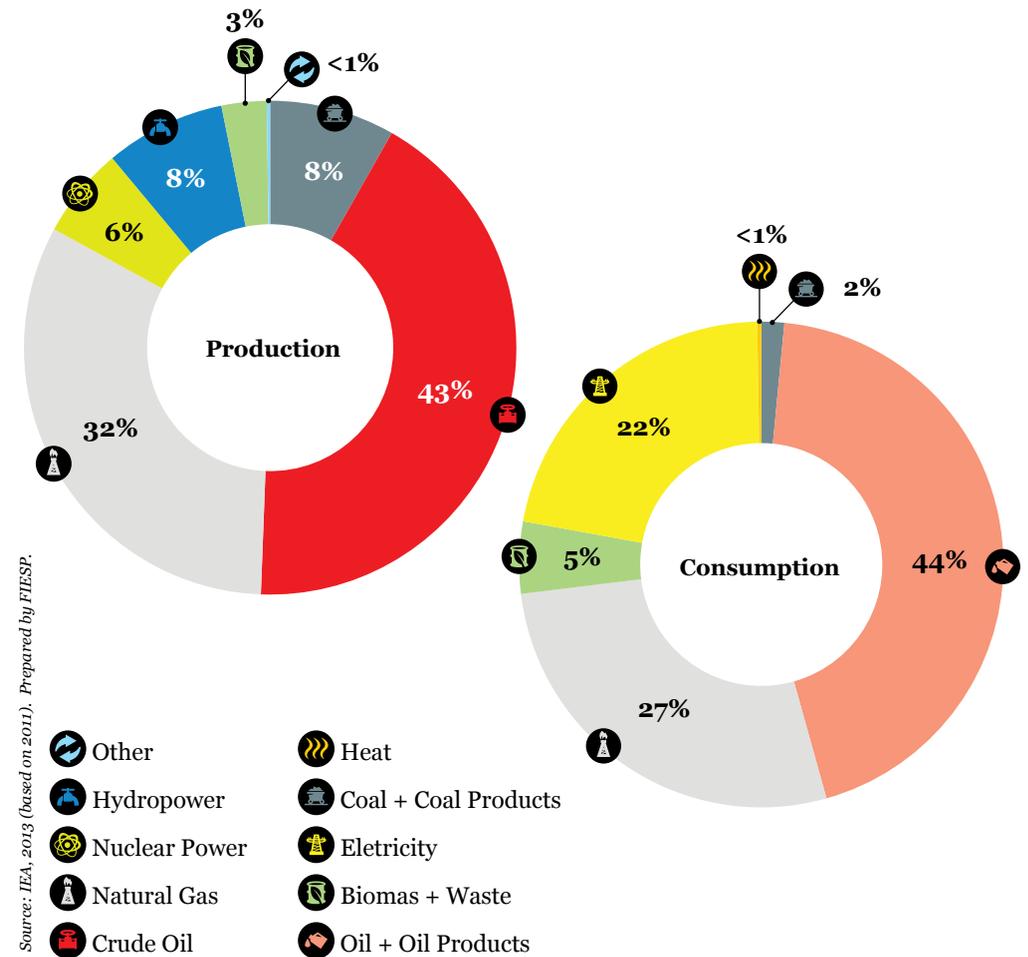
Graph 6 – Energy Production and Final Consumption in the USA



Note that 73% of the energy utilized in the U.S. comes from fossil fuels, such as oil, coal, and natural gas. Energy coming from nuclear sources in the period analyzed correspond to approximately 12% of total energy production, whereas renewable energies comprised 8% of total energy supplies. Renewable energy production comes in large part from biomasses,

especially corn ethanol³¹⁶, but also relies on hydro, wind, geothermal, and solar sources.

Graph 7 – Energy Production and Final Consumption in Canada

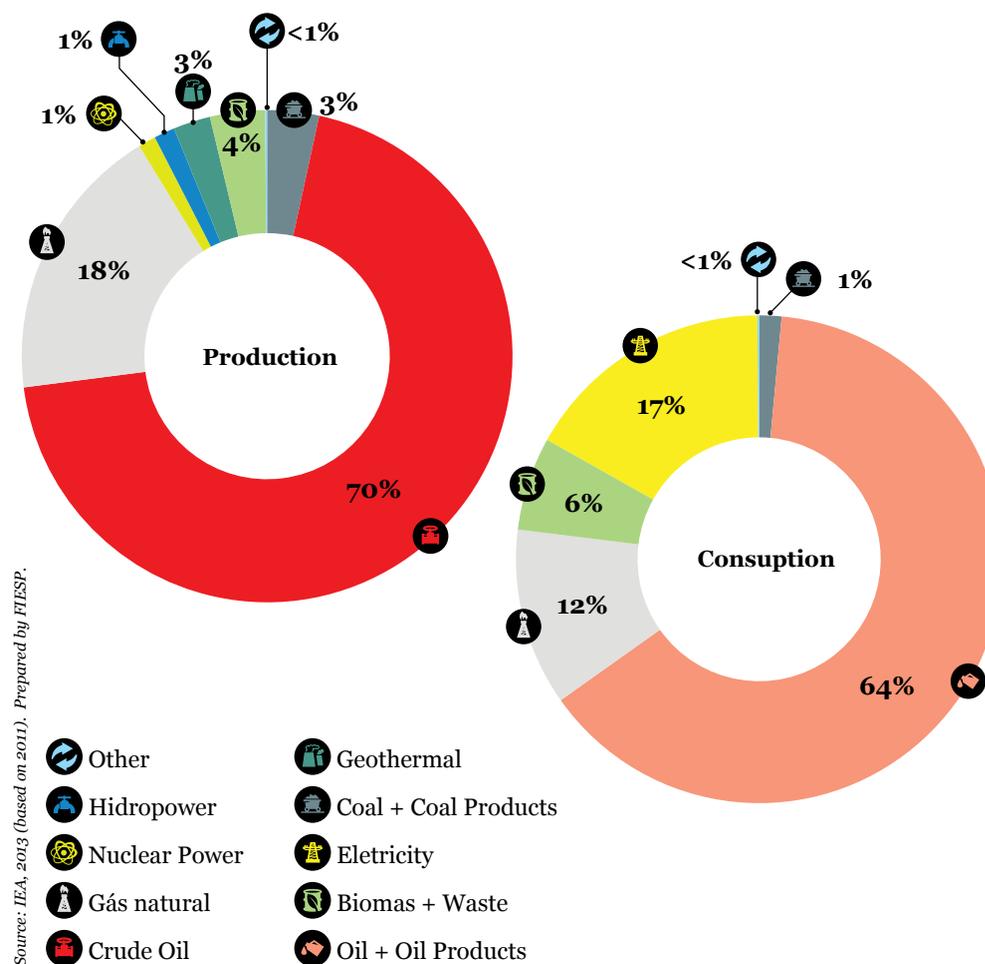


³¹⁶ Note that despite the fact that the production of this particular biomass is widely considered to be renewable, the Environmental Protection Agency (EPA) of the USA published a study in which it suggested that corn ethanol only reduces carbon emissions by 21% compared to gasoline. Available at: <http://www.fas.org/sgp/crs/misc/R40155.pdf>. Last accessed July 15, 2013.

Canada is one of the world's largest energy producers, since it shows a high level of utilization of its natural energy resources. About 35% of its total production is exported. The U.S. is the largest importer of Canadian energy, particularly of oil, natural gas, coal and electricity. As the two countries have intensive trade relations with respect to energy, there is a high degree of integration between their transmission networks, enabling energy flow in both directions.

Its consumption centers on oil, natural gas and electricity, altogether representing 93% of the sum total. Note that electricity generation is distributed evenly among coal, nuclear and hydroelectricity, with little involvement from natural gas, oil products, wind, and solar power.

Graph 8 - Energy Production and Final Consumption in Mexico



Mexico possesses abundant natural gas and oil reserves and, just as with Canada, occupies an important position among the world's leading oil producers. The country is the second largest oil supplier of the U.S. Oil sector commerce plays an important role in the Mexican economy and in 2010 represented 14% of its exports and more than 30% of the total reve-

nue collected by the Mexican government³¹⁷.

With respect to domestic energy consumption, Mexico mainly utilizes oil and natural gas, which combined represent approximate 90% of the total energy consumption. The remaining percentage is divided among the consumption of coal, nuclear power, hydroelectricity, and other renewables.

3.2. INTEGRATION

The North American States have domestic regulatory frameworks that are quite different compared to one another. Mexico has a higher degree of state control over its natural resources, containing within the category of state services all phases of the energy production chain, whereas Canada and the U.S. retain shared jurisdiction over the energy sector within their respective domestic spheres. In Canada, jurisdiction over the energy sector is divided between the federal and provincial governments. The provinces control the exploitation, development, and conservation of exhaustible natural resources, and the federal government is responsible for interprovincial and international trade. In the U.S., the Federal Energy Regulatory Commission (FERC) and the Department of Energy (DOE) regulate distribution and transport on the international and interstate levels; state governments are responsible for local distribution (i.e. within the borders of each State) and for the regulating and licensing of the energy industries; fossil fuel exploitation takes place entirely in the realm of private enterprise.

As the region relies upon intensive and geographically favorable energy trading, exporting countries needed assured, open access to the American energy market, whereas from the American point of view, it was necessary to increase the security of the energy supply³¹⁸.

In 1987, Canada and the U.S. signed the Canada-United States Free

Trade Agreement (CUSFTA). Created under the rules of GATT 47 for the trade in goods, CUSFTA had as its purpose comprehensive liberalization, covering the goods (including areas such as agriculture, technical barriers, and governmental purchases) and service sectors, in addition to proposing to create conditions for facilitating regional investment and competition. With regard to the energy policy adopted in Chapter 9 of the Agreement, Article 901 included electricity under the normative framework for the regulation of trade in goods. The agreement also reaffirmed the obligations contained in GATT 47 and the prohibition of any type of restrictions on energy trading. The GATT 47, in Article I, makes reference to customs duties and tariffs on exports, by bringing MFN treatment into the domain of multilateral trading. Article 903 of the CUSFTA, explicitly prohibiting the discriminatory application of tariffs and export taxes, intensified the regulations on issues related to export taxes.

In 1994, CUSFTA was replaced by NAFTA, signed between the U.S., Canada, and Mexico. NAFTA is considered to be a landmark among preferential trade agreements, especially with regard to the special treatment given to trade in energy goods, to investment, and to the cross-border transit involving these goods³¹⁹. Moreover, the presence of a chapter for the energy sector shows interest in creating a commitment that ensures the continued integration of the North American energy sector.

3.3. LEGAL REGIME

Basing itself on the provisions of the GATT 94, NAFTA incorporates the principles of non-discrimination and national treatment (Article 301), as well as the intention to progressively eliminate the tariffs applied to all goods covered by NAFTA, even ones not expressly included, such as energy goods (Article 302).

Article 301.1: Each Party Shall accord national treatment to the goods of another Party in Accordance with Article III of the General Agreement on Tariffs and Trade (GATT), including its interpretative notes, and to

317 EIA. Country Analysis Brief - Mexico. July 2011. Available at: <http://www.eia.gov/EMEUCabs/Mexico/pdf.pdf>.

318 HERRÁN, R.; PORETTI, P. Energy Trade and Investment under the North American Free Trade Agreement. In: SELIVANOVA, Y. (ed.). Regulations of Energy in International Trade Law: WTO, Nafta and Energy Charter. USA: Kluwer Law International, 2011, pp. 335- 371, p.340.

319 Ibid p. 335.

this end Article III of the GATT and its interpretative notes, or any equivalent provision of a successor agreement to Which all Parties are party, are incorporated into and made part of this Agreement.

(...)

Article 302.1: Except those otherwise provided in this Agreement, the Party may Increase any existing customs duty, or adopt any customs duty, on an originating good.

The Agreement also imposes requirements upon the signatories that exceed those existing under the WTO agreements. These additional requirements focus on balancing the interests of both importing and exporting countries of energy goods on the energy markets, placing the emphasis on issues of access to energy resources and security of the energy supply.

Liberalization commitments relating to the energy sector are contained in Chapter 6 of NAFTA, which in large part are implemented only between Canada and the U.S., due to the reservations adopted by Mexico³²⁰. The general principles governing this Chapter confirm respect for the constitutions of each Member (Article 601.1), at the same time highlighting the important role of trade in energy goods for regional integration (Article 601.2).

To define the energy and basic petrochemicals covered by the Agreement, Article 602.2 makes direct reference to the classification contained in the HS. This classification includes virtually all forms of energy: from uranium to fossil fuels, including coal, gas, oil and electricity³²¹. It should be noted that the Chapter does not cover equipment utilized in the different segments of the industry energy, although these goods have benefited from the general phasing out of tariffs as envisaged in Article 302.

The imposition of restrictions, taxes, and other measures on importing and exporting energy goods is regulated by subsequent articles. Arti-

³²⁰ The content of the reservations and their consequences are also analyzed in this Chapter.

³²¹ HS sectors and subsectors covered: 2612.10, 27.01-27.06, 2707.50, 27.08-27.09, 27.10 (except mixtures containing paraffin listed in items c9-c15), 27.11 (except ethylene, propylene, butylene and butadiene with purity above 50%), 27.12-27.16, 2844.10-2844.50, 2845.10 and 2901.10 (only with respect to ethanes, butanes, pentanes, hexanes and heptanes).

cle 603 incorporates the provisions contained in Article XI of GATT 94, concerning prohibitions and quantitative restrictions on the import or export of energy products and petrochemicals, by prohibiting both quantitative restrictions and the imposition of minimum or maximum prices on exports and/or imports³²². However, the Parties are allowed to apply restrictions on energy trading if these goods are coming from or sent to a non-Member State, i.e. energy goods imported from a non-Member State by a Party to the Agreement can be restricted or prohibited³²³. Also authorized are licensing systems for imports and exports, so long as these systems are operated in a manner consistent with the Agreement, including the provisions contained in Paragraph One of Article 603.5 and Article 1502³²⁴.

Article 604 also builds upon GATT 94 by preventing Parties from adopting duties, taxes, and other charges for the export of any energy or petrochemical good to the territory of another Party, unless such tariffs, taxes or charges are applied to exports to all of the parties in an equitable manner, as well as to any such good when consumed domestically.

Article 604: Export Taxes

No Party may adopt or maintain any duty, tax or other charge on the export of any energy or basic petrochemical good to the territory of another Party, unless such duty, tax, or charge is ADOPTED or maintained on:

- a) exports of any such good to the territory of all other Parties, and*
- b) any such good when destined for domestic consumption*

The article aims to curb the usage of tariffs on energy exports as a means of subsidizing local industry by lowering the prices of these raw materials

³²² Unless the minimum or maximum price measures applied to imports are intended to serve as countermeasures or previously authorized antidumping measures (Art. 603.2).

³²³ HORLICK, G.; SCHUCHHARDT, C.; MANN, H. NAFTA Provisions and the Electricity Sector. Background Paper prepared for the Commission for Environmental Cooperation of North America Secretariat in support of the Electricity and Environment initiative, 2002. Available at: http://www.cec.org/Storage/46/3844_nfta5-final-e2.pdf.

³²⁴ Art. 1502 ensures the right to form state monopolies or state-owned companies provided that the activity of said enterprise is monitored by regulatory controls, administrative supervision, or other measures that serve the same function.

on the domestic market. Item b of Article 604 eliminates, in practice, the advantages gained by the utilization of export tariffs, insofar as it requires that this tariff must be charged on the same energy good when destined for the domestic market³²⁵.

Another provision in the Agreement deals with recognition of the rights of the Parties to incentivize, through subsidies, the exploitation and development of the oil and gas sectors (Art. 608).

The Parties can also adopt and maintain restrictions on energy exports, provided that they include the conditions called forth by Articles XI.2 (a) and XX (g), (i) and (j) of the GATT 94 and that, in order to be adopted, these measures do not reduce the proportion of the total energy supply available to other NAFTA Members below the levels observed 36 months prior to the adoption of the restriction, or impose a higher export price on NAFTA members than that applied to the domestic market (Article 605 (a), (b) and (c)). It also denies Parties the recourse to Article XXI of the GATT 94 for justifying the implementation or maintenance of restrictive measures on the import or export of energy goods or basic petrochemicals from or to Contracting Parties to NAFTA, except in cases involving national security, to the extent that it is necessary to ensure supplies to military institutions, to respond to armed conflicts, and to implement national policies or international agreements on the non-proliferation of nuclear weapons (Art. 607).

NAFTA apparently seeks to circumscribe and reduce the broad definition of security present in Article XXI of GATT 94,³²⁶ which could, as has

325 It is worth mentioning that export tariffs on energy products are an indispensable source of state income for many countries that are economically dependent on this type of activity. It is unclear whether this article as written took into account the political viability of an extension of NAFTA to Central America, although its distinctive wording could ensure its reproduction in other international treaties on the matter.

326 These conditions allow restrictions and prohibitions to be applied temporarily for the purpose of: (i) preventing or remedying serious shortages of food or other products essential to the exporting Party (Art. XI.2 (a)), (ii) promoting the conservation of exhaustible natural resources if the restrictive measure is adopted also in the domestic realm (Article XX (g)), (iii) ensuring sufficient domestic supplies are used in domestic industries during periods when the domestic price of such materials falls below the international price as part of a governmental stabilization policy (Art. XX (j)), and (iv) ensuring the acquisition or distribution of products with insufficient supply in cases where the restriction is considered essential (Article XX (j)).

already been seen in this study, allow for large-scale arbitrariness on the part of the States within the interpretation and application of this mechanism.

Although NAFTA does not provide regulations for trading renewable energy goods, there has been an increased government interest in the cross-border trade of these goods. This interest has become apparent in the form of Renewable Energy Portfolios, which are usually local regulations that require the inclusion of a specific amount of energy produced from renewable sources. However, the portfolios may vary from one local jurisdiction to another, many times not covering all available forms of renewable energy and having different definitions, which can harm trade in the sector³²⁷.

Regarding technical barriers to trade (Chapter 9 of NAFTA), Article 903 reaffirms the commitments of the Parties in relation to the TBT. Because in the U.S. as well as in Canada the energy sector is regulated by national and subnational bodies, the diversity of rules resulting from this legislative activity can lead to technical barriers to trade. To avoid the formation of an incoherent framework, thereby increasing transaction costs, the Parties should use internationally established norms and technical standards as the basis for implementing measures related to the matter (Article 905). They should also comply with transparency requirements in relation to the measures adopted (Article 909), and commit to not implementing measures that create unnecessary obstacles for trading among Parties (Article 904).

Chapter 7, on agriculture and sanitary measures, makes no mention of energy goods related to this sector, such as biofuels or ethanol. According to Howse and Van Borke, this structure might be justified by the fact that within the period of the NAFTA negotiations the agricultural sector was understood in its traditional sense –it was not considered as an energy

327 HOWSE, R.; VAN BORK, P. Opportunities and Barriers for Renewable Energy in NAFTA. In: *Renewable Energy and International Law Project: Third North American Symposium on Assessing the Environmental Effects of Trade*. February 2006, p. 15.

industry or source of raw materials for chemical industries³²⁸.

Since part of the electricity and oil trades were still monopolized by public or private institutions in several jurisdictions within regions of NAFTA Member States, the provisions contained in Chapter 15 of NAFTA on monopolies and state enterprises are also relevant to the analysis of the sector's regulation. Articles 1502.1 and 1503.1 authorize, respectively, the appointment of monopolies and the establishment of state undertakings by the Parties to the Agreement. However, the Parties should assure, principally by means of regulatory control and administrative supervision, that the monopolies act in keeping with the responsibilities assumed by the Party, maintain conduct in keeping with the commercial purposes in buying and selling a monopolized product or service on a given market. Finally, they should assure that both monopolies and the state-owned companies do not tolerate discriminatory treatment towards investments coming from other Parties to the Agreement.

NAFTA, once again, attempts to surpass the multilateral regulatory framework, more effectively defining concepts and rules to prevent fraud and significant trade disturbances. The solution found for state-owned enterprises, in this case, is adapted to the reality and current practices within the countries involved and was accomplished by means of regulatory control.

3.4. INVESTMENTS AND SERVICES

At the time of its coming into force, NAFTA brought forth innovative aspects, in comparison to the multilateral ambit, as it sought greater integration within the sectors of investment and of the cross-border trade in energy services. Although the GATS, implemented in 1995, has filled many of the remaining gaps in these areas, the investment sector in fields unrelated to services still operates without a decisive set of rules for en-

³²⁸ Agriculture at the time of the drafting of the Nafta was 'agriculture' in the traditional sense – neither a nascent energy industry nor a nascent chemicals and plastics feedstock production industry. HOWSE, R.; VAN BORK, P. Opportunities and Barriers for Renewable Energy in NAFTA. In: Renewable Energy and International Law Project: Third North American Symposium on Assessing the Environmental Effects of Trade. February 2006, p. 33.

sureing comprehensive regulation. Chapters 11 and 12 of NAFTA introduce, respectively, obligations relating to investments and cross-border trade in services, creating a normative framework that demonstrates a greater ability to protect foreign investors originating in the Member States, which has increased the legal security granted to investors and thus translated into incentives for making new investments, including in the electricity sector and oil and natural gas supply sectors.

3.4.1. INVESTMENTS

Chapter 11 contains guarantees intended to protect investors originating in NAFTA Member States from certain government interventions, while providing the means to compensate any damages experienced by investors if the interventions referred to in such Chapter should occur. The regulation includes virtually all forms of investment and covers legislative actions, regulatory measures, administrative decisions, decrees, and other acts directed to private investors, established by the government receiving the foreign investment.

One of the main merits of Chapter 11 is to assure foreign investors of the right of establishment in any market and industry. This right is subject to reservations for each of the Members³²⁹, but, once granted, automatically awards all other existing rights to investors.

Articles 1102 and 1103 of NAFTA establish that the National Treatment clause and the MFN clause, respectively, should also be extended to investors. Thereby guaranteeing that foreign investors receive treatment no less favorable than that received by a national investor or a third country in similar circumstances. As noted by Horlick and Schuchhardt, it would not be difficult to identify foreign companies already established for the purposes of verifying the national treatment meted out to them. However, the issue is less clear when considering companies in the pre-establishment phase, especially in relation to the environmental impacts caused by certain institutions in the process of energy generation and

³²⁹ This situation is less clear in the case of Mexico, where foreign investments in the energy sector are still not permitted owing to the reservations contained in Annex 602(3) of NAFTA.

transmission, since the problem only affects new actors and prevents the direct comparison with older, already-established companies. Thus, for the purposes of National Treatment, wariness was advised when comparing companies, considering that the environmental requirements to be met are higher for new firms engaged in the process of establishing themselves³³⁰.

Article 1105, in its turn, creates assurances of access to due process for foreign investors, demanding that they are treated “in accordance with international law, including just and impartial treatment in addition to full protection and security” and that there is no discriminatory treatment related to the measures adopted regarding losses suffered by investments within the territory due to periods of armed conflict.

NAFTA also prohibits the imposition of minimum performance requirements for the establishment, acquisition, expansion, management, direction, or operation of a foreign investment, be it from a State Party to the Agreement or not (Article 1106). Considered to be minimum performance requirements are, for the purposes of applying this Article, the specific parameters of operation that an investor must meet in order to be allowed to settle and work in a country, such as minimum export quotas, the utilization of a certain percentage of domestic content in its production, technology transfer, etc.³³¹ The list of performance parameters is restrictive (Article 1106.5) and is presented below:

Article 1106: Performance Requirements

1. No Party may impose or enforce any of the following requirements, or enforce any commitment or undertaking, in connection with the establishment, acquisition, expansion, management, conduct, or operation of an investment of an

330 HORLICK, G.; SCHUCHHARDT, C.; MANN, H. NAFTA Provisions and the Electricity Sector. Background Paper prepared for the Commission for Environmental Cooperation of North America Secretariat in support of the Electricity and Environment initiative, 2002, p. 23. Available at: http://www.cec.org/Storage/46/3844_nfta5-final-e2.pdf.

331 According to paragraphs 1106.2 and 1106.6, measures requiring the investor to use technologies compatible with the protection of health, safety or the environment, the adoption of measures to ensure compliance with domestic legislation, the protection of human life, animal and plant health and conservation of natural resources are not considered inconsistent with the Agreement.

investor of a Party or of a non-Party in its territory:

- (a) to export a given level or percentage of goods or services;*
- (b) to Achieve a given level or percentage of domestic content;*
- (c) to purchase, use or accord a preference to goods produced or services provided in its territory or to purchase goods or services from persons in its territory;*
- (d) to relate in any way the volume or value of imports to the volume or value of exports or to the amount of foreign exchange inflows associated with such investment;*
- (e) to restrict sales of goods or services in its territory that such investment produces or provides by relating such sales in any way to the volume or value of its exports or foreign exchange earnings;*
- (f) to transfer technology, a production process or other proprietary knowledge to a person in its territory, except when the requirement is imposed or the commitment or undertaking is enforced by a court, administrative tribunal or competition authority to remedy an alleged violation of competition laws or to act in a manner not inconsistent with other provisions of this Agreement; or*
- (g) to act as the exclusive supplier of the goods it produces or services it provides to a specific region or world market.*

Paragraph 3 of the Article prohibits the conditioning of investment-related benefits upon certain performance criteria, including local content, export coefficients, and others. Once again, the list is restrictive (Article 1106.5) and is transcribed below:

- 3. No Party may condition the receipt or continued receipt of an advantage, in connection with an investment in its territory of an investor of a Party or of a non-Party, on compliance with any of the following requirements:*
- (a) to achieve a given level or percentage of domestic content;*
- (b) to purchase, use or accord a preference to goods produced in its territory, or to purchase goods from producers in its territory;*
- (c) to relate in any way the volume or value of imports to the volume or value of exports or to the amount of foreign exchange inflows associated with such investment; or*
- (d) to restrict sales of goods or services in its territory that such investment*

produces or Provides Relating by such sales in any way to the volume or value of its exports or foreign exchange earnings.

Paragraph 4 of Article 1106 provides some exceptions to the prohibition on conditioning investment-related benefits. Thus, a NAFTA Party could condition the advantages based upon the requirement to locate production, to provide services, to train or employ workers, to construct or expand certain facilities or to carry out research and development within its territory.

Chapter 11 of NAFTA also guarantees investors that the transfer of capital related to investments may be made freely and without delay. However, provided that this is done in a nondiscriminatory manner and in keeping with the principles of good faith, the receiving State may prevent this investment transaction via the application of domestic laws relating to bankruptcy, insolvency, or the protection of the rights of creditors; issuing, trading, or dealing in securities; criminal or penal offenses, among others (Article 1109).

As for expropriation, it remains prohibited concerning investments, except when motivated by the public interest, accomplished in a non-discriminatory manner, in accordance with due process (Article 1105) and on payment of compensation (Article 1110.1), which should be equivalent to the market value of the expropriated investments on the date of its expropriation plus the interest equivalent to the period starting from the date of expropriation until the date the payment is made.

Chapter 11 also provides the arbitration procedures for dispute settlements between investors and the State receiving the investment.

3.4.2. SERVICES

As in the multilateral framework, measures related to the cross-border trade in goods are covered both by the chapter on goods and the chapter on services, and it is possible that both are applied simultaneously. Such an interpretation is consistent with WTO rules, which affirm that both the GATS and the GATT 94 can cover matters related to the same measure.

For the purposes of Chapter 12, “cross-border trade in services” occurs

when there is: (i) the provision of services from the territory of a Party into the territory of another Party, (ii) the provision of services within the territory of a Party by a national of that Party to a national of another Party, or (iii) the provision of services by a national of a Party within the territory of another Party to the Agreement.

Also applicable to the cross-border trade in services are the principles of National Treatment³³² and MFN³³³. Parties cannot require that service providers have residence or representative offices within the territory of the State in which they intend to act as a condition for the providing of cross-border services.

The Member States of NAFTA opted for liberalization of the service sector by means of the negative list regime. In this model, all services and ways of delivering services remain liberalized, except those included in the lists of exceptions. This means that the members of NAFTA may adopt or maintain discriminatory measures related to services, provided they are listed in the relevant Annexes³³⁴.

3.5. EXCEPTIONS

Mexico, unlike Canada and the U.S., is exempted from some of the provisions relating to the energy regime contained in the Agreement³³⁵, keeping the oil and gas sectors closed to foreign participation and monopolized by state activity via *Petróleos Mexicanos* (PEMEX). Thus, at least in

332 Art. 1202: “(...) treatment no less favorable than the most favorable treatment accorded, in like circumstances, by that state or province to service providers of the Party of which it forms a part”.

333 Art. 1203: “Each Party shall accord to service providers of another Party treatment no less favorable than that it accords, in like circumstances, to service providers of any other Party or of a non-Party”.

334 With regard to the liberalization of the services sector, Mexico has reservations on most-favored nation treatment and local presence for cross-border services relating to the whole energy and petrochemical sector (Annex II - “Reservations for Future Actions”) while Canada and the U.S. have reservations relating to Annex V (“Quantitative Restrictions”) with regard to the transport of oil and gas and electricity transmission.

335 See Annex II in the present Chapter.

the energy sector, NAFTA remains less trilateral than bilateral³³⁶.

The reservations contained in the Annexes to Chapter 6 of NAFTA reflect the defensive position adopted by Mexico in the negotiations for the signing of the agreement³³⁷. In Annexes 602.3, 603.6, 605, 607 and 608.2, the Mexican state reserved for itself the monopoly of a large number of strategic activities related to the energy sector.

In the oil and gas sector, the reservations include: (i) the exploitation, utilization, refining and processing of crude oil and natural gas, the production of artificial gas, basic petrochemicals, and their raw materials; (ii) the foreign trade, transportation, storage, and distribution of crude oil, natural and artificial gas, products obtained from refining or processing of crude oil and natural gas and basic petrochemicals. The hydrocarbons sector is completely controlled by the government via the national oil company, PEMEX.

The electricity sector, in its turn, has the status of a public service, and is included in the state monopoly on the generation, transmission, conversion, distribution, and sale of electricity³³⁸.

Regarding the exceptions related to the clauses on investment, Canada has reservations contained in Annex I of NAFTA (on the Reservations for Existing Measures and Liberalization Commitments). The country maintains a ceiling on the foreign ownership of *Petro-Canada Inc.* and *Cooperative Energy Corporation*, as well as a nationality requirement for production licenses within areas not under provincial jurisdiction. Beyond this, it reserved for itself the right to maintain minimum require-

336 HERRÁN, R.R.; PORETTI, P. Energy Trade and Investment under the North American Free Trade Agreement. In: SELIVANOVA, Y. (ed.). Regulations of Energy in International Trade Law: WTO, Nafta and Energy Charter. USA: Kluwer Law International, 2011, pp. 335-371, p.336.

337 Non-negotiable points, also known as “five ‘no’s”’: (i) “no” to foreign investment in the sectors of oil refining and exploitation, areas which remain under state control, (ii) “no” to risk-sharing agreements whose objective is the payment of foreign companies in crude oil, (iii) “no” to the commitments concerning the energy supply guarantees, (iv) “no” to liberalizing gas imports and exports, and the whole trading process should be done by PEMEX; and (v) “no” to foreign gasoline retailers.

338 With the exception of paragraph 5 of Annex 602.3, which allows the acquisition, establishment, and/or operation of facilities for the generation or cogeneration of electricity for the self-supply of the generating company, provided that all surplus electricity be sold to the Federal Electricity Commission (Comisión Federal de Electricidad –CFE) under the terms agreed upon between the CFE and the enterprise.

ments on local presence for the development of projects involving oil and gas and to maintain a maximum interest of 49% for foreign investors in uranium mining.

The U.S., for its part, has reservations about the atomic energy sector, which will not grant licenses to foreign entities for the transfer, production, use, or import of facilities that utilize or produce nuclear materials.

Finally, the Mexican reservations contained in Annex I of NAFTA relate to measures that violate the obligation of National Treatment in the gasoline, oil, and diesel retail sectors.

The number of reservations made in the energy sector by all Parties to the NAFTA is proof of the sensitivity of the topic and the difficulty of its regulation, even at the regional level (see Annex II of this study).

3.6. DEVELOPMENTS

Aiming to foster communication between governments and energy sectors, the North American Energy Working Group (NAEWG) was established in 2001 as a trilateral forum for discussing energy policy and promoting cooperation and energy integration among States³³⁹. In 2005, NAEWG was incorporated into the Security and Prosperity Partnership of North America (SPP), a broader initiative that, although not constituting a binding agreement, aimed to increase cooperation and the exchange of information between the Parties.

With regard to the energy sector, the group aimed to: (i) strengthen energy security and environmental protection through the development of a framework for harmonizing energy efficiency standards and sharing technical information with the objective of improving the energy market in North America; (ii) encourage the exchanging of information and exploring opportunities to reduce barriers to expanding renewable energy technologies; and (iii) improve air quality and the safety of chemicals

339 Government of Canada. The Energy Working Group. Available at: <http://www.spp-psp.gc.ca/eic/site/spp-psp.nsf/eng/00045.html>.

available on the market³⁴⁰.

With the end of SPP in 2009, the U.S. adopted a policy of bilateral harmonization towards its bordering States, as a way of advancing continental integration initiatives related to trade, regulation, and security. Due to the adoption of such a policy, the Presidents of the United States and Mexico announced in 2009 the formation of a bilateral framework on clean energy and climate change. The initiative focuses primarily on cooperation in the fields of renewable energy, energy efficiency, and the development of low carbon technology for energy systems, in addition to improving safety in cross-border flows of electricity and promoting joint actions with the goal of facilitating energy trade within the region³⁴¹.

The Presidents also established in 2010 the High-Level Regulatory Cooperation Council (HLRCC). The HLRCC Work Plan, published in 2012, shows, among other objectives, the desire to harmonize development and regulation standards in the areas of oil and gas production and exploitation and well containment and control, with the objective of making them simpler and more transparent. In the same context is the completion in February 2012 of the Agreement Between the United Mexican States and the United States of America Concerning Transboundary Hydrocarbon Reservoirs in the Gulf of Mexico, which aims to ensure the exploitation of the oil and gas reservoirs within the Gulf of Mexico in a safe, responsible, and efficient manner, providing greater transparency and legal certainty for trade and investment within the sector³⁴².

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Annex II – Reservations and Special Provisions in NAFTA

Annexes 602.3, 603.6, 605, 607 and 608.2 contain the reservations adopted by the NAFTA parties with respect to the commitments assumed within the energy realm of the Agreement.

Annex 602.3: Reservations and Special provisions

Reservations

1. *The Mexican State reserves to itself the following strategic activities, including investment in such activities and the provision of*

services in such activities:

- a. exploration and exploitation of crude oil and natural gas; refining or processing of crude oil and natural gas; and production of artificial gas, basic petrochemicals and their feedstocks and pipelines;
- b. foreign trade; transportation, storage and distribution, up to and including the first hand sales of the following goods:
 - i. crude oil,
 - ii. natural and artificial gas,
 - iii. goods covered by this Chapter obtained from the refining or processing of crude oil and natural gas, and
 - iv. basic petrochemicals;
- c. the supply of electricity as a public service in Mexico, including, except as provided in paragraph 5, the generation, transmission, transformation, distribution and sale of electricity; and
- d. exploration, exploitation and processing of radioactive minerals, the nuclear fuel cycle, the generation of nuclear energy, the transportation and storage of nuclear waste, the use and reprocessing of nuclear fuel and the regulation of their applications for other purposes and the production of heavy water.

In the event of an inconsistency between this paragraph and another provision of this Agreement, this paragraph shall prevail to the extent of that inconsistency.

2. Pursuant to Article 1101(2), (Investment-Scope and Coverage), private investment is not permitted in the activities listed in paragraph 1. Chapter Twelve (Cross-Border Trade in Services) shall only apply to activities involving the provision of services covered in paragraph 1 when Mexico permits a contract to be granted in respect of such activities and only to the extent of that contract.

Trade in Natural Gas and Basic Petrochemicals

3. Where end-users and suppliers of natural gas or basic petro-

chemical goods consider that cross-border trade in such goods may be in their interests, each Party shall permit such end-users and suppliers, and any state enterprise of that Party as may be required under its domestic law, to negotiate supply contracts.

Each Party shall leave the modalities of the implementation of any such contract to the end users, suppliers, and any state enterprise of the Party as may be required under its domestic law, which may take the form of individual contracts between the state enterprise and each of the other entities. Such contracts may be subject to regulatory approval.

Performance Clauses

4. Each Party shall allow its state enterprises to negotiate performance clauses in their service contracts.

Activities and Investment in Electricity Generation Facilities

5.
 - a. *Production for Own Use*
An enterprise of another Party may acquire, establish, and/or operate an electrical generating facility in Mexico to meet the enterprise's own supply needs. Electricity generated in excess of such needs must be sold to the Federal Electricity Commission (Comisión Federal de Electricidad) (CFE) and CFE shall purchase such electricity under terms and conditions agreed to by CFE and the enterprise.
 - b. *Co-generation*
An enterprise of another Party may acquire, establish, and/or operate a co-generation facility in Mexico that generates electricity using heat, steam or other energy sources associated with an industrial process. Owners of the industrial facility need not be the owners of the co-generating facility. Electricity generated in excess of the industrial facility's supply requirements must be sold to CFE and CFE shall purchase such electricity under terms and conditions agreed to by CFE and the enterprise.

c. *Independent Power Production*

An enterprise of another Party may acquire, establish, and/or operate an electricity generating facility for independent power production (IPP) in Mexico. Electricity generated by such a facility for sale in Mexico shall be sold to CFE and CFE shall purchase such electricity under terms and conditions agreed to by CFE and the enterprise. Where an IPP located in Mexico and an electric utility of another Party consider that cross-border trade in electricity may be in their interests, each relevant Party shall permit these entities and CFE to negotiate terms and conditions of power purchase and power sale contracts. The modalities of implementing such supply contracts are left to the end users, suppliers and CFE and may take the form of individual contracts between CFE and each of the other entities. Each relevant Party shall determine whether such contracts are subject to regulatory approval.

Annex 603.6: Exception to Article 603

For only those goods listed below, Mexico may restrict the granting of import and export licenses for the sole purpose of reserving foreign trade in these goods to itself.

2707.50	<i>Other aromatic hydrocarbon mixtures of which 65 percent or more by volume (including losses) distills at 250 C by the ASTM D 86 method.</i>
2707.99	<i>Rubber extender oils, solvent naphtha and carbon black feedstocks only.</i>
2709	<i>Petroleum oils and oils obtained from bituminous minerals, crude.</i>
2710	<i>Aviation gasoline; gasoline and motor fuel blending stocks (except aviation gasoline) and reformates when used as motor fuel blending stocks; kerosene; gas oil and diesel oil; petroleum ether; fuel oil; paraffinic oils other than for lubricating purposes; pentanes; carbon black feedstocks; hexanes; heptanes and naphthas.</i>
2711	<i>Petroleum gases and other gaseous hydrocarbons other than: ethylene, propylene, butylene and butadiene, in purities over 50 percent.</i>
2712.90	<i>Only paraffin wax containing by weight more than 0.75 percent of oil, in bulk (Mexico classifies these goods under HS 2712.90.02) and only when imported to be used for further refining.</i>
2713.11	<i>Petroleum coke not calcined.</i>

2713.20	<i>Petroleum bitumen (except when used for road surfacing purposes under HS 2713.20.01).</i>
2713.90	<i>Other residues of petroleum oils or of oils obtained from bituminous minerals.</i>
2714	<i>Bitumen and asphalt, natural; bituminous or oil shale and tar sands, asphaltites and asphaltic rocks (except when used for road surfacing purposes under HS 2714.90.01).</i>
2901.10	<i>Ethane, butanes, pentanes, hexanes, and heptanes only.</i>

Annex 605: Exception to Article 605

Notwithstanding any other provision of this Chapter, the provisions of Article 605 shall not apply as between the other Parties and Mexico.

Annex 607: National Security

1. *Article 607 shall impose no obligations and confer no rights on Mexico.*
2. *Article 2102 (National Security) shall apply as between Mexico and the other Parties.*

Annex 608.2: Other Agreements

1. *Canada and the United States shall act in accordance with the terms of Annexes 902.5 and 905.2 of the Canada United States Free Trade Agreement, which are hereby incorporated into and made a part of this Agreement for such purpose. This paragraph shall impose no obligations and confer no rights on Mexico.*
2. *Canada and the United States intend no inconsistency between this Chapter and the Agreement on an International Energy Program (IEP). In the event of any inconsistency between the IEP and this Chapter, the IEP shall prevail as between Canada and the United States to the extent of that inconsistency.*

4. AFRICA

To understand the complexities in the development of the African continent, it is necessary to understand its historical and political context and consequently its lack of foundations that makes this continent the least developed on the planet.

The African continent comprises 54 countries with great cultural, linguistic, economic, and social diversity. Its territory is home to over a billion people, approximately 15% of the world's population, but consumes only 6% of the total energy produced in the world, its per capita electricity consumption being one-sixth of the world average consumption.

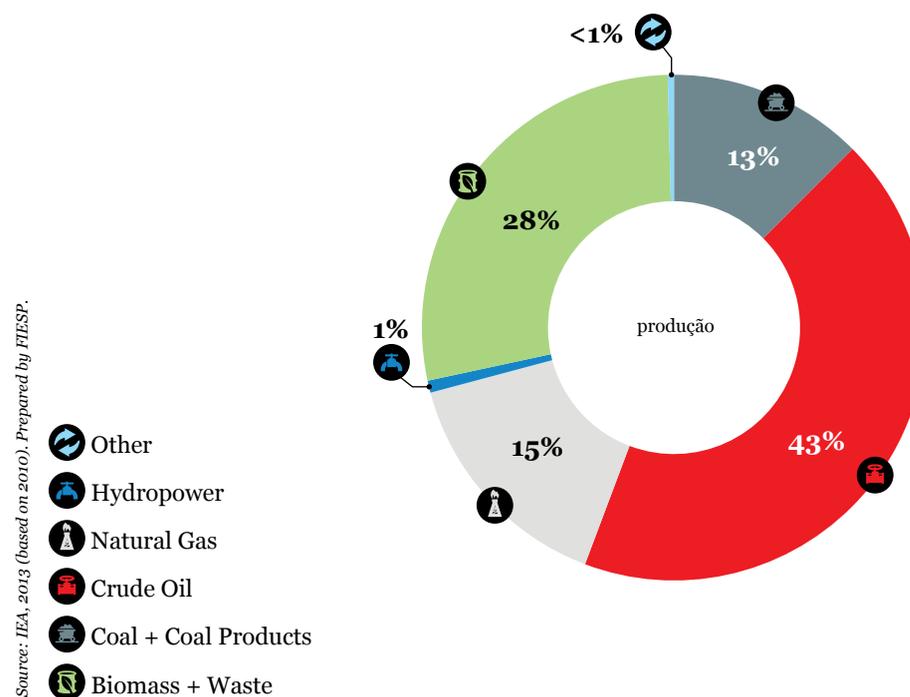
The purpose of this chapter is to present the main integration initiatives of African countries. Initially, the energy profile will be addressed, along with details of the production, trade, consumption, and allocation of natural resources. Afterwards the presentation will shift to the integration initiatives that, within the energy sector, resulted in five regional electrical systems that aim to integrate the continent in a comprehensive way.

4.1. ENERGY PROFILE

4.1.1. ENERGY PRODUCTION

The energy production in Africa is characterized by the predominance of fossil fuels. Oil, coal, and natural gas account for 71% of the total energy production.

Graph 9 – Energy Production in Africa



The five largest oil producers are, in ascending order, Egypt, Algeria, Libya, Angola and Nigeria, which combined represent approximately 9% of the daily global production³⁴³. It is noteworthy that all of these countries, with the exception of Egypt, are OPEC members. With respect to natural gas, Algeria and Egypt are the main representatives in which three quarters of total production is concentrated, while Nigeria and Libya are also natural gas producers. Coal production accounts for 13% of total energy production, with South Africa producing 98%; Zimbabwe and Botswana are responsible for the remainder.

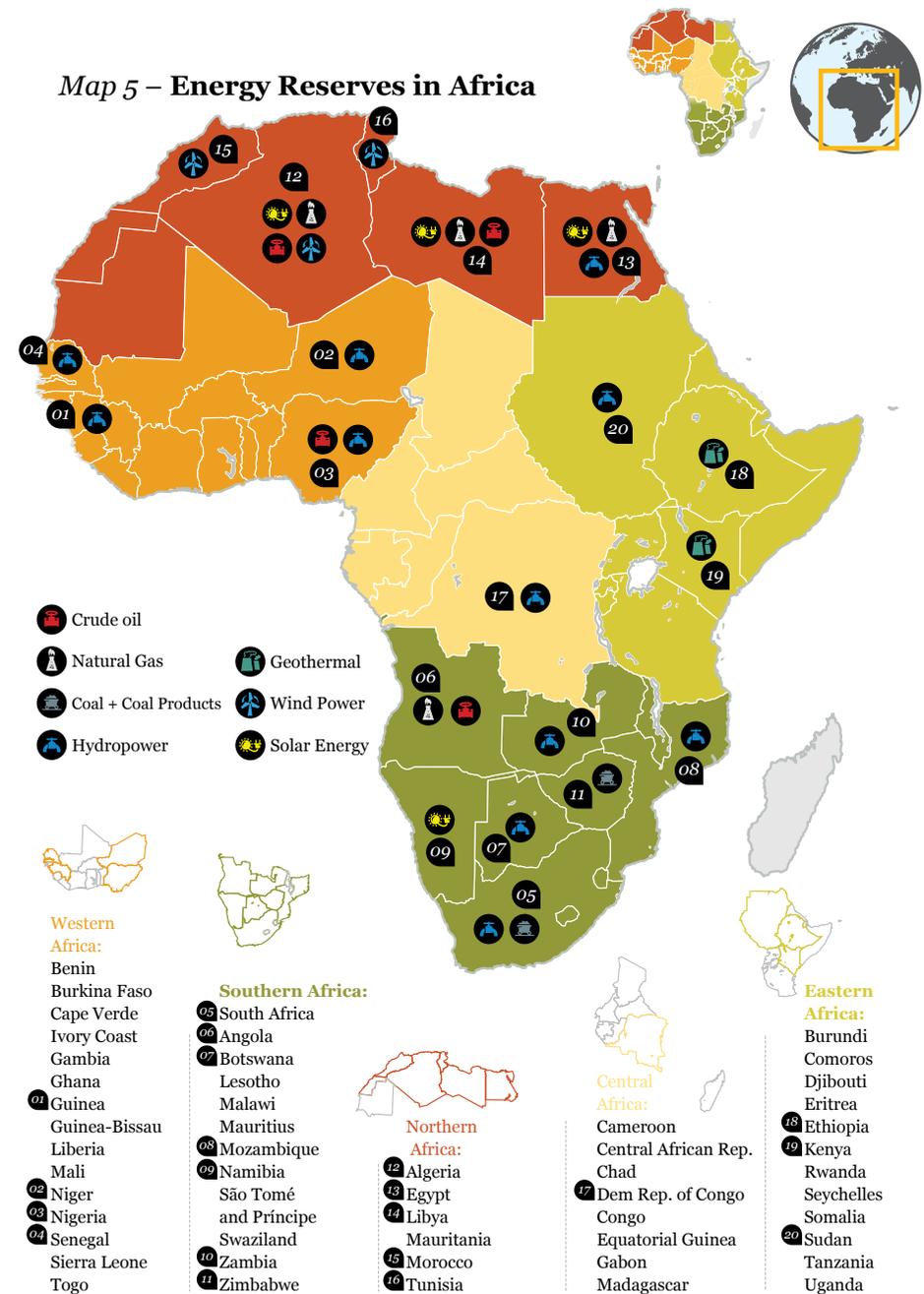
Primary biomass, since it is very relevant for African energy consumption and has important specificities within the African context, will be addressed in greater depth throughout the chapter.

343 CIA. The World Fact Book. Available at: <https://www.cia.gov/library/publications/the-world-factbook/>.

4.1.2. RESERVES³⁴⁴

The continent has considerable energy potential. However, resource distribution is heterogeneous and depends on a wide variety of sources, both renewable and fossil. To facilitate the understanding of their distribution, the continental division laid out by the African Development Bank (AFDB) will be utilized.

Map 5 – Energy Reserves in Africa



344 The energy potential of a region can be understood as the set of global energy resources known, regardless of the feasibility of exploiting them. In turn, the concept of installed power capacity refers to the gross power (kW), which determines the size of the generating plant.

Source: AfDB and WEC SER, 2010. Prepared by FIESP.

Relative to fossil fuels, the largest reserves of oil and natural gas are found in the northern portion of the continent. Regarding coal reserves, the southern region has the largest share of the reserves.

Table 7 shows the allocation of the major fossil fuel reserves in quantitative terms by country:

Table 7 - Fossil Fuel Reserves in Africa

	Oil (Mtoe)	Natural Gas (bcf)	Coal (million tons)
South Africa	15	362	30156
Algeria	23,241	159,069	-
Angola	9,500	5,700	-
Egypt	4,200	76,634	16
Libya	44,271	54,385	-
Nigeria	37,200	18,6887	190
Other	18,051	33,047	1271
TOTAL	136,478	516,084	31.692

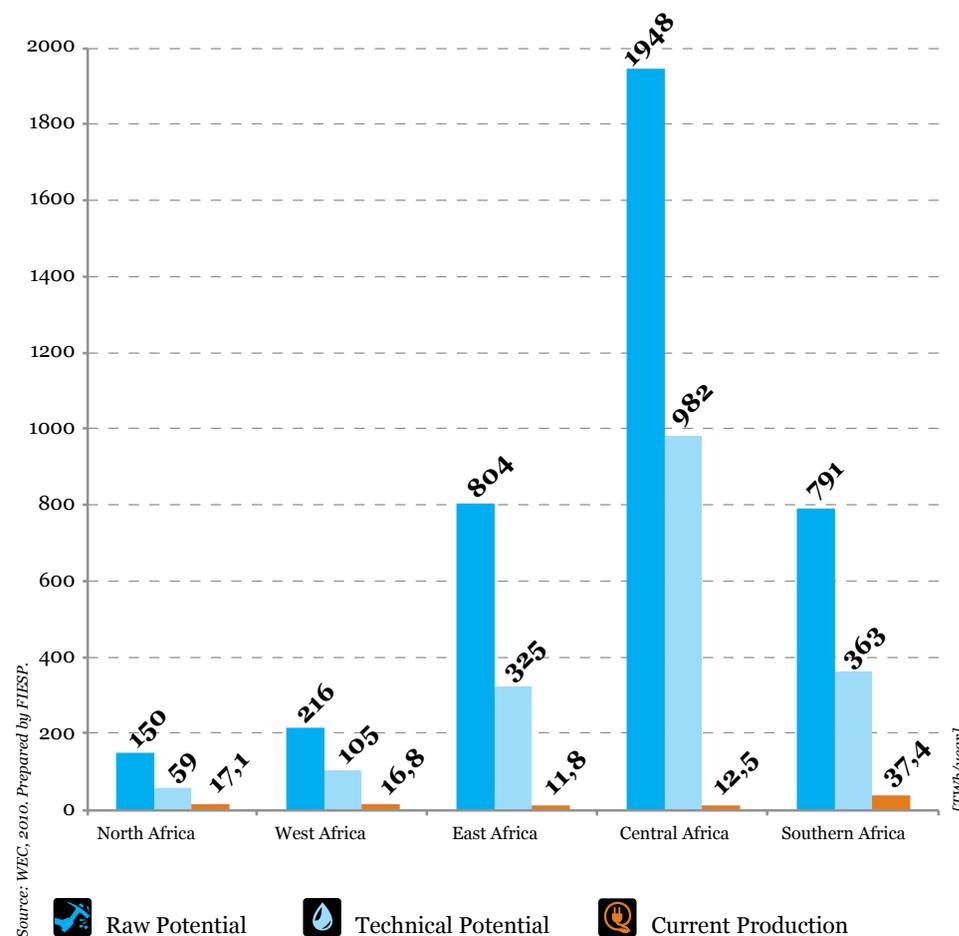
Source: World Energy Council, 2010.

The renewable energy potential of the continent should be underscored. The Sahara desert boasts the largest solar energy potential on the planet, and is considered to be the area with the world's highest level of total solar irradiation (TSI). Despite this fact, the extremely high costs of deploying this technology render its large-scale production infeasible.

The potential of geothermal energy is concentrated in the eastern portion of the continent. Kenya and Ethiopia have the highest potential with 70% of the total. Regarding wind power, it is estimated that Africa has a potential of 30,000 MW; however, this figure is not definitive because the available studies do not take into account the entire territory.

Water resources are found in all regions except North Africa. As shown in Graph 10, the technical hydropower potential is 1834 TWh/year, which would supply nearly three times its current consumption if exploited at full capacity. Of all relevant potentials, the greatest is located in Central Africa, with 982 TWh/year. Given this situation, the Grand Inga project in the DRC stands out, as it is considered the largest hydroelectric project in the world, with an estimated potential of 39,000 MW.

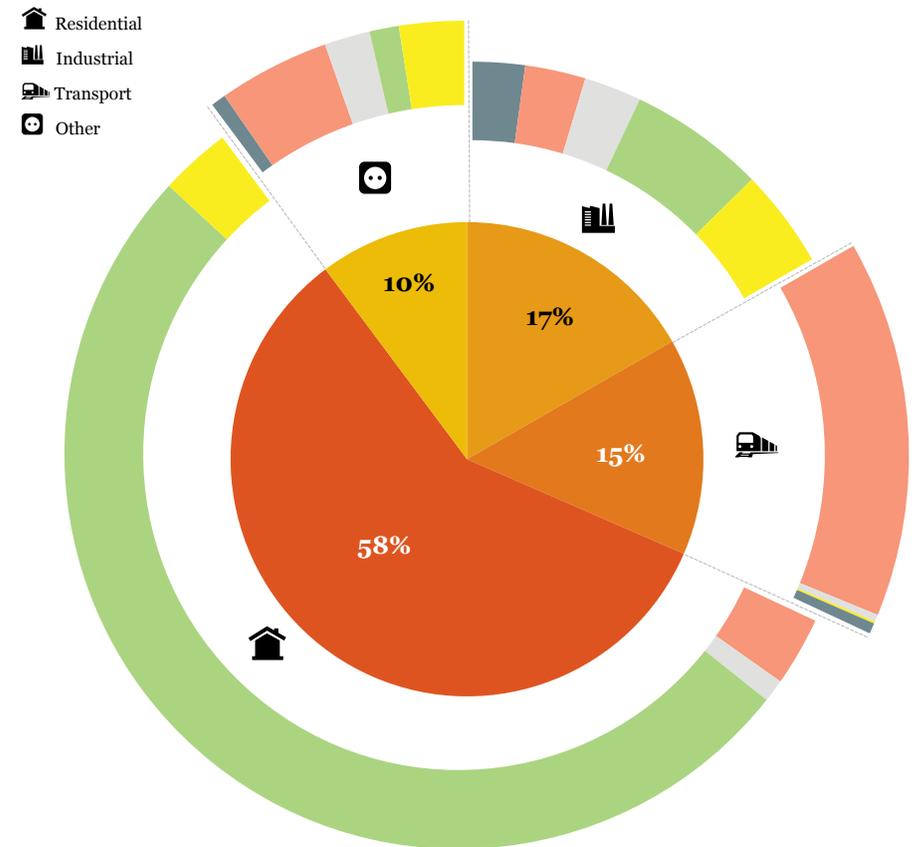
Graph 10 – Energy Production Capacity Compared to Hydroelectric Potential



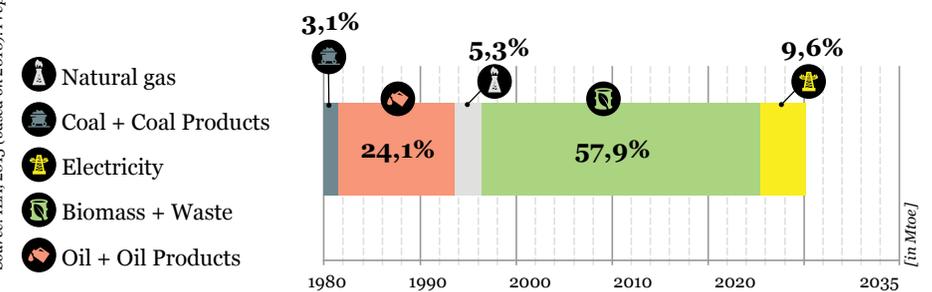
4.1.3. ENERGY TRADE AND FINAL CONSUMPTION

Of the entire continental energy production, more than half is directed towards exports (50.3%), mostly in the form of crude oil, which alone represents two-thirds of all energy exports. It is noteworthy that the African states in OPEC account for 75% of the total output, while exporting 83% of the oil they produce, this being a key point to understanding the dynamics of the sector. Nigeria, for example, the largest oil producer on the continent, accounts for 24% of total output and exports 98% of the oil it produces. It is therefore understandable that much of the African energy output does not remain in its territory, which is reflected within the energy consumption of the continent.

Graph 11 – Final Energy Consumption in Africa



Source: IEA, 2015 (based on 2010). Prepared by FIESP.



Due to the high level of exports, the domestic energy supply is limited to merely 44% of primary production.

Graph 11 shows a significant imbalance in the consumption of the main sectors of the economy. As previously mentioned, the energy consumption in Africa is comparatively lower than all other continents. This fact, coupled with the predominance of residential energy consumption, reflects the low level of industrial development. In this context, primary biomass represents most of the continent's energy consumption (57%), and households are the main consumers of this source, concentrating approximately 90% of total biomass consumption, a fact which denotes the low accessibility have inhabitants to other energy sources and low social development.

Box 34: Traditional Use of Biomass

Both in developed countries and economies in transition, it is apparent that the technologies used in the conversion of biomass to energy tend to be highly efficient, in addition to its agricultural practices that comply with sustainability criteria. Still, for developing countries the techniques and practices implemented are generally much less efficient, owing to the low availability of technology and inadequate dissemination of information. Many still use bonfires or rudimentary stoves, cook in areas without ventilation, and/or collect firewood at unsustainable rates.

In this scenario, treating dependence on fossil fuels and energy security as specific topics becomes meaningless to the extent that it is necessary to discuss them together with more basic development factors, such as access to energy, food security, eradicating extreme poverty, etc.

4.2. ELECTRICAL INTEGRATION

In the embattled process of African decolonization, the growing desire for freedom and the continental unity resulted in proposals aimed at narrowing the asymmetries caused by the colonial period. One result of this

process was the establishment, in 1963, of the AFDB and the Organization of African Unity (OAU).

The AFDB is a multilateral financial institution whose purpose is to aid the economic and social development of the region. The OAU played a vital role in clearing away the vestiges of colonialism, in order to affirm a common identity, strengthen continental unity, and establish a framework capable of providing a solid foundation for peaceful and positive cooperation among the States of the region.

In 1999 the Heads of State of the OAU issued the Sirte Declaration, establishing a new institution called the African Union (AU), which was responsible for appropriately positioning the region in relation to the global market, creating a solid institutional framework, and accelerating and strengthening the movement for political and economic integration. The two bodies acted concurrently until 2002, when the AU assumed the tasks of the OAU to become the main representative body of the continent.

Within this context, the 2001 creation of the African Energy Commission (AFREC) and the New Partnership for Africa's Development (NEPAD) also stand out.

The AFREC aims to strengthen the dialogue between the members of the AU, seeking to further the development of the energy sector. Towards this end, its primary tasks are: (i) developing energy policies and development strategies of the continent, (ii) promoting energy trading between African countries and regional economic communities (RECs), (iii) establishing a database and enabling the exchange of information on energy among African countries and RECs, and (iv) providing technical assistance for the development of human resources within the energy sector, primarily through personnel training and educational programs.

The NEPAD, for its part, can be understood as a comprehensive, strategic project seeking to plan the socio-economic development of the continent. It is divided among the following areas: (i) Agriculture and Food Security; (ii) Climate Change and National Resources Management; (iii) Regional Integration and Infrastructure; (iv) Human Development; and (v) Economic and Social Governance.

4.2.1. PROGRAM FOR INFRASTRUCTURE DEVELOPMENT IN AFRICA (PIDA)

One of the greatest obstacles to economic and social progress is the lack of infrastructure, which prevents the formation of productive structures and, consequently, the development of a labor market. To break this vicious circle, a 2010 initiative known as PIDA (Programme for Infrastructure Development in Africa) was launched. It involves joint actions among NEPAD, AFDB and AU's executive arm, called the African Union Commission (AUC).

The program provides guidelines for the development of the sector, taking 2040 to be its focus year (*Outlook 2040*), and is divided into four platforms for sectoral policies: (i) energy; (ii) transports; (iii) telecommunications and information technology; and (iv) basic sanitation.

The scope of the energy sector in PIDA covers the supply, demand, generation, and commercial transport of energy, taking into account the regional dimension and the distribution of energy goods across the continent. The Energy Outlook 2040 aims to balance the supply and demand of energy within 54 countries, with the emphasis placed on the market potential of regional energy and on the synergy among the different infrastructure models. The study examined all countries; however, to ensure greater clarity of its results they were presented both within regions—or “power pools”— and also on the continental level.

Box 35: Power Pools

Power pools can be defined as a group of two or more operators of public power that coordinate their electricity generation and transmission activities within a specific country or region. Management of activities may cover several dimensions, such as: (i) the connection of power plants with transmission lines; (ii) joint planning in the construction of new production and transmission facilities; (iii) managing the electricity demand; and (iv) coordination and planning of the power delivery.

The delivery of electricity is regulated by technical and economic criteria that prioritize sources with lower costs, but also take into account, for example, availability criteria for intermittent sources, levels of hydroelectric dams, distance from the generating unit to the site of consumption, etc.

The electric system planning is also crucial for the development of power pools. In the long run, it allows for the correct expansion of generation facilities in relation to economic growth, and enables better jobs and the balancing of generation sources.

Delivery management and long-term system planning, when analyzed together, directly converge towards reducing costs and increasing the security of supply.

4.2.2. ABUJA TREATY, RECS AND POWER POOLS

Even before the onset of the OAU, African leaders had recognized how important cooperation and integration were for their economies. Since the 1960s, states were encouraged to establish economic partnerships, which would lead to the creation of sub-regional markets. The signing of the Abuja Treaty gave rise to the African Economic Community (AEC), through which it was possible to attain these markets.

Box 36: The Abuja Treaty - 1991

In the 1980s, under the auspices of the OAU, the Lagos Plan of Action (LPA) was adopted as a primary means of pursuing economic integration. However, the commitments in this plan only assumed a concrete form during the Meeting of Heads of State of the OAU in 1991, held in Abuja, Nigeria. As a result of the summit the treaty was signed that established the AEC.

The main guidelines of the organization are progressively establishing free trade areas and customs unions, creating a common market, a continental central bank, and ultimately a monetary union.

The AEC Treaty introduced the concept of Regional Economic Communities (RECs), which are essential for the implementation of their goals, since the RECs are the building blocks that underpin the activities of the organization.

Currently the main RECs are: (i) the Arab Maghreb Union (AMU); (ii) the Economic Community of West African States (ECOWAS); (iii) the Economic Community of Central African States (ECCAS); (iv) the Common Market for Eastern and Southern Africa (COMESA); and (v) the Southern African Development Community (SADC).

The Treaty establishes six stages towards attaining the full implementation of the project by the year 2028: (i) strengthen the existing RECs and where necessary create new ones (5 years); (ii) stabilize tariffs and other barriers to regional trade, strengthening sectoral integration (mainly within trade, agriculture, finance, transportation, communication, industry and energy) and coordinate and harmonize the activities of RECs (8 years); (iii) establish a free trade area and a customs union in each REC (10 years); (iv) coordinate and harmonize tariff and non-tariff systems among RECs, with the goal of establishing a continental customs union (two years); (v) establish the African Common Market and adopt common policies (4 years); and (vi) integrate all sectors, creating the African Central Bank, adopt a single currency, organize African Economic and Monetary Union and elect the first Pan-African Parliament (five years).

RECs also promote regional energy and trade projects through their respective power pools: (i) AMU - Maghreb Electricity Committee (*Comité de L' Electricité Maghrebin* - COMELEC); (ii) ECOWAS - Western Africa Power Pool (WAPP); (iii) ECCAS - Central Africa Power Pool (CAPP); (iv) COMESA - Eastern Africa Power Pool (EAPP); and (v) SADC - Southern Africa Power Pool (SAPP).

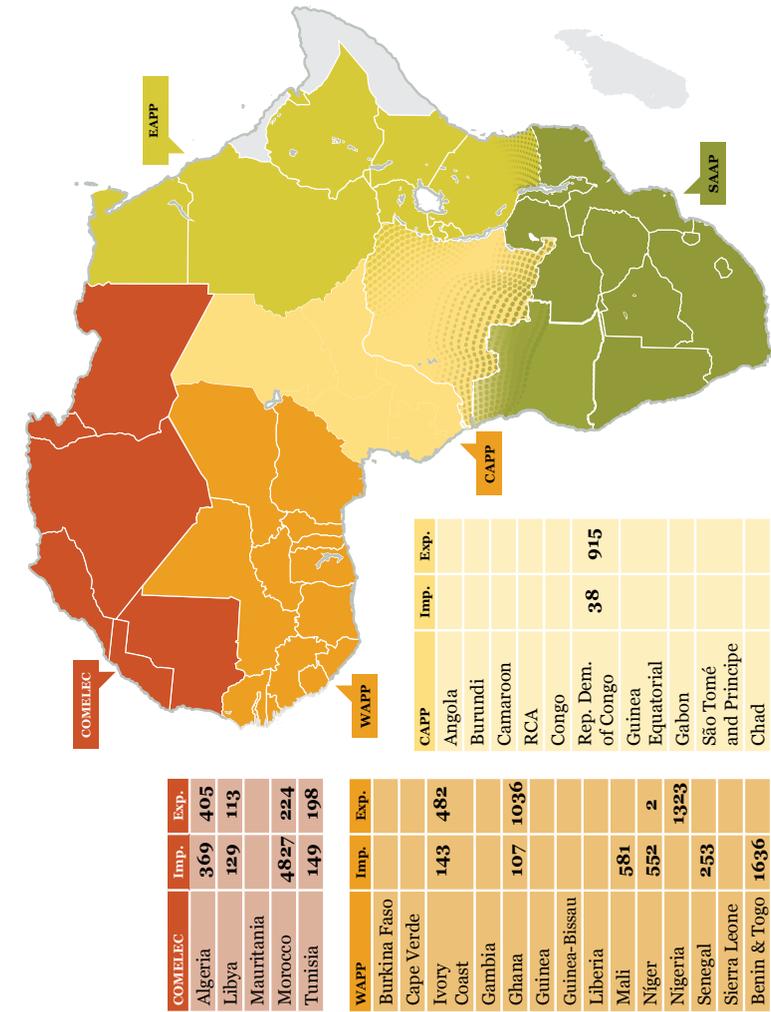
Map 6 offers a summary of the structures of the electricity trade and provides the basic characteristics of each system. In what follows, the RECs and their respective power pools will be analyzed separately, highlighting the primary features of each one.



EAPP	Imp.	Exp.
Burundi	83	
Djibouti		
Rep. Dem. of Congo		44,3
Egypt	251	814
Ethiopia		
Kenya	26	
Rwanda	84,7	
Sudan		
Tanzania	68	
Uganda		73

SAPP	Imp.	Exp.
Angola	27	
Botswana	2945	
Rep. Dem. of Congo	6323	871
Lesotho	49	7,4
Malawi		0
Mozambique	2326	309
Namibia	2462	294
South Africa		
Swaziland	909	
Tanzania	52	
Zambia		65,6
Zimbabwe	710	

Map 6 – Electricity Trade* Structure and Flows within Africa



Fonte: ICA, 2011.

4.2.2.1. MAGHREB ELECTRICITY COMMITTEE (COMELEC)

Created in 1974, the COMELEC remained inactive until 1989, when it was designated a specialized agency of the AMU, serving as a coordinator of utility companies in the region and responsible for the production, transmission, and distribution of electricity in the five Member States: Algeria, Libya, Mauritania, Morocco and Tunisia. These companies are: SONELGAZ - *Société Nationale de l'Electricité et du Gaz* (Algeria), ONE - *Office National de l'Electricité du Maroc* (Morocco), STEG - *Société Tunisienne de l'Electricité et du Gaz* (Tunisia), GECOL - General Electricity Company of Libya (Libya), and SOMELEC - *Société Mauritanienne d'Electricité* (Mauritania).

All countries except Mauritania have electrical interconnections. Currently, there exist the following interconnections: (i) 400 kV between Spain, Morocco, Algeria and Tunisia, and (ii) 220 kV between Algeria, Tunisia, Libya and Egypt.

In 2009 electricity consumption was estimated at just over 89 TWh. Three countries are responsible for 86 % of total consumption: Algeria is responsible for 38%, Morocco for 25%, and Libya, for 23%.

Although there are interconnections in operation, the level of electricity interchange is well below the nominal value of these lines. Except for exports from Spain to Morocco, the electricity trade still remains low between Algeria-Morocco and Algeria-Tunisia, whose average utilization is below 20% of total capacity³⁴⁵.

The main objective of the COMELEC is to study the issues facing electrical facilities of Members and to share the best initiatives through actions which are designed to: (i) promote the exchange of information among members; (ii) coordinate investment programs for energy generation and transmission, as well as activities related to the strengthening of the transmission capacity or the creation of new infrastructure; (iii) monitor the development of the interconnections and related issues; and (iv) promote the integration of the electricity industry in the region.

³⁴⁵ Infrastructure Consortium for Africa, 2011.

The Euro-Maghreb Electricity Market

Despite the high number of interconnections between the various Member States of the COMELEC, the electricity market in the Maghreb region remains limited: its States do not have surplus capacities of electricity generation, even though countries such as Algeria and Libya are among the largest producers and exporters of hydrocarbons. The Barcelona Process launched in the mid-1990s allowed the signing, in 2003, of a Memorandum of Understanding among Algeria, Morocco, Tunisia, and the EU, with the purpose of establishing the Euro-Maghreb Electricity Market. The mechanism is intended to progressively integrate the electricity markets of Algeria, Morocco and Tunisia into the internal electricity market in the EU.

The electricity trade between Member States of the COMELEC is still incipient, and the main objective pursued by the States is to return the balance of trade to zero by the end of the trading period analyzed.

In 2008, ONE and SONELGAZ signed contracts relating to (i) the electricity trade and (ii) the transit of electricity to Spain through the Moroccan electricity transmission network. It should be emphasized that Algeria is already registered as an operator in the Iberian electricity market, but its trade volumes are still modest.

4.2.2.2. WEST AFRICAN POWER POOL (WAPP)

Created in 1999, during the 22nd Session of the Assembly of Heads of State and Government of ECOWAS, the West African Power Pool (WAPP) is a specialized agency composed of 19 energy companies of the region, managing the financing and implementation of projects that fall under its scope. Members of WAPP are: Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo.

The WAPP has as its main objectives: (i) integrating the operations of national power systems; (ii) forming a unified electricity market; (iii) ensuring the steady supply of electricity; and (iv) maintaining electricity fees at affordable levels.

In 2010, electricity generation has reached the level of 46 TWh (excluding the States of Guinea-Bissau, Liberia, and Sierra Leone), representing 15% of total growth compared to 2009. It is worth noting that Nigeria was responsible for 54% of the total generation of the WAPP and that its output grew by 20% during the same period.

Between 2009 and 2010, imports increased significantly, by 63.5 %. The largest importers were Benin and Togo, alone comprising 45% of the total. Regarding exports, these are largely concentrated within three countries: Nigeria (47%), Ghana (36%), and Côte d'Ivoire (17%).

The ECOWAS Energy Protocol

The Energy Protocol was adopted in January 2003. Following its ratification by the Member States in 2007, the ECOWAS Energy Protocol became the regional standard. The Protocol aims to increase long term cooperation within the energy sector, with the goal of bringing more investment into the sector and increasing energy trade within the West African region. The provisions of this legislation include: (i) the protection of foreign investments; (ii) non-discrimination conditions for energy trade; and (iii) procedures for resolving disputes,

The ECOWAS Regional Electricity Regulatory Authority (ERERA), founded in 2008³⁴⁶, is the entity responsible for regulating cross-border electrical connections and trade among the Member States of ECOWAS. Among its duties are: (i) establishing a transparent methodology for imposing tariffs on regional power pools; (ii) adopting technical regulations for the sector; (iii) monitoring the operations of the regional market; (iv) resolving disputes between regional market participants; (v) contributing to the development of a regional energy policy; and (vi) assisting in training of national regulatory bodies.

Commercial framework

In 2008 the WAPP developed a methodology for establishing models of

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energy purchase and transportation contracts, aided by financial support from the French Development Agency (*Agence Française de Développement* - AFD). Two bilateral agreements were negotiated: one on energy (VRA³⁴⁷ - SONABEL) and one on transportation (Gridco³⁴⁸ - SONABEL).

In order to establish an electricity market, the WAPP is preparing a study that will: (i) designate a market model to be used; (ii) assist in the establishment of clear business rules; and (iii) develop a plan and a training manual. It is therefore essential to follow the developments of said study, so as to better understand the mechanisms adopted by ECOWAS for the energy sector.

4.2.2.3. CENTRAL AFRICA POWER POOL (CAPP)

Founded in 2003, the CAPP was designated as a specialized agency of the ECCAS. Coming into operation in 2004, it aims to deploy and coordinate the energy policies of its Member States (Angola, Burundi, Cameroon, Central African Republic, Congo (Brazzaville), Democratic Republic of Congo, Equatorial Guinea, Rwanda, Sao Tome, and Principe and Chad).

The CAPP has as its main objectives: (i) promoting and coordinating energy policy; (ii) conducting monitoring studies; (iii) building community infrastructure; (iv) expanding regional access to electricity; and (v) assuring the energy supplies of its Members.

Electricity generation in 2009 reached just over 19 TWh, the lowest aggregate power generation among all the pools. The Democratic Republic of Congo, Cameroon and Angola combined account for approximately 81% of the total electricity output, distributed by the countries at 38%, 22%, and 21%, respectively.

In 2008, the year with the most recent data available, there was only a limited amount of interregional energy trading, with the Democratic Republic of Congo dominating and acting as the hub for interconnections with Burundi, Congo, Central African Republic, Rwanda, Angola, and Zambia— thereby enabling energy trade with the SAPP.

347 VRA – Volta River Authority.

348 Gridco- Ghana GRID Company.

Electricity Market Code

The Electricity Market Code adopted in October 2009 aims to implement a regulatory framework that promotes and ensures regional trade and investments in the electricity sector.

The methodology to be used in establishing models for energy purchase and transportation contracts shall be developed by CAPP.

4.2.2.4. EASTERN AFRICA POWER POOL (EAPP)

Founded in 2005 with the signing of an Intergovernmental Memorandum of Understanding, the EAPP acts as a specialized agency of COMESA in order to foster the region's electrical interconnectivity. Its members are: Burundi, the Democratic Republic of Congo, Egypt, Ethiopia, Kenya, Rwanda, Sudan³⁴⁹, Tanzania, and Libya.

The main objectives of EAPP are: (i) providing safe energy sources; (ii) optimizing the use of available energy resources while taking into account the socioeconomic and environmental aspects; (iii) increasing the supply of energy and the population's access to electricity; and (iv) reducing electricity costs.

Ethiopia and Sudan had established no interconnections with any other country as of the year 2008, according to the latest data. However, there are several interconnections underway in the region either by way of transmission lines or bi-national hydroelectric plants, as in the case of the Democratic Republic of Congo and Rwanda.

Electricity output in 2008 reached over 148 TWh, Egypt being the largest producer and constituting 86% of the total.

Egypt is also the largest supplier of electricity in the region, accounting for 87% of exports and nearly 50% of imports. The country also stands out for its interconnection with Jordan, Syria, and its presence in the COMELEC.

³⁴⁹ There is not information available regarding South Sudan.

Regulatory Framework

The Regional Power System Master Plan and Grid Code Study of EAPP were launched in 2009, and their final report was submitted in 2011. The main projects to be adopted by the Conference of Energy Ministers of EAPP are articulated in the two main programs: (i) generation capacity through hydropower projects; and (ii) electricity transmission projects. The EAPP signed memoranda of understanding and cooperation with EAC, SAPP, and WAPP, and is in negotiations with CAPP and IGAD.

In March 2009, the COMESA formally established the Association of Energy Regulators for Eastern and Southern Africa (RAERESA), which should make a positive impact on the development of a regional regulatory body.

An Independent Regulatory Board should be established and comprised of appointees of national regulatory boards of the Member States. This new board will be responsible for: (i) implementing standards, procedures, and specifications as established by the Steering Committee; (ii) organizing the electricity markets within EAPP; and (iii) resolving any disputes that may arise between States or in relation to trade with EAPP..

Commercial framework

With regard to the features of the electricity market, EAPP has benefited from the EU Technical Assistance and Capacity Building to EAPP initiative. In this context, two projects were presented: (i) Regional Market for EAPP and (ii) Rules for the Regional Market of EAPP.

The first project presented a framework for the regional market, with particular emphasis on trade agreements and transactions that occurred between participants. The second project was designed to regulate trade in the whole flow of electricity transmitted through the borders of the Member States via transmission lines connected to the transmission network of the participating countries, provided that they are in accordance with the standards and procedures set out in EAPP and the Interconnection Code of the East African Community (EAC).

4.2.2.5. SOUTHERN AFRICA POWER POOL (SAPP)

Founded in 1995 under the auspices of SADC, SAPP is a specialized agency that aims to increase the supply of energy from its members through the integration of national systems into a unified electricity market. Members of SAPP are: South Africa, Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, Republic of Congo, Swaziland, Zambia, Zimbabwe, and Tanzania.

Among the objectives of SAPP are: (i) improving the safety of the existing regional electric system; (ii) facilitating network expansion and integration within non-member countries; (iii) increasing the low rate of access to energy in rural areas; (iv) developing a competitive energy market; and (v) inducing an energy market in the short term, while facilitating energy trade surpluses that are not committed to existing contracts.

Within the SAPP, trade agreements are concluded through bilateral contracts. At least 28 bilateral agreements have been signed, among which stand out the agreement between SNEL (the Democratic Republic of Congo) and ZESA (Zimbabwe) and the STEM (2001), Post STEM (Balancing Market, 2002) and DAM (2009) agreements.

Electricity output in 2010 totaled just over 260 TWh, this being the largest aggregate amount of generation among all power pools. South Africa stands out as the main actor in the system, in the role of producer as well as consumer and trader of energy.

Exports of electricity from South Africa reached in 2010 a total of 13,754 GWh, with the main importers being Swaziland, Zimbabwe, Mozambique, Namibia, and Botswana, the latter of which imports almost all of its consumption.

SADC Energy Protocol

The main purpose of the SADC Protocol, signed in Maseru in August 1996, is to ensure that regional energy policies and programs are in line with SADC policies and the strategies of its other sectors.

In this context, Members of SADC adopted guidelines for integration and cooperation in the regional energy sector: (i) promoting energy trade

and the formation of power pools in accordance with the model established by the SAPP Intergovernmental Memorandum of Understanding, called the Agreement between Member Operators; (ii) promoting the creation of an integrated resource plan for the electricity sector, in order to obtain benefits derived from economies of scale, the optimization of investments, and the fair distribution of the resultant benefits; and (iii) promoting uniformity of standards, rules, and procedures relevant to regional generation, transmission and distribution of electricity, including the standardization of electrical facilities, especially in the areas where the region has comparative advantages.

Regulatory Framework

To ensure the proper functioning of the Short Term Energy Market (STEM) and Day Ahead Market (DAM) (the STEM Book of Trading and Financial rules, and the DAM Governing Document) defined the rules to be followed for the conclusion of agreements between all participants and the market operator.

An implementation structure was also defined, including a markets subcommittee, staff monitoring, and surveillance of markets and market operators.

Regional Electricity Regulators Association of Southern Africa (RERA)

The RERA (Regional Electricity Regulators Association of Southern Africa) was established by SADC in 2002 as a formal association of electricity regulators that operates under the terms of the Protocol on Energy (1996) and the SADC Energy Cooperation Policy and Strategy (1996).

The Association aims to facilitate the harmonization of regulatory policies, legislation, standardization, and practices. It also seeks to act as a platform for effective cooperation among energy regulators in the region encompassed by the SADC. The regulators of the electricity supply sector in the countries in the region may become Members of RERA, although each country can have only one representative in the Association.

4.2.3. UNION OF PRODUCERS, TRANSPORTERS AND DISTRIBUTORS OF ELECTRIC POWER IN AFRICA (UPDEA)

The UPDEA (Union of Producers, Transporters and Distributors of Electric Power in Africa) is a nonprofit organization, established in 1970, which aggregates African electricity companies. Its initial mission was to promote the development, technical harmonization and the integration of electrical systems, regional information exchange, and accessibility of the energy resources distributed across the continent.

In 2002, it adopted a new position aligned with the guidelines of NEPAD, so as to promote not only the interconnection and coordination among the power pools, but also the reach of electricity access on the continent.

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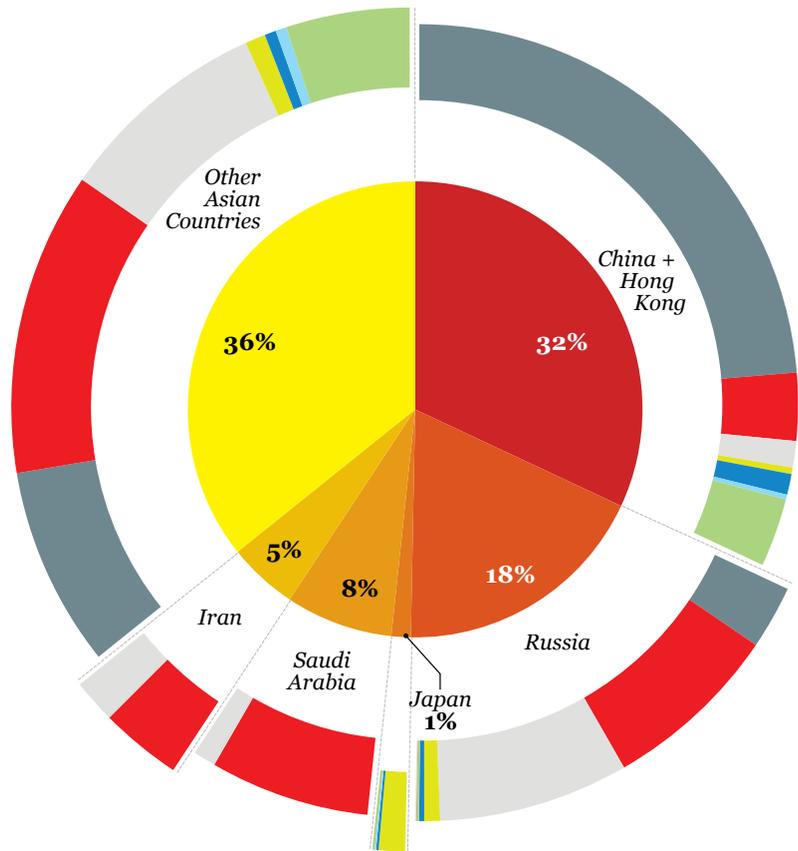
5. ASIA

5.1. ENERGY PROFILE

5.1.1. ENERGY PRODUCTION

The Asian region presents enormous geographical, economic, and social diversity. Because this region includes global exponents of the energy market, such as China, Japan, Russia, and the Middle East, internal and interregional flows of energy prove to be considerably intertwined, especially due to the political and economic complexities of the region.

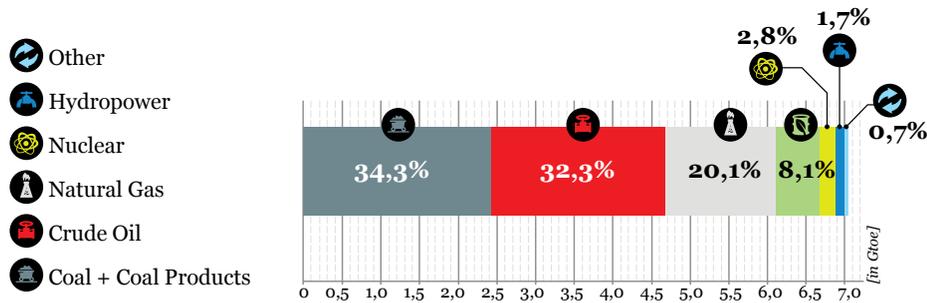
Graph 12 - Energy Production in Asia



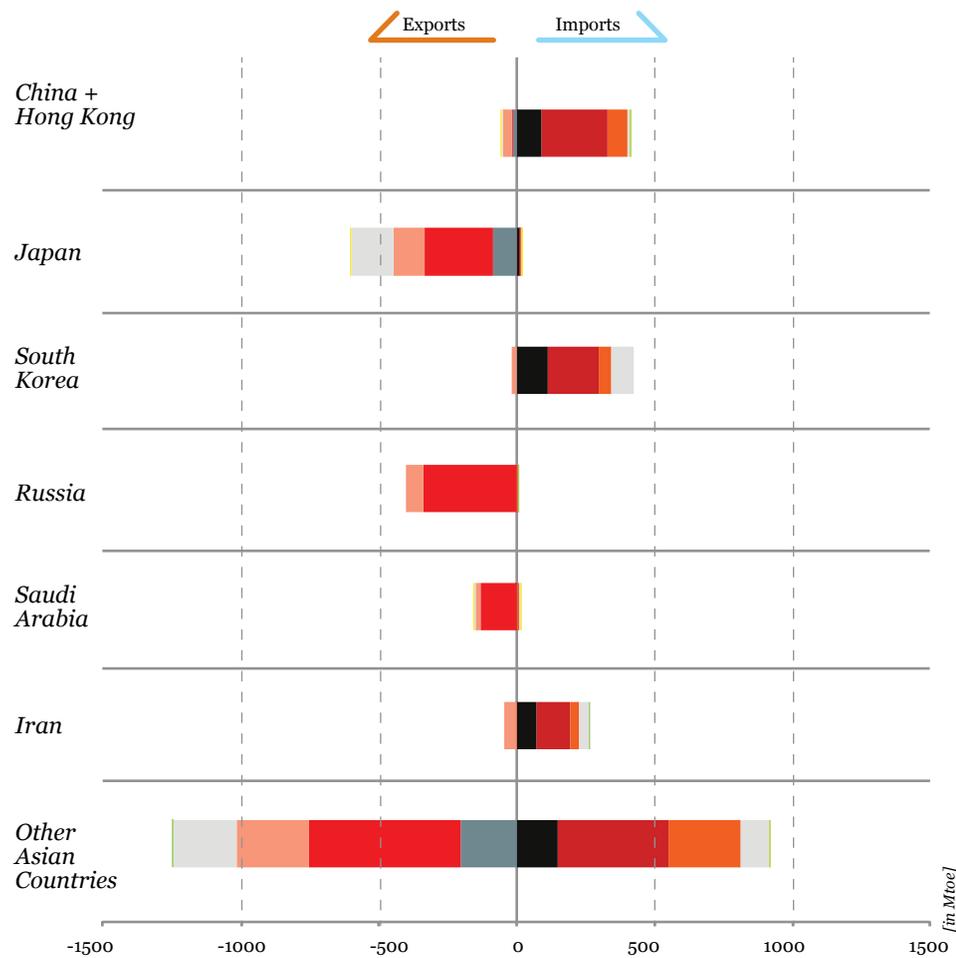
It can be observed in Graph 12 that the Asian production of energy focuses on coal, oil, and natural gas— revealing low levels of renewable energy productions. China, the world’s largest energy producer, is responsible for 32% of Asian production, its main product being coal; Russia is next, with 18% of regional output, especially in oil and natural gas; Saudi Arabia represents 8% of total energy output, mainly in oil and gas; Iran accounts for 5% of the total output of the region, also concentrated in oil and gas; and Japan, which provides 1% of regional output, is founded largely on nuclear power.

5.1.2. ENERGY TRADE

Source: IEA, 2013 (based on 2010). Prepared by FIESP.



Graph 13 - Asian Energy Imports and Exports



Source: IEA, 2013 (based on 2010). Prepared by FIESP.

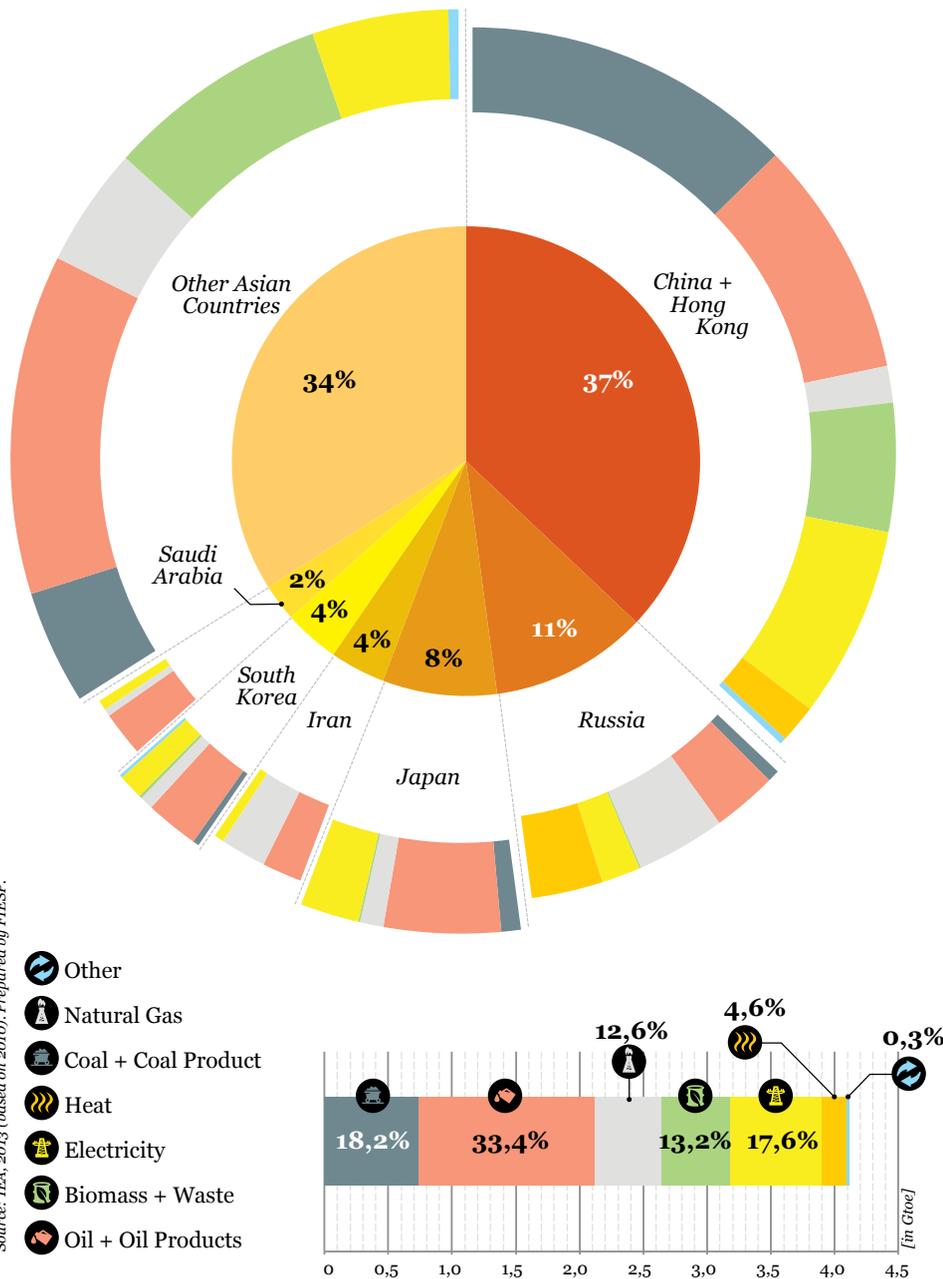
- Natural Gas
- Crude Oil
- Coal + Coal Products
- Electricity
- Biomass + Waste
- Oil Products

The Asian region³⁵⁰ has extremely important energy trade flows, especially in oil and oil products, coal and gas. As shown in Graph 13, the major energy importers are Japan, China, and South Korea, although the region as a whole shows signs of intense energy trading. Russia, Saudi Arabia, and Iran are characterized by large exports of oil and oil products, coal, and natural gas.

5.1.3. FINAL ENERGY CONSUMPTION

350 According to the availability of data from the IEA, the energy profile of the Asian region included the following countries: Afghanistan, Armenia, Azerbaijan, Bahrain, Bangladesh, Bhutan, Brunei, Cambodia, Chinese Taipei (Taiwan), Cook Islands, Cyprus, East Timor, Fiji, French Polynesia, Georgia, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kazakhstan, Kiribati, Kuwait, Kyrgyzstan, Laos, Lebanon, Macau, Malaysia, Maldives, Mongolia, Myanmar, Nepal, New Caledonia, North Korea, Oman, Pakistan, Palau, Papua New Guinea, People's Republic of China and Hong Kong, Philippines, Qatar, Russia, Samoa, Saudi Arabia, Singapore, Solomon Islands, South Korea, Sri Lanka, Syria, Tajikistan, Thailand, Tonga, Turkey, Turkmenistan, United Arab Emirates, Uzbekistan, Vanuatu, Vietnam, and Yemen.

Graph 14 – Final Energy Consumption in Asia



China also stands out as the world’s largest energy consumer, utilizing mainly coal, oil and electricity. Russia, the second largest, has a considerably high consumption of oil and natural gas. Japan, the third largest consumer in the region, primarily uses oil and electricity, as well as coal and natural gas. The remaining countries in the region have diverse domestic consumptions as well, with an emphasis on oil and primary biomass usage.

It is worth emphasizing the importance of electricity for regional consumption. Responsible for approximately 18% of total consumption, electricity generation relies mainly on coal and natural gas, although the region contains the greatest hydroelectric potential on the planet, which has hardly been explored. Currently, the largest producer of hydroelectricity is China, which generates 19% of global production and has 18% of worldwide installed capacity. Asia has a vast hydropower potential that is underutilized and should be the basis for the expansion of its electrical system. Nuclear power is also presented as an important energy source, particularly to Japan, who is the third largest consumer of this input and highly dependent upon imports of uranium³⁵¹.

5.2. ENERGY INTEGRATION INITIATIVES

The Asian region³⁵² presents a variety of economic, demographic, and physical conditions and natural resources. Its energy resources are geographically dispersed, with different potentials for extraction in each region.

The challenges faced by the energy sector in Asia are center on the need

351 “Note that while uranium is imported... nuclear is considered to be a domestic source of energy.” IEA Energy Policies Review: The European Union 2008.

352 To determine the countries that make up the Asian region, we used data from the Asian Development Bank (ADB): (i) Western and Central Asia - Afghanistan, Armenia, Azerbaijan, Georgia, Kazakhstan, Pakistan, Tajikistan, Turkmenistan, Kyrgyzstan and Uzbekistan, (ii) East Asia - China and Mongolia, (iii) South Asia - Bangladesh, Bhutan, India, Maldives, Nepal and Sri Lanka, (iv) Southeast Asia - Cambodia, Indonesia, Japan, Laos, Malaysia, Myanmar, Philippines, Thailand and Vietnam. To determine the countries that make up the Eurasian region, we used data from the Eurasian Development Bank (EDB): Armenia, Belarus, Kazakhstan, Kyrgyzstan, Russia and Tajikistan. As can be seen, Armenia, Kazakhstan, Tajikistan and Kyrgyzstan are Members of both development banks. In this study, we will consider them as part of the Asian region.

for an ample supply of reliable and affordably energy, to make possible the economic growth projected for the coming decades³⁵³. In order to achieve a state of energy security, it is desirable to establish a regional energy market that is integrated and unified.

Some regional organizations have worked towards the possibility of adopting rules to promote energy integration, or to establish a minimum regulatory framework. In this section, we shall discuss some of the initiatives for regional integration in Asia: the Shanghai Cooperation Organization (SCO), the Asian-Pacific Economic Cooperation (APEC), the Association of Southeast Asian Nations (ASEAN), the Energy Market Integration in East Asia (EMI), the Central Asia/South Asia Regional Electricity Market (CASAREM), and the Common Electricity Market of the Commonwealth of Independent States (CIS CEM).

5.2.1. SHANGHAI COOPERATION ORGANISATION (SCO)

The Shanghai Cooperation Organization (SCO)³⁵⁴ was created in 2001 from the Shanghai Five Mechanism, and aimed to intensify cooperation among its members in the realm of national security. However, certain initiatives from the areas of social and economic development stood out the most.

In addition to signing a framework agreement that promotes economic cooperation among the States, including the goal of establishing a free trade zone in the long term, the States agreed to prioritize the realization of joint projects related to the energy sector, including the oil and gas sectors, the exploration of new hydrocarbon reserves, and the joint use of water reservoirs.

In 2006, the President of Russia proposed the creation of an Energy Club. In 2007, the Members agreed to establish a strategic plan for energy cooperation within the SCO, with the aim of coordinating the mining and transport of energy, in order to meet the interests of energy exporters

353 Asia Development Bank Outlook 2013. Available at: <http://www.adb.org/publications/asian-development-outlook-2013-asias-energy-challenge>. Last accessed July 04, 2013.

354 The Members of the Organization are: Kazakhstan, China, Kyrgyzstan, Russia, Tajikistan and Uzbekistan. More information can be found at: <http://www.sectsc.org/EN/index.asp>.

and importers and thus form a “unified regional energy space”³⁵⁵. The Members decided that cooperation in the energy sector should be divided into three stages: (i) establishing a mechanism for cooperation; (ii) implementing the cooperation project by transforming the energy industry, developing its infrastructure, creating conditions for Members to actively participate in the market, among others; and (iii) establishing a unified energy policy.

The main objectives of the energy cooperation established under the SCO are: (i) the construction of infrastructure; (ii) the regulation of the energy transport system, which must include standards for all types of energy transport, energy transit, third-party access to transport infrastructure, etc.; (iii) financing; and (iv) cooperation and technology transfer³⁵⁶.

However, it has been debated whether creating an Energy Club would in fact facilitate dialogue among the countries of the region, especially if it is considered that the energy issue also involves countries that are not part of the SCO, for example, Turkmenistan, an important producer and territory for the transit of natural gas.

Within the Organization, Russia is the largest energy exporter, and China has the greatest potential for imports. For the SCO to have a prominent role in the international sector the interests of these two countries must be balanced, so that it is possible to harmonize the energy policies of the bloc—a task that will not be accomplished without overcoming some difficulties, involving both political as well as economic dimensions³⁵⁷.

Furthermore, in spite of being a project negotiated at the regional level, it should be noted that the consequences of most of the proposed initiatives among SCO members occur outside the realm of the organization or

355 GUAGCHENG, X. The Energy Policy of Shanghai Cooperation Organization. In: *International Journal of Asian Economics*, No. 1, 2010, p. 216.

356 Ibid. Pg 218.

357 China, the biggest economy in the Asian region, is in constant search for raw materials to fuel their manufacturing sector, as well as consumer markets for their products. Russia and the Central Asian countries are rich in natural resources and potential markets for Chinese goods. China is willing to invest in the Asian region and its infrastructure in order to expand its access to raw materials and increase exports to neighboring countries. Russia and the Central Asian countries, meanwhile, desire Chinese investments, but they fear that opening their markets to Chinese products may have negative consequences for their economies. MATUSOV, A. Energy Cooperation in the SCO: Club or Gathering? In: *China and Eurasia Forum Quarterly*. Vol 5 (3), 2007, p. 83-99, p. 84.

bilaterally. This is the case, for example, regarding cooperation on oil and natural gas between China and Kazakhstan, cooperation on electricity between Kazakhstan and Russia, and cooperation on natural gas between China and Turkmenistan, and Russia and Turkmenistan, among others.

Currently, the SCO has no concrete multilateral initiatives for the regional integration of the energy sector. It is necessary, however, to monitor the possible outcomes of negotiations within the Organization.

5.2.2. ASIA-PACIFIC ECONOMIC COOPERATION (APEC)

With regard to energy, APEC has the primary objective of assuring energy security. The initiative began in 1989, based on the proposal of the Prime Minister of Australia, with a membership of 12 countries: Australia, Brunei Darussalam, Canada, Indonesia, Japan, South Korea, Malaysia, New Zealand, Philippines, Singapore, Thailand, and the U.S. In 1991, it was joined by the People's Republic of China, Hong Kong (China) and Taiwan; in 1993, Mexico and Papua New Guinea; in 1994, Chile; and finally in 1998, Peru, Vietnam, and Russia.

The forum is concerned with the economic integration of the States, whose decisions are made by consensus and whose commitments are voluntary, without obligations based on treaties. The period between 1989 and 1992 was marked by further meetings and informal ministerial dialogue among the States; beginning in 1993 the Annual Meeting of the APEC Economic Leaders was established.

In 2000, amidst the turmoil of oil prices, the Energy Working Group (EWG) expressed, in its Declaration of the Economic Leaders, the bloc's need to promote stability and common interests between consumers and energy producers, launching the Energy Security Initiative (ESI)³⁵⁸.

This Energy Working Group³⁵⁹ performs certain technical and political functions, as well as analyzing issues relating to incentivizing renewable energy, the exchange of information, transparency, among others. The work is done through meetings of Ministers and groups of specialists.

358 APEC Economic Leaders Declaration. Brunei Darussalam: Delivering to the Community. Bandar Seri Begawan, November 16, 2000, pp. 1 and 6.

359 More information can be found on its website: <http://www.ewg.apec.org/>.

Some of the initiatives proposed are: (i) task forces; (ii) sustainable development; (iii) communities for the development of intelligent energy; and (iv) energy security. Being cooperative measures, they do not have a binding regulatory framework.

5.2.3. ASSOCIATION OF SOUTHEAST ASIAN NATIONS (ASEAN)

ASEAN has held agreements concerning energy since 1986³⁶⁰. The first of these signed were the Agreement on Energy Cooperation and the Petroleum Security Agreement, both on June 24, 1986. Around the same time, the ASEAN Emergency Petroleum Sharing Scheme was approved, which covers crude oil and oil products in circumstances of scarcity. In December 1995 the Agreement on Energy Cooperation was reformulated in Bangkok (Thailand), through the Protocol Amending the Agreement on ASEAN Energy Cooperation, which initiated a greater number of cooperative activities in various energy sectors.

The increase in oil consumption in the bloc Members led to the signing of the ASEAN Petroleum Security Agreement (APSA) on March 1, 2009, in Cha-am (Thailand). The APSA aims to enhance oil energy security individually or collectively (Article 1, APSA) and contains short-term (Article 3.2, APSA) and medium-term (Article 3.3, APSA) measures. The short-term measures are essentially concerned with reducing domestic energy consumption. The medium-term measures are aimed at energy diversification (Article 3.3.1 (c), APSA), the involvement of new exploration projects, especially in deepwater and other new areas (Article 3.3.1 (b), APSA), and the liberalization of the oil and gas sectors, and oil stocks (Article 3.3.1 (f), APSA)³⁶¹.

To ensure domestic oil demand for its Members, the APSA requires all requests for assistance to be submitted to the mechanism created

360 China also has a Framework Agreement on Economic Cooperation with ASEAN, in whose Article 7 the energy sector was included. Despite this, however, the regulatory effects are not significant at the present time. See Framework Agreement on Comprehensive Economic Co-operation Between ASEAN and the People's Republic of China Phnom Penh, November 4, 2002

361 These measures were reiterated and reaffirmed in the Cebu Declaration on East Asian Energy Security, signed in the Philippines on January 15, 2007, also within the ambit of ASEAN.

for managing crisis situations, called Coordinated Emergency Response Measures (CERM). The following are the prerequisites for implementing emergency measures: (i) a decrease in oil supply of at least 10 % of normal domestic demand, and (ii) the implementation, by the Member State in question, of all measures contained in Article 3.2 of the APSA regarding adoption of internal policies to reduce oil consumption. If the situation persists for more than 30 days, the CERM can be utilized (Article 2.1 of the Annex to APSA). Both Article 3.2 of the APSA and Articles 2.3 and 2.4 of the Annex determine that assistance should be provided by the other ASEAN Members on a voluntary and commercial basis³⁶², according to the terms directly negotiated between them. The monitoring of the measures adopted in these instances and the advice offered to Members in an emergency is the responsibility of the ASEAN Council on Petroleum (ASCOPE).

Regarding the settlement of disputes, Article 6 of the APSA requires Members to first try to resolve the issue through consultations (Article 6.1). If within 30 days this has not proven to be possible, Members should refer to the ASEAN Protocol on Enhanced Dispute Settlement Mechanism (APEDSM)³⁶³.

The ASEAN establishes five-year, non-binding action plans, the ASEAN Plan of Action for Energy Cooperation (APAECs), through which its energy policies are partnered with measures to reduce the effects of climate change, favoring energy production through renewable sources³⁶⁴.

362 It can be noted that this is a less comprehensive agreement in terms of legal obligations than the agreement provided by the International Energy Agency (IEA), as previously discussed in the chapter on Energy Security.

363 A Party must file a request with the Senior Economic Officials Meeting (SEOM, Article 1, APEDSM) for the holding of consultations (Article 3, APEDSM), after good offices, conciliation and mediation (Article 4, APEDSM). Should these fail, the Party must request the establishment of a Panel (Article 5, APEDSM). By negative consensus (Article 9.1, APEDSM), the SEOM may decide not to adopt the report, or may adopt it, or, further, the Party may notify the SEOM of its decision to appeal. In this event, the case is submitted to the Appellate Body (Article 12, APEDSM). It falls to the ASEAN Economic Ministers to appoint the members of said body (Article 12.1, APEDSM). In the event of failure to comply with the Panel report after it is adopted, compensation and suspension of concessions may be applied (Articles 15 and 16, APEDSM). This system bears similarities to that of the WTO.

364 ASEAN. Declaration on Climate Change, Energy, and the Environment. Singapore, November 21, 2007.

In addition to these agreements, there is also the ASEAN Center for Energy (ACE), a body responsible for pursuing cooperation with other countries. ACE is an intergovernmental organization composed of Senior Officials on energy from each ASEAN Member and a representative of the ASEAN Secretariat. Its resources come from a specific fund managed by a private entity established with equal contributions from all of its founding members: Brunei, Cambodia, Singapore, Philippines, Indonesia, Laos, Malaysia, Myanmar, Thailand, and Vietnam.

Some initiatives that body has given rise to include the Memorandum of Understanding on the Trans-ASEAN Gas, from 2002, and the Memorandum of Understanding on ASEAN Power Lines in 2007, among other initiatives that offer little innovation for regulations in the multilateral realm as analyzed in the current study. A possible exception is the rules on intellectual property protection, which establish that the technological developments made by several countries belong to them. The developments achieved by one country belong to it alone, and the other States should act in accordance with that right and in compliance with all relevant domestic legislation.

The ASEAN+3 meetings are held periodically, in which members of the organization establish a forum for dialogue between them and Japan, China, and South Korea. These discussions were extended to the energy sector through the ASEAN Ministers on Energy Meeting (AMEM) jointly with the Energy Ministers of the three States. The meetings are forums for dialogue, exchange of experience and mutual contributions among countries, which may generate some recommendations for ASEAN Members to individually develop their energy policies.

5.2.4. EAST ASIA ENERGY MARKET INTEGRATION (EMI)

The East Asian region has shown a significant growth, and a large amount of energy is needed to ensure growth prospects. Aiming to establish a harmonized and integrated market power that can ensure supplies

for the region, the East Asia Summit (EAS)³⁶⁵ implemented the foundation for the integration of the energy market in the region.

The main incentives for the promotion of the EMI are increasing energy security, reducing carbon emissions, and facilitating regional integration in order to foster economic growth, optimize the allocation of resources between countries, and work for the conservation of the environment³⁶⁶.

However, the progress made by the EMI was limited. Due to the geographical and socioeconomic differences of the countries that make up the region, various bottlenecks were identified that impede the achievement of a perfectly integrated regional energy market. Significant among them are the existence of a non-uniform market, where countries have different levels of import and export tariffs and diverse subsidy policies, hindering any possible standardization; disparate energy pricing mechanisms; and certain issues that proved difficult to negotiate, such as those related to the PSNR and the removal of subsidies, among others³⁶⁷.

5.2.5. CENTRAL ASIA/SOUTH ASIA REGIONAL ELECTRICITY MARKET (CASAREM)

The Central Asia/South Asia Regional Electricity Market (CASAREM) was created with the objective of developing an efficient electricity market between two neighboring regions, Central Asia and South Asia³⁶⁸. The project is likely to increase the prospects for growth in both regions involved and, through the Intergovernmental Council, Members are working to decide on its implementation, on the establishment of policies and rules, and on the use of technical and environmental standards.

365 EAS members are: Australia, Brunei, Cambodia, China, India, Indonesia, Japan, Republic of Korea, Malaysia, Myanmar, New Zealand, Philippines, Singapore, Thailand and Vietnam.

366 KIMURA, F.; SHI, X (eds.). *Deepen Understanding and Move Forward: Energy Market Integration in East Asia*. ERIA Research Project Report 2010-2015. Jakarta: ERIA, 2011, pp. 1-18, p. 2.

367 IGES Policy Brief. *Energy Market Integration in East Asia: What an Economic Analysis Tells Us?*. October 2011, N. 15. Available in www.isn.ethz.ch/Digital-Library/Publications/Detail/?Ots777=0c54e3b3-1e9c-2c24-be1e-a6a8c7060233&lng=en&id=134014. Last accessed July 5, 2013.

368 The members of CASAREM are: Kyrgyzstan and Tajikistan, Central Asia's exporters; Afghanistan and Pakistan, importers in South Asia.

The CASA-1000 Project, the first phase of implementation of CASAREM, aims to enable the transmission of 1300 MW of electricity from Kazakhstan and Tajikistan to Afghanistan and Pakistan. The Project seeks to benefit the communities settled along the route of the transmission lines by working to enable their further development.

However, some difficulties can be observed in relation to the implementation of the Project, for example, the existence of technical problems related to the infrastructure used for the transmission of electricity from the central region to the southern region and some issues related to the need for large amounts of funding for its realization³⁶⁹.

5.2.6. COMMON ELECTRICITY MARKET OF THE COMMUNITY OF INDEPENDENT STATES (CIS CEM)

In May 2007 in Yalta (Ukraine) the Agreement Establishing the Common Electricity Market of the Commonwealth of Independent States (CIS CEM)³⁷⁰ was adopted.

The Contracting Parties to CIS CEM took into account the EU experience on energy integration as well as the energy provisions of the ECT, focusing their integration project on standards that guarantee equal rights, mutual benefits and fair competition among market participants.

The Agreement provides for, among other things, the harmonization of national legislation in relation to the electricity sector, the creation of a common space for information exchange, greater regulation and transparency regarding monopoly activities, and non-discriminatory access to power transmission lines and other services that are subject to natural monopolies.

In October 2012, the Conference held between the Union of the Electricity Industry in Europe (EURELECTRIC) and the CIS Electric Power Council chose as its theme the integration of electricity systems and

369 KRAVTSOV, N. *Project CASAREM (CASA 1000) and Its Impact on Central Asian Countries*. In: *Banwatch*. Third Quarter, 2009, pp. 11-15. Available at <http://www.forum-adb.org/docs/BW2009Q3-4.pdf>. Last accessed July 5, 2013.

370 The following are Members of CIS CEM: Armenia, Belarus, Kazakhstan, Kyrgyzstan, Russia and Tajikistan. The other CIS Members that are not part of the Agreement are: Azerbaijan, Georgia, Moldova, Turkmenistan, Ukraine and Uzbekistan.

markets in the EU and the CIS as a means of assuring security of the energy supply and to increase cross-border trade in electricity³⁷¹. On that occasion, it was discussed the possibility of achieving greater cooperation between the two regions beginning from common goals such as: (i) the exchange of information, experience, and technology; (ii) the harmonization of national laws; (iii) the optimization of infrastructure related to the energy sector in the two regions; (iv) the creation of a regulatory environment that encourages investment receiving; (v) greater access to markets; (vi) greater transparency; and (vii) cooperation between regional TSOs, among others.

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371 Joint EURELECTRIC/CIS Electric Power Council Conference. *Integrating EU and CIS Power Systems and Markets - A Way to Increase Security of Supply. October 31, 2012*. Available at: <http://www.eurelectric.org/events/2012/integrating-eu-and-cis-power-systems-and-markets-%E2%80%93-a-way-to-increase-security-of-supply/proceedings/>. Last accessed July 5, 2013.

6. LATIN AMERICA AND THE CARIBBEAN

According to the definition of the Economic Commission for Latin America and the Caribbean (ECLAC), the Latin American and Caribbean region consists of 46 countries and territories³⁷², mostly of Latin languages, constituting approximately 8.5% of the world's population³⁷³ and 4.8% of the world's GDP³⁷⁴.

To simplify the understanding of the countries of the region, the following analysis uses the political divisions offered by the OLADE: (i) South America: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay and Venezuela (ii) Central America: Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama, and (iii) the Caribbean: Barbados, Cuba, Grenada, Guyana, Haiti, Jamaica, Trinidad and Tobago, the Dominican Republic, and Suriname.

372 According to the division presented by ECLAC, the following are part of the geographic region of Latin America and the Caribbean: (i) Central America: Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua and Panama, (ii) America South: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, French Guiana, Falkland Islands (Malvinas), Paraguay, Peru, Suriname, Uruguay and Venezuela, and (iii) the Caribbean: Antigua and Barbuda, Bahamas, Barbados, Dominica, Grenada, Haiti, Jamaica, Dominican Republic, Saint Lucia, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago. Also part of the geographical division of the Caribbean are some non-independent territories: Anguilla, Aruba, Netherlands Antilles, Aruba, British Virgin Islands, U.S. Virgin Islands, Turks and Caicos Islands, Montserrat and Puerto Rico. The Population Division of the United Nations also includes Martinique in the Caribbean region. See: CEPAL. O que é a CEPAL? Available at: <http://www.cepal.org/cgi-bin/getProd.asp?xml=/brasil/noticias/paginas/2/5562/p5562.xml&xsl=/brasil/tpl/p18f.xsl&base=/Brazil/tpl/top-bottom.xsl>. Last accessed July 15, 2013. See also: ECLAC. Anuário Estadístico de América Latina y el Caribe, 2012, p. 4. Available at: http://www.cepal.org/publicaciones/xml/4/48864/AES2012NotasTécnicas_ing.pdf. Last accessed July 15, 2013.

373 In 2012, ECLA estimated that the population of Latin America and the Caribbean corresponded to approximately 600 million people. Following the estimates of the U.S. Census Bureau, the global population today is 7 billion people. See: ECLAC. CEPALSTAT 2012. Available at: <http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp>. Last accessed July 15, 2013.

374 The ECLAC estimates that in 2012 the GDP of Latin America and the Caribbean had been \$3.4 trillion dollars. Following data from the World Bank, it is estimated that world GDP in the same period was \$71.67 trillion dollars. See ECLAC. CEPALSTAT 2012. Available at: <http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp>. Last accessed July 15, 2013.

Map 7 – Political Map of Latin America and the Caribbean



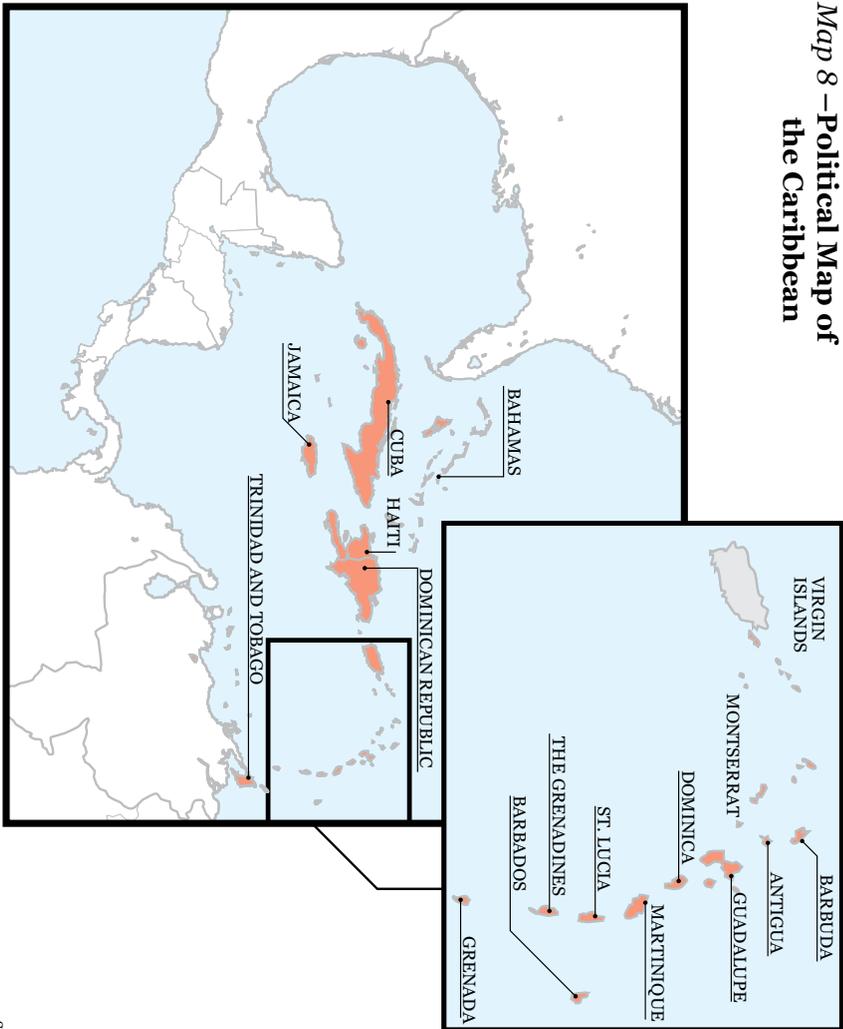
of Latin American regional energy integration. First, it will analyze the energy profile of the regions that make up Latin America (Central America and South America) and the Caribbean. Secondly, it will address continental integration efforts. In the following the major ongoing projects in Central America and the Caribbean are studied along with the energy integration proposed in South America

6.1. ENERGY PROFILE: LATIN AMERICA AND THE CARIBBEAN

6.1.1. ENERGY PRODUCTION

The region of Latin America and the Caribbean is rich in energy resources, containing major energy producing nations such as Brazil, Mexico, Venezuela and Colombia.

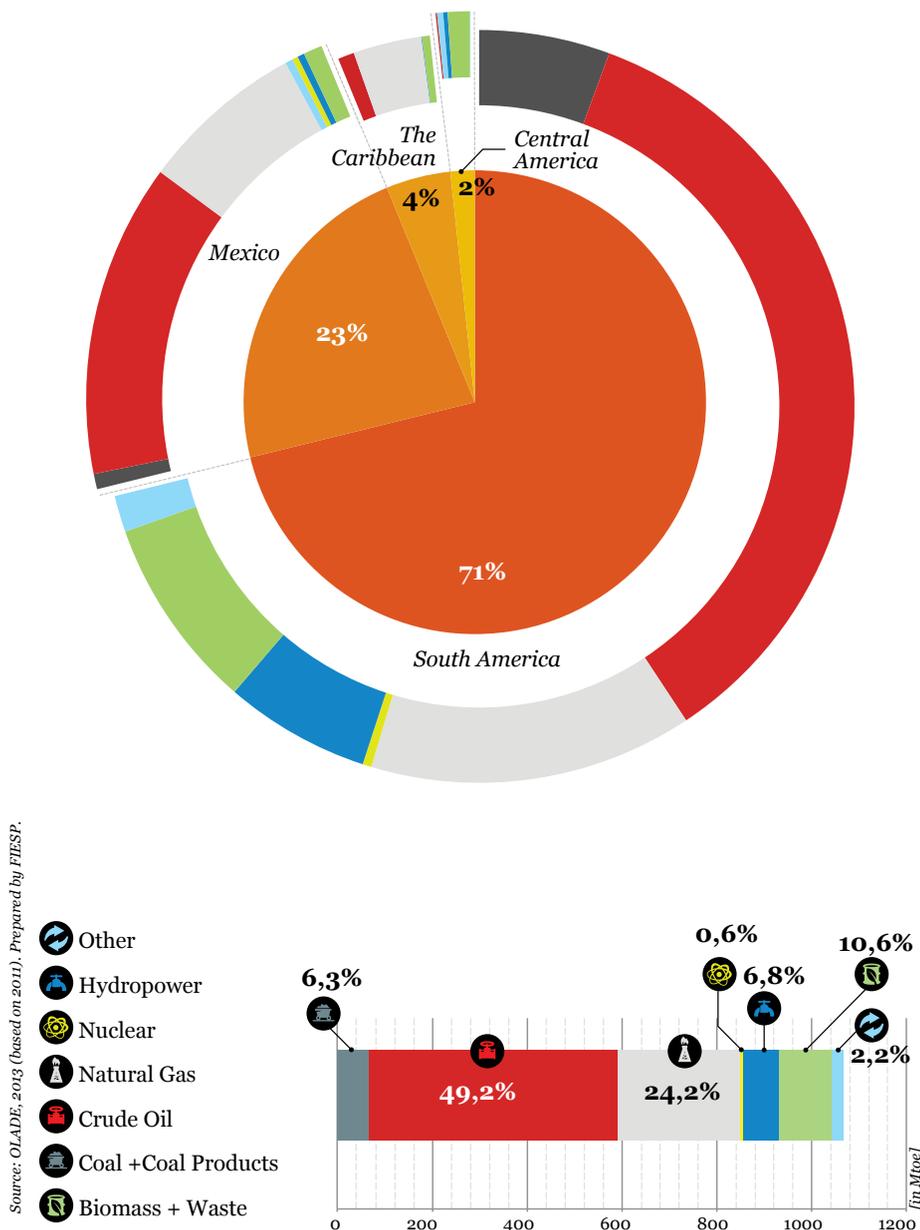
Map 8 – Political Map of the Caribbean



Source: OLADE. Prepared by IIESP.

This chapter's main objective is to describe the most relevant initiatives

Graph 15 – Energy Production in Latin America and the Caribbean



Graph 15 shows that 49.2 % of the region’s energy comes from oil. In this context Venezuela stands out as having the largest oil reserves in the world³⁷⁵, as does Brazil, owing to the recent discoveries of oil reserves in pre-salt layers. If combined, these two countries account for 50.8% of oil production in the region and 6.6% of world production. Natural gas represents 24.2% of regional energy production and the largest producers are Bolivia, Venezuela, and Trinidad and Tobago. Coal now accounts for 6.3 %, with Colombia being its largest producer, with 83.5% of regional production. Hydraulic energy is equivalent to 6.8% of total energy production, especially from Brazil, accounting for 50.5% of the total.

South American energy production accounts for over two-thirds of the regional output, and is largely concentrated in fossil fuels, which are responsible for 76.8% of the sub-regional total. Biomass and hydropower are also significant, providing 11.7% and 8.8% respectively.

Mexico produces 23% of the total energy in the region. Fossil fuels represent 92.6% of its production, mostly related to oil and natural gas with a small stake in coal as well.

Production in the Caribbean, representing 4% of the regional total, consists largely of natural gas, which accounts for 73.3% of its total, followed by oil at 17.5%, and biomasses with 8.4%. In this context, Trinidad and Tobago is the leading producer, contributing 80.9% to the sub-region.

Central America, for its part, has a low production of fossil fuels. 64.1% of its production profile consists of biomasses, with four-fifths of this amount referring only to wood. Following this is the production of geothermal energy and hydropower, responsible respectively for 17.6% and 12.7%.

375 According to BP Statistical Review of World Energy, 2013.

6.1.2. ELECTRICITY GENERATION

As shown in Table 8, in 2011 the Latin American and Caribbean region had 316,745.4 MW of installed power capacity. Hydroelectricity is responsible alone for 49.5% of the total, followed by thermal sources, with 47.3%. Solar, wind and geothermal comprised 1.8% of the installed power, while nuclear power corresponded to 1.4%, concentrated only in Argentina, Brazil, and Mexico.

Table 8 - Hydroelectric Potential and Installed Capacity in Latin America and the Caribbean (2011)

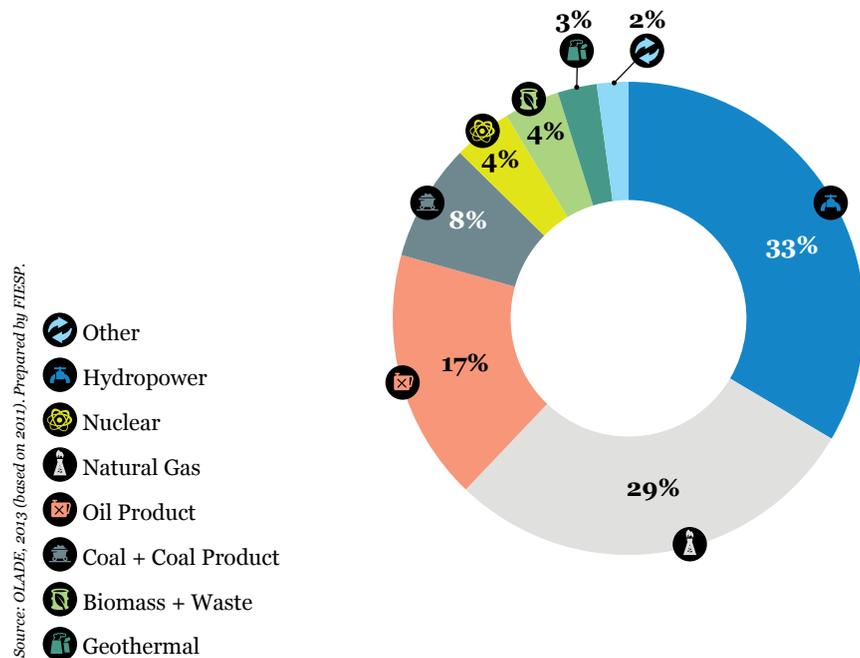
Countries	Hydroelectric Potential (MW)	Installed Capacity (MW)				
		Hydro	Thermal	Nuclear	Other*	Total
Argentina	40,400	10,045	22,660	1,018	87.0	33,180.0
Barbados	0	0	239	0	0	239.1
Belize	900	53	91	0	0	144.1
Bolivia	40,000	485	974	0	0	1,459.2
Brazil	260,093	82,458	31,243	2,007	1,426.0	117,133.8
Chile	25,156	5,991	10,711	0	827.7	17,529.6
Colombia	93,000	9,718	4,688	0	18.0	14,424.1
Costa Rica	6,633	1,682	862	0	563.1	3,107.7
Cuba	650	64	6,165	0	11.7	6,240.3
Ecuador	25,150	2,243	2,990	0	2.4	5,235.9
El Salvador	2,165	472	801	0	204.4	1,477.2
Grenada	0	0	49	0	0.4	49.1
Guatemala	5,000	891	1,570	0	49.2	2,510.0
Guiana	7,000	0	349	0	0	348.5
Haiti	207	61	207	0	0	267.3
Honduras	5,000	531	1,089	0	102.0	1,721.7
Jamaica	86	22	808	0	41.7	872.2
Mexico	53,000	11,542	38,631	1,365	973.4	52,511.5
Nicaragua	2,000	105	852	0	150.5	1,108.3
Panama	3,282	1,351	1,040	0	0	2,391.0
Paraguay	12,516	8,810	6	0	0	8,816.1
Peru	58,937	3,453	5,103	0	0.7	8,556.4
Dominican Republic	2,095	523	5,311	0	33.0	5,867.6
Suriname	2,420	189	223	0	0	412.0
Trinidad & Tobago	0	0	2,099	0	0	2,098.7
Uruguay	1,815	1,539	1,043	0	127.0	2,709.0
Venezuela	46,000	14,622	9,961	0	1,122.0	25,705.0
Total Latin America and the Caribbean	693,506	156,852	149,764	4,390	5,740.2	316,745.4

Source: OLADE-SIEE (2011) (*) Geothermal + Solar + Wind

The hydroelectric potential of the region is very pronounced, representing more than double the total installed power. In this context we highlight the integration initiatives pursuing the construction of binational power plants, like the Itaipu power plant that generated the most electricity worldwide in 2012³⁷⁶, surpassing even the Chinese Three Gorges power plant³⁷⁷. Other important initiatives such as Salto Grande (BR-UR) and Yacyretá (PY-AR), will also be addressed in this chapter.

Although hydropower is the source with the largest installed power and participation in the production of electricity, it turns out that just over a fifth of the potential has been exploited.

Graph 16 – Electricity Production in Latin America and the Caribbean



376 In terms of installed power, the Three Gorges Dam is the world's largest, with 22,000 MW of installed power. Itaipu, the second largest, with 14,000 MW. <http://www.itaipu.gov.br/energia/comparacoes>.

377 In 2012 Itaipu generated 98,29 GWh and Three Gorges Generated 98,11 GWh. <http://www.itaipu.gov.br/energia/comparacoes>.

As shown in graph 16, hydroelectricity accounts for the largest part of electricity generation, with 33.5%. The second most important source is natural gas with 28.6%, Mexico being its leading producer in the region. The portion generated from oil and oil products is 17.4%, with major use of diesel and fuel oil. Coal accounts for 8% of total generation, a fossil source of low utilization. Note that although nuclear energy represents 1.4% of the installed power, its share increases to 4% of the total generated due to its operation regime at the base of the system and to not being seasonal in nature. Biomass accounts for 3.8%, notably Brazil, which is responsible for more than half of its generation, largely stemming from its cogeneration³⁷⁸ in ethanol plants and sugar mills. Geothermal energy represents 2.7% of the total, with Mexico as the most pronounced producer. Other sources represent 1.9% of the total.

6.1.3. ENERGY TRADE

The region of Latin America and the Caribbean is a net exporter³⁷⁹ of energy, especially in regard to coal, oil, and oil products. Colombia, Venezuela, Bolivia, Ecuador, and Paraguay all have energy production greater than or equal to their gross domestic supply³⁸⁰ and correspond to net exporters in South America.

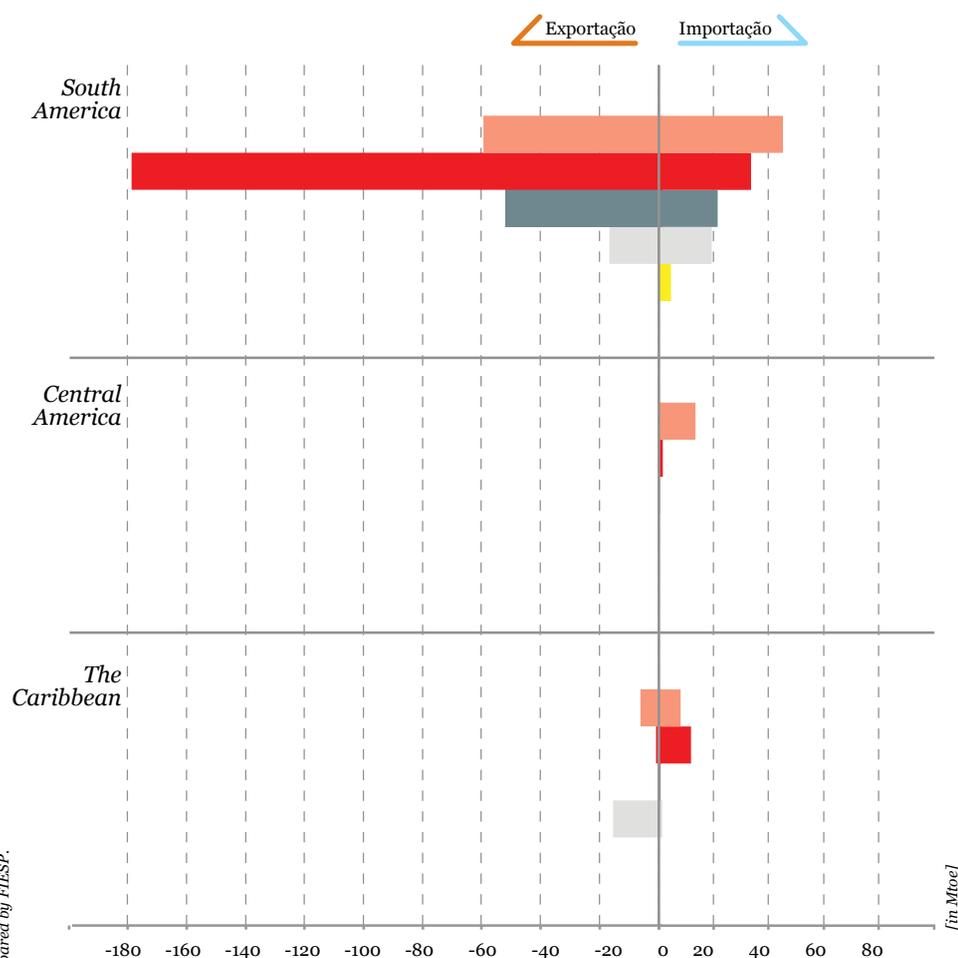
While Mexico is integrated in the Latin American region, the country has no energy agreement with the region. Since it was addressed separately in the chapter on NAFTA its energy trade flows are not covered in this chapter.

378 Cogeneration is the simultaneous, sequential generation of two or more forms of energy from a single fuel. The most common process is the production of electricity and thermal energy (heat or cold) from the use of natural gas and/or biomass, among others. Available at: http://www.cogen.com.br/cog_conceito.asp.

379 A particular country or region can be considered as a net exporter when the value of goods exported by it is greater than the value of goods imported in a given period of time. If applied to the energy sector, a net exporter is characterized by exporting an amount of energy greater than the volume imported.

380 The gross domestic supply of energy corresponds to the total amount of energy a country has at its disposal to process and/or consume.

Graph 17 – Energy Imports and Exports in South America, Central America, and the Caribbean



Source: OLADIE, 2013 (based on 2011). Prepared by FIESP.

- Natural Gas
- Crude Oil
- Coal + Coal Products
- Electricity
- Oil Products

Graph 17 highlights the commercial balance of power in the region. South America has the highest intensity of trade in the region, mainly in exports of oil, oil products, and coal. Regarding oil and oil products, the main exporters are Venezuela, Brazil, and Colombia. Although Brazil is considered a net oil exporter, its imports are also significant, accounting for one third of total imports from the region as a whole. This is because of the quality of the oil produced in Brazil. In order to operate its refineries, Brazil needs to mix in lighter oils, creating a *specific blend*.

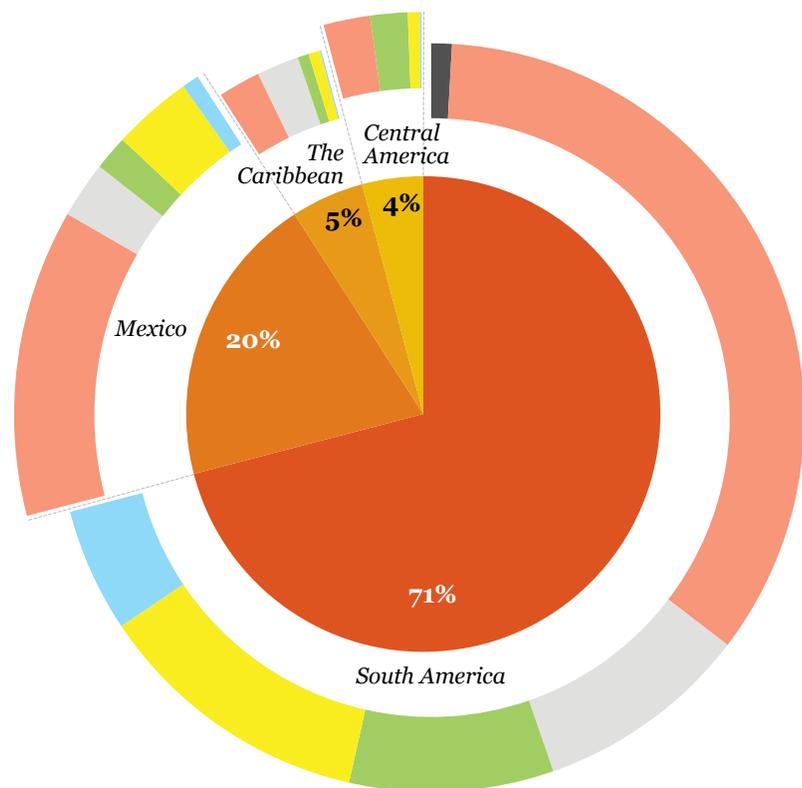
The Caribbean region is the second largest in volume and stands out for its relations with Venezuela, mainly in the oil and gas sectors³⁸¹. Of imports by the region, 91% are in oil and oil products. Regarding exports, what stands out is the importance of Trinidad and Tobago, responsible for much of the exported energy. This Caribbean country is the largest exporter of natural gas in the region, the world's fifth largest exporter of liquid gas, trading with the Americas, Asia, and Europe. Its main buyers are the U.S. and Spain.

Central America is an importer of oil products, which account for 85% of the total energy sold in the region. In this context gasoline and diesel stand out as the most imported products, especially by Guatemala, Panama, and Honduras.

6.1.4. FINAL ENERGY CONSUMPTION

³⁸¹ Although, geographically, Venezuela integrates the region of South America, its energy policies are directed mainly to Central America and the Caribbean. The Venezuelan strategy for energy integration of the region includes proposals for the creation of supra-national oil companies (such as Petrocaribe and Petroalba) and the signing of Energy Security Treaties aimed at assuring the supply of energy demand in the region.

Graph 18 – Final Energy Consumption in Latin America and the Caribbean



As shown in graph 18, oil and oil products comprise more than half of the final energy consumption. Electricity makes up 16.3%, largely concentrated in Brazil, which consumes about half that amount. Natural gas makes up 13.5%, Argentina being the largest regional consumer with almost a third of the total. Biomass accounts for 12.1%, a consequence of the fact that many nations in the region are adopting mandates for blending biofuels. Coal accounts for only 0.9%, comprising the smallest share among all the regions studied.

Regarding renewable energy, it altogether comprises 29% of the final consumption of the region. It is noteworthy that a significant portion of the electricity generated on the continent comes from hydroelectric sources and additional renewable sources³⁸².

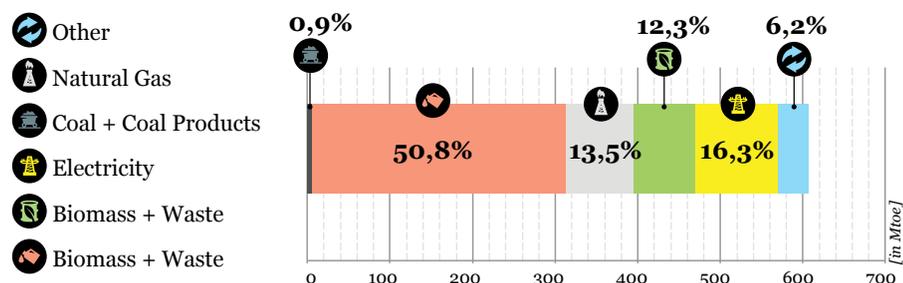
South America is the largest consumer, especially Brazil, which represents 53% of this share and ranks as the largest energy consumer in the region with 37% of the total. Mexico is next with 33%, a large part of its consumption coming from oil and oil products.

6.2. CONTINENTAL INTEGRATION INITIATIVES

From the second half of the twentieth century, Latin American nations have adopted certain mechanisms in order to facilitate trade integration. Initially broader in scope, they constituted forums to stimulate dialogue among the countries in the region. Subsequently, these projects ultimately brought forth subregional initiatives with various purposes, including energy integration.

Analyzed below are some initiatives that allow greater integration among Latin American countries: the Latin American Integration Association (ALADI), the Latin American Energy Organization (OLADE); the Regional Energy Integration Commission (CIER) and the Regional Association of Oil, Gas and Biofuels Sector Companies in Latin America and the Caribbean (ARPEL).

Source: OLADI, 2013 (based on 2011). Prepared by FIESP.



³⁸² Biomass, geothermal, wind, and solar power.

6.2.1. LATIN AMERICAN INTEGRATION ASSOCIATION (ALADI)

The Latin American Integration Association (ALADI) was created by the Treaty of Montevideo (TM80) in 1980, continuing the process of economic integration initiated in 1960 by the Latin American Free Trade Association (ALALC). The Association is comprised of thirteen Member Countries³⁸³, and aims to implement, in a gradual and progressive manner, a Latin American common market, mainly to be characterized by the adoption of tariff preferences and the elimination of non-tariff restrictions.

To achieve this, the following general principles have been laid out: pluralism on political and economic matters; the progressive convergence of partial actions for the creation of a Latin American common market; flexibility; differential treatment based on the level of development of Member Countries; and a multiplicity of ways to reconcile trade instruments³⁸⁴.

Moreover, the ALADI promotes the creation of an area of economic preferences through three mechanisms: (i) regional tariff preference agreements, applied to products originating in Member Countries vis-à-vis the tariffs applicable to third party countries; (ii) Regional Scope Agreements (RSAs), common to all Member Countries; and (iii) Partial Scope Agreements (PSAs), in which only two or more States participate³⁸⁵.

Among the modalities of RSAs, of note are the Trade Promotion Agreements (RSA.TPs) and the Economic Complementation Agreements (ECAs).

According to Article 9 of the TM80, the AAP.PCs should be open to the participation of other Members of ALADI. Therefore, they should contain provisions aimed at converging with other Members who are not signato-

383 The Members of the ALADI are: Argentina, Bolivia, Brazil, Chile, Colombia, Cuba, Ecuador, Mexico, Panama, Paraguay, Peru, Uruguay and Venezuela. Nicaragua has requested accession for membership in 2011 and is currently working to fulfill the conditions set out in order to become a Member Country of the Association.

384 ALADI. Conheça a ALADI – Quem somos? Available at: http://www.aladi.org/nsfaladi/arquitec.nsf/VSITIOWEBp/quienes_somosp. Last accessed September 21, 2012.

385 All modalities of agreements in ALADI are specified in Article 5, 6, 7 of the TM80.

ries, in order to enable all Member Countries to obtain the benefits therein established.

The ECAs are designed to: (i) promote the maximum utilization of production factors, (ii) stimulate economic complementation; (iii) ensure equitable competitiveness, (iv) facilitate competition in the international market of products, and (v) promote the balanced and harmonious development of member countries. These agreements are an essential pillar of economic and commercial relations among the member countries of ALADI, such as the ECA-18 that regulates the trade relations of MERCOSUR, created by the Treaty of Asunción in 1991. Initiatives such as this highlight the importance of the ALADI as a legal instrument and facilitator of integration agreements among the countries of Latin America.

The ALADI is open to new Members and allows its members to sign agreements with non-member countries and areas of economic integration, provided these belong to Latin America (Article 25, TM80). Also provided for is the horizontal cooperation with other integration movements and specific actions with other countries, though subject to compliance with the provisions of Article 27 of the TM80³⁸⁶.

6.2.2. LATIN AMERICAN ENERGY ORGANIZATION (OLADE)

The Latin American Energy Organization (OLADE) was created in November 1973 by the Lima Agreement, in response to the need for designing energy policies for Latin American and Caribbean countries, especially after the international crisis energy of the early 1970s.

The Lima Agreement establishes a body for cooperation, coordination,

386 Article 27: “At the same time, member countries may draw up partial scope agreements with other developing countries or respective economic integration areas outside Latin America, following the various modalities foreseen in the third section of chapter II of the present Treaty, and under the terms of the pertinent regulative provisions. Notwithstanding the above, these agreements shall be subject to the following rules: a) Concessions granted by member countries participating in them shall not be extended to other members, with the exception of the relatively less developed countries; b) When products already negotiated with other member countries in partial scope agreements are included, concessions granted may not be higher than those agreed with the former, and in such case they shall be automatically extended to those countries; and c) They shall be declared consistent with the commitments undertaken by member countries within the frame of the present Treaty, in accordance with captions a) and b) of the present article.”

and advice that is oriented towards the integration, protection, conservation, rational exploitation, and protection of energy resources in the region (Article 2). Moreover, one of the main foundations for the institutional integration process on the energy front is the harnessing and protection of natural resources, based on solidarity of action among Member States (Article 3). It can be said that the concept of “national security” was applied to this initiative of regional energy integration, while observing the limits imposed by the principle of sovereignty over natural resources of each Member State. The OLADE is thus a technical support organization where the Member States act jointly for regional energy integration³⁸⁷.

The organization aims at promoting the independent development of energy resources and capabilities; promoting an effective and rational policy for exploitation, processing, and marketing of energy resources; coordinating and facilitating direct negotiations among the Member States; facilitating cooperation; promoting new ways of ensuring the free transit and the use of different means for transporting energy resources, in addition to searching for common energy policies as a means of integration.

The contribution of OLADE for energy integration in Latin America is expressed in many ways, such as: activities for strengthening institutional capacities of the energy ministries within the region (training, for example); management of the knowledge and information of the sector (regional events, networks of experts); technical studies and projects; and the work of compiling and systematizing statistical data on the sector within each region. These data are used by the IEA in preparing the assessment and annual reports on the energy sector in the world. The OLADE also monitors the energy-related legislation of various countries, in an effort to facilitate the knowledge and information on the regulation of these countries.

387 The members of OLADE are: Argentina, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Dominican Republic, Suriname, Trinidad and Tobago, Uruguay and Venezuela. Cooperation with other organizations is also part of the work of OLADE, such as the partnership with AFREC.

6.2.3. REGIONAL ENERGY INTEGRATION COMMISSION (CIER)

The Regional Energy Integration Commission (CIER) was created on July 10, 1964, based on a proposal approved during the First Congress of Regional Electrical Integration. The CIER is a Non-Governmental Organization (NGO)³⁸⁸ that comprises several companies and organizations in the electricity sector of its Member Countries and Associate Members, Latin America and the Iberian Peninsula³⁸⁹.

The main objective of the CIER is to promote the integration of regional electricity sectors through activities aimed at: (i) increasing the efficiency and management of electric power companies, (ii) promoting cooperation and exchange of information, experiences, and documents in the technical, economic, and legal sectors, (iii) training professionals, (iv) conducting studies to improve the quality of service provided by these companies, (v) developing projects with a regional focus, (vi) compiling the general specifications and technical standards pertaining to each Member, (vii) promoting the harmonization of statistics in the region to create a database, (viii) encouraging the rational use of energy, with an emphasis on the effects caused to the environment, and (ix) promoting integration and energy trade in the electricity markets on the continent.

The CIER has five areas, which correspond to the segments of the electricity industry: generation, transmission, distribution, marketing, and a corporate sector.

The CIER conducts several studies with the aim of providing alternative solutions for the electric power sector, thereby contributing to the resolution of issues that impact the energy supply of the region. To meet its objectives, it supports the creation of projects in each of its areas of activity.

388 Although an NGO, it is diplomatically recognized by Uruguay.

389 The members of the CIER are: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela and CECACIER (Regional Committee for Central America and the Caribbean), plus 263 companies. Also participating are UNESA (Spanish Association of Electrical Industry) and related entities of Costa Rica (ARESEP - Public Services Regulatory Agency), Panama (ASEP - National Agency of Public Utilities), Guatemala (CNEE - National Electricity Commission), and Uruguay (URSEA - Regulatory Agency for Energy and Water Services, and ADME - Electricity Market Administration).

For this purpose, it relies on the direct participation of its members for the selection of the topics and priorities to be addressed and the support of multilateral financial institutions like the World Bank and the Andean Development Corporation (CAF).

The projects developed by CIER are important for evaluating the sector within the territory of each of its members, and assisting the formulation of energy policies and the development of legislation that can be implemented for integrating power lines.

The project of greater relevance to this study is the “CIER 15 - Study of The Electricity Trade among the Andean markets, Central America, and MERCOSUR. The feasibility of their integration.” Completed in 2010, the CIER 15 was carried out to show that it is possible to create electricity interconnection projects that meet the internal policies of each country and ensure maximum benefit to the final user. Thus, the project was divided into two phases. In Phase I, an analysis was carried out on the existent interconnections and the regulatory and institutional progress of the Electricity and Gas Markets in each region. It was concluded that it would be necessary to improve integration in the regions analyzed, with more flexible models and greater interdependence among countries, so that it would be possible to achieve convergence in terms of both efficiency and security in service delivery. This would require, besides the decision of politicians of the countries of the regions analyzed, a higher degree of institutionalization, infrastructural improvements with respect to power lines and interconnections for the transportation of gas, and rules for energy trade in border areas³⁹⁰.

Phase II promoted a technical, commercial, regulatory, and strategic assessment of the feasibility of creating and/or enhancing energy transactions among the systems of the regions of Central America (REM), the Andes, and the Southern Cone. The results contributed to a decision being made by public and private stakeholders on the implementation of renewable energy exchanges among countries, taking into account the

390 CIER. Estudio de Transacciones de Electricidad entre las Regiones Andina, América Central y MERCOSUL. Factibilidad de su Integración. Primera Fase. Informe Final. November 2006. Available at <http://www.cacier.com.ar/Institucional/Proyectos/Documentos/FaseI-Informe%20Final.pdf>. Last accessed July 03, 2013.

political and economic realities, the associated risks, the different levels of market development, and the diversity of the energy potential within the region.

This phase was divided into two modules: (i) a study of the energy potentials, and (ii) an evaluation of the transmission lines³⁹¹ and opportunities for energy trade among CIER Members. It was found that each of the countries analyzed was applying different regulatory frameworks, infrastructure, and commercial and institutional rules to the energy sector. The challenge for the organization of an integrated action would be to propose a system in which all members attain improvements in the area.

The results of the CIER 15 show that an opportunity exists for further integrating the region’s energy, improving the efficiency of resources utilization, better quality services, more efficient tariffs, and a more competitive environment. It was concluded that rules on competition and shared use of transmission lines should be designed for all parties involved. Similarly, it would be necessary to create a mechanism for settling disputes in order to avoid disputes over the use of transmission lines, energy trading, and even over actions that could be construed as abuse of market power by system operators³⁹².

6.2.4. REGIONAL ASSOCIATION OF OIL, NATURAL GAS AND BIOFUELS SECTOR COMPANIES IN LATIN AMERICA AND THE CARIBBEAN (ARPEL)

The Regional Association of Oil, Natural Gas and Biofuels Sector Companies in Latin America and the Caribbean (ARPEL), founded in 1965, is a nonprofit association that brings together the companies and institutions from the oil, natural gas, and biofuels sectors that are located in Latin America and the Caribbean.

391 Transmission Lines Project analyzed by CIER 15: (i) Chile-Argentina; (ii) CIEN Project (Brazil-Argentina); (iii) Paraguay-Argentina-Chile; (iv) Colombia-Panama; (v) Bolivia-Chile; (vi) Brazil-Uruguay; (vii) Inambari hydroelectric plant (Peru-Brazil); (viii) Cachueta Esperanza hydroelectric power plant (Bolivia- Brazil); (ix) SIEPAC II; (x) Argentina-Brazil-Paraguay; (xi) Peru-Ecuador; and (xii) Bolivia-Peru.

392 CIER. Proyecto CIER 15 Fase II. Informe Final. 2011. Available at http://www.cacier.com.ar/Institucional/Proyectos/Documentos/Informe_Final-CIER15.pdf. Last accessed July 3, 2013.

The main areas of activity of the ARPEL are: (i) the development of various sectors of industrial activity, through promoting dialogue, fostering initiatives aimed at harmonizing sectoral policies, and formulating regulatory frameworks that foster regional integration and the development of renewable energy, (ii) the promotion of operational excellence by disseminating best practices and collaborating on the technical training of the staff of such companies, and (iii) the optimization of the social and environmental performance of companies.

The ARPEL has technical committees responsible for the development of studies and projects, and for gathering strategic information, reporting, and organizing events. Moreover, ARPEL promotes cooperation, mutual assistance, and joint action with associations and institutions from other sectors and regional and international organizations that have goals compatible with its own³⁹³.

6.3. ELECTRICAL INTEGRATION IN CENTRAL AMERICA

The regulatory framework and the integration of the energy market in Central America include the electricity market. Its rules govern a broad spectrum of issues, ranging from free transit to competition rules, with institutions responsible for regulating and supervising market participants, be they public or private. The first electrical integration initiative of Central America was the creation of the Central American Electrification Council (CEAC) in 1979. The Agreement Establishing the Council was approved in April 1985, in the city of San Jose (Costa Rica) and signed by the governments of Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica and Panama. The CEAC was established as a body for cooperation, coordination and integration in order to “achieve a better utilization of energy resources within the Member States”³⁹⁴.

The objectives of the CEAC include: promoting and conducting studies;

393 ARPEL. ARPEL in Perspective. Available at <http://media.arpel2011.clk.com.uy/folletoing.pdf>. Last accessed July 3, 2013.

394 CIER. Estudio de Transacciones de Electricidad entre las Regiones Andina, América Central y MERCOSUL. Factibilidad de su Integración. Primera Fase. Informe Final. November 2006, p. 54. Available at: <http://www.cacier.com.ar/Institucional/Proyectos/Documentos/FaseI-Informe%20Final.pdf>. Last accessed July 03, 2013.

providing scientific assistance; establishing an information center able to offer data and statistics on the States; promoting training and vocational training centers; contributing analyses of economic and technical feasibility of projects; celebrating bilateral or multilateral agreements for the electrical interconnection among the Central American countries and other States, among others.

The Council is composed of a company or public body of each Member on energy, namely: INDE³⁹⁵, CEL³⁹⁶, ENEE³⁹⁷, ENATREL³⁹⁸, ICE³⁹⁹, and ETESA⁴⁰⁰. It was also created the office of Executive Secretary (legally responsible for the organization). The criteria for its coming into force were defined at the First Joint Meeting of CEAC (1989), in El Salvador, when the Council was actually installed.

The Central American countries^{401,402} realized that, having small economies, they could only achieve an economy of scale for the energy sector with the creation of an integrated regional market, a factor that would increase their competitiveness against the networks of Mexico and Colombia, the latter being nearby markets that are more competitive. Thus, the states of Central America developed the Central American Electrical Interconnection System (SIEPAC)⁴⁰³ established by the Framework Treaty of the Electricity Market in Central America, 1997. This treaty became the legal basis for the creation of a Regional Electricity Market (REM).

395 INDE is the Spanish acronym for “Instituto Nacional de Electricidad,” Guatemala.

396 CEL is the Spanish acronym for “Comisión Ejecutiva Hidroeléctrica Del Rio Lempa”, El Salvador.

397 ENEE is the Spanish acronym for “Empresa Nacional de Energía Eléctrica,” Honduras.

398 ENATREL is the Spanish acronym for “Empresa Nacional de Transmisión Eléctrica,” Nicaragua.

399 ICE is the Spanish acronym for “Instituto Costarricense de Electricidad,” Costa Rica.

400 ETESA is the Spanish acronym for “Empresa de Transmisión Eléctrica S.A.,” Panama.

401 El proceso de la integración eléctrica centroamericana. In: El Heraldo. Tegucigalpa (Honduras), March 23, 2011. Available at: <http://archivo.elheraldo.hn/Ediciones/2011/03/24/Noticias/El-proceso-de-la-integracion-electrica-centroamericana>. Last accessed July 05, 2013.

402 Despite being geographically located in Central America, Belize is not a Party to SIEPAC.

403 The stakeholders of SIEPAC are: INDE (Guatemala); CEL and ETESAL – Empresa Transmisora de El Salvador S.A. de CV (El Salvador); ENEE (Honduras); ENATREL (Nicaragua); ICE and CNFL – Compañía Nacional de Fuerza y Luz, S.A. (Costa Rica); Empresa ENDESA Latinoamérica (Spain); Grupo Empresarial ISA (Colombia); Comisión Federal de Electricidad de México (Mexico).

6.3.1. REGIONAL ELECTRICITY MARKET (REM)

SIEPAC has two main objectives: (i) supporting the training and the consolidation of a REM, by creating legal, institutional, and technical mechanisms in order to enable the participation of the private sector and the development of new electricity systems, and (ii) establishing an electrical interconnection infrastructure (power lines, compensation equipment, and substations) that facilitates the exchange of energy among the countries participating in the REM⁴⁰⁴.

The integrated network will be approximately 1800 km long by the end of its construction, scheduled for August 2013^{405,406}. These lines will connect the national energy transmission networks of the countries participating in the project. The longest section is located in Costa Rica, with 493 km, while the smallest is in Panama, with a length of 150 km, as shown in the following map⁴⁰⁷:

404 419 EPR. Descripción del Proyecto SIEPAC. Available at: <http://www.eprsiepac.com>. Last accessed July 3, 2013.

405 EPR. Cronograma. Available at: http://www.eprsiepac.com/cronograma_siepac_transmision_costa_rica.htm. Last accessed July 3, 2013.

406 In June 2013, the power lines were practically finished, save for 36 km in Costa Rica. La Prensa Gráfica. MER entra em vigor y pone a funcionar el SIEPAC. El Salvador, June 25, 2013. Available at: <http://www.laprensagrafica.com/mer-entra-en-vigor-y-pone-a-funcionar-el-siepac>. Last accessed July 4, 2013.

407 EPR. Ruta de la Línea - Líneo SIEPAC Primer Sistema de Transmisión Regional. Available at: http://www.eprsiepac.com/ruta_siepac_transmision_costa_rica.htm. Last accessed July 6, 2012.



Map 9 – Layout of the SIEPAC Transmission Line



Box 37: Overview of the SIEPAC Project

Among the strengths of the project, we can highlight the exchange of surplus electricity through mechanisms that facilitate cooperation in emergency situations, a policy that reduces the need for electricity rationing in the Contracting Parties. Due to the adoption of this policy, there is an improvement in capacity utilization and reduction in fuel consumption, benefiting participants and enabling the growth of the electricity market in the region.

The system, however, has some shortcomings. Integration refers mostly to the interconnections between networks, and can only reliably attend to one circuit at 230 kV, which clearly shows the constraints of the system's operational security. Furthermore, in terms of flows, the line presents, at certain points, a limit of 50 MW, without communications incorporated. The lines run mainly under short-term contracts, a model that requires further strengthening and compensation.

The REM was created to regulate the regional electricity market and to develop its efficiency and competitiveness. The REM adds itself to the domestic markets of the six Contracting Parties⁴⁰⁸, becoming the seventh regional electricity market⁴⁰⁹. It is incumbent upon REM to establish commercial transactions of electricity through short-, medium- and long-term contracts with market agents, which may be companies involved in the generation, transmission, distribution, and trading of electricity.

Commercial transactions occur through the Regional Transmission Line (RTR), comprising: (i) all power lines of 115 kV or higher that cross the boundaries of two or more countries of the region, or (ii) national lines that may influence international flows of energy, even of distinct

408 Article 2 of the Second Protocol to the Framework Treaty on the Central American Electricity Market inserted a paragraph one in Article 4 of the Original Framework Treaty: "El Mercado Eléctrico Regional es el ámbito en que se realizan las transacciones regionales de compra y venta de electricidad entre los agentes del mercado."

409 Each country has domestic power lines that communicate with the primary line, forming the system of regional transmission lines. The purchase and sale of energy between the secondary lines (national) and the consumer can be made according to the national regulations, while the purchase and sale of energy from the primary line (i.e. from the primary to secondary line) should be made following the rules of the REM. For this reason the REM is called the seventh market.

owners⁴¹⁰.

The Framework Treaty on the Central American Electricity Market established the REM in 1998. The Treaty has as its main objectives: (i) establishing the conditions for the growth of REM and expanding the interconnection infrastructure necessary for its development, (ii) encouraging private participation in the power sector, (iii) creating conditions to ensure power supply with acceptable levels of quality, reliability, and safety, (iv) establishing objective, transparent and non-discriminatory rules to regulate the operation of the REM and the relationships among the participating agents, and (v) acting so that the benefits arising from the REM reach all inhabitants of the region.

The Treaty states that, in cases where the legislation of a country permits one company to conduct two or more activities in the provision of electricity services or designates one company to conduct commercial transactions under the REM, these companies should create separate business units, allowing for a clear identification of the costs of each activity (Article 5).

In its Article 12, the Treaty determines that regional and national power lines shall be freely accessible to the agents of the REM, and charges relating to the use and availability of regional networks shall be approved by the Regional Electric Interconnection Commission (CRIE).

Each Party shall designate a public entity in its country to participate in a public company or a mixed capital company, with the objective of developing, designing, financing, building, and maintaining a primary system of regional transmission that will serve as the interconnection among the electrical systems of the six countries of the Central American isthmus (Article 15). Likewise, none of the countries involved will have any kind of unilateral control over the company. It should be governed by private law and will be called Regional Owner Enterprise (EPR). The authority for constructing and exploiting the primary system of regional interconnection is transferred from the national realm to the EPR and will last up to thirty years, after which it may be renewed (Article 16).

410 It is up to the Regional Planning and Transmission System (SPTR), subordinate to the EOR, to prepare the list of lines that will be considered regional, following the original SIEPAC project, of 2001.

Furthermore, the Parties undertake to: (i) ensure the free transit of electricity through their respective territories, for themselves or third-party countries in the region, subject only to the conditions set out in the Treaty, its Protocols, and Regulations (Article 32.a), and (ii) remove the taxes on the transit, import, and export of electricity among Parties acting in a discriminatory manner in relation to transactions occurring in the REM.

The Treaty also provides that disputes arising between the agents, between system operators and national markets, or between the EOR and regulators of the Contracting Parties of the REM that are not settled by negotiation shall be submitted to CRIE for resolution. Disputes arising between the Contracting Parties concerning the interpretation and application of the Treaty shall be referred to arbitration.

With the purpose of ensuring compliance with the provisions of the Treaty and organizing the interrelationships among market agents, two regional bodies were created: the Regional Operator Entity (EOR) and CRIE. The EOR is a body responsible for coordinating the primary system of regional interconnections and for the commercial management of the REM. In coordination with the national entities responsible for the distribution of electricity, it performs the tasks concerning the coordinated operation of electrical systems. Its main objectives and tasks are: (i) to suggest to the CRIE operational procedures of the REM and of the use of regional transmission lines, (ii) to ensure that the operation and regional distribution of electricity are governed by economic criteria, (iii) to carry out the commercial management of transactions among market agents, and (iv) to formulate the plan for expanding the generation and transmission of electricity.

The CRIE is the regulator of the REM, which has as main objectives: (i) to regulate the functioning of the market, (ii) to ensure conditions of competition and non-discrimination, (iii) to adopt decisions with the purpose of promoting the development of the market, (iv) to regulate aspects of electricity transmission and generation regionally, (v) to adopt measures that prohibit the abuse of a dominant position within the REM, (vi) to approve tariffs for the usage of the regional transmission system, (vii) to resolve conflicts among agents, provided that they are derived from the application of the Treaty, (viii) to periodically assess the development

of the REM and propose measures that can facilitate its consolidation, among others.

The Regional Electricity Market Regulation (RMER), in effect since January 1, 2013⁴¹¹, contains a series of standards aimed at: (i) regulating the technical and commercial operations of the REM for its operation to be efficient, competitive, transparent and reliable, (ii) regulating the operation of the Regional Transmission Network (RTR), by means of the EOR, to ensure system security and free access for the market players, (iii) regulating the activities of market actors, (iv) supervising the technical operation of the REM based on stricter quality, safety, and performance criteria than those previously established; (iii) providing mechanisms for supervision, monitoring and control of the activities of the REM and the conduct of market players, among others.

It is important to emphasize that the agents providing electricity transmission services should allow free and non-discriminatory access to their lines. The capacity at the RTR will be determined on a case-by-case basis, in keeping with the state of the REM's functioning. Equal priority of access to the RTR is assured to agents whenever there is sufficient transmission capacity for the demand to be met under normal conditions, including additional demand. However, the EOR may limit the supply of new demands if they affect the fulfillment of the criteria of quality, safety, and performance in the power transmission service. Moreover, the RMER also contains provisions governing situations of unavailability of facilities and the compensation scheme to be followed in such cases, among others.

6.4. INTEGRATION IN SOUTH AMERICA

The process of South American integration involves different initiatives. Initially presented will be the regional initiatives, in which are included projects that aim to include all countries in the region or that are open to accession of other South American candidates. Then the bilateral and tri-

411 Resolution CRIE-P-23-2012. Available at: <http://www.crie.org.gt/images/stories/RESOLUCIONES/2012/PRESENCIALES/RESOLUCION%20P-23-2012.pdf>. Last accessed July 4, 2013.

lateral initiatives for building dams and pipelines, and for the integration of electric power, will be discussed. Finally, the Venezuelan initiatives for energy integration will be analyzed, usually directed toward the countries of Central America and the Caribbean.

6.4.1. UNION OF SOUTH AMERICAN NATIONS (UNASUR)

The Union of South American Nations (UNASUR)⁴¹² is an international organization created in 2008 that aims to boost regional integration concerning energy, health, education, environment, infrastructure, security, and democracy. All of the actions of UNASUR are aimed at building a regional identity, and also at eliminating socioeconomic inequality, achieving social inclusion and citizen participation, strengthening democracy, and reducing inequalities by bolstering the sovereignty and independence of Member States⁴¹³.

To UNASUR, the energy strategy of the region should be focused on integration as the most appropriate path for promoting energy safety among Member States. The importance of energy integration in South America has been reaffirmed since the 2002 Consensus of Guayaquil on Integration, Security, and Infrastructure Development.

The foundations of energy integration in the region are grounded in the convergence of principles contained in the Consensus of Guayaquil and the Declarations of Cuzco (2004), Caracas (2005), Cochabamba (2006), and Margarita (2007): (i) cooperation and complementation; (ii) solidarity among peoples; (iii) respect for sovereignty and self-determination of peoples; (iv) the sovereign right to establish criteria that ensure sustainable development through the use of renewable and non-renewable

412 The event that paved the way for the establishment of UNASUR was the creation of the Community of South American Nations (CASA) in 2004. CASA aimed to unite two major regional powers: the nations that form the MERCOSUR bloc and those forming the Andean Community of Nations (CAN). In 2007, during the 1st South American Energy Summit, Members of CASA chose to change the name of the organization, adopting, on that occasion, the name UNASUR. The UNASUR Constitutive Treaty was approved on May 23, 2008 and entered into force on March 11, 2011

413 The members of UNASUR are: Argentina, Bolivia, Brazil, Colombia, Chile, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay and Venezuela. The following are observers: Panama and Mexico.

resources, as well as to manage the rate of exploitation of these resources; (v) regional integration in search of complementarity among countries and balanced use resources for the development of their peoples; (vi) respect for the modes of ownership that each state uses to develop its energy resources; (vii) energy integration as an important tool for promoting social and economic development and eradicating poverty; (viii) universal access to energy as a civil right; (ix) the sustainable and efficient use of the region's energy resources and potential; and (x) articulation of energy complementarities in order to reduce the asymmetries existing in the region⁴¹⁴.

During the 1st Summit on Energy Integration, held in 2007 on Margarita Island (Venezuela), the Energy Ministers of the Union of South American Nations, in addition to recognizing the initiatives adopted by the countries of the region toward greater cooperation and coordination in the energy sector, emphasized the need to develop guidelines for a South American energy strategy, an action plan for the sector, and the development of a South American Energy Treaty (TES).

With the approval of the UNASUR Constitutive Treaty in 2008, the South American Energy Council was institutionalized, which has proven to be critical for the development of regional energy integration initiatives. In addition to the Energy Council, Members of UNASUR also created a technical advisory body to the Energy Council: the Infrastructure and Planning Council (COSIPLAN). The activities of both Councils will be analyzed below.

6.4.1.1. SOUTH AMERICAN ENERGY COUNCIL

Within the Council the following provisions have been consolidated: (i) Guidelines for the South American Energy Strategy, (ii) the Action Plan for Regional Energy Integration, and (iii) the structure of the TES.

Beginning with the principles underlying regional energy integration, the Guidelines for the South American Energy Strategy propose certain

414 OLADE; UNASUR. Unasur: Un espacio que consolida la integración energética. June 2012, p. 16. Available at: <http://www.olade.org/sites/default/files/publicaciones/UNASUR%20-%20Un%20espacio%20que%20-completo.pdf>. Last accessed July 08, 2013.

guidelines that will facilitate achieving the goals necessary for attaining energy integration in South America: (i) promoting security of energy supply in the region, (ii) promoting the regional energy trade, (iii) strengthening regional energy infrastructure, (iv) establishing mechanisms of complementarity between national hydrocarbons SOEs and other types of energy, (v) supporting trade and technology transfer, as well as training of manpower, (vi) encouraging the development of regional energy so as to provide a model for rational and sustainable consumption that preserves natural resources and the environment, (vii) promoting industrialization and the development of the energy sector and its regional complementation, (viii) promoting the harmonization of the regulatory and commercial aspects associated with energy integration, (ix) incorporating the component of regional integration in the national energy projects, (x) promoting the efficient use of energy and the exchange of experience in this field, (xi) promoting the development of renewable and alternative energy (biofuels, wind, solar, nuclear, ocean, geothermal, hydroelectric, hydrogen-based, among others); (xii) encouraging partnerships between the public sector and the private sector ; (xiii) maintaining existing bilateral or sub-regional and regional agreements, as well as negotiating future agreements, (xiv) promoting a balanced relationship between energy producing and consuming countries, and (xv) encouraging proposals for harmonizing national energy policies, taking into account the current legal frameworks of each country.

The Action Plan for Regional Energy Integration, approved in 2010, in addition to pursuing an efficient energy mix for the South American region from energy complementarity and integration opportunities among the countries, establishes specific objectives for each of the energy sources found in the region:

- (i) Oil: ensuring availability in the short, medium, and long term; strengthening its industrial processing; developing the structure of the oil sector; implementing exchange and supply mechanisms; and stimulating the creation of regulatory frameworks for promoting and protecting international investments;
- (ii) Natural Gas: ensuring the availability in the short, medium, and

long term; developing the regional structure of the natural gas sector; implementing exchange and supply mechanisms; and promoting industrial processing and production of liquids from natural gas;

- (iii) Coal: increasing the availability of coal resources in order to ensure availability in the short, medium, and long term; promoting the industrial use of coal; encouraging the use of new technologies for producing electricity from coal; and implementing exchange and supply mechanisms;
- (iv) Electricity: increasing and diversifying the sources and inputs for electricity generation in the region and strengthening and developing the infrastructure of electricity transmission, distribution, and exchange;
- (v) Renewable Energy: increasing the share of renewable and alternative energy sources in the energy mix of the South American region by developing production;
- (vi) Biofuels: promoting the use and production of biofuels as alternatives to fossil fuels; incentivizing the incorporation and expansion of the infrastructure of each country in order to increase biofuels trading within the region; and
- (vii) Nuclear: evaluating the possibilities and conditions for optimum utilization of nuclear power to diversify the regional energy mix and promote cooperation and exchange of information among the countries concerned.

The suggested structure for the TES seeks to fulfill UNASUR'S objective of promoting energy integration for the maximum, sustainable, and harmonious use of resources within the region. The intended energy integration framework includes: (i) the adoption of principles that enable the regulatory harmonization of the countries of the region, (ii) regulating the treatment of transnational companies, (iii) monitoring of energy flows and the adoption of mechanisms to be used in emergency situations, (iv) principles of free transit and non-discrimination; (v) freedom of access, in a regulated manner, to the remaining installed capacity; (vi) regularity and continuity in the supply of energy; (vii) regulation of border-related

aspects of energy circulation; and (viii) the environmental aspects of energy integration.

The structure also allows for the possibility of two or more signing Parties agreeing to commitments among themselves in the form of specific protocols to the Treaty, in addition to providing a mechanism for the settlement of disputes.

Negotiations for the formulation of the content of the TES are continuing and are pursuing the development of the legal structure as presented in 2010. The ad hoc Specialized Group on legal matters should take into consideration the two core principles stated in the most recent declaration of the Energy Council of UNASUR: free transit and non-discrimination, which are essential for the proper functioning of an energy integration treaty.

6.4.1.2. INFRASTRUCTURE AND PLANNING COUNCIL (COSIPLAN)

The initial move for coordinating physical integration projects was made by the Initiative for the Integration of the Regional Infrastructure in South America (IIRSA), launched in 2000 for a ten-year term; this was a result of the Summit in Brasília, the first meeting of 12 presidents of South America. As a source of funding, the IIRSA⁴¹⁵ partnered with certain regional financial institutions⁴¹⁶: the Inter-American Development Bank (IDB), the CAF, and the Financial Fund for the Development of the River Plate Basin (Fonplata), so that it could complete the multisector objectives⁴¹⁷ proposed.

The original expectations, when the IIRSA was launched, were not only that the IDB contribute a greater volume of financing, but also that the projects under the name IIRSA could have a stamp or seal of quality which would ensure greater access to international credit, towards which

415 The Council of Guayaquil decided that the initiative would be divided into three sectors: transport, energy, and communications. The COSIPLAN also retained this division. See: Consenso de Guayaquil sobre Integración, Seguridad e Infraestructura para el Desarrollo. II Reunión de Presidentes de América Del Sur, July 26 and 27, 2002.

416 Ibid., Paragraph 14.

417 Ibid., Paragraph 8.

the outreach work done by the banks would play an important role. After the end of IIRSA's term, it was evaluated that its advent had been helpful in diagnosing the needs of physical infrastructure in the region, in the development of the appropriate methodologies, and in the systematization of the project portfolio. However, it was not enough to resolve the issue of long-term financing in adequate terms⁴¹⁸.

The advent of UNASUR was a catalyst that enabled the Member States to reorient the IIRSA. The need for further discussion on its projects and, above all, to seek solutions at the political and not merely the technical level for the crucial problem of financing precipitated the creation of COSIPLAN in August 2009. With this measure, the countries seek to give appropriate political and strategic support to the activities related to the regional integration of physical infrastructure.

The COSIPLAN assumed the functions of IIRSA's Executive Steering Committee (CDE), being responsible for reassessing the mix of projects, with the mandate of prioritizing those most emblematic for strengthening and integrating regional infrastructure, as well as seeking effective public funding sources for the works needed in the region.

COSIPLAN's Portfolio of Projects has 88 projects and works in various sectors and subsectors that will be executed between the years 2012 and 2022. Among these, two are relevant to the energy sector: (i) Project 13, CAP Hub, *Línea de Transmisión 500kv (Itaipu - Asunción - Yacyretá)*, a work valued at approximately US\$ 255 million that will be for the benefit of Paraguay; and (ii) Project 25, MCC Hub, *Gasoducto del Noreste Argentino*, whose beneficiaries will be Argentina and Bolivia, with an approximate value of US\$ 1 billion.

6.4.2. ANDEAN COMMUNITY OF NATIONS (CAN)

The Andean Community of Nations (CAN), South American bloc for economic integration and cooperation, originated with the Cartagena

418 Brazilian Ministry of Foreign Relations. América do Sul: Relações com países sul-americanos; infraestrutura. In: Balanço de Política Externa: 2003-2010. Available at: <http://www.ita-maraty.gov.br/temas/balanco-de-politica-externa-2003-2010/1.1.6-america-do-sul-infraestrutura>. Last accessed July 08, 2013.

Agreement of May 26, 1969⁴¹⁹.

The Andean Strategic Agenda (AEA) identified energy integration as a strategic area for the development of its Members⁴²⁰. Through its Implementation Plan, the AEA broadened the playing field of energy integration in CAN, primarily by establishing the following as strategic alignments within the sector⁴²¹: (i) promoting the exchange of information and experience on hydrocarbon, mineral, and hydroelectric cooperation within the sub-region, (ii) strengthening the institutionalization of the issues associated with energy integration, especially with regard to electrical and natural gas interconnections, (iii) promoting increased energy security and preservation of the environment, (iv) encouraging the development and use of renewable energy, and (v) facilitating the processes of energy integration, including electricity trade and interconnection among natural gas systems.

In 2002, the “Agreement for the Regional Interconnection of Power Systems and International Trade of Electrical Energy” was approved and signed in Quito (Ecuador), as a juridical, community framework designed to accelerate the development of the electricity sector among the Members.

Among other principles, the Agreement provided, in Article 1, the general principles of integration, such as: (i) the prohibition of measures enabling discriminatory behavior, (ii) assurance of free access to international interconnection lines; (iii) market rules for the management of power lines, (iv) decoupling between physical flow and contracts for the international sale and purchase of electricity, also by virtue of the principle of free access, to ensure the returns on investments made in this type of line, and (v) opposition to the use of subsidies and direct incentives on electricity exports, these being considered anticompetitive practices.

Subsequently approved via Decision 536/2002 was the “General

Framework for the Sub-regional Interconnection of Electric Systems and Intra-community Electricity Exchange”⁴²².

According to this Decision, no subsidies, incentives, or other restrictions on international electricity trade are permitted other than limitations related to available capacity. Decision 536 also establishes that: (i) there should be no price discrimination between domestic and foreign markets, (ii) free access to international interconnections should be permitted, (iii) the use of physical transmission facilities between countries will be based on the economic dispatch coordinated across markets, regardless of electricity purchase and sale contracts, which are purely commercial, (iv) the requirement of legislation in domestic markets that encourages competitive conditions in the electricity market, with cost-effective prices and fees, preventing price discrimination and abuse of market power, (v) there should be free employment among the agents and respect for established contracts, and (vi) private participation in international interconnection projects should be promoted.

Article 20 established the creation of the Andean Committee of Electricity Policy-Making and Regulatory Agencies, responsible for promoting the standards necessary to achieve the objectives provided in the General Framework. Also created through Decision 557/2003 was the Council of Ministers of Energy, Electricity, Hydrocarbons, and Mines of the Andean Community.

In November 2009, Decision 720 suspended the application of Decision 536/2002 for a period of two years, the time required for a review to be completed and for a new community regime for electricity exchanges among Member States to be established. To facilitate trade during the period of suspension, Decision 720 adopted a Transitional Regime.

Since the revision of Decision 536 was not completed within the timeframe initially planned, Decision 757/2011 derogated Decision 720/2009, replacing the Transitory Regime in effect at the time with two

419 The Cartagena Agreement initiated the Andean integration process that, at the time, was known as the Andean Pact. In 1997, amid the reforms under the Cartagena Agreement to adapt it to changes in the international arena, the Presidents of the Member States decided to change the name of the organization, which was renamed the Andean Community of Nations.

420 The members of CAN are: Bolivia, Colombia, Ecuador, and Peru.

421 Andean Community of Nations. Energía. Available at: <http://www.comunidadandina.org/Seccion.aspx?Id=71&tipo=&title=TEenergia>.

422 It should be noted that initially this Decision would not apply to Bolivia. Bolivia requested to be part of it during the Third Meeting of the Council of Ministers of Energy, Electricity, Hydrocarbons and Mines of the Andean Community, which occurred on July 14, 2005. Andean Community of Nations. Acta de la IIIª Reunión del Consejo de Ministros de Energía, Electricidad, Hidrocarburos y Minas de la Comunidad Andina. SG/CM.EEHM/III/ACTA, October 5, 2005, p. 4.

new schemes: (i) Transitional Regime Applicable to International Electricity Transactions between Colombia and Ecuador (Annex I), and (ii) Transitional Regime Applicable to International Electricity Transactions between Ecuador and Peru (Annex II), which were valid for two years (Article 1 of Decision No 757/2011.)

Article 3 maintained the obligation of the Member States to not grant any kind of subsidy for electricity exports or imports, prohibiting also the adoption of specific restrictions on intra-community electricity imports, exports, or transit. Article 4, in turn, once again provided that the agents (rather than companies) participating in international contracts, when involved in a dispute, could have recourse to the Court of Justice of the Andean Community.

The Annexes retained many of the principles outlined in the first Decision and introduced specific obligations for the Parties referred to in their titles, such as, for example, Article 6 of Annex II (Ecuador and Peru), which establishes:

When the use of the electrical system of Ecuador or Peru is required for transit and it is feasible to comply with a contract with an Agent of a third party country, the exporting Agent shall pay the transit country for the concepts referred to in subparagraphs b and c of item 5 of Article 1 of this Annex.

- a) This operation does not require the transit country to supply the energy not delivered by the exporting country, nor will it affect its domestic market.
- b) The transit country cannot use this strategy to cover its domestic demand.

The revision of Directive 536/2002 had not been completed in June 2013⁴²³. Faced with its stagnation, there was the emergence of a complementary initiative related to energy integration of CAN: the Andean Electrical Interconnection System (SINEA).

⁴²³ Decision 789/2013 determined that Decision 536/2002 should be suspended no later than August 31, 2016, the date on which it is expected that its review will be complete.

The SINEA, created in 2011, aims to actively pursue the development of a new community regime for electricity trade among the participating Andean countries⁴²⁴. Through the Declaration of Santiago⁴²⁵, Members agreed that the Working Groups of CAN related to planning and regulatory harmonization would participate in the SINEA, in order to provide them with the technical and normative support necessary for the regional electrical integration process⁴²⁶. The SINEA also follows the principles of: (i) legal and contractual stability, (ii) freedom of transit, (iii) free access to the remaining capacity of the transmission lines, (iv) non-discrimination, (v) competitive pricing, and (vi) sustainable development.

A new meeting of SINEA is expected to be held in September 2013, in Medellin, during which an action plan and a timetable will be prepared for implementing the agreed project. It is recommended, therefore, that the developments of this initiative be monitored.

6.4.3. SOUTHERN COMMON MARKET (MERCOSUR)

On March 26, 1991, Argentina, Brazil, Paraguay and Uruguay signed the Treaty of Asunción, aiming at the creation of the Southern Common Market (MERCOSUR)⁴²⁷. The main purpose of the Treaty was the integration of the Member States through the free movement of goods, services, and factors of production; the establishment of a Common External Tariff (CET); the adoption of a common trade policy; coordination of macro-economic and sectoral policies; and the harmonization of legislation. The

⁴²⁴ Included in the SIENA are: Peru, Chile, Colombia and Ecuador. Bolivia participates as an observer.

⁴²⁵ Fourteenth Meeting of the Andean Committee of Electricity Policy-Making and Regulatory Agencies of CAN, September 27, 2012. Available at: <http://www.comunidadandina.org/Upload/201292895532Declaracion-de-Santiago.pdf>. Last accessed July 9, 2013.

⁴²⁶ Sector Electricidad. Perú, Chile, Colombia, Ecuador y Bolivia conformarán el Sistema de Interconexión Eléctrica Andina: SINEA. November 04, 2012. Available at: <http://www.sectorelectricidad.com/3089/peru-chile-colombia-ecuador-y-bolivia-conformaran-el-sistema-de-integracion-electrica-andina-sinea/>. Last accessed July 09, 2013.

⁴²⁷ In 2012, Venezuela became a Member of MERCOSUR. In the same year, a protocol was signed for the accession of Bolivia, which will be the sixth full member of the Bloc. The Associate Members are: Bolivia, Chile, Peru, Colombia and Ecuador. The following are not Associate Members, but began to attend MERCOSUR meetings in 2012: Guyana and Suriname.

Member States established the institutional structure of the bloc through the Protocol of Ouro Preto in December 1994.

The main decision-making bodies that make up the institutional structure of MERCOSUR are the Common Market Council (CMC), the Common Market Group (GMC) and the MERCOSUR Trade Commission (CCM).

The CMC, integrated by the Ministers of Foreign Affairs and Economy of each Member State, should guide the political process of integration and decision making, in order to ensure compliance with the objectives set by the Treaty of Asuncion. It is this body that it is charged with drafting the Decisions, which are binding. The GMC and the CCM deal with executive issues of the Bloc and act so as to discuss the trade policies applied as well as to propose projects for approval of the CMC, among other duties.

The regulation of the energy market within MERCOSUR is not explicit: most texts produced, although binding, show no detailed obligations, but rather guidelines and principles to be followed.

Of the regulatory actions taken within the bloc, the following will be addressed: (i) the activities of the Sub-Working Group on Energy (SGT No. 09)⁴²⁸, (ii) the projects undertaken under the auspices of the MERCOSUR Structural Convergence Fund (FOCEM), (iii) the terms adopted by the Member States under the Framework Agreement on Regional Energy Complementation, in effect since 2010, (iv) the Biofuels Action Plan, and (v) the MERCOSUR ruling on the application of the principle of freedom of transit among Member States.

6.4.3.1. ACTIVITIES OF THE WORKING GROUP ON ENERGY - SGT NO. 09

The MERCOSUR Action Plan to Year 2000⁴²⁹ established the energy

428 The sub-working groups were created by the Internal Rules of the Common Market Group, MERCOSUR/CMC/DEC No. 4/91, 1991, which, in Chapter VI, Articles 17-25, provides on the possibility of their creation to discuss specific and technical topics. Decisions are made by consensus, subgroups are generally formed by government officials from Member States, and their conclusions must be submitted to the GMC.

429 MERCOSUR/CMC/DEC No. 9/95 of August 5, 1995.

sector as one of the key points for a true common market to be set up by the Member States. The program established the objectives to be completed by 2000 in several areas and, for the energy sector, proposed goals related to harmonization of environmental legislation, optimization of electricity production and generation, rational use of energy, and production of renewable energy.

Among the Sub-Working Groups (SGT) created by the Internal Rules of the GMC⁴³⁰, SGT No. 9⁴³¹ stands out, which relates to the energy sector. The SGT No. 9 produced some guidelines and resolutions that were adopted by the CMC and the GMC⁴³², such as the Memorandum of Understanding on Electricity Exchange and Electrical Integration in MERCOSUR (MERCOSUR/CMC/DEC No. 10 of July 23, 1998).

This memorandum adopted certain principles to assure free trading in electricity, with the aim of promoting the development of the regional integration process of the sector, such as: (i) ensuring a competitive market for electricity generation without the imposition of subsidies that may affect the conditions of competition; (ii) ensuring non-discrimination between producers and consumers, regardless of their geographic location, (iii) allowing the exchange of market data and information, including real-time data, required to coordinate the operation of the physical interconnections and the accounting of exchanges, (iv) ensuring free

430 The Common Market Council (CMC) has adopted, as proposed by the GMC, a decision on the creation of “Specialized Meetings” (MERCOSUR/CMC/DEC No. 09/1991), which was used also for the creation of SGTs. All SGTs are subordinate to the GMC and should report it the conclusions or suggestions that the SGT eventually wishes the MERCOSUR to adopt. It is incumbent upon the GMC to adopt the proposal and forward it to the CMC in order for it to become binding on all Member States.

431 With various denominations throughout the history of MERCOSUR, TMS No. 9 was firstly modified by the Restructuring of the Subsidiary Bodies of the Common Market Group and the Trade Commission of MERCOSUR (MERCOSUR/CMC/DEC No. 59/00 of December 14, 2000). Recently, the CMC approved the decision “Structure of the Common Market Group and Typology of its Subsidiary Bodies” (MERCOSUR/CMC/DEC No. 12/2012), which maintains SGT No. 9 with the specific topic of energy.

432 The Common Market Group adopted the “Negotiating Agenda of Subgroup No. 9 - Energy” on December 13, 1996, through MERCOSUR/GMC/RES No. 150/96, establishing five priority tasks: (i) the energy programs of MERCOSUR, (ii) the regulatory frameworks of the energy sectors of MERCOSUR, (iii) the prices, tariffs, and tax treatment of the energy sector; (iv) energy rationalization, quality, and productivity, and (v) the overall coordination of SGT No. 9.

access to the remaining capacity of transmission facilities, regardless of nationality, the destination of the energy, or the public or private status of the companies, subject to the fees established for their use ; (v) ensuring the transparency of operations and free access to information of electrical systems, markets and their transactions, (vi) assuring the supply of electricity, among others.

Also based on the activities of SGT No. 09 and on the importance of natural gas trading for the States Parties, the “Memorandum of Understanding on Gas Exchanges and Gas Integration among MERCOSUR Member States”⁴³³ was approved. The Memorandum established principles to: (i) increase the competitiveness of the market for natural gas production, (ii) to ensure that prices and tariffs on services associated with the purchase and sale of natural gas (transport, distribution and storage) are consistent with economic costs within their respective markets, without discrimination between users with similar characteristics and without direct or indirect subsidies that may affect the competitiveness of exportable goods and free trade in the Member States, (iii) grant permits, licenses, or concessions that are necessary for the construction and operation of pipelines, (iv) protect the rights of natural gas users against oligopoly or monopoly practices, the abuse of dominant position, and poor service quality, and (v) ensure free access to relevant information on gas systems, among others.

In 2001, the Common Market Group established new priority tasks for SGT No. 9 through the Resolution on “Negotiating Agenda for Sub-Working Group No. 9 - Energy and Mining”⁴³⁴:

- (i) Develop and equip a public energy information system (SIEM);
- (ii) Identify, analyze, and propose solutions to situations that affect compliance with MERCOSUR/CMC/DEC No. 10/ 98 (electric energy), MERCOSUR/CMC/DEC No. 10/99 (gas), the Treaty of Asuncion, and the Protocol of Ouro Preto, and fulfillment of the stages of the electricity, gas, and oil and oil products industries;

433 MERCOSUR/CMC/DEC No. 10/99 of December 7, 1999.

434 MERCOSUR/GMC/RES 33/01 of October 10, 2001.

- (iii) Facilitate energy integration initiatives in the region, as incentivized by the Brasilia Declaration (September 01, 2000); and
- (iv) Establish horizontal technical cooperation in the sector.

However, the negotiating agenda did not achieve many effective results. The CMC also proposed two recommendations: one on energy efficiency (General Guidelines for Energy Efficiency within MERCOSUR⁴³⁵) and another on energy sources (Guidelines on Energy Sources within MERCOSUR⁴³⁶), which are not legally binding but serve as a benchmark for measuring the performance of Member States.

6.4.3.2. MERCOSUR STRUCTURAL CONVERGENCE FUND (FOCEM)

Another important initiative of the bloc was the creation of the MERCOSUR Structural Convergence Fund (FOCEM)⁴³⁷.

Considering that the benefits resulting from the expansion and integration of regional markets could not be fully exploited by the smaller economies as long as the unequal conditions among the Member States subsisted, the FOCEM was created to act as a means of financing projects for the benefit of the smaller economies of MERCOSUR.

The objectives of the Fund are to promote structural convergence, develop competitiveness, promote social cohesion—particularly in the smaller economies and less developed regions—, and support the operations of the institutional framework and the strengthening of the integration process of MERCOSUR.

FOCEM is funded by non-refundable financial contributions from Member States, the annual amount being \$100 million dollars⁴³⁸. The possibility of obtaining funding for the implementation of a project is not

435 MERCOSUR/CMC/REC 01/09 of July 24, 2009.

436 MERCOSUR/CMC/REC No. 02/09 of July 24, 2009

437 MERCOSUR/CMC/DEC No. 45/04 of 16 December 2004; MERCOSUR/CMC/DEC No. 18/05 of June 19, 2005 on the integration and operation of FOCEM.

438 The contribution of Member States to FOCEM presents the following proportion: Argentina, 27 %; Brazil, 70 %; Paraguay, 1 %; and Uruguay, 2 %. Article 6, MERCOSUR/CMC/DEC No. 18/05 of June 19, 2005.

equal among the Members. Article 10 of the Decision that establishes and regulates the operations of FOCEM determines that the funds will be allocated among the Member States in keeping with the following percentages: projects presented by Paraguay, 48%; those presented by Uruguay, 32%, and those presented by Argentina and Brazil, 10% each.

The Regulation of FOCEM⁴³⁹ establishes, in Article 36, I, items (ii) and (iii), that projects will be funded that fall under the following categories, among others: (ii) extraction, transportation, and distribution of fossil fuels and biofuels (iii) generation, transmission, and distribution of electricity.

It can be concluded, therefore, that FOCEM funds can also be used to finance energy projects, thus contributing to the energy integration of the bloc. Currently three are three projects related to the energy sector that have been approved by the CMC under FOCEM: (i) The Brazil-Uruguay 500MW Electrical Interconnection⁴⁴⁰, presented by Uruguay, (ii) Construction of the Itaipu-Villa Hayes 500 kV Transmission Line and of the Villa Hayes Substation, and Expansion of the Itaipu Right Bank Substation⁴⁴¹, presented by Brazil and Paraguay, and (iii) Iberá TS - Paso de Los Libres Norte TS 132 kV Interconnection⁴⁴², presented by Argentina.

6.4.3.3. FRAMEWORK AGREEMENT ON REGIONAL ENERGY COMPLEMENTATION

In relation to treaties and agreements among the Member States of MERCOSUR, also worthy of mention is the Framework Agreement on Regional Energy Complementation among the Member States of MERCOSUR and Associate States, signed on December 9, 2005 and coming into effect on February 26, 2010⁴⁴³.

The purpose of the Agreement is to contribute to the advancement of regional energy integration in terms of the systems of production, trans-

439 MERCOSUR/CMC/DEC No. 01/10.

440 MERCOSUR/CMC/DEC No. 02/10.

441 MERCOSUR/CMC/DEC No. 07/10.

442 MERCOSUR/CMC/DEC No. 03/10.

443 The parties to the Framework Agreement are: Argentina, Brazil, Paraguay, Uruguay, Chile, Colombia, Ecuador, and Venezuela.

port, distribution, and marketing of energy products in the Member States in order to assure energy inputs and create the necessary conditions for minimizing the commercial costs related to energy exchanges between the Contracting Parties.

Although the Agreement does not establish binding obligations, Article 6 establishes certain priority areas that should be observed by the Parties in order to intensify integration: (i) trade of hydrocarbons (notably oil and gas), (ii) interconnection of electrical transmission lines, (iii) interconnection of gas and other hydrocarbon pipelines; (iv) cooperation in the exploration for, and exploitation, extraction, and processing of, hydrocarbons, and (v) sources of renewable energy and alternative energy⁴⁴⁴.

The Agreement also recommends that the Members undertake interchange and technical updating activities intended to strengthen the institutional capacities to promote the rational and efficient use of conventional energy, energy efficiency, renewable energy, the preservation of the environment, and the harmonization of the levels of security and quality among the Parties.

6.4.3.4. ACTION PLAN FOR BIOFUELS

In December 2006, the Memorandum of Understanding to Establish a Special Working Group on Biofuels⁴⁴⁵ was adopted, with the aim of presenting a cooperation program on biofuels.

Under the cooperation program, it would be the responsibility of the Special Working Group to propose measures to: (i) encourage the production and consumption of biofuels, especially ethanol and biodiesel, (ii) conduct a comparative survey of regulatory frameworks on biofuels in the Member States, (iii) encourage the structuring of integrated production chains in the sector, (iv) encourage technical cooperation on biofuels and joint research programs on the production and use of biofuels (v) facilitate the exchange of information, and (vi) promote capacity building

444 The Agreement does not define what renewable energy or alternative energy would be.

445 MERCOSUR/CMC/DEC No. 36 /06 of December 15, 2006.

for the sustainable production of biofuels.

The MERCOSUR Action Plan for Cooperation on Biofuels prepared by this Working Group and approved by the CMC⁴⁴⁶ established an Ad Hoc Group on biofuels within the GMC in order to prepare a proposal on the criteria and instruments according to which the cooperation activities and objectives on biofuels will develop.

Furthermore, the Action Plan sets out some key activities, such as:

- (i) evaluating the regional agricultural potential for the production of biofuels (meaning, in the text, ethanol and biodiesel);
- (ii) industrial process within the production chains on a commercial scale;
- (iii) the feasibility of a sustainable production of biofuels;
- (iv) defining the business model for manufacturing activities in the sector;
- (v) verifying the regulatory frameworks for the production of biofuels;
- (vi) regional and global cooperation;
- (vii) reviewing the investment rules of the sector;
- (viii) developing infrastructure and logistics systems for the integration of the production and distribution of biofuels; and
- (ix) reviewing the technical specifications of the corresponding products.

6.4.3.5. PRINCIPLE OF FREEDOM OF TRANSIT

In June 2011, the CMC approved a decision establishing that the goods and means of land and water transport shall enjoy freedom of transit within the territory of the Member States of MERCOSUR (Article 1)⁴⁴⁷.

The wording of the text was inspired by Article V of the GATT and the provision that ensures freedom of transit within the ALADI. Its Article 2 establishes that the goods and means of transport shall be considered in

446 MERCOSUR/CMC/DEC No. 49/07 of December 17, 2007.

447 MERCOSUR/CMC/DEC No. 19/11 of June 28, 2011.

transit “when the passage through such territory constitutes only a portion of a complete journey beginning and ending outside the borders of the Member State in whose territory it is conducted,” while Articles 3 and 4 emphasize the principle of non-discrimination.

However, like Article V of the GATT, the CMC did not specify whether freedom of transit applies also to cases relating to the energy sector.

6.4.4. BILATERAL INITIATIVES FOR ELECTRICAL INTEGRATION IN SOUTH AMERICA

In the context of regional energy integration, noteworthy are the initiatives for the construction of large dams on waterfalls of rivers that form the borders of certain South American countries. As such, the regulatory aspects will be approached relative to certain undertakings that have enabled major advances in bilateral cooperation between the countries of the region, such as the hydroelectric dams of Itaipu (Brazil and Paraguay); Yacyretá (Argentina and Paraguay) and Salto Grande (Argentina and Uruguay).

6.4.4.1. ITAIPU

The Itaipu Dam is currently the largest dam in activity on the planet in terms of power generation. It has 20 generating units and 14,000 MW of installed power, being responsible for 17.3% of the energy consumed in Brazil and 72.5% of the energy consumed in Paraguay. The production record was set in 2012, when the hydropower generated reached 98,287,128 MWh⁴⁴⁸. The plant is also engaged in environmental matters and contributes to social activities and projects as a way of promoting sustainable development and improving life in the vicinity of the power

448 Itaipu. Geração. Available at: <http://www.itaipu.gov.br/energia/geracao>. Last accessed July 9, 2013.

plant⁴⁴⁹.

The Itaipu Treaty of April 1973⁴⁵⁰ was the result of an initiative by the Brazilian and Paraguayan governments to create a binational company with the goal of electricity generation and sale, from Salto de Sete Quedas up until Foz do Iguaçu.

Negotiations began some years before and, by means of the Act of Iguaçu from June 1966, the parties agreed that:

“The electricity that may be produced by the slope of the Paraná River, from and including Salto Grande de Sete Quedas or Salto do Guaira to the mouth of the Iguaçu River, will be divided equally between the two countries, each of them being recognized the right of first refusal for the acquisition of this same energy at a fair price, to be opportunely set by specialists from the two countries, for any amount that will not be used to supply the consumption needs of the other country.

This first document was the basis that made possible the completion of the Treaty of Itaipu⁴⁵¹. As a way of enabling the realization of the project,

449 Itaipu's social responsibility projects, not foreseen in the agreements signed between Paraguay and Brazil, are divided into five areas: (i) child care (Jovem Jardineiro, Bolsa Escola, Partnership with UNICEF, among others), (ii) a future for the youth (an internship program, one thousand scholarships, projects for the Itaipu Technological Park, and the partnership with the Brazilian federal government that established 'Universidade Federal da Integração Latino-Americana' (Federal University of Latin American Integration), among others), (iii) equal opportunities (Coleta Solidária, Casa-Abrigo, Rede Cidadã, Saúde na Fronteira, among others), (iv) incentives to employees (the Itaipu Choir, supplemental education, planning for retirement, etc.), and (v) sustainability works and projects (support for educational programs, full support to peasants and the indigenous peoples, infrastructure works, among others). More information about these and other programs can be found on Itaipu's website at www.itaipu.gov.br.

450 The Treaty of Itaipu was incorporated into Brazilian law through Legislative Decree No. 23 of May 30, 1973, published on page 1659 of the Journal of the National Congress of June 1, 1973, and Decree No. 72.707 of August 28, 1973, published on pages 8642-8645 of the Official Gazette of August 30, 1973. In Paraguay, the treaty was enacted by Law No. 389 of July 11, 1973.

451 There were, in the period of negotiations, disagreements between Brazil and Paraguay, and between these two and Argentina. The first conflict referred to the controversial opinion issued by Brazil that the hydroelectric project would be viable only for the Brazilian side, while some adverse effects would be observed in Paraguay, e.g. flooding. The second conflict referred to the effects that could be caused to the project for the construction of the Corpus and Yacyretá Apice hydroelectric plants, a bilateral Argentine-Paraguayan venture, due to the modification of the normal course of the waters of the Rio de la Plata Basin.

the Treaty established that the Parties (Paraguay and Brazil) have equal rights and obligations based on the creation of a binational entity, in order to accomplish the construction of the corresponding hydroelectric dam (Article III)⁴⁵².

Article XIII of the Treaty of Itaipu provides that all the installed power will be acquired by one or both Contracting Parties:

The energy produced by the hydroelectric utilization referred to in Article I shall be divided equally between the two countries, each of them being recognized the right to acquire, as established in Article XIV, the energy that is not used by the other country for its own consumption.

Sole Paragraph - The High Contracting Parties undertake to acquire, jointly or separately as they may agree, the total installed power.

Article XIV refers to the possibility of acquisition of electricity services by the Brazilian Eletrobras and the Paraguayan *Administración Nacional de Electricidad* (ANDE), which can also be performed by companies or entities (Brazilian or Paraguayan) designated by their respective governments.

The Treaty provides that if there is disagreement about its interpretation or application, neither the construction nor the operation of the hydroelectric plant shall be disrupted. In addition, issues related to the Treaty and the interpretation of its clauses and annexes shall be resolved by usual diplomatic means (Article XXII).

Appendix A presents the bylaws of the Itaipu Binational Company, approved on January 28, 1986⁴⁵³, and provides for the institutional organization, capital, and the parties' respective duties. Annex B identifies and describes the Project for the Hydroelectric Utilization of the Paraná River.

The regulation of the purchase and sale of energy is contained in Annex C to the Treaty, which provides on the “Bases for Financial Matters and

452 The binational company is composed of Eletrobrás and ANDE (Administración Nacional de Electricidad), in accordance with Article III, paragraph 1.

453 Note DAM-I/DEM/CAI/01/PAIN of the Brazilian Minister of Foreign Affairs of Brazil and Note DM/T/N.R. No. 1 of the Paraguayan Minister of Foreign Affairs, with identical content and date. The Brazilian note was published in the Brazilian Official Gazette on February 20, 1986, pages 2703-2706.

for the Provision of Electricity Services at Itaipu.” Article III⁴⁵⁴ of Annex C sets out rules on royalty payments for the use of energy and for excessive consumption, in addition to determining the costs of electricity service (Article III.8 of Annex C to the Treaty of Itaipu).

Although Article VI of Annex C determines that the payment terms established be reviewed only fifty years from the date of its entry into force (i.e., only in 2023), the disagreements that occurred in 2009 over the price paid by Brazil for the surplus energy sold by Paraguay were inevitable. Accordingly, Decree No. 7,506, of June 27, 2011 enacted the Agreement by Exchange of Diplomatic Notes⁴⁵⁵ (especially Diplomatic Note No. 528 of September 1, 2009), revising the price to be paid⁴⁵⁶ for the energy assigned by one High Contracting Party to the other, in the following terms:

“[T]hat the value established in sub-item III.8 of Annex C to the Treaty, i.e. the amount required to compensate one of the High Contracting Parties per gigawatt-hour (GWh) assigned to the other High Contracting Party, be multiplied by 15.3 (fifteen point three).”

The new amount paid per GWh assigned to Brazil by Paraguay went from US\$ 300 to US\$ 4,590, and it is estimated that Paraguay will receive about US\$ 360 million, US\$ 240 million more than it received up to 2009. Beyond this, also to be paid is a minimum of US\$ 650 per GWh

454 Diplomatic Note No. 5 of April 25, 1973 and Diplomatic Note No. 1 of February 11, 1974, the last published in the Official Gazette of February 20, 1974, on page 2002, approved the method for calculating the adjustments to be paid for the use of the energy produced at Itaipu, in accordance with items A and B of the last note mentioned.

455 Diplomatic Notes are notes exchanged between the foreign ministries of two countries that can, in themselves, constitute an international treaty. In this sense, the author notes that “the process for the formation of an agreement by exchange of notes is quite simple: a note by the proponent and the responsive note both constitute the treaty. This type of agreement is used to regulate matters of minor importance.” AMARAL JÚNIOR, A. *Curso de direito internacional público*, 3rd ed. São Paulo: Atlas, 2012, pp. 51-52.

456 In January 1986 was the last change in the formula for calculating the final price of the energy produced by Itaipu; through Diplomatic Notes No. 03, 04 and 28, the method to calculate the amount to be paid by the energy transfer was modified by including an Adjustment Factor (AF) and a Multiplier Factor (MF), resulting in the following formula: Compensation for assignment (U.S. \$) = 300 U.S. \$ / GWh x AF x MF.

as royalties, and the total amount paid cannot be less than US\$ 18 million (Article III.4, Annex C). Finally, the costs of administration and supervision relating to Itaipu will be compensated in the amount of US\$ 50 per GWh (Article III.5, Annex C).

The issue of the price of energy generated at Itaipu assumed political overtones and was settled amicably between the two governments. However, the absence of general rules common to the countries of the region can occasionally lead to such difficulties as those presented by Paraguay against Brazil. A regional regulatory framework could help strengthen the legality of these agreements, favoring the fulfillment of the agreements reached regardless of any political issues that begin to influence the administration of agreements in the sector.

6.4.4.2. YACYRETÁ

The Yacyretá Dam has 20 generating units, 3,200 MW of installed capacity, and an average annual gross generation of 20,000 GWh⁴⁵⁷.

The Treaty of Yacyretá, signed by the governments of Argentina and Paraguay on December 3, 1973, aims at the production and trading of the electricity generated from the waters of the Paraná River, as well as the improvement of navigability in the region. The Treaty includes Diplomatic Notes No. 20, 21, 22, 23 and 24⁴⁵⁸, as well as those to be exchanged between the High Contracting Parties within the subjects of the said Treaty during its validity. As with the Treaty of Itaipu, the structure of the Treaty of Yacyretá includes a primary text establishing the obligations related to the creation of the project and the mechanisms applicable to the dam. Annex A includes the Bylaws of the Yacyretá Binational Company; Annex B presents the characteristics of the components of the project, what will

457 Entidad Binacional Yacyretá. *Características Técnicas*. Available at: http://www.yacyreta.org.ar/index.php?option=com_content&task=view&id=21&Itemid=32.

458 The Diplomatic Notes address issues related to the Treaty of Yacyretá and its annexes, the most important being the agreement in which the Argentine government undertakes to extend credit of U.S. 50 million to the energy authority of Paraguay (ANDE) for the payment of the capital of Yacyretá by the Paraguayan side. Diplomatic Note No. 20. *Apertura de un crédito a ANDE por el Gobierno Argentino para la integración del capital de Yacyretá*. December 3, 1973, § 1. In turn, paragraph 4 sets an annual interest rate of 6 % on the loans.

be built and where; and Annex C deals with royalty payments and the price of energy assigned from one party to the other.

The obligations and rules contained in the Treaty are similar to those contained in the Treaty of Itaipu, as they establish equal rights and obligations between the parties; tax exemption to the Binational Company; a system for the settlement of disputes by usual diplomatic means, among others. One difference between the two treaties is the amount paid for the energy assigned, as well as the calculation of the cost of the service (Article XV of the Treaty of Yacyretá).

The Treaty of Yacyretá also establishes compensation owing to the flooding of certain areas by the construction of the dam (Article IV, Annex C) and compensation for allocation of energy from a High Contracting Party to the other, corresponding to 5% of the investment to produce that GWh (Article V.2, Annex C). Such compensation may not be less than US\$ 9 million (Article V.3, Annex C).

In 1998, the President of Argentina reported that twenty turbines would be built instead of the ten established in the initial planning⁴⁵⁹. The construction of the Yacyretá Plant started only in 2006, after an agreement between the Parties was reached in 2003⁴⁶⁰. It was only in 2010 that the Yacyretá project reached its maximum capacity.

The plant's annual production record was set in 2011, reaching 20,867 GWh, which represents an increase of 6.15% in relation to 2010⁴⁶¹.

459 BONIFATO, C.S.: Menem dijo que habrá diez turbinas más. In: La Nación. July 08, 1998. Available at: <http://www.lanacion.com.ar/102640-yacyreta-menem-dijo-que-habra-diez-turbinas-mas>. Last accessed July 17, 2012.

460 On December 17, 2003, the Joint Declaration of the Presidents of each country affirmed their interest in completing the project, and, on December 29, 2003, their Ministers signed the Acuerdo entre los Ministros de Planificación Federal, Inversión Pública y Servicios de la República Argentina y de Obras Públicas y Comunicaciones de República del Paraguay, demanding that the Yacyretá Binational Company (YBC) produce a plan of works and actions needed to build the complex.

461 Yacyretá alcanza Record de producción anual de energía en 2011. Última Hora, January 02, 2012. Available at: <http://www.ultimahora.com/notas/493166-Yacyreta-alcanza-record-de-produccion-anual-de-energia-en-2011>. Last accessed July 19, 2012.

6.4.4.3. SALTO GRANDE

The Salto Grande hydroelectric plant, an Argentine and Uruguayan initiative, was the first binational hydraulic complex in Latin America. The development of the project started in 1938 through *Acta del 13 de enero de 1938*, and the dam was already in operation by 1979. The plant is equipped with 14 generators, representing an installed capacity of 1,890 MW, and is responsible for generating almost half of the electricity consumed in Uruguay, while supplying about 8% of the Argentine demand.

The complex has a unified control center responsible for operating the electrical system of the plant and coordinating operations between the two countries through the agencies responsible for the Argentine Load Dispatch (*Compañía Administradora del Mercado Mayorista Eléctrico - CAMMESA*) and the Uruguayan Load Dispatch (*Administración Nacional de Usinas y Transmisiones Eléctricas - UTE*).

The Joint Technical Commission of Salto Grande, established by the Act of 1938, is responsible for operating and maintaining the Salto Grande complex, in accordance with the objectives set forth in the 1946 Agreement: optimizing the use of available water resources, besides transmitting and managing the energy produced to markets with quality, safety, and reliability⁴⁶².

Importantly, this initiative has an International Arbitration Court to resolve contractual, civil and criminal matters about the agreements involving the Salto Grande Hydroelectric dam (Resolution No. 718/79 of Salto Grande).

6.4.5. INITIATIVES FOR THE OIL AND NATURAL GAS SECTORS

The early years of the 1990s marked the beginning of the gas integration of the South American region. Some of these initiatives, which stand out for the magnitude of the project or for their respective regulations, will be examined below.

462 Comisión Técnica Mixta de Salto Grande. Available at: <http://www.energiaynegocios.com.ar/req/pages/comisiontecnicamixtadesalto.html>.

Map 10 - Gas Pipelines in South America



Source: Petrobrás, 2013. ENARGAS, 2005. ECOPEPETROL, 2013. Hidrocarburos Bolivia. CESP, 2004. Prepared by FIESP.

6.4.5.1. URUPABOL AGREEMENT

The URUPABOL Agreement, signed among Uruguay, Paraguay, and Bolivia as a way to intensify the integration efforts of the three countries, had its first period of existence between the years 1963 and 1976, when it was denounced by the Paraguayan head of government, Alfredo Stroessner. The Agreement had been initially established with the goal of forming a permanent regional bloc, for purposes related to the objectives of the IDB: reducing poverty and inequality in Latin America and the Caribbean and pursuing development in a sustainable manner in the region⁴⁶³.

The sub-regional integration bloc remained inactive until the mid 1990's, when the members resumed their operation. In 2006, the initial integration project proposed by the URUPABOL Agreement was deepened in the energy sector and, in 2008, the URUPABOL Tri-National Cooperation and Energy Integration Technical Committee was established with support from the CAF.

The Joint Declaration of the Presidents of URUPABOL of December 17, 2010 expressed the interest of the Members in: (i) recognizing the sovereign, permanent right of States and peoples to their natural resources; (ii) maintaining URUPABOL as a mechanism for coordination and cooperation among Member States, to be used as an instrument for integration and regional development; (iii) conducting trade in energy, observing the principles of fair price, transparency, equality, integration, free transit, circulation, and solidarity; and (iv) advancing negotiations for the organization of a tri-national company⁴⁶⁴. The goal is to reach an agreement on energy integration by 2013⁴⁶⁵.

In addition, Members recognize the efforts of the URUPABOL Tri-National Cooperation and Energy Integration Technical Committee that, together with the CAF, conducted the analysis of the project for gas supplies

463 IDB. Sobre o Banco Interamericano de Desenvolvimento. Available at: <http://www.iadb.org/pt/sobre-o-bid/sobre-o-banco-interamericano-de-desenvolvimento,5995.html>.

464 URUPABOL . Declaración Conjunta de Presidentes – Cumbre de Presidentes de URUPABOL. Available at: <http://www.sme.gov.py/vmme/pdf/Finalpropuestafinal01urupabol.pdf>.

465 ICTSD. Bolivia, Paraguai e Uruguai reafirmam compromisso energético. In: Pontes Quinzenal, vol. 7, no. 6, May 2012. Available at: ictsd.org/i/news/pontesquinzenal/132492/. Last accessed July 16, 2012.

via a pipeline system and passing through the Paraguay-Paraná Waterway.

In 2012, a technical meeting with the participation of CAF discussed the energy integration project of the three members:

“Thus, in the framework of the ‘URUPABOL Tri-National Cooperation and Energy Integration Technical Committee,’ the representatives of the countries that attended this important event expressed their commitment to continue working on developing energy integration, whereas the URUPABOL project has as its objective to electrically connect Bolivia, Uruguay, and Paraguay through the Paraguay-Paraná waterway, seeking economic complementarity and subsidiarity from integration in order to promote the further development of the three countries.”⁴⁶⁶

The URUPABOL emphasizes the natural gas trade among the Parties and the establishment of the infrastructure needed for it to be delivered directly to Paraguay and Uruguay, from Bolivia. The project also aims to ensure access of Bolivian gas to markets in Uruguay and Paraguay. For Bolivia, this initiative could mean the possibility of obtaining the best price for the product, while the Paraguayans will no longer depend solely on Argentine exports. The project provides for the transmission of 109 metric tons per day of gas to Paraguay, about 10% of its domestic consumption, in addition to sending gas to Montevideo through the Paraguay-Paraná waterway⁴⁶⁷.

According to a statement from the Bolivian Hydrocarbons Minister is-

sued in 2012⁴⁶⁸, the Bolivian interest in the agreement would be related to the gas production surplus expected for 2013, which justifies the necessity of reaching an energy agreement to regulate the URUPABOL trade in gas as soon as possible.

The viability of the project is still under review by the CAF, a factor that makes it difficult to conduct a deeper analysis of the regulatory scope of the initiatives discussed herein.

6.4.5.2. BRAZIL-BOLIVIA PIPELINE (GASBOL)

The Brazil-Bolivia Pipeline (Gasbol), a major source of the natural gas supply to industrial centers located in southeastern and southern Brazil, has an extension of 557 km in Bolivia and 2593 km in Brazilian territory, and the pipe utilized has a thickness of 81.3 cm. With a maximum transport capacity of 32.85 m³/day⁴⁶⁹, the pipeline starts in the city of Rio Grande (Bolivia) and ends in the city of Canoas (Brazil), crossing 135 municipalities scattered over five Brazilian states.

466 República Plurinacional da Bolivia. Ministerio de Hidrocarburos y Energía. La Comisión Técnica de Urupabol se reunió en la ciudad de Santa Cruz, 2012. Available at: http://hidrocarburos.gob.bo/sitio/index.php?option=com_content&view=article&id=1934:la-comision-tecnica-de-urupabol-se-reunio-en-la-ciudad-de-santa-cruz&catid=108:noticias. Last accessed June 16, 2012.

467 ICTSD. Bolivia, Paraguai e Uruguai reafirmam compromisso energético. In: Pontes Quinzenal, v. 7, n. 6, May 2012. Available at: ictsd.org/i/news/pontesquinzenal/132492/. Last accessed July 16, 2012.

468 According to the Minister: “Vamos a tener mucho excedente a partir del próximo año. Inicialmente para Paraguay (está destinado) 109 toneladas métricas por día.” Anuncian venta de gas a Uruguay y Paraguay e incremento de volúmenes. In: El Diario. Bolivia, April 26, 2012. Available at: http://www.eldiario.net/noticias/2012/2012_04/nt120426/economia.php?n=33&-anuncian-venta-de-gas-a-uruguay-y-paraguay-e-incremento-de-volumenes. Last accessed July 4, 2012.

469 Gas Transboliviano. Gasoducto - Información Técnica. Available at: <http://www.gastransboliviano.com/gasoducto/info/default.aspx>. Last accessed September 18, 2012.



Source: TBG, 2013. Prepared by HESP.

Mapa 11 - O Gasoduto Brasil-Bolívia (Gasbol)



At the time of the pipeline inauguration in 1999, “the 135 municipalities of the five Brazilian states traversed by the pipeline concentrated 82% of national industrial output, 75% of Brazil’s GDP, and 71% of national electricity consumption, which shows the importance of its strategic dimension.”⁴⁷⁰ Given the importance of this project, it is worth to point out the main movements that led to the construction of Gasbol, as well as its current legal regulation.

The first integration initiative coordinated by the Parties was the Treaty on the Output and Utilization of Bolivian Oil, of 1938, which created a joint committee for technical studies related to the purchase and sale of Bolivian oil by Brazil. The Roboré Agreement abolished this commission in 1958.

The Roboré Agreement, of 1958, consists of a protocol, ten agreements and twenty diplomatic notes that intensified the trajectory of energy integration between Brazil and Bolivia. The Agreement provided for, among other things, the division of Bolivia into two regions: one in the north, which would count exclusively on Brazilian investment (equivalent to 40% of the territory), and the other in the south, under the exclusive responsibility of *Yacimientos Petrolíferos Fiscales Bolivianos* - YPF (Bolivian state oil and gas).

The Agreement provided rules of free transit regardless of the time or circumstances, as well as tax exemptions for goods in transit (i.e. only passing through Brazilian territory, with their final destination in another country)⁴⁷¹. It was a bold provision for a time when concerns about energy security were still neglected, since it was only after the oil crisis of the 1970’s that countries became preoccupied with assuring supplies.

The Agreement established a sales quota to Brazil of up to one hundred thousand barrels of oil per day, provided that the consumption needs of Bolivia have been met⁴⁷². Brazil has pledged to finance a pipeline that

470 LAMPREIA, L.F. *Diplomacia Brasileira: palavras, contextos e razões*. Rio de Janeiro: Lacerda, 1999, p. 198; PETROBRAS. *Gasoduto Bolívia-Brasil: rota de progresso para a América Latina*. Rio de Janeiro: Mauad, 1999.

471 Article XIV, Diplomatic Note No. 6 of March 29, 1958.

472 Special Mission of the United States of Brazil, Diplomatic Note No. 6, C/R/1958/4, La Paz, March 29, 1958.

would link to Bolivia, which in turn would provide to Brazil the amount of oil equivalent to the amount spent by the Brazilian government for the construction of the pipeline.

Despite these initiatives, the topic most relevant to energy relations between Brazil and Bolivia concerns natural gas trade. Although there was not, at the time of signing the Agreement, any evidence of gas fields in the area reserved for Brazil in the Bolivian territory, Brazil already had interest in securing the purchase of any gas fields that might be found in the region⁴⁷³.

The proposal for a gas pipeline between Bolivia and Brazil was implemented through Diplomatic Note No. 6 of 1958, sent from La Paz to the Brazilian government. At that time, the gas extraction was more expensive than oil extraction, which shows that Brazil's interest in Bolivian gas had a significant political component. In 1965, the construction of the pipeline was put back on the agenda due to a project for the construction of a pipeline presented by the Brazilian Minister of Planning to the National Security Council. However, only in 1973 with the outbreak of the first oil crisis did gas effectively come to be considered as an alternative to oil, with the costs of gas extraction beginning to look justified.

From that moment on, the purchase of Bolivian gas by Brazil ceased being primarily a political strategy and became a matter of economic necessity for the country. New agreements were signed with the aim of increasing the volume of gas purchased by Brazil, such as the Agreement on Cooperation and Industrial Complementation (Cochabamba Treaty) of 1974, the Protocol for Purchase and Sale of Gas (signed between Petrobras and YPF) of 1978, and the 1988 Treaty of La Paz.

Concrete initiatives to build the Gasbol became more evident starting in 1992. The Diplomatic Note of August 17, 1992, signed by the Minis-

473 Special Mission of the United States of Brazil, Diplomatic Note No. 6, C/R/1958/4, Article XIII: "When, in Area 'B', there are sufficient natural gas production and reserves to economically justify the construction of a pipeline, Brazil and Bolivia will undertake to construct said project, while taking into account the actual needs of the Brazilian market and the obligation placed upon the two countries by Article VII of this Note. If it suits Bolivia, Brazil undertakes to extend to Bolivia the necessary credits, to be reimbursed with crude oil and/or natural gas, for the construction of the project in Bolivia, which will belong to 'Yacimientos Petrolíferos Fiscales Bolivianos.' Brazil will build and operate the pipeline that runs through its own territory."

ter of Foreign Affairs of Brazil at that time, provided for the signing of a preliminary agreement between Petrobras and YPF, and subsequently a definitive agreement for the purchase of Bolivian gas by Brazil. This project represented a huge step towards regional energy integration⁴⁷⁴.

On the same date, the Partial Scope Agreement on the Promotion of Trade between the Government of the Federative Republic of Brazil and the Government of the Republic of Bolivia for Natural Gas Supply (PSA)⁴⁷⁵ was signed. The PSA determined that there should be no restriction whatsoever, by any of the Parties, to the export or import of gas in the volume contracted by the operators (Petrobras and YPF), as provided in Articles 1 and 2 of the PSA. Both governments would be responsible for ensuring compliance with the agreement for the purchase and sale of natural gas between the operators (Article 5, paragraph *a*, of the PSA).

The payments, prices, volumes, terms, and warranties remain the responsibility of the operators (Article 6, PSA). Regarding the construction of Gasbol, Article 5, paragraph *b*, determined that the signatory countries should authorize the construction and operation of pipelines and gas transportation within their respective jurisdictions. The works to be carried out in the territories of the signatory countries would be governed by the internal laws and regulations and would be supervised by their competent authorities.

The PSA⁴⁷⁶ signed by Brazil and Bolivia only established some structural matters, and the gas trade and the whole contractual structure underlying it were delegated to companies from both countries (Petrobras and YPF), with the Ministry of Foreign Affairs of Brazil and its counterpart in Bolivia being only in charge of monitoring the works. Thus, the Agree-

474 The Diplomatic Note of August 17, 1992 between Brazil and Bolivia determined that: "Both governments agree that, opportunistically, Petrobras and YPF, in keeping with the prevailing laws in Bolivia, will set the contractual terms for the participation of Petrobras, through its subsidiaries, in the exploitation, production, marketing and transportation of hydrocarbons in Bolivia, as well as in the distribution of oil and natural gas in the Bolivian domestic market."

475 LAMPREIA, L.F. *Diplomacia Brasileira: palavras, contextos e razões*. Rio de Janeiro: Lacerda, 1999, p. 198.

476 The Agreement was signed on the basis of Article 13 of the Treaty of Montevideo, which deals with promoting trade among the Member States of ALADI. It was ratified and internalized by both countries. On the Bolivian side, by Supreme Decree No. 23,513, of May 22, 1993, and on the Brazilian side, by Decree No. 681 of November 11, 1992.

ment for the Purchase and Sale of Natural Gas (Gas Supply Agreement - GSA) signed between YPFB and Petrobras regulates the transport of the gas, its price, and the operational and commercial rules pertaining to the project. It also determines that the purchase and sale of gas will take place without interruption for 20 years, starting from the completion of the construction of Gasbol. The Agreement for Tax Exemption Relating to the Implementation of the Brazil-Bolivia Pipeline Project, signed on August 05, 1996⁴⁷⁷, determined the tax exemption (Article 1) during the construction phase of the pipeline⁴⁷⁸, until the volume capacity of 30 million m³/day had been reached (Article 3).

Gasbol was completed and commissioned in 1999, reaching the target volume of 30 million m³/day. Petrobras has contractually undertaken a gas purchase of 8 million to 16 million cubic meters/day. Contracts for gas transportation and contracted volume would progressively increase until they reached the maximum daily capacity of the pipeline.

To complete the purchase, it is necessary to transport the gas from Bolivian territory to the territory of Brazil. Thus, there is also a transportation contract between YPFB and *Gas Transboliviano* (GTB) – a firm created to manage the transportation of gas in Bolivia – for the transport of gas from Bolivia to Brazil. When crossing the border, the gas is placed under the jurisdiction of another transportation contract, signed between Petrobras and *Transportadora Brasileira Gasoduto Bolívia-Brasil S.A* (TBG) – a company created to manage the transportation of gas from its entrance into Brazilian territory, up until the point of entry at state gas networks. The transportation from then on, until its distribution, is also the responsibility of Petrobras⁴⁷⁹.

Within this context, the Bolivian government took actions in 2006 to nationalize the exploitation, extraction, and sale of Bolivian gas. The relations between the distributors, including Gaspetro (an affiliate of

Petrobras), were changed with regard to their participation in the Bolivian stretch. The change of the ownership structure of Gas Transboliviano (GTB)⁴⁸⁰ reflects this measure.

Until the publication of Supreme Decree No. 28,701 on May 1, 2006, signed by Evo Morales, the Bolivian president, who nationalized the oil and gas sectors in that country, the Ministry of Foreign Affairs of Brazil did not have in its organizational chart a specialized division dedicated to energy. It was not until that moment that the Ministry decided to create the Department of Energy⁴⁸¹ in order to assist technically and politically in negotiations regarding energy issues. After this episode, the supply of gas from Bolivia to Brazil was no longer affected and is guaranteed until 2019, when the contract between the operators should be reviewed. Meanwhile, Petrobras and YPFB signed new agreements, and new investments by the Brazilian state-owned company in Bolivia are already planned for the coming years.

6.4.5.3. GREAT SOUTHERN PIPELINE

The Great Southern Pipeline is a project developed by Argentina, Brazil, and Venezuela, with the objective of building a pipeline that would start in Puerto Ordaz (gas exploitation zone in Venezuela) to Argentina, interconnecting the pipelines from northeastern Brazil (like the South-east-Northeast Gas Pipeline- GASENE) and also from other countries, such as Peru, Bolivia, and Uruguay.

The project included a pipeline that would be 8000-15000 km long and up to 170 cm in diameter in some stretches. The cost was estimated at between US\$ 17 and 23 billion. At first, the investment would be co-

477 The Agreement was incorporated into Brazilian law by Decree No. 2,142 of February 5, 1997.

478 The Diplomatic Note of February 17, 1993 already provided for a tax exemption for goods and services involved in the pipeline construction (Article 7, NR 02/17/1993).

479 OXILIA DÁVALOS, V.E. Raízes Socioeconômicas da Integração Energética na América do Sul: análise dos projetos Itaipu Binacional, Gasbol e Gasandes. Thesis for the Doctoral Program in Energy, University of São Paulo. São Paulo, 2009, p. 269-270.

480 Information on GTB can be found on the following website: <http://www.gastransboliviano.com/default.aspx>. Information on the Brazilian counterpart may be found at: <http://www.tb.com.br/portaITBGWeb/tbg.portal>.

481 The Department of Energy, linked to the Secretariat for the Environment, Energy, Science and Technology, was included by Decree No. 5979 of December 06, 2006, which approves the Internal Structure of, and the List of Appointed Positions and Positions of Trust for, the Ministry of Foreign Affairs and provides assistance on other matters. Decree No. 5032 of April 05, 2004, which is prior to that of 2006, did not provide for such structure, but only the Department of Environment and Special Themes, related/subordinated to the Sub-secretariat General for Politics.

ordinated among PDVSA (the state oil company of Venezuela), CAF, and *Caixa Econômica Federal* of Brazil.

The Great Southern Gas Pipeline would also be related to another proposal: connecting the pipelines of the MERCOSUR countries, mainly Gasbol.



Map 12 – Great Southern Gas Pipeline



Fonte: Olade, 2006. Elaboração: FIESP.

The Memorandum of Understanding on Gas Interconnection, signed by Argentina, Brazil, and Venezuela on December 9, 2005, provided that the pipeline project would remain open to the inclusion of other countries from MERCOSUR and South America. For negotiations to move ahead, a Ministerial Committee for Coordination and Decision would be created, composed of the Minister of Mines and Energy of Brazil and their counterparts from Argentina and Venezuela. In addition, a Negotiating Committee would be created, which would have the presence of the state oil companies from the three countries: PDVSA (Venezuela), ENARSA, (Argentina), and Petrobras (Brazil).

The document affirms the sovereignty of each country to its own energy resources and does not inhibit the fulfillment of any other agreements relating to the subject that have been signed by the Parties to the Memorandum. It became effective on the date of its signature and was valid for 12 months, with extensions being permitted at the discretion of the parties.

In the first half of 2007, the president of Venezuela in that the period stated that there was no interest in continuing the project, while the president of Petrobras in the period said the pipeline could take 25-30 years to be completed, mitigating the effects of potential benefits accruing from this integration. The project, therefore, did not advance further, and the Memorandum became ineffective.

6.4.5.4. ARGENTINA-CHILE

Argentina and Chile have many pipelines crossing their territory. According to the National Energy Commission (CNE) of Chile, the Bandurria Pipeline – the first in agreement with Argentina – was put into operation in 1996 in order to make possible the transportation of the Argentine gas for the expansion of the methanol plant in Chile. With the same objective, pipelines were built in the Strait of Magellan (Dungeness – DAU No. 2 and Condor-Posesión), which were commissioned in 1999⁴⁸².

GasAndes pipeline operations began in August 1997, while the GasAta-

482 CNE. Hidrocarburos – Gas Natural – Infraestructura Sector. Available at: <http://www.cne.cl/component/content/article/34-hidrocarburos-tipos-energeticos-gas-natural/373-infraestructura-sector>. Last accessed September 27, 2012.

cama and Norandino pipelines were put into operation in 1999; finally, in November 1999, the Pacific pipeline was commissioned.

Table 9 - International Pipelines between Argentina and Chile

Pipeline	Commissioning	Origin	Destination	Diameter (inches)	Capacity (MMm ³ /day)	Total Length (km)
Gasatama-ca	07/1999	Comejo (Argentina)	Mejillones (Chile)	20	8.5	941
Norandino	11/1999	Pichanal (Argentina)	Coloso (Chile)	From 12 to 20, depending on the stretch	From 1.6 to 7.1, depending on the stretch	1.180
GasAndes	08/1997	Mendoza (Argentina)	San Bernardo (Chile)	From 12 to 24, depending on the stretch	9.0	467
Gas Pacífico	11/1999	Loma La Lata (Argentina)	Nacimiento (Chile)	From 10 to 24, depending on the stretch	From 1.0 to 9.7, depending on the stretch	638
Bandurria	1996	Tierra del Fuego (Argentina)	Planta Cullen (Chile)	14	2.0	83
Dungeness-DAU no 21	1999	Dungeness (Argentina)	Daniel (Chile)	From 08 to 10, depending on the stretch	2.8	33
Condor-Posesión	1999	El Condor (Chile)	Planta Posesión (Argentina)	12	2.0	09

Source: National Energy Commission (CNE).

In addition to a number of communications, memoranda, and diplomatic notes between the Ministries of Mines and Energy (or equivalent) in Chile and Argentina, the Economic Complementation Agreement No. 16 (ACE16), registered under the ALADI and signed on August 2, 1991, was the legal basis for the signing of several protocols related to the integration by gas and oil pipelines between the two countries. Accordingly, the regulation between Argentina and Chile on oil and gas can be summarized in the table below:

**Table 10 - The Gas Regulation between Argentina and Chile
Additional Protocols (APs) to ACE No. 16 (1991)**

No.	Subject	Date Signed	In Effect	Main Measures
05	Gas Interconnection and Natural Gas Supply	01/12/1993	YES	Regime of free access, national legislation applied to each stretch. Private contract establishes purchase and sale conditions as well as transport obligations.
08	Trade and Transport of Liquid Hydrocarbons (Neuquén-Chile Pipeline)	09/03/1993	NO (replaced by Additional Protocol No. 24)	Principle of non-discrimination in relation to third parties' exports or imports; ensures freedom of transit and prevents restrictions on the export of liquid hydrocarbons from Chilean ports transported by the pipeline; maximum volume of 15,000 m ³ /day for export, import, and transit of liquid hydrocarbons between Argentina and Chile through the pipeline.
15	Gas Interconnection and Natural Gas Supply	07/07/1995	YES	It is incumbent on the firms that conducted the purchase and sale and transportation of gas to ensure the ability to transport the product between the two countries. Explicit reference to the principle of non-discrimination, and to the dispute settlement mechanism based on communication between the technical bodies of the Parties.
24	Trade and Transport of Liquid Hydrocarbons	12/06/1999	YES	Prohibition of new restrictions on imports, exports, or transit of hydrocarbons between Chile and Argentina. In an emergency in the gas supply, the principle of non-discrimination between Chilean and Argentinean consumers will be applied, subject to their proportional consumption. As to everything else, it follows rules previously established between the Parties.
26	Information on Oil and Gas Markets	10/29/2002	YES	Establishes an information system for the oil and gas markets, and on the internal decisions made by a Party in relation to energy trade.

Source: ALADI.

In short, the regulation between Argentina and Chile for the overall operation of gas pipelines, especially with regard to the supply and the existing interconnection, provides for a system of free access and free transit establishing that no Party shall adopt restrictive measures on the transit of gas, even if the purchase is destined for third countries. Furthermore, the definition of the terms of the purchase and sale of the products, like the price, transportation contract, and transport capacity of the product between the two countries, is up to the companies that will deal directly with the issue, through international contracts in the realm of private trade.

Also remarkable is the concern for the principle of non-discrimination, explicitly stated in their protocols after 1995. The dispute settlement mechanism operates through communications between the relevant technical bodies of the Parties, and, as a last resort, Additional Protocol No. 2⁴⁸³ to ACE No. 16 may be applied, which establishes an arbitration mechanism.

As with all agreements of this kind, it is established that the regulation applied will correspond to the territory in which the activity is being performed. The Parties undertake only to ensure the structure to effect the transportation of the product, to act in accordance with the commercial rules of the market, and to apply the principle of non-discrimination.

In case of *force majeure* or unforeseeable circumstances that compromise the supply of gas, the principle of non-discrimination will also apply in relation to the affected consumers, regardless of their geographical location. In such cases, each group of consumers will be supplied based on their proportional consumption under normal conditions.

The tariff treatment for imports of liquid hydrocarbons will be governed by ACE No. 35 (MERCOSUR-Chile). Additional Protocol No. 26 establishes an information system on the oil and gas markets and on internal decisions made by the Parties, individually, in relation to energy trade.

⁴⁸³ Additional Protocol No. 2 of June 17, 1992 establishes a Dispute Settlement Regime to resolve any conflict between Chile and Argentina under ACE No. 16 and its additional protocols.

6.4.5.5. OPPEGASUR

On March 9, 2007, the governments of Venezuela, Argentina, and Bolivia signed the Energy Treaty for the Establishment of an Organization of South American Gas Producing and Exporting Countries (Oppegasur)⁴⁸⁴.

Article I of the Treaty establishes the main objectives of Oppegasur: (i) ensuring a fair and reasonable value for the natural resources of the peoples involved; (ii) ensuring the achievement of policies that ensure the development of infrastructure for energy integration in the region, particularly with regard to gas integration and gas supply for the internal market in each country; (iii) contributing to the energy mix of the Member States; (iv) promoting the industrial processing of gas and the development of joint investments in various areas of the energy sector, focusing on alternative energy; and (v) carrying out joint investments among the Parties to allow for the execution of exploitation and extraction activities in the gas fields of the region⁴⁸⁵.

The undertaking is contained within the proposal for Petrosur and intends to include the participation of other countries in South America (Article V), always assuring the respect of the principle of sovereignty over natural resources (Article XI).

It is its intention to develop infrastructure, the petrochemical industry, and also the generation of electricity derived from natural gas. In this sense, Article XIII presents the projects that will be developed on a priority basis by the organization: (i) development of the physical connectivity of the region, based on supporting the construction of regional pipelines; (ii) construction of a natural gas liquids⁴⁸⁶ (NGLs) recovery plant; (iii) development of exploitation and production works in the gas fields of the region; (iv) development of Liquefied Natural Gas (LNG) projects as well as gasification terminals in the region; (v) development of compressed natural gas (CNG) infrastructure projects in the respective countries; (vi)

484 The text of the agreement was published in the Official Gazette of the Bolivarian Republic of Venezuela No. 38,662 of April 12, 2007.

485 The Addendum was published in the Official Gazette of the Bolivarian Republic of Venezuela No. 38,698, of June 5, 2007, pp. 354, 820.

486 Natural gas liquids are wet gas byproducts, such as naphtha, gasoline, and LPG.

development of petrochemical projects based on natural gas; (vii) development of projects to generate electricity from natural gas; and (viii) development of projects involving LNG trade⁴⁸⁷.

The dispute settlement system is identical to those contained in other agreements proposed by Venezuela, in particular for “petros,” (oil companies); however, it is legally fragile because it suggests resolution be sought through friendly and diplomatic mechanisms among the Parties (Article VIII). The Treaty can be renewed every 12 months, provided there are written communications among the parties.

6.4.5.6. OTHER GAS PIPELINES IN SOUTH AMERICA

South America, as illustrated by Map 10, has an extensive network of gas pipelines crossing more than one country. Clearly each pipeline meets the specific economic needs of one or more countries in the region. However, there are pipelines without regulatory features relevant to the industry, or whose works generate a relatively low impact on the continent’s daily life, this being the reason that they will be only briefly mentioned.

These initiatives include:

- i) Argentina and Uruguay: Partial Scope Agreement on Trade Promotion for Gas Supplies, signed on January 31, 1992;
- ii) Argentina and Bolivia: Partial Scope Agreement on Trade Promotion concerning Energy Integration, signed on February 16, 1998, and also its Additional Protocol for the Supply of Natural Gas from Bolivia to the Northeastern Argentina Gas Pipeline (GNEA),⁴⁸⁸ signed on October 14, 2004;
- iii) Bolivia and Paraguay: Partial Scope Agreement on Natural Gas Supplies, signed on March 15, 1994.

487 See Official Gazette of the Bolivarian Republic of Venezuela No. 38,698, of June 5, 2008.

488 More information on the pipeline can be found at: Bolivia comenzó a construir ducto para vender gas a Argentina. AFP: February 25, 2011. Available at: http://www.iirsa.org/BancoConocimiento/N/noticia_110225_construccion_gasoducto_bolivia/noticia_110225_construccion_gasoducto_bolivia.asp?CodIdioma=POR&CodSeccion=19. Last accessed 10/03/2012.

These initiatives led to some pipeline projects, for example the GNEA and the Juana Azurduy Integration Pipeline (GIJA), both between Argentina and Bolivia, and the Paraná-Uruguaiana pipeline between Argentina and Uruguay. Other initiatives showed no striking differences, such as the Cruz del Sur pipeline between Argentina and Brazil, or have been closed for more than ten years, as is the case of *Yacimientos-Bolivian Gulf* (Yabog) between Bolivia and Argentina, whose supply lasted from 1972 until 1999⁴⁸⁹.

As previously mentioned, regulation at international level, from the perspective of agreements between States or their subsidiary bodies, is not very developed. Although some principles and commitments are present, obligations to buy and sell, price, mode of transport, among others, are governed by contract law and not by the international law, since it is up to the operator of the pipeline on both sides of the border to determine the rules by which the trade will be made, based on the agreements and general memoranda signed between the countries involved, in order to ensure access to the pipeline.

6.4.6. ELECTRICAL INTEGRATION

During the 2000s, with the advent of various regional initiatives, especially of UNASUR, the South American countries began to seek the integration of their electricity transmission lines. Currently, there are some ongoing projects, such as the project agreement between Brazil and Uruguay for the latter to be incorporated into Brazil's National Integrated System (NIS), and the negotiations between Brazil and Peru for the construction of five dams in the Peruvian Amazon region.

The Brazilian performance in the energy sector has also advanced with the celebration of several framework agreements and memoranda of un-

489 MARES, D.R. Natural Gas Pipelines in the Southern Cone, # 29. In: Geopolitics of Gas - Working Paper Series. CESP; Baker Institute for Public Policy Energy Forum, May 26, 2004, pp. 4-6.

derstanding with other countries such as Nigeria⁴⁹⁰, China⁴⁹¹, Kenya⁴⁹², Liberia⁴⁹³, Venezuela⁴⁹⁴, Colombia⁴⁹⁵, and Argentina⁴⁹⁶.

Memoranda and framework agreements usually establish working groups on energy, organized under the auspices of the Ministry of Mines and Energy of Brazil (MME). Disputes are usually settled through consultation and agreement between the Parties. In such cases, Petrobras and Eletrobras alike are usually invited to compose the working groups.

Next, the main South American initiatives for electrical integration will be analyzed.

6.4.6.1. BRAZIL-URUGUAY

In 2006, the Ministry of Mines and Energy of Brazil and its counterpart in Uruguay initiated dialogues with the aim of drawing up a project for integration in the field of electricity. The proposal is designed to intensify energy integration between the two countries through the construction of transmission lines that will carry up to 500 MW from Brazil to Uruguay.

The route of the transmission lines would be as follows:

490 Memorandum of Understanding on Cooperation in the Field of Energy between the Federal Republic of Brazil and the Federal Republic of Nigeria, July 29, 2009.

491 Protocol between the Government of the Federative Republic of Brazil and the Government of the People's Republic of China on Cooperation in Energy and Mining, of February 19, 2009.

492 Agreement between the Government of the Federative Republic of Brazil and the Government of the Republic of Kenya on Cooperation in the Energy Sector of July 6, 2010.

493 Memorandum of Understanding between the Government of the Federative Republic of Brazil and the Government of the Republic of Liberia on Cooperation in Energy and Mines of April 7, 2010.

494 Memorandum of Understanding between the Government of the Federative Republic of Brazil and the Government of the Bolivarian Republic of Venezuela on Energy, April 28, 2010. There is also the Venezuela-Brazil Strategic Partnership, established through Joint Communiqué - Brazil-Venezuela Strategic Alliance - Declaration by the Governments of Brazil and Venezuela and Implementation of the Strategic Alliance, with an action plan, signed on February 13 and 14, 2005.

495 Memorandum of Understanding between the Government of the Republic of Brazil and the Republic of Colombia on Cooperation in Bioenergy, Including Biofuels, September 01, 2010.

496 Memorandum of Understanding between the Government of the Federative Republic of Brazil and the Government of the Argentine Republic on Cooperation in Bioenergy, Including Biofuels, of January 31, 2011, and Memorandum of Understanding between the Ministry of Mines and Energy of the Federative Republic of Brazil and the Ministry of Federal Planning, Public Investment and Services of Argentina on Exchange of Electricity, of January 31, 2011.

Map 13- Brazil-Uruguay Electrical Interconnection



Source: UTE, 2009. Eletrobrás, 2011. Elaborated by FIESP.

Brazil, through the converter stations of Rio Grande do Sul, would make the expansion of the President Médici Substation (SS); the construction linking this station to the Candiota SS; a new Candiota SS; and another 60 km of transmission lines extending from the Candiota SS to the border with Uruguay.

On the Uruguayan side, over 65 km of transmission lines would be installed, starting from the Brazilian border to the Melo Converter SS. Following this is the construction of a 283 KM transmission line between the Melo Converter SS and the San Carlos SS, along with the expansion of the latter.

In addition to the memorandum of understanding of 2006, the Ministry of Mines and Energy of Brazil (MME) also signed a Memorandum on December 21, 2011 authorizing sending up to 72 MW to Uruguay. This amount was increased to 500 MW on February 15, 2012, and in May 31, 2012 the MME authorized sending this same amount from three separate converter stations: Rivera (Uruguay), Garabi (Brazil), and Uruguaiana (Brazil). MME Ordinance No. 105 of March 08, 2012 authorized the appointee of UTE (Eletrobras' counterpart in Uruguay) to operate within the systems approved by the memoranda of understanding that were signed for this purpose.

In its 2010 report, Eletrobras underscored that ANEEL Authorizing Resolution No. 2,280 of February 23, 2010 is the first one designating an undertaking intended to be fully implemented by the Brazilian state-owned company⁴⁹⁷.

The legal framework established to date is a commercial contract between Eletrobras and UTE. Still, no final bilateral treaty has been signed between Brazil and Uruguay concerning the rules that will be applied to the inclusion of Uruguay in the SIN.

6.4.6.2. BRAZIL-PERU

The Agreement between Brazil and Peru on electricity supplies has the goal of establishing a legal framework to promote and facilitate the development of the necessary infrastructure, in Peruvian territory, for pro-

497 Eletrobras. Relatório de Sustentabilidade. Rio de Janeiro: Eletrobras, 2010, p. 90.

ducing electricity for the domestic market of the Andean country and for exporting surplus power and associated electricity to Brazil in order to make possible the interconnection of their national systems (Article 2).

The agreement establishes a legal framework authorizing the financing for the construction of five hydroelectric dams in Peru that can potentially export the surplus energy produced to Brazil. The negotiation process lasted about five years, and the main movements are listed in the table below:

Table 11 - Preparatory Phases of the Brazil-Peru Agreement

Date	Document	Main Measure
11/09/2006	Memorandum of Understanding	Establishment of a Permanent Joint Commission on Energy, Geology and Mining
08/28/2007	Joint Commission Meeting	Establishment of the Ad Hoc Working Group on Energy Integration for preparing a bilateral agreement
05/17/2008	Energy Integration Agreement	Studies and project evaluation.
04/28/2009	Memorandum of Understanding	Preparation of studies for electrical interconnection between the two countries for exporting electricity from Peru to Brazil.
12/11/2009	Joint Communiqué of the Presidents of Brazil and Peru	Establishment of an Agreement for the electrical areas of each country to present a draft agreement for the development of hydroelectric power generation facilities.
02/17/2010	Diplomatic Note No. 5-2M/055 From Peru to Brazil	First proposal for final agreement (there were two more).
06/16/2010	Agreement for Supply of Electricity to Peru and Export of Surplus to Brazil	Signing of the final agreement.

The Agreement provides that the cumulative capacity of all hydropower plants covered should not exceed 6,000 MW, while accepting a tolerance of 20% (Article 3 (a)). In addition, the power and the electricity of each hydroelectric plant will be destined in the following order: (i) the regulated market of Peru; (ii) the Peruvian free market; and (iii) the markets of Brazil (Article 3 (b)).

The surplus power and electricity of the Parties can be traded, and the Parties should establish the procedures for such trade (Article 6). Although the Agreement seeks to define the conditions for exporting energy, there is not, in the text itself, a quantification of said surplus⁴⁹⁸. It is the responsibility of Peru to ensure, permanently, a reserve margin of no less than 30%, so that it is possible to meet, in a safe manner, both the demand of its domestic market and export commitments (Article 8).

In emergency situations that may compromise the energy security of a Party, be it due to a hydrological issue, or to difficulties in supplying electricity to the markets involved, the Parties are allowed to change the contracted amounts of electricity exports, provided that the measure is adopted by mutual consent and on a temporary basis (Article 7.1). It is up to the Ministries of Mines and Energy of Brazil and Peru to determine together how these emergency conditions will be defined (Article 7.2).

The regime established by the Agreement will last fifty years (Article 12). The Agreement may be terminated by either Party via diplomatic channels, but only fifteen years after its entry into force (Article 14.1).

The Agreement further provides that all energy exploitation activities be carried out “in the context of sustainable development⁴⁹⁹ and in accordance with the environmental standards required by the respective legislation the Parties and international agreements to which they are parties”

498 “The Peruvian market has priority over the Brazilian market. Therefore, it is important to consider what is meant by surplus. For example, if construction works are carried out to meet a Peruvian demand of 30% and 70% is available for export, will all of the 70% be considered surplus? This shows the importance of the definition of surplus. In view of the absence of studies that specify how much will be needed for the market of Peru, it is not clear how far Peru will go and how many reservations Peru will need.” See: LA ROSA, V.C. Acuerdo para el suministro de electricidad al Perú y exportación de excedentes al Brazil: Buscando la gobernanza energética en el Perú. Programa de Energía Sostenible, Lima (Peru): DAR - Derecho Ambiente y Recursos Naturales, June 2011, p. 44.

499 In 2012, the Central Ashaninka del Rio Ene (CARE), an organization that represents the interests of indigenous peoples in Peru, filed a lawsuit in Peru’s Superior Court of Justice questioning the validity of the agreement by not respecting the rights of indigenous peoples. In addition to this question, there are doubts about the sustainability of the projects, since they could, in theory, affect the development of the Peruvian Amazon, and result in conflicts with previous government projects. See: International Rivers. Peru-Brazil Energy Agreement Challenged in Peru Court. February 19, 2012. Available at: <http://www.internationalrivers.org/resources/peru-brazil-energy-agreement-challenged-in-peru-court-3688>. Last accessed July 17, 2012.

(concurrent application of Articles 3(h) and 9).

As is evident, this is an agreement oriented toward the production of electricity in the territory of a country for the supply of another one. Also contained in the Brazil-Peru Agreement is a dispute settlement system that prioritizes diplomatic solutions.

6.4.6.3. OTHER INITIATIVES

Below is a non-exhaustive list of other initiatives that demonstrate the variety of cross-border interconnections between South American countries:

- i) Paraguay and Uruguay: Partial Scope Agreement on Trade Promotion in the Area of Energy Cooperation, signed on April 12, 1996;
- ii) Argentina and Peru: Partial Scope Agreement on Energy Cooperation, signed on August 12, 1998 (effective as of February 21, 2000);
- iii) Argentina and Chile: Additional Protocol No. 21 to ACE No. 16, signed on December 29, 1997, concerning electrical interconnections and electricity supply between the parties (in effect);
- iv) Argentina and Chile: Additional Protocol No. 25 to ACE No. 16, signed on May 19, 2000, about the possibility of developing a national system for collection of information on the electricity market and supervision of its agents, as provided in AP No. 21 (in effect);
- v) Brazil and Paraguay: Four transmission lines that connect the Itaipu plant and the Right Bank substation in Paraguay to the Foz do Iguaçu substation in Brazil⁵⁰⁰;
- vi) Brazil and Argentina: Uruguiana Frequency Converter Station, in Brazil, with a capacity of 50 MW, and the transmission line between the Uruguiana substation and the Paso los Libres substation in Argentina⁵⁰¹; Brazil and Venezuela: 230 kv transmission line, with

a capacity of 200 MW, connecting Boa Vista (RR) to Santa Elena (Venezuela)⁵⁰².

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500 ELETROBRAS. Relatório de Sustentabilidade das Empresas Eletrobrás. Rio de Janeiro: Eletrobrás, 2011, p. 96.

501 Ibid. p. 96.

502 Ibid.

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Annex

III

Agreements, Memoranda, Decisions, Protocols, Recommendations, etc.

Agreement between the Government of the Federative Republic of Brazil and the Government of the Republic of Kenya on Cooperation in the Energy Sector of July 6, 2010.

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Memorandum of Understanding between the Government of the Federative Republic of Brazil and the Government of the Argentine Republic on Cooperation in Bioenergy, Including Biofuels, of January 31, 2011, and Memorandum of Understanding between the Ministry of Mines and Energy of the Federative Republic of Brazil and the Ministry of Federal Planning, Public Investment and Services of Argentina on Exchange of Electricity, of January 31, 2011.
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SECTION III

CURRENT REGULATORY FRAMEWORK OF THE ENERGY SECTOR

The energy policy adopted by countries comprises another important aspect, shaped by the international context. Several economic activities are linked to the import or export of goods, services, and investments in the energy sector, compelling countries to depend on the interplay with their main trade partners in the international energy market.

As analyzed in this study, the diversity of international regulation systems, which include rules negotiated mainly at the multilateral and regional levels, reveals a significant degree of complexity that must be examined for an understanding of the vastness of the sector.

In the current global context, no country can be considered self-sufficient in terms of energy. Among the main products of foreign trade bases are energy goods such as oil, coal, natural gas and electric power, which are indispensable for the economic development of countries. According to a recent WTO report, only considering fuels, these accounted for 18% of goods traded among countries. By also including minerals, this figure reaches 22.5%. In this sense, understanding and mastering international trade rules governing the matter are indispensable for the public and private agents involved in the articulating the public policies of each State.

The current challenges related to the sustainable development of most

States necessarily involve the safety of a continuous supply of energy that promotes economic growth, ensuring the indispensable security of energy. For this to happen, it is estimated that countries will rely increasingly on importing other sources and diversifying their energy production chains. However, the promotion of energy integration is hindered by the absence of a comprehensive regulatory framework that promotes transparency and predictability of rules, which would prevent conflicts from resulting in limitations or disruptions of the supply or transport of energy, in addition to serious diplomatic issues.

In addition, investors in the sector do not have a clear regulatory framework and protection mechanisms that allow a technical resolution of disputes arising from possible government measures.

International trade has undergone intense changes, being increasingly guided by patterns of consumption that are determined by consumer preferences in developed and developing countries. These consumers have begun to appreciate issues related to the protection of the environment and concerns over the effects of climate change. These principles are now reflected in their consumption choices, and standards of sustainability begin to be established in order to respond to these desires. These paradigms, however, not only are not limited to the impacts caused by the consumption of the product itself, but also take into account their respective production processes, and perhaps even taking into consideration the choice of energy sources. In this context, several standards of sustainability have been adopted in international forums. However, these discussions often suffer from the strong influence of non-governmental organizations and multinational corporations, and there is not always an active role played by States in the formulation of these patterns, which may ultimately harm the interests of the States in future energy integration projects.

Given the many conflicts related to the energy sector that were triggered in recent years, we can see the difficulties brought about by the absence of a broader agreement that complements existing regional projects and provides the necessary assurances for national supply, without risks stemming from the political instability of neighboring countries or policies that nationalize foreign investments.

As presented in this paper, the multilateral regulation of trade in energy is insufficient to address various problems that are emerging or that may arise in the context of a seemingly inevitable energy integration.

In the regional ambit, there is a proliferation of integration agreements, which take on important issues concerning the security of supply and transit of energy goods. This regulation, however, proves to be fragmented, and still resents the need for greater coordination of the different regulatory frameworks.

Strengthening the several regulatory systems already in place at the multilateral and regional levels of the energy sector has proven to be crucial for overcoming the difficulties that are currently being experienced. Therefore, a greater presence of countries at the several negotiating tables, not only of representatives of governments, but also of the main sectors involved, is advisable.

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Fuels and Electricity

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