

# INTEGRATION OF DISTRIBUTED GENERATION

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# **ELECTRICITY SUPPLY MODEL IS CHANGING**



- Customers installing Distributed Generation
- Microgrids are seen as antidotes to reliability issues



# **NEW SCENARIO**

The grid of the future includes:

- 1) Renewables in the form of Distributed generation
- 2) Energy Storage to act as the balancing platform and the grid stiffening
- 3) Intelligent Switching and protection to dynamically reconfigure the grid to the renewables that are quickly entering and exiting the grid.



# **ENERGY STORAGE – MICROGRIDS**

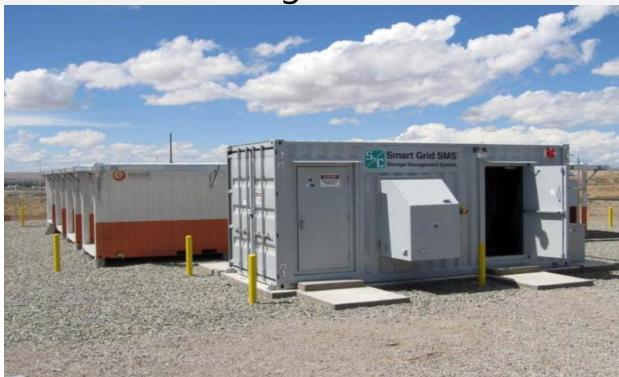
- Microgrids based on DG require:
  - Fast, intelligent switching
  - Energy storage providing:
    - Voltage source for DG synchronization
    - Smoothing intermittent renewables
    - Time shifting renewable energy



# **S&C ELECTRIC COMPANY**

# **Solution Supplier**

- For Network Distributed Intelligence
- For Storage and Distributed Storage
- For MicroGrids
- For EPC





### THE VALUE OF S&C'S SOLUTIONS

- Specialists in renewable energy interconnection
- Expertise coordinating projects with utilities
- Power System Studies and Analysis
- Innovative products that can be delivered on an engineering, procurement and construction (EPC) basis



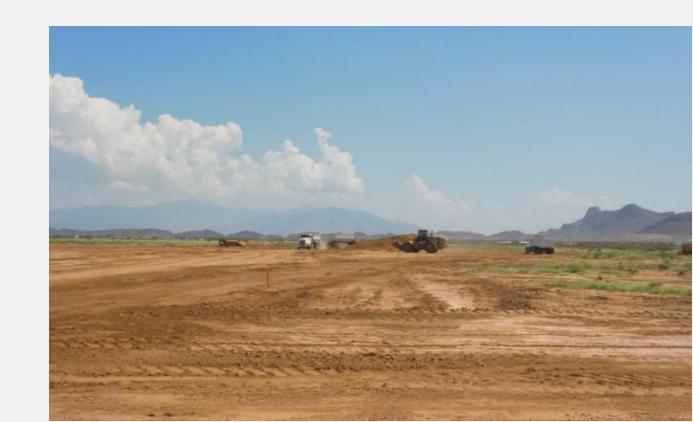




# **SOLAR EPC**



Situation where Customer needs to accelerate times



# SOLAR EPC



OUR SOLUTIO' 58. S&C desi Suit the proj Seir System VI™ Switc Switc Switc Switc Switc Switc Switc Switch S





# **SELLING MORE ENERGY AND REDUCING OPEX**

### **EXECUTIVE SUMMARY OF RESULTS**

Vista® CAPEX's Increment: 603,710R\$

### Savings considering entire OPEX:

163,207R<sup>©</sup> **OPEX Savings:** 

2.92 **OPEX** (Total Savings):

**PV of OPEX Savings:** 

PPA Duration

### ang O&M only:

**30,300**R\$ /Year

notal Savings): 545,406R\$ /PPA Duration

PV of O&M Savings: 233,009R\$ /PPA Duration

#### **S&C'S VISTA® SCENARIO**

Unit Price: 75,000 R\$ 3.00 hours Install & Assembly:

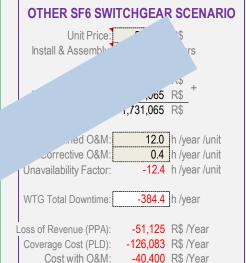
Equipment: 2,325,000 R\$ Install & Assembly: **CAPEX**: 2.334.774 R\$

Planned O&M: 0.1 Corrective O&M: Unavailability Factor:

WTG Total Down

.521 R\$ /Year -10,100 R\$ /Year

-54.402 R\$ /Year



OPEX:

-217.609 R\$ /Year





## **THANKS**

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