Bucharest Microgrid Symposium
Microgrids, Distributed Generation and BESS
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Grid transformation megatrends

An ecosystem of distributed energy capabilities, digital solutions and services to maximize customer value and retention

**Decentralization**
Distribution networks will see exciting interactions between utilities, consumers, and new market players

**Electrification**
Increasing penetration of renewable energy sources will require a more flexible power system

**Digitalization**
Digital technologies ensure reliable network operation and maximum value to customers
Energy and grid transformation
Evolving ecosystem due to growth in distributed capabilities

- Growth in DERs
- Bi-directional power and information flows
- Grid operators need to respond to a complex & distributed network
- Consumers become “prosumers”, want maximum value from their assets
- Utilities need new revenue opportunities

Distributed energy resources (DER)
Energy and grid transformation

New opportunities for digital solutions and services at the edge of the grid

New digital solutions & services required to:

- Optimize system performance
- Ensure grid reliability
- Create business opportunities for energy providers
- Maximize customer value

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Managing distributed energy resources

Renewables, BESS, loads, automation & optimization as key elements of microgrids and the grid transformation

Customer challenge:
- Operate distributed energy assets (generation, storage and loads) in an interconnected manner to provide reliable power
- Manage the increasing cost of integrating renewables into the grid system with flexibility options

Technology developments:
- Easy configuration, engineering and commissioning: tools & test setup
- Automation solution that allows for easy interoperability (protocols, engineering): controller & ABB Ability. Optimization and microgrids as part of an active distribution grid
- Seamless integration of various aggregation concepts (DERMS, VPPs): interfaces
- Lowest cost renewables and storage: low cost BESS, thermal storage, CHP, power-to-X
ABB in Microgrids and BESS

Microgrid Plus control system

Microgrid Plus control distributed system for coordination of generation and loads, integration of renewables and seamless islanding capabilities

- Solar PV power plant
- Wind power plant
- Conventional power
- Grid connection
- Modular scalable energy storage and grid stabilization
- Distributed control system
- Remote asset management and data analytics
- Advanced power distribution and protection
- Residential loads
- Commercial loads
- Industrial loads

PowerStore™ battery energy storage solution

A reliable, modular, containerized “plug and play” solution with a Virtual generator operating mode, handling up to 100% of renewable energy