



ENERGY STORAGE:

Deal Structures, Financing Issues and
Revenue Streams

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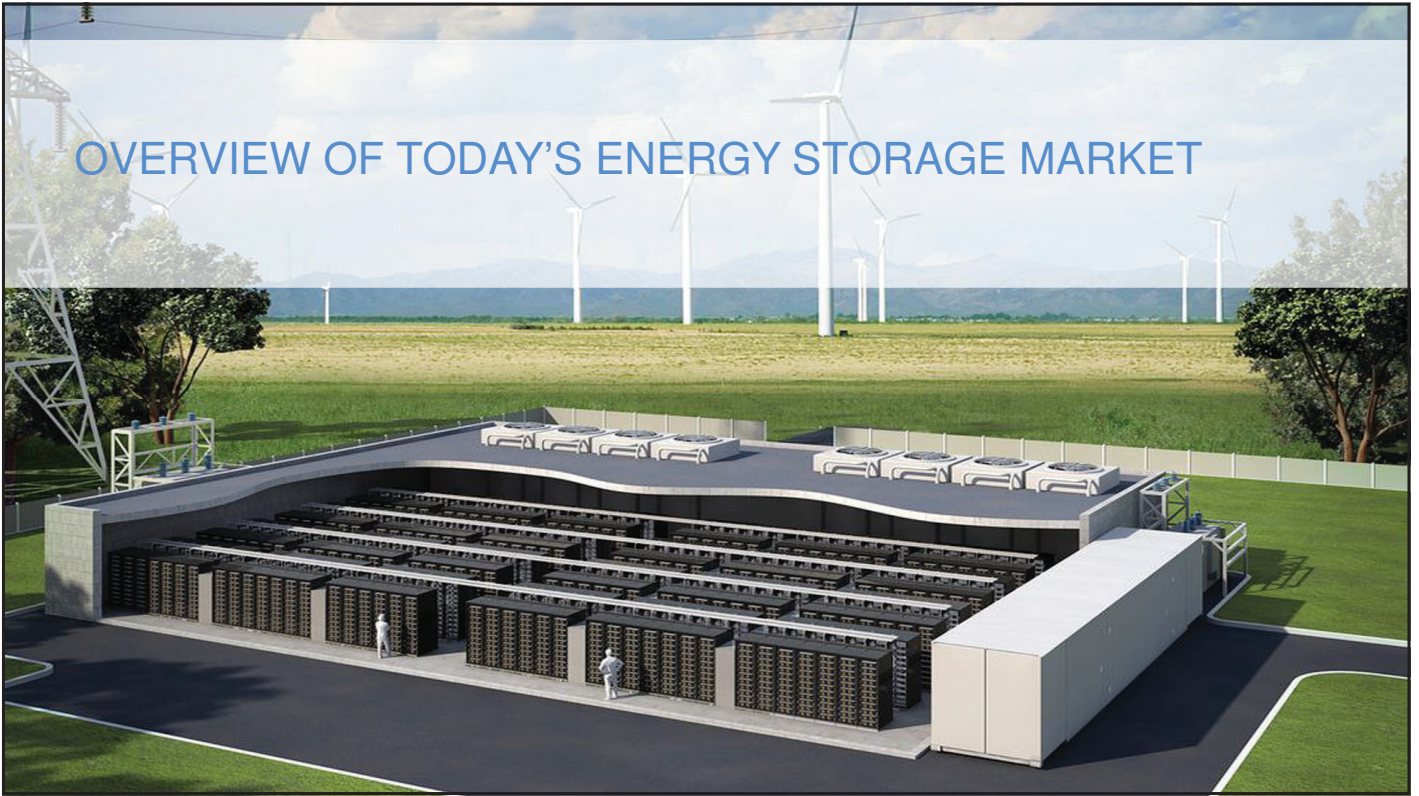
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OVERVIEW OF TODAY'S ENERGY STORAGE MARKET



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ENERGY STORAGE SERVICES

Bulk energy services	Ancillary services	Transmission infrastructure services	Distribution infrastructure services	Customer energy management services	Off-grid	Transport sector
Electric energy time shift (arbitrage)	Regulation	Transmission upgrade deferral	Distribution upgrade deferral	Power quality	Solar home systems	Electric 2/3 wheelers, buses, cars and commercial vehicles
Electric supply capacity	Spinning, non-spinning and supplemental reserves	Transmission congestion relief	Voltage support	Power reliability	Mini-grids: System stability services	
	Voltage support			Retail electric energy time shift	Mini-grids: Facilitating high share of VRE	
	Black start			Demand charge management		
				Increased self-consumption of solar PV		

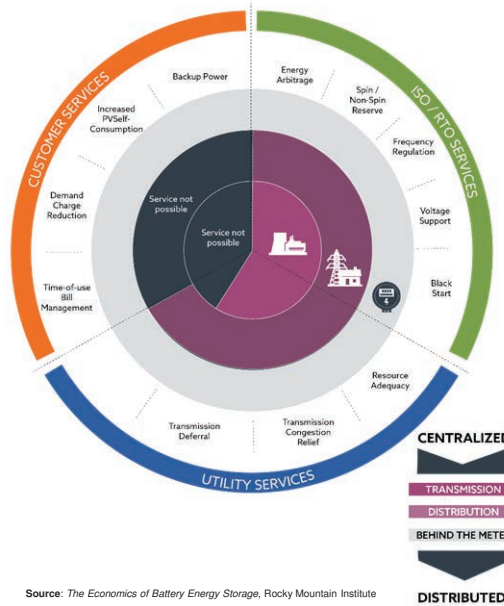
Boxes in red: Energy storage services directly supporting the integration of variable renewable energy

Source: IRENA (2017), Electricity Storage and Renewables: Costs and Markets to 2030, International Renewable Energy Agency, Abu Dhabi.

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ENERGY STORAGE SERVICES

BATTERIES CAN PROVIDE UP TO 13 SERVICES TO THREE STAKEHOLDER GROUPS



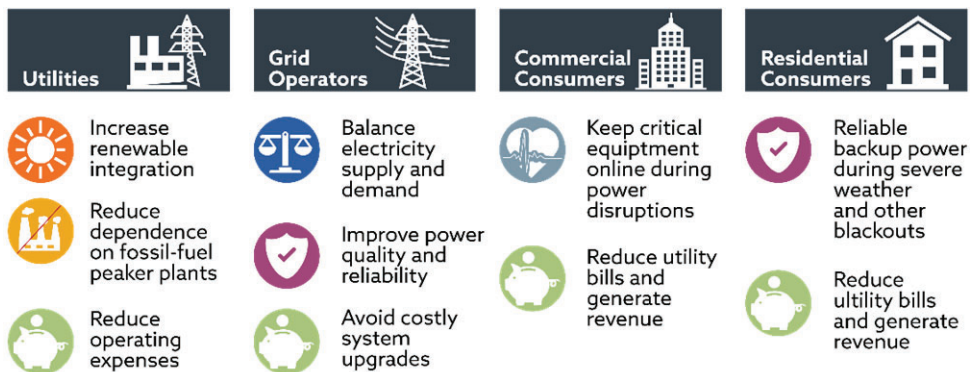
Source: *The Economics of Battery Energy Storage*, Rocky Mountain Institute

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ENERGY STORAGE: VALUE ADDED

The Value of Storage

Energy storage technologies have the capacity to benefit each segment of the power system.



Source: *Energy Storage and Electricity Markets*, Resilient Power, A Project of CleanEnergyGroup

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