Energy Storage: Midcontinent Independent System Operator (MISO) Perspective

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Market platform for non-discriminatory participation

MISO market facilitates non-discriminatory market participation regardless of resource type, business model, sector or location.

In addition to traditional generation resources, MISO tariff allows new resource types to provide energy and ancillary service:

- Demand Response Resource Type I
- Demand Response Resource Type II
- Stored Energy Resource
- External Asynchronous Resource
- Dispatchable intermittent resource
Projects and studies related to storage

**Introduced Stored Energy Resource (SER): 2010**

- Allow short term storage energy resources to provide regulating reserve

**FERC Order 755 – performance based two-part regulating reserve compensation: 2012**

- Fair compensation on resources providing faster and better AGC responses

**AGC enhancement on fast ramping resources – create a fast AGC signal to better utilize fast ramping resources:**

- Being prioritized under market enhancement roadmap program
- MISO internal study shows that attracting additional 20% regulating resources can result in $10 million annual production cost savings
- Transmission Planning studies show potential for grid scale storage
Market clearing prices are not attractive enough

• Storage resources in MISO market
  – Pumped storage
  – 1MW/7MWh testing battery participated as SER
  – 20MW/5MWh grid scale battery: expected in production 2016

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