

Diversity in DR Programs

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Sources of Diversity

- Organization of Markets
 - ISOs,
 - Vertically Integrated IOUs,
 - Coops & Munis,
 - Government Agencies

Size of RTOs

REGION	Peak Demand In 2006 (MW)
ISO-NE	27,395
NYISO	32,654
PJM	139,746
ERCOT	62,396
MISO	132,658
SPP	42,227
California	46,561
Total RTOs	483,637
Total Other	383,191

Other Major Markets

IOU/Muni/Government	Peak Demand In 2006 (MW)
Florida	45,751
SERC - Entergy	27,620
SERC - Southern	47,535
SERC - TVA	34,719
Ontario	27,005
Quebec	21,379
WECC - North	32,453
WECC - South	30,111

Structure of Markets - Wholesale

- Capacity Markets
 - ISO-NE and the FCM
 - PJM and the RPM
 - NYISO and ICAP
 - MISO and RAA
 - California, Ontario
 - Energy only, Texas, Alberta, SPP
 - IOUs and margin requirements

Structure of Markets - Wholesale

- Ancillary Services
 - Regulation, PJM, ERCOT
 - 10 minute Spinning Reserve, PJM, ISO-NE
 - Synchronous Reserves, ERCOT (LaaRs)
 - 10 minute non-Spin
 - 30 minute non-Spin
- EILS, SCR, other emergency programs
- Price Bidding Programs

Structure of Markets - Retail

- Load Management
 - ODR in New England FCM
 - Ontario Programs
 - State EE Programs
 - Integrated Resource Plan Programs
- Interruptible Power Rates
- Critical Peak Pricing, etc.

Customers and Technologies

- Large Industrial
 - Energy Intensive, sophisticated controls
 - Manufacturing, wide spectrum of capabilities, customized solutions
 - Specialized, air compressors, variable speed motors, etc
 - Batch v Process (Steel, Aluminum, etc)

Customers and Technologies

- Office Buildings and Retail
 - HVAC, refrigeration/freezers
 - Lighting controls
 - Sophisticated control system can allow calibrated response
- Small Retail and Residential
 - DLC allows control and aggregation
- Smart Grid/AMI

NERC – DR and Reliability

- When does DR count as a reliability resource?

North American Energy Standards Board

- Development of Measurement and Validation Standards
- Includes both Wholesale Products and Retail products
- Consensus is the goal
- Attempting to find common ground, overcome terminology and focus on value.
- Wholesale matrix is the template for Retail M&V efforts, convergence where possible