

FERC Staff Report on Demand Response and Advanced Metering



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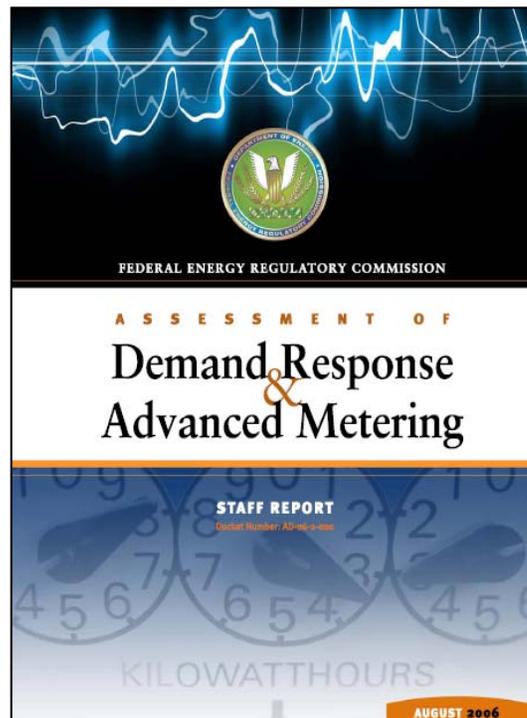
Miami Beach, FL

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*The author's views do not necessarily represent the views of the
Federal Energy Regulatory Commission*



FERC Demand Response Report



- FERC staff recently completed a report required by the Energy Policy Act of 2005
- Report assesses demand response and advanced metering

<http://www.ferc.gov/legal/staff-reports/demand-response.pdf>



Congressional Directive

- Section 1252(e)(3) of EPAct 2005 directs FERC, by appropriate region, to identify and review:
 - Advanced metering penetration
 - Demand response programs
 - Resource contribution from programs
 - Role of demand response in regional and transmission planning
 - Demand response regulatory barriers



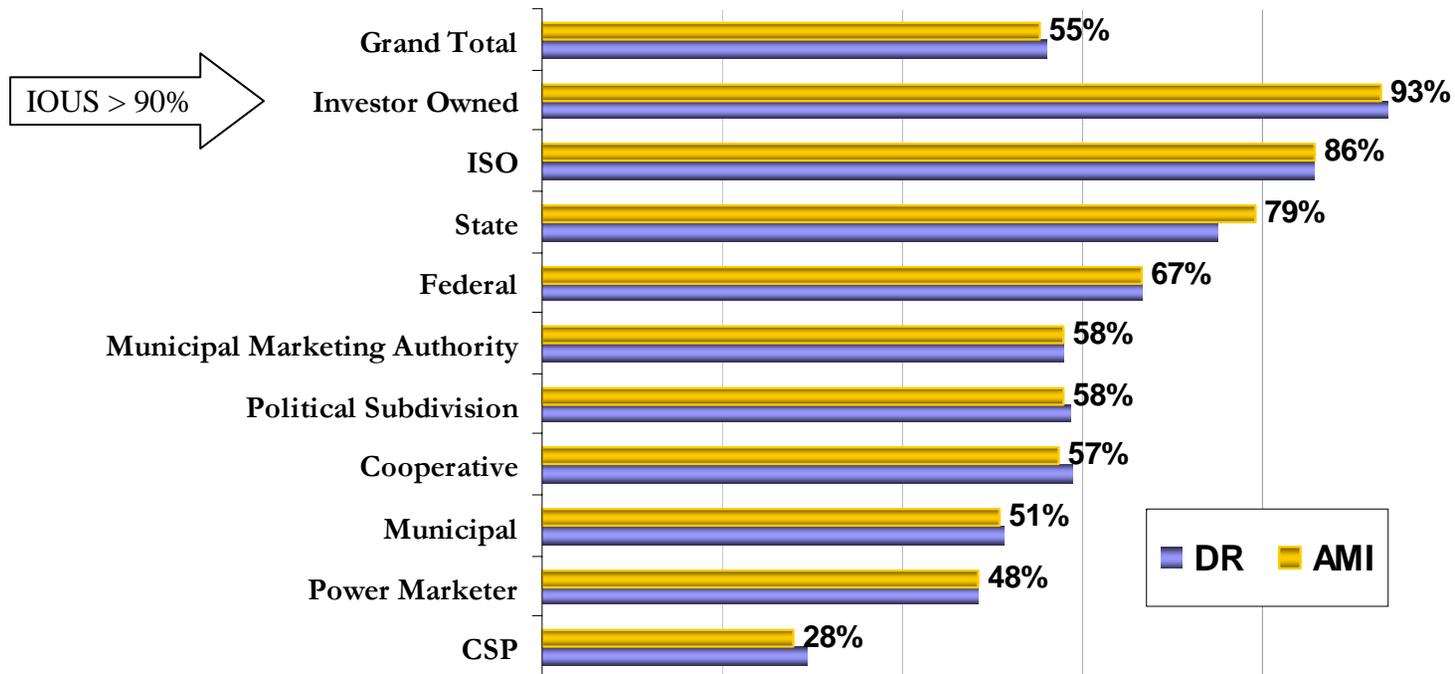
FERC Survey

- Sent voluntary survey to 3,365 entities
 - DR survey results by NERC region
 - AMI survey by states
- Covered all 50 states
- Surveyed
 - Public and private utilities
 - Regulated and unregulated entities
- Response rates to demand response & advanced metering surveys ~ 55%
- Survey data now available at <http://www.ferc.gov/industries/electric/indus-act/demand-response.asp>



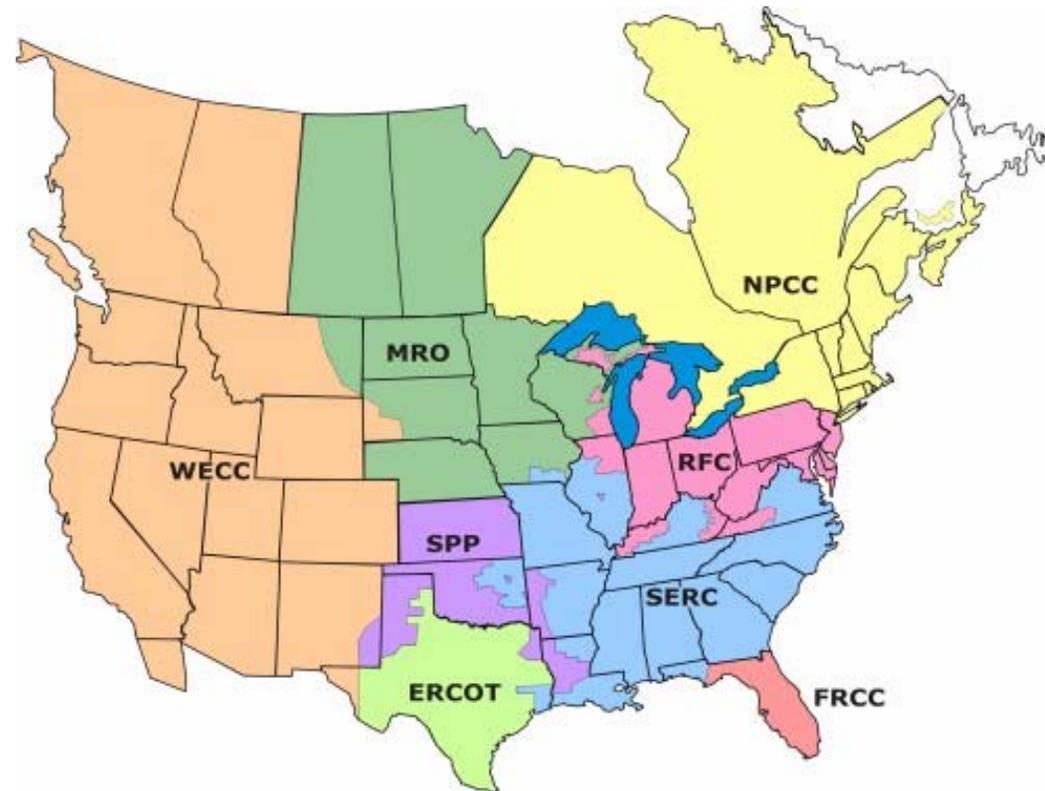
Response Rates to both Surveys

2006 FERC Survey Response Rate by Type of Entity





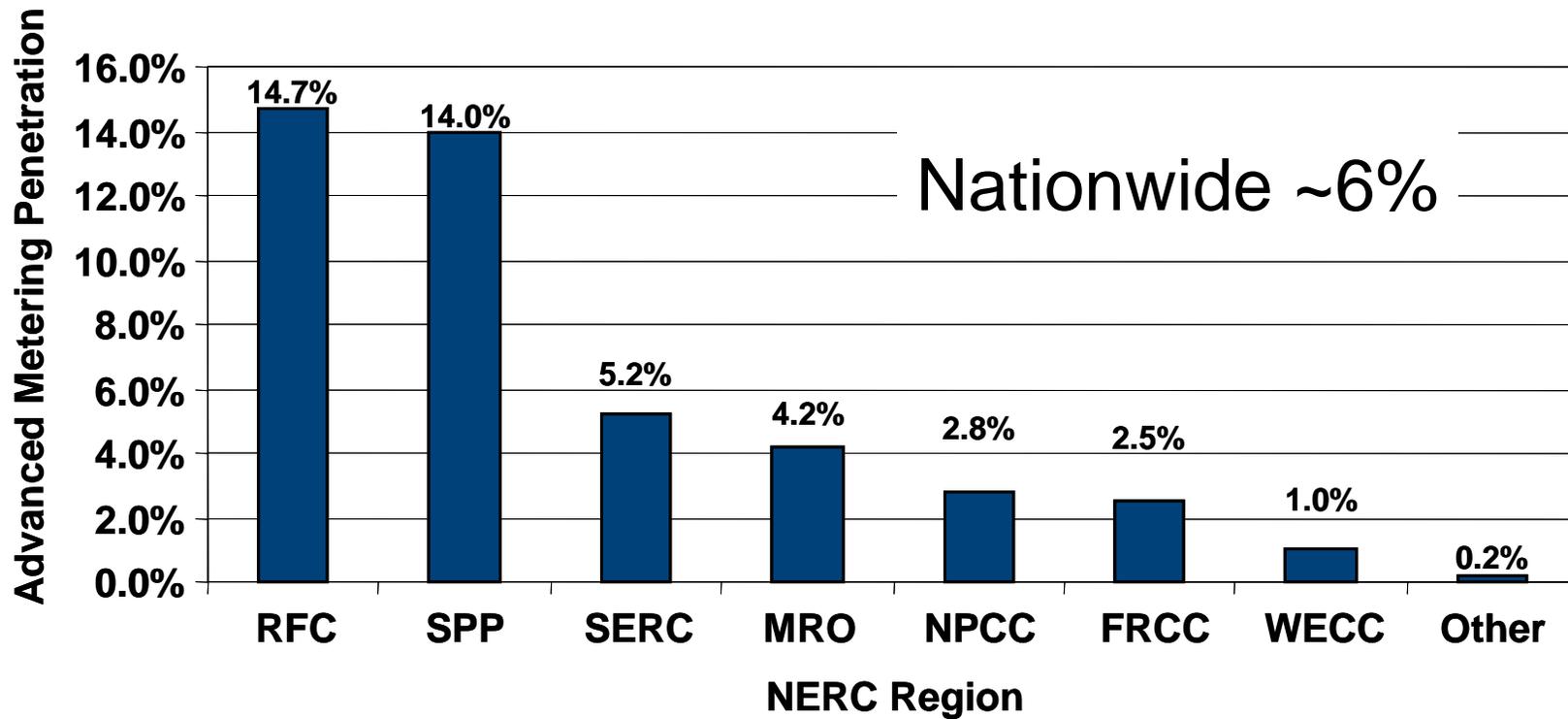
Survey regions – NERC regions



Source: NERC Regions- NERC 2006 Summer Assessment

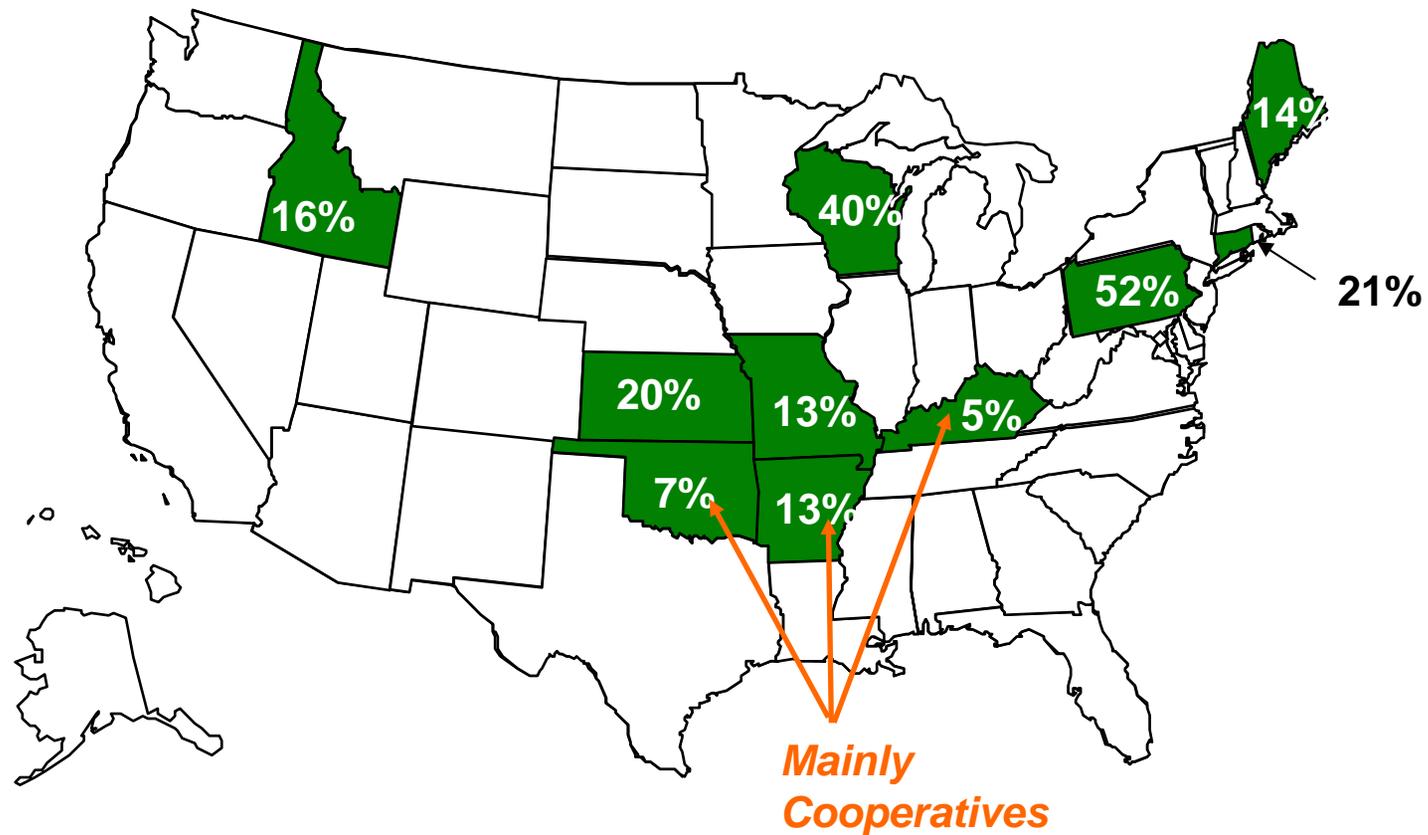


Advanced Metering Penetration By Region





Advanced Metering Penetration Top Ten States



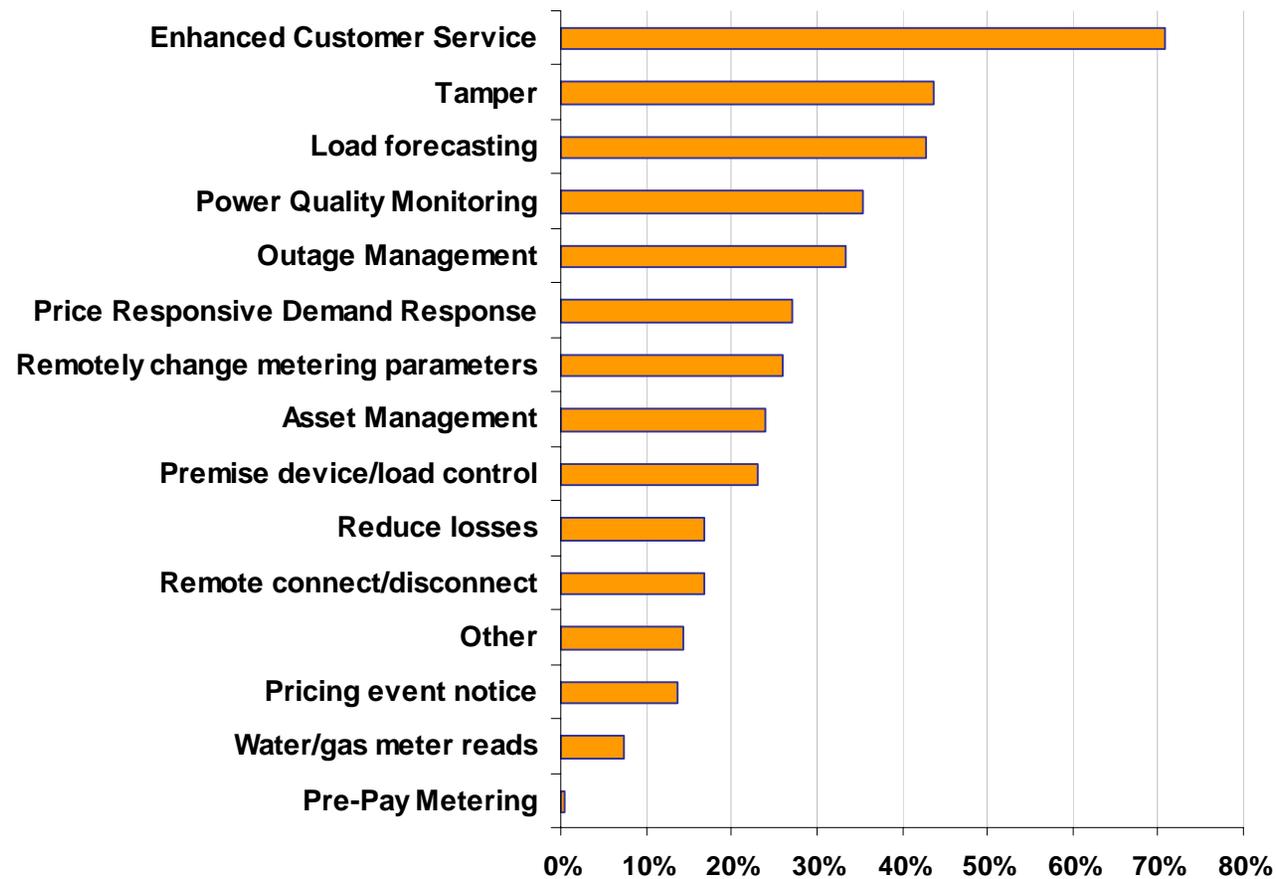


Other Metering Findings

- **Costs of metering, communication technologies has been declining, however total capital costs have not declined significantly**
 - *Current range for AMI system and other costs is about \$125-\$150 per meter*
- **AMI provides utilities multiple benefits beyond meter reading savings**
 - **Benefits associated with demand response are only a portion of total benefits**
- **Number of customers who can access their interval usage data in near real-time is small**
 - **Only about 226,000 customers nationwide**
- **Lack of consistent AMI specifications**
- **There are multiple uses of AMI**



Uses of Advanced Metering



Source: FERC Survey



Implications for Demand Response

- Low advanced metering penetration presents a barrier to greater expansion of price responsive demand response
 - Particularly amongst mass market customers
 - Complicates measurement and wholesale settlement
- Adoption of the standards for advanced metering in EPCRA 2005 Section 1252 will likely support greater demand response
- Benefits associated with demand response can improve advanced metering cost-effectiveness



Demand Response Programs in Report

- Incentive-Based Programs
 - Direct load control
 - Interruptible / curtailable rates
 - Demand bidding / buyback programs
 - Emergency demand-response programs
 - Capacity-market programs
 - Ancillary-services market programs
- Time-Based Rates
 - Time-of-use
 - Critical-peak pricing
 - Real-time pricing

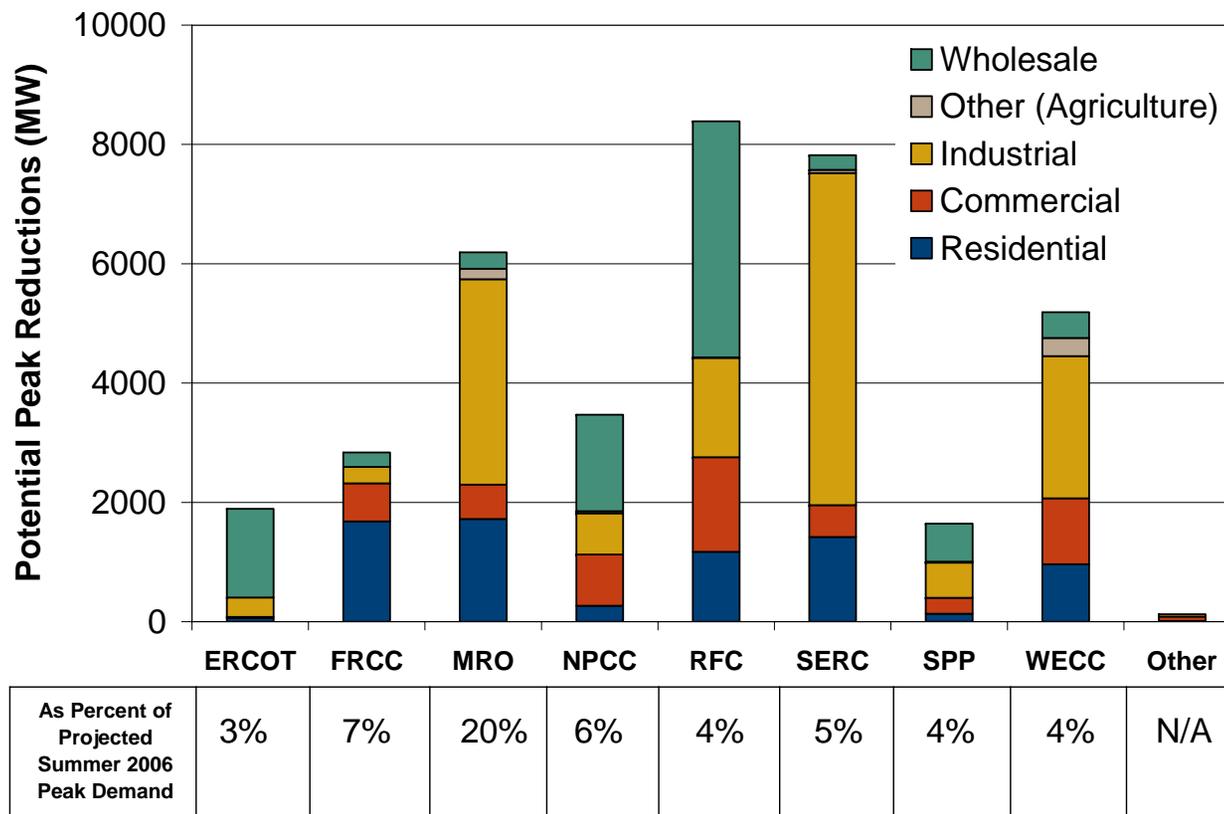


Demand Response Results

- Demand response is important in both wholesale and retail markets
- 37,500 MW of demand response potential in existing programs:
 - Vast majority from incentive-based demand response – many legacy utility programs
 - ISO and other wholesale demand response represents about 8,900 MW (24%)
- Demand response capability represents between 3% to 7% of peak demand in most regions



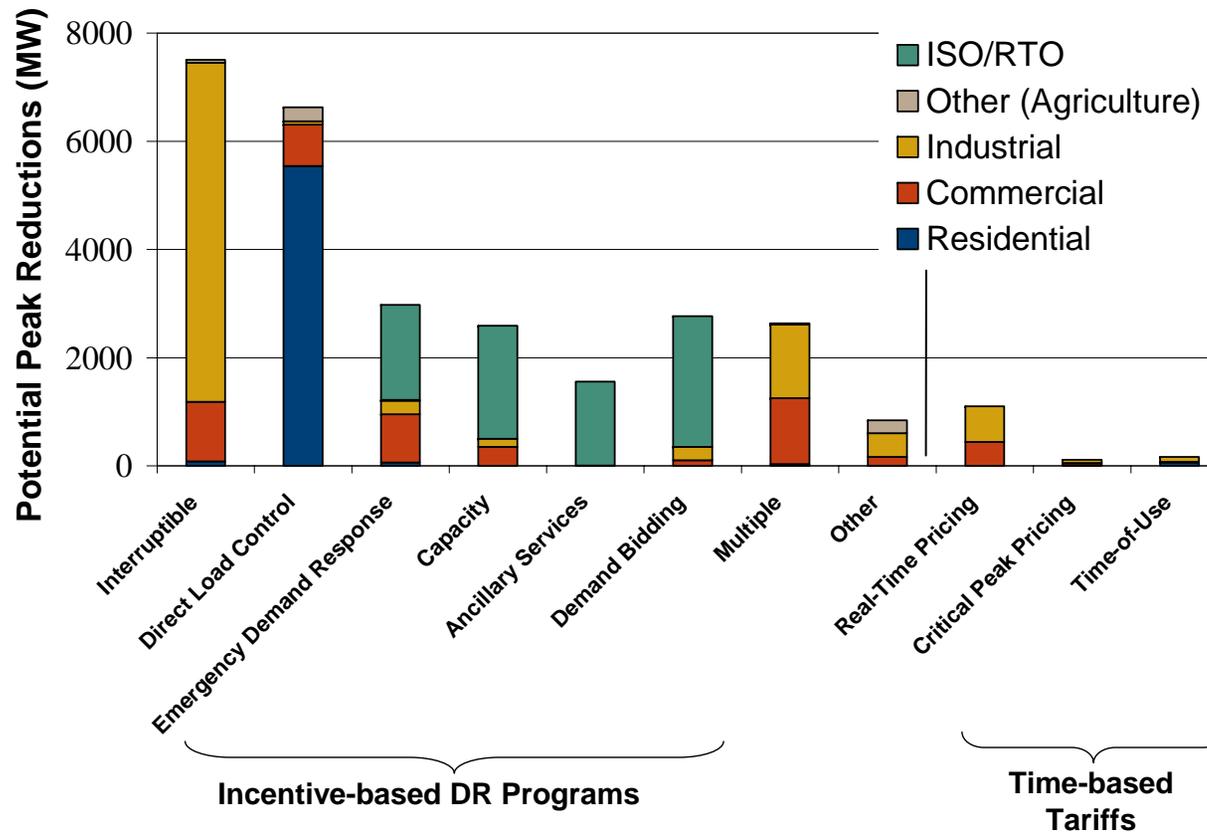
Existing DR Resource Contribution By Region and Customer Class



Sources: FERC Survey, EIA, and ISO/RTO Reports



Existing DR Resource Contribution By Type of Program

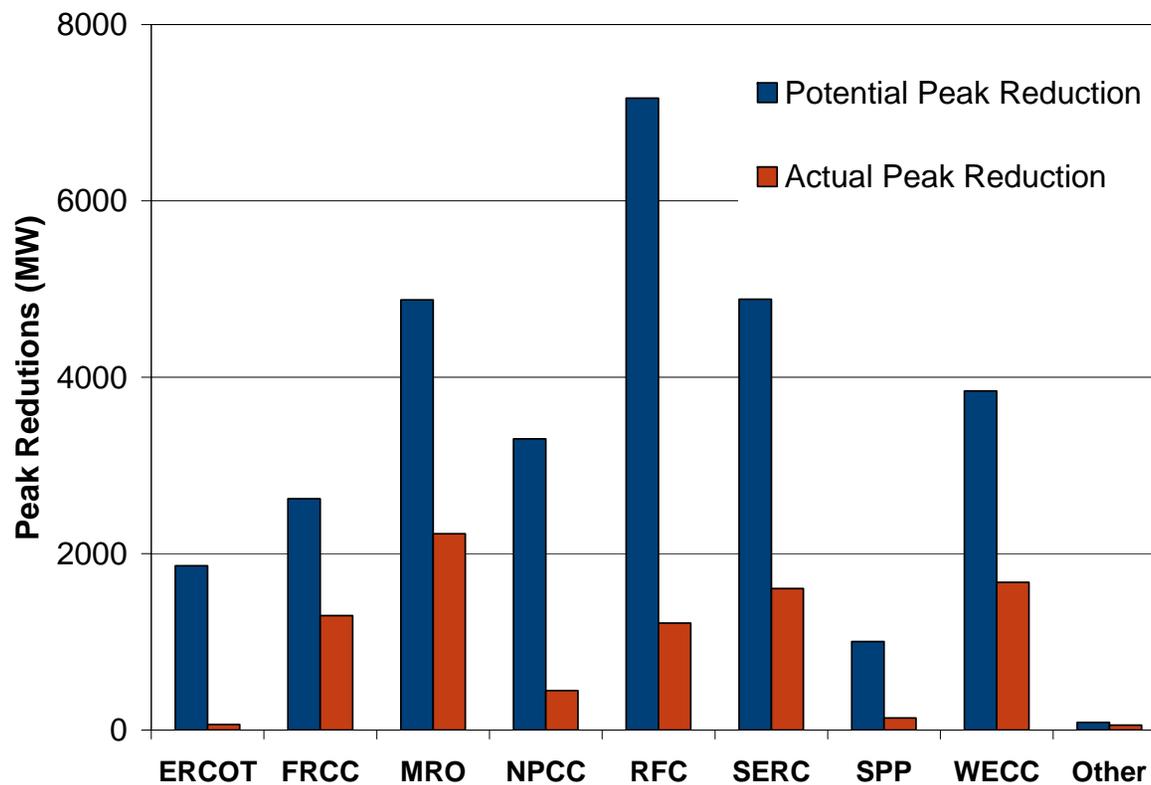


Source: FERC Survey



2005 Actual Demand Response

Compared to Potential from Existing Demand Response



Source: FERC Survey



Demand Response in Transmission Planning

Congress directed FERC to identify “steps taken to ensure that, in regional transmission planning and operations, demand resources are provided equitable treatment.” Steps identified by staff include:

- Assure that planning and operational requirements are specified in terms of functional needs.
- Accommodate the inherent characteristics of demand response resources.
- Allow appropriately designed demand response resources to provide all ancillary services.
- Allow for the consideration of demand response alternatives for all transmission enhancement proposals.
- When appropriate, treat demand response as a permanent solution.
- Develop better demand response forecasting tools for system operators.



Regulatory Barriers

Barriers identified by staff include:

- Disconnect between retail pricing and wholesale markets
- Utilities' disincentives to offering demand response
- Enabling technologies' deployment need cost-recovery certainty; may need incentives
- Research is needed on cost-effectiveness and how to measure demand reductions
- Specific state-level rules may inhibit more demand response
- Specific retail and wholesale market rules may limit use of demand response
- Fluctuating rules may limit third-party participation
- Insufficient market transparency and access to data
- Better coordination of federal and state jurisdictional programs could enable more demand response



Staff Recommendations to the Commission:

- Explore how to better accommodate demand response in wholesale markets;
- Explore how to coordinate with utilities, state commissions and other interested parties on demand response in wholesale and retail markets;
- Consider specific proposals for compatible regulatory approaches, including how to eliminate regulatory barriers to improved participation in demand response, peak reduction, and critical peak pricing programs.



Questions?

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