

FERC Staff Report on Demand Response and Advanced Metering

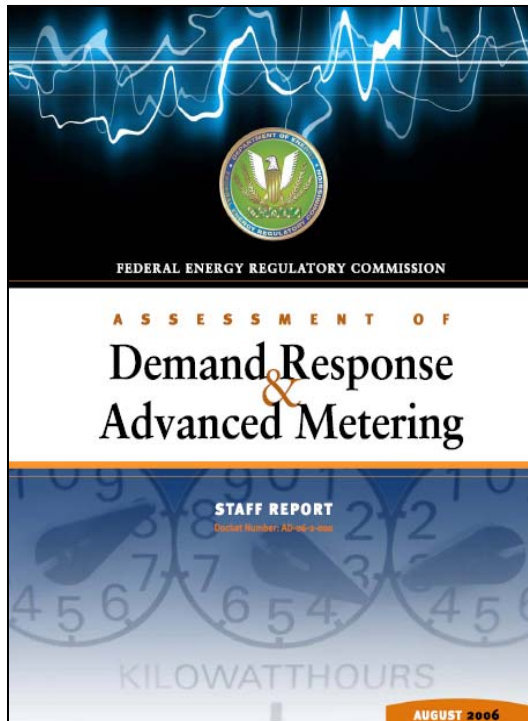


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FERC

MADRI, Washington, D.C.
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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 Request

- Section 1252(e)(3) of EPAct 2005 requests that FERC, by appropriate region, 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



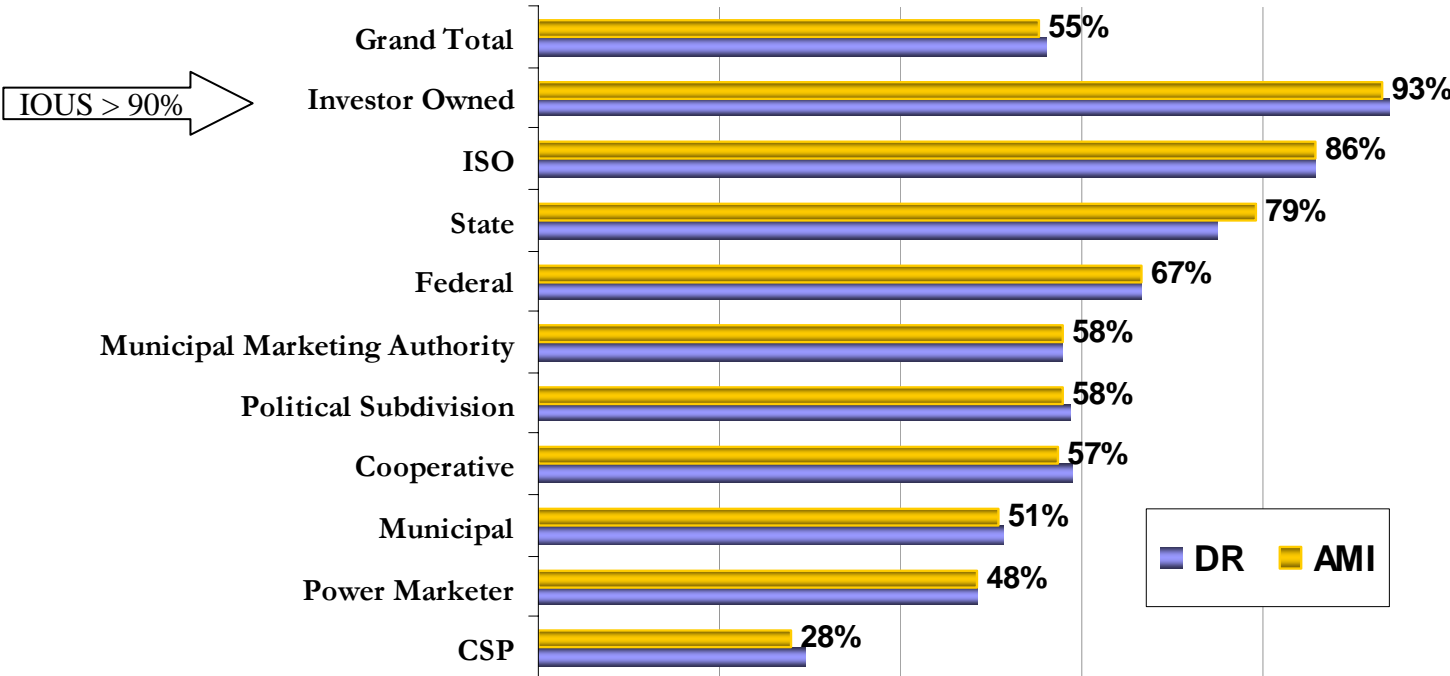
FERC Survey

- 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%



Response Rates to both Surveys

2006 FERC Survey Response Rate by Type of Entity



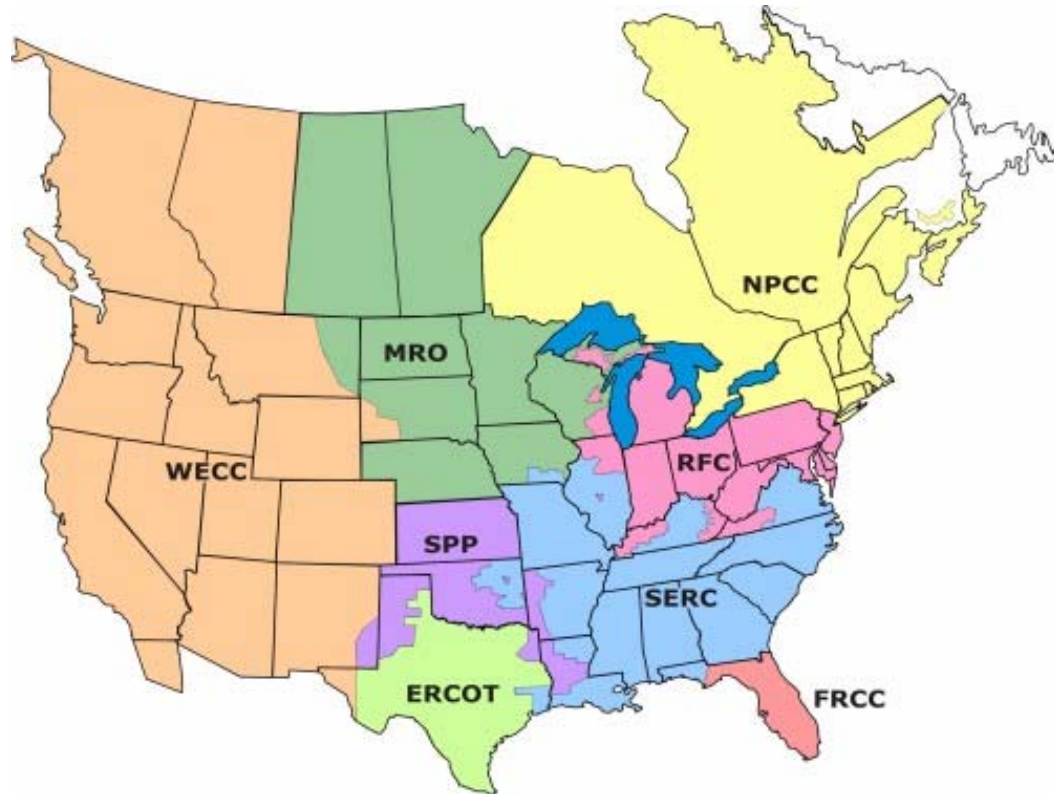


Advanced Metering Penetration Results

- Penetration of advanced metering low: 6%
 - Some earlier estimates had been closer to 10%
 - Some utilities with fixed network AMR did not report their meters as “advanced meters”
- Higher penetration in both rural and more-urbanized states
- Rural electric cooperatives have the highest percent
- Except for Pennsylvania, penetration in the Northeast and Mid-Atlantic states is lower than the national average



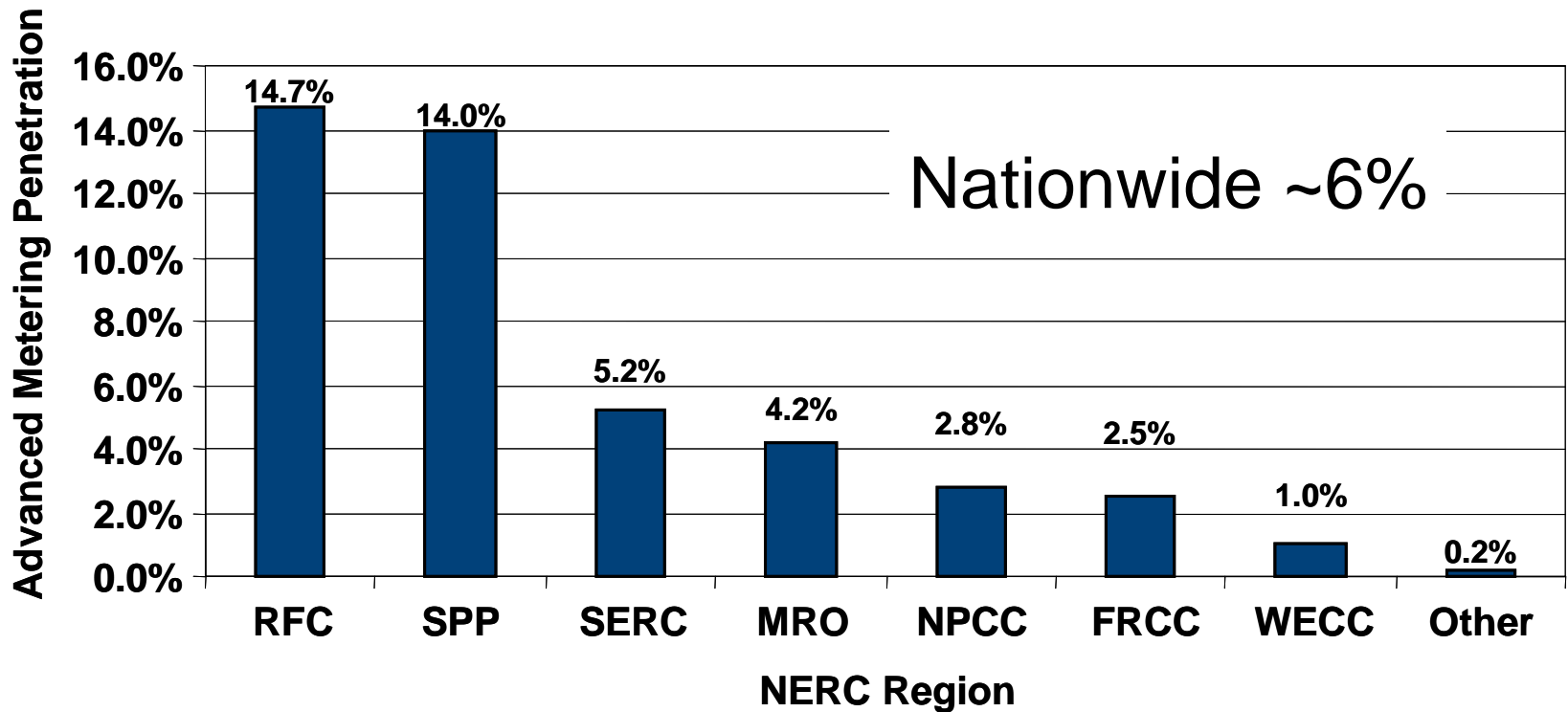
Survey regions – NERC regions



Source: NERC Regions- NERC 2006 Summer Assessment



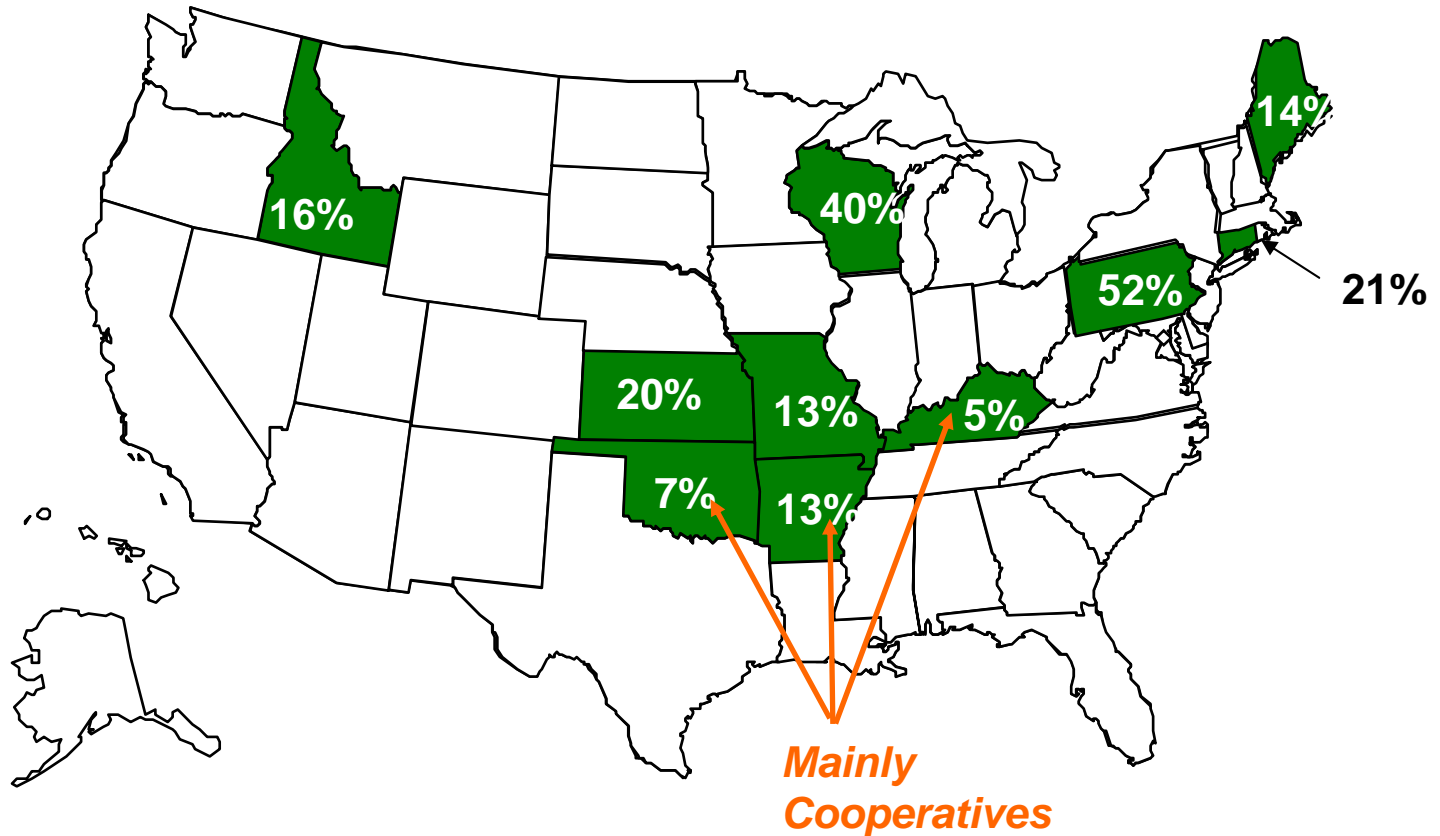
Advanced Metering Penetration By Region





Advanced Metering Penetration

Top Ten States





Advanced Metering Penetration in Northeast and Mid-Atlantic States

State	Res AMI	Com AMI	Ind AMI	Trans AMI	Other AMI	Total AMI
PA	52.1%	55.9%	29.1%	100.0%	0.0%	52.5%
CT	21.1%	23.4%	36.6%	100.0%	99.3%	21.4%
ME	14.3%	14.8%	5.7%	0.0%	0.0%	14.3%
NH	2.3%	2.0%	43.2%	0.0%	0.0%	2.5%
NJ	0.4%	0.0%	3.1%	6.5%	0.0%	0.4%
MA	0.0%	1.3%	3.5%	0.8%	0.2%	0.2%
DC	0.0%	0.9%	0.0%	0.0%	0.0%	0.1%
NY	0.0%	0.3%	10.3%	0.0%	3.6%	0.1%
RI	0.0%	0.4%	6.9%	0.0%	0.0%	0.1%
MD	0.0%	0.2%	0.0%	67.3%	2.4%	0.0%
DE	0.0%	0.0%	1.9%	0.0%	0.3%	0.0%
VT	0.0%	0.0%	1.4%	0.0%	0.0%	0.0%
US Average	5.7%	4.7%	4.8%	5.4%	3.0%	5.6%



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



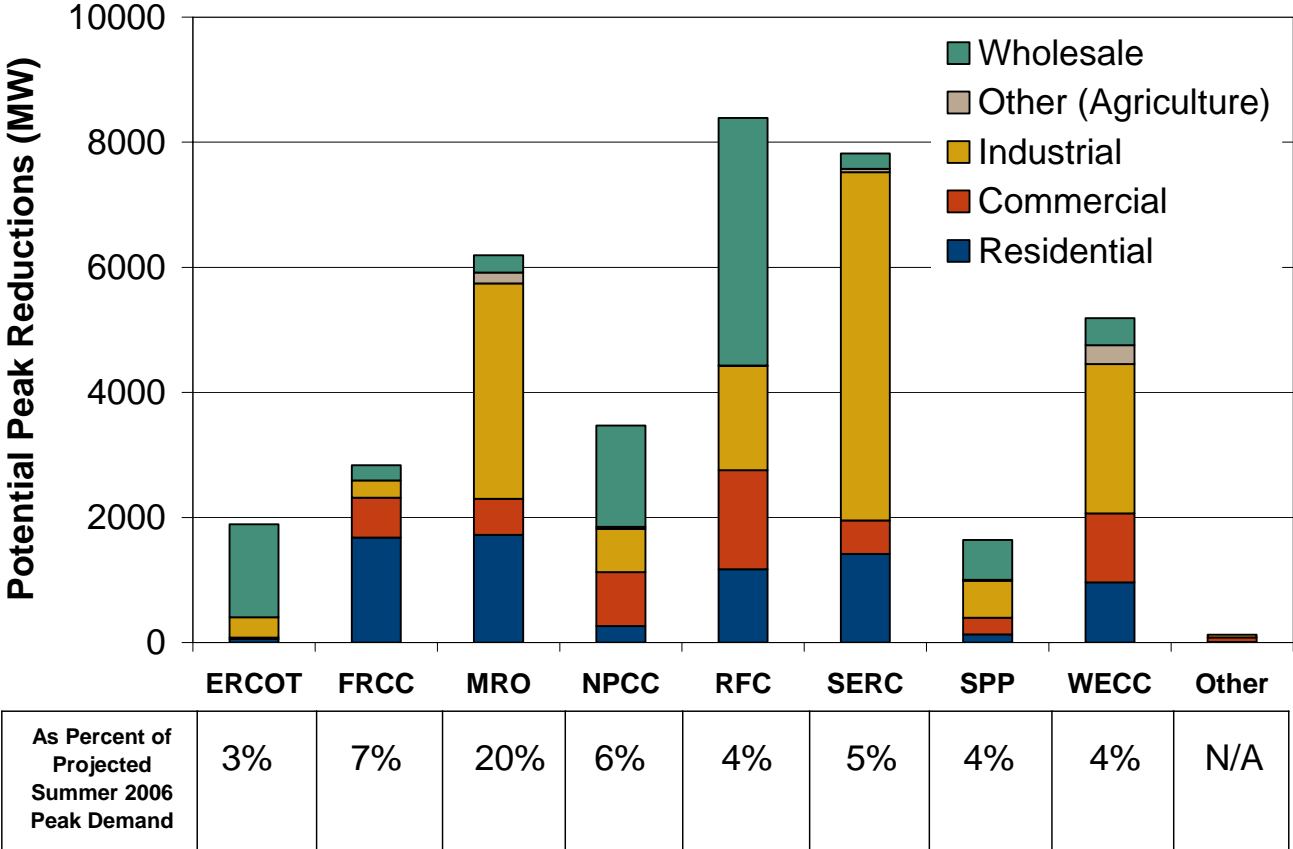
Demand Response Results

- 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
- Demand response in the Northeastern states reflects the importance of ISO programs in the region (particularly in NPCC)



Existing DR Resource Contribution

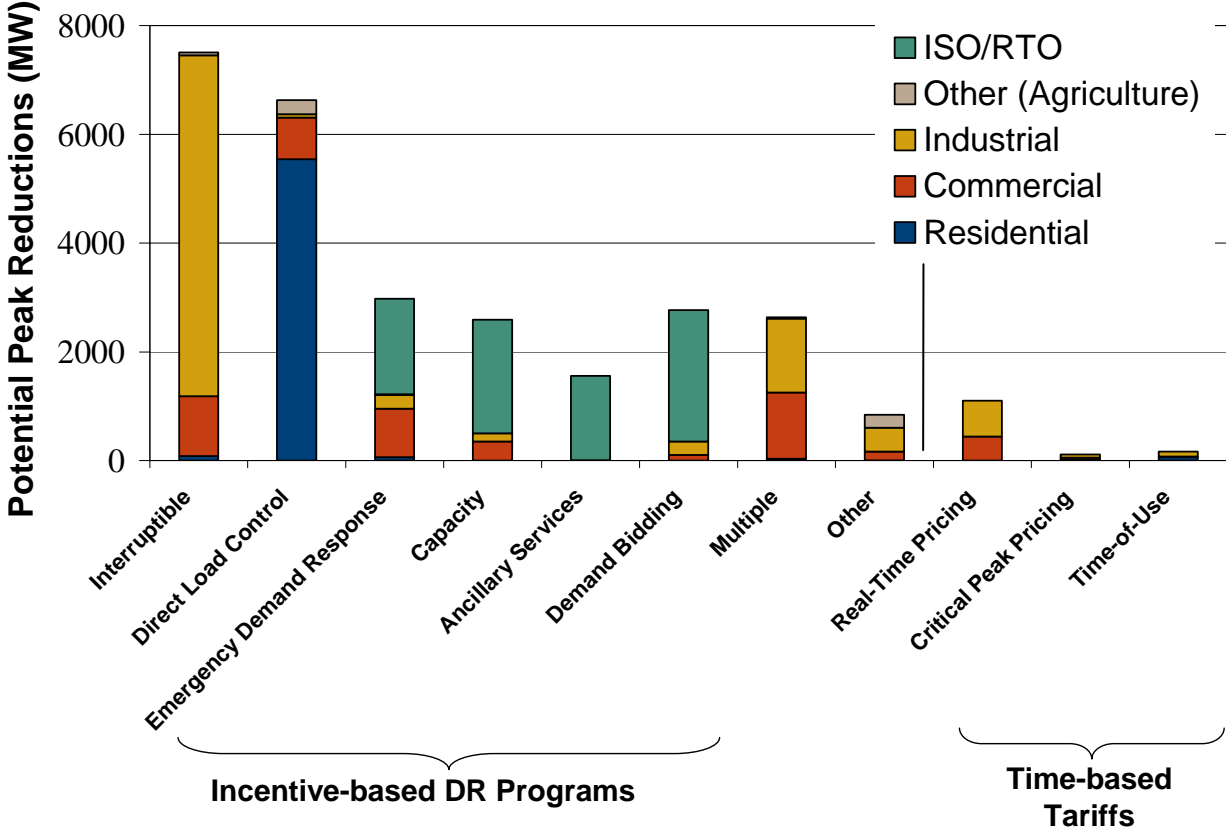
By Region and Customer Class





Existing DR Resource Contribution

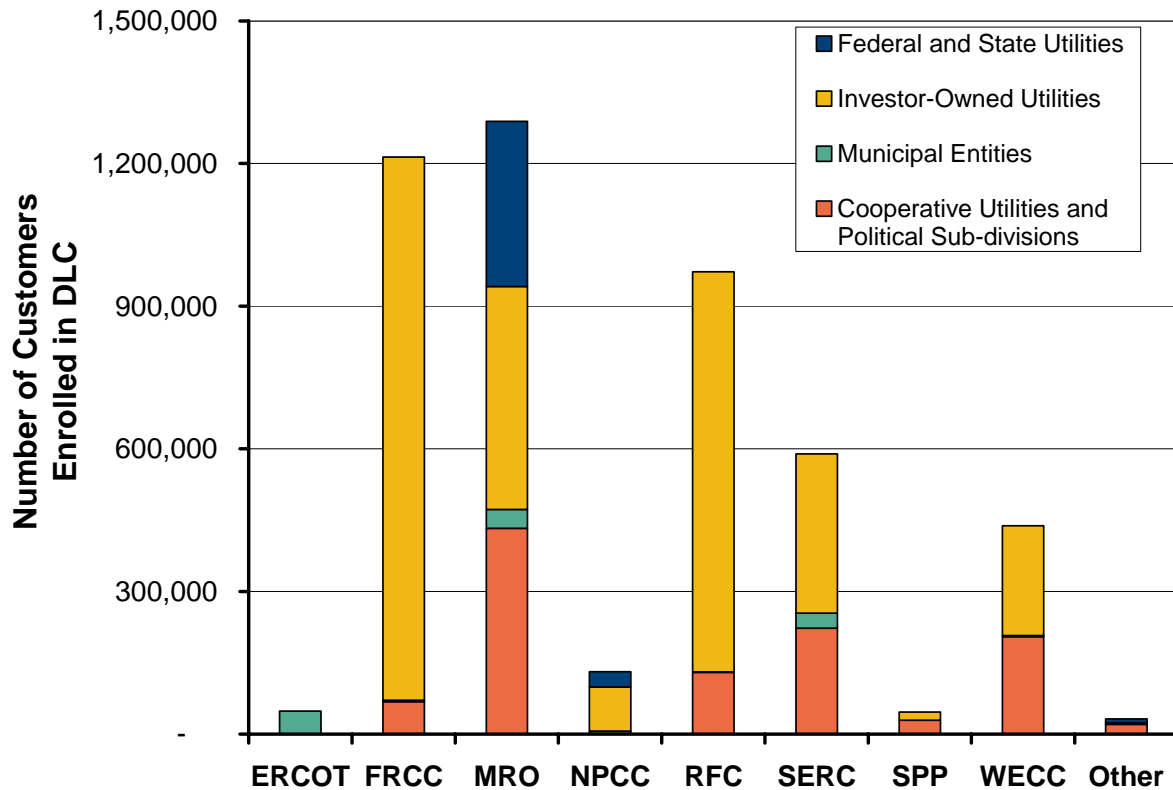
By Type of Program





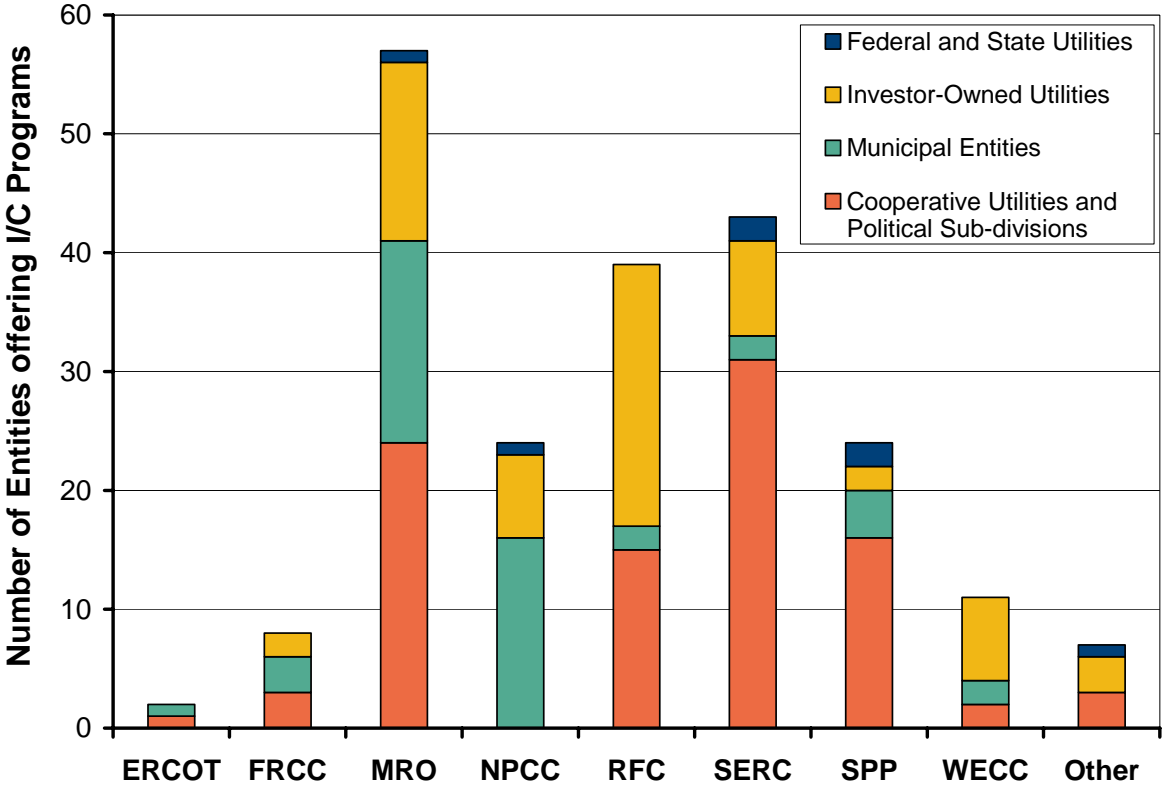
Customers Enrolled in DLC Programs

By Region and LSE-entity type



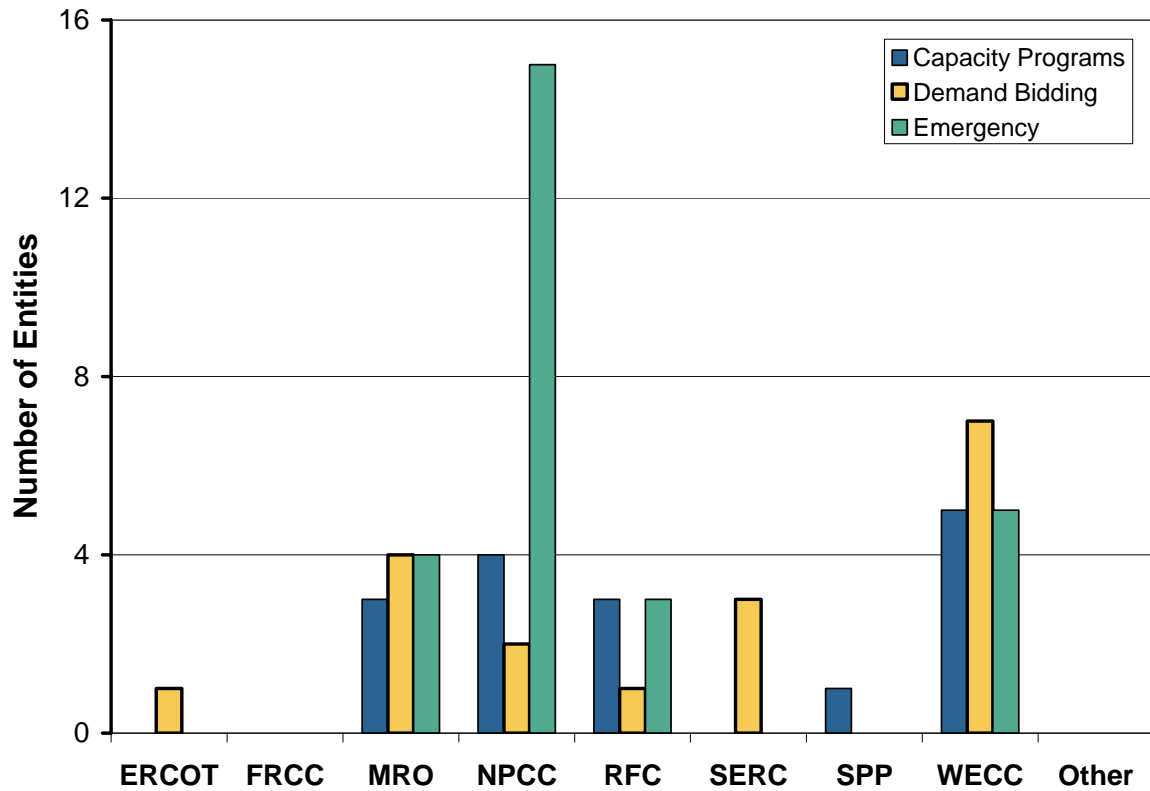


Entities Offering Interruptible/Curtailable Tariffs By Region and LSE-entity type





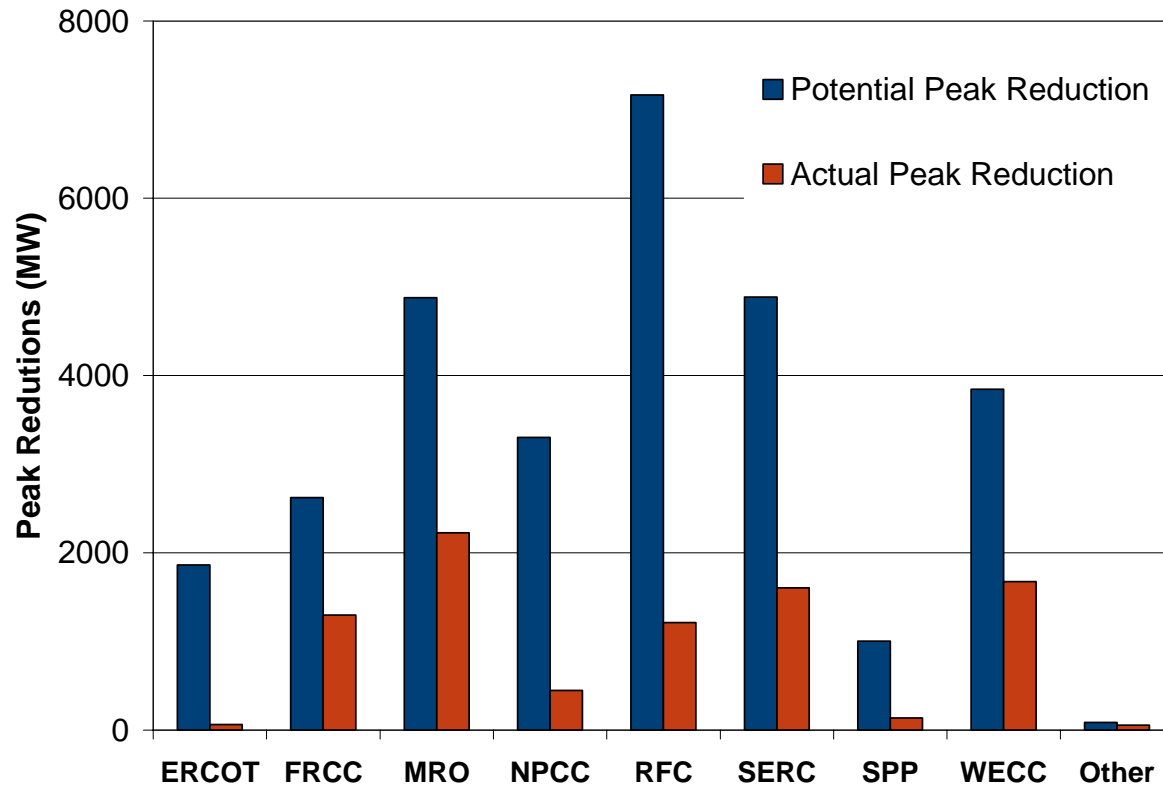
Entities Offering Other Incentive-Based Demand Response





2005 Actual Demand Response

Compared to Potential from Existing Demand Response





Actual Vs. Potential Demand Response

Ratio of Actual Deployed to Potential by Program Type – 2005

Program Feature	Sample Size	Median Value
Direct Load Control	440	.56
Interruptible/Curtailable	195	.39
Emergency Demand Response	25	.01
Capacity Programs	10	.14
Demand Bidding	12	.10



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

- 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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