

A National Assessment of Demand Response Potential

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Federal Energy Regulatory Commission
For
FERC/NARUC Collaborative on Demand Response
July 19, 2009

Agenda

- Statutory Requirements
- Approach and Features
- National Results
- Selected State Results
- Barriers to Demand Response, and Recommendations
- The NADRP Model Spreadsheet

Purpose and Content of the Assessment

- FERC Staff report to Congress, as required by the Energy Independence and Security Act of 2007
 - Demand response potential
 - Barriers to demand response
 - Recommendations

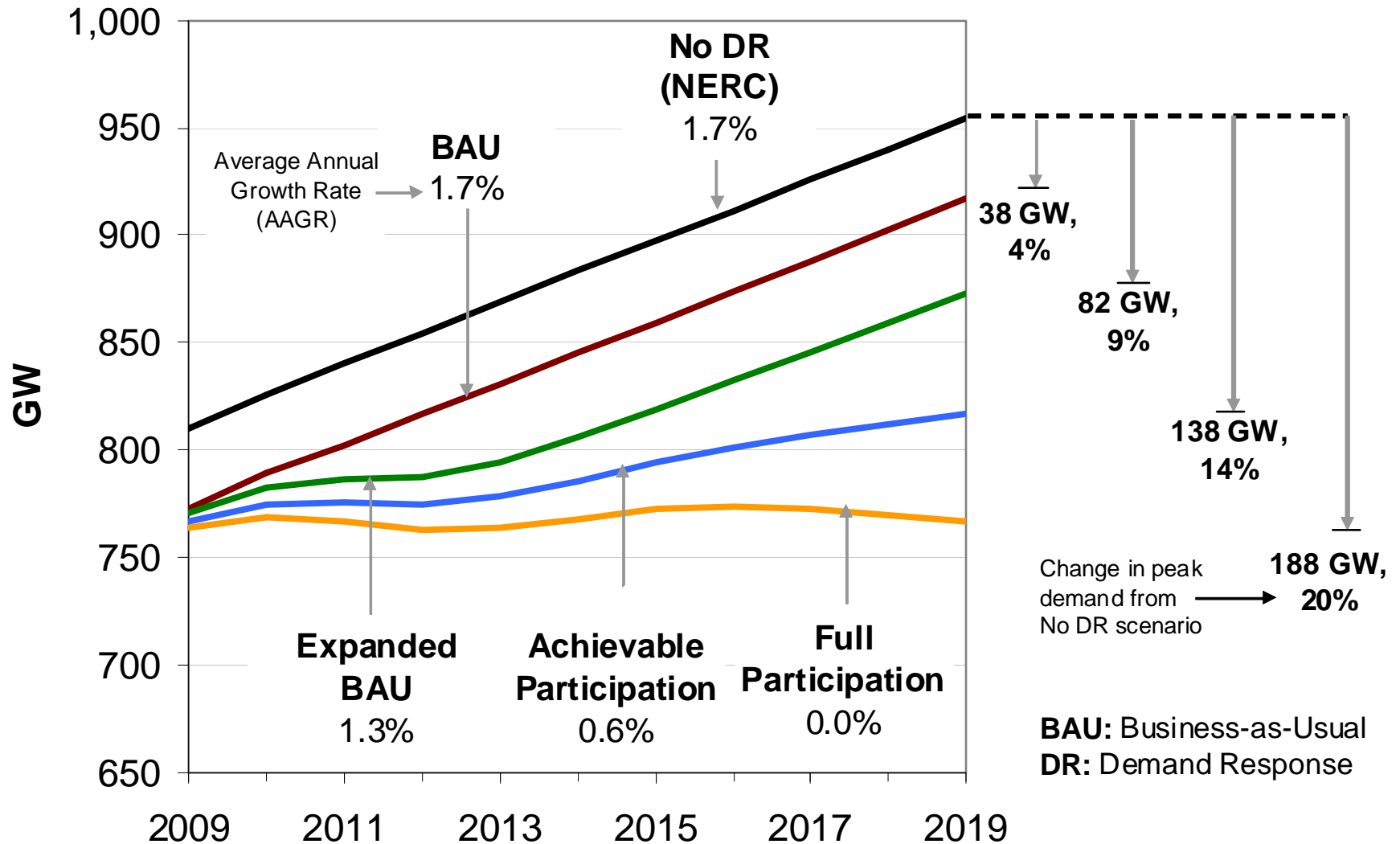
Unique Features

- Bottom-up, state-by-state analysis
- 15 pilot programs synthesized
- User-friendly spreadsheet model
- Review of barriers
- Recommendations to achieve potential

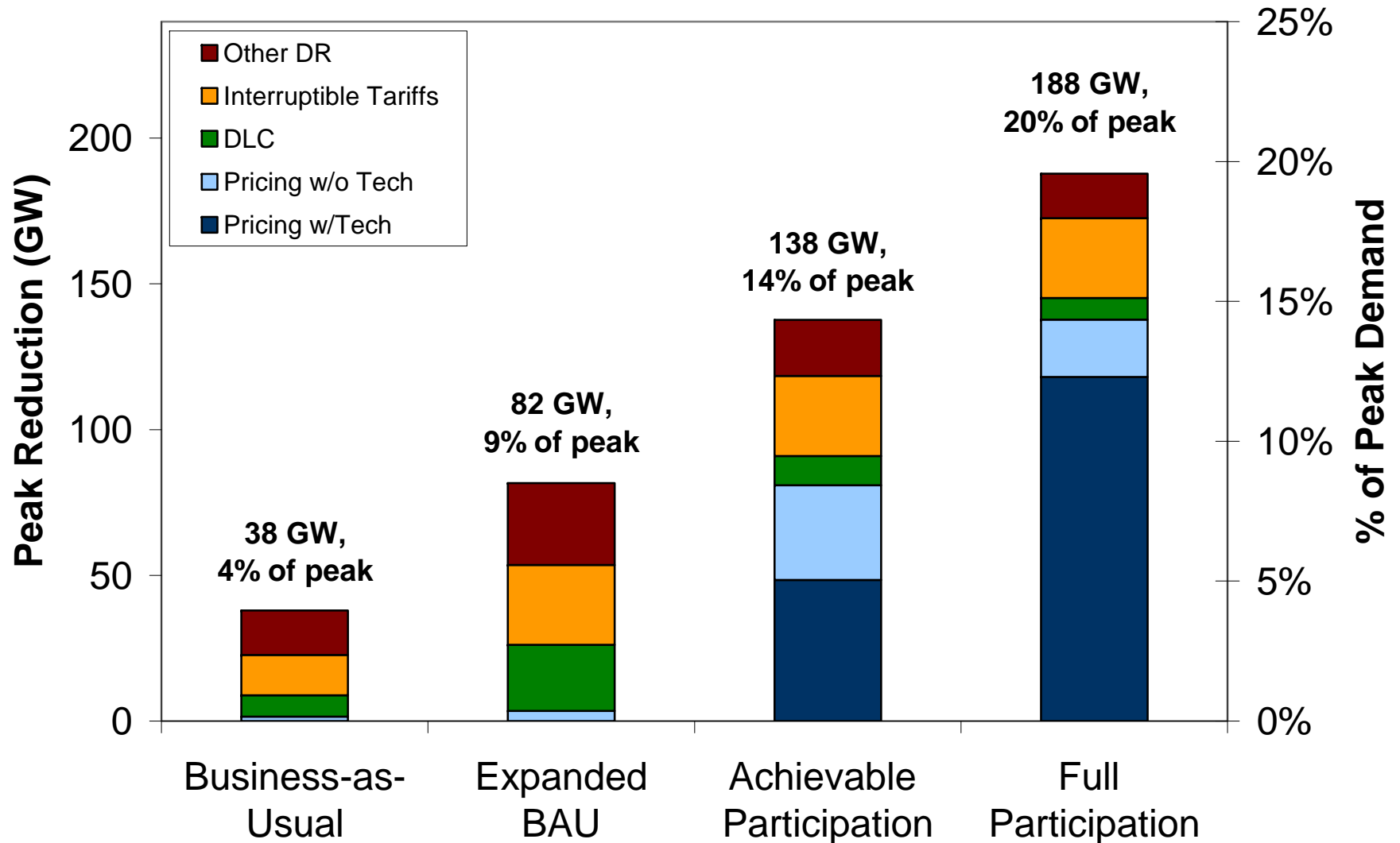
Approach: Scenarios

- Business-as-Usual (baseline)
- Expanded Business-as-Usual
- Achievable Participation
- Full Participation

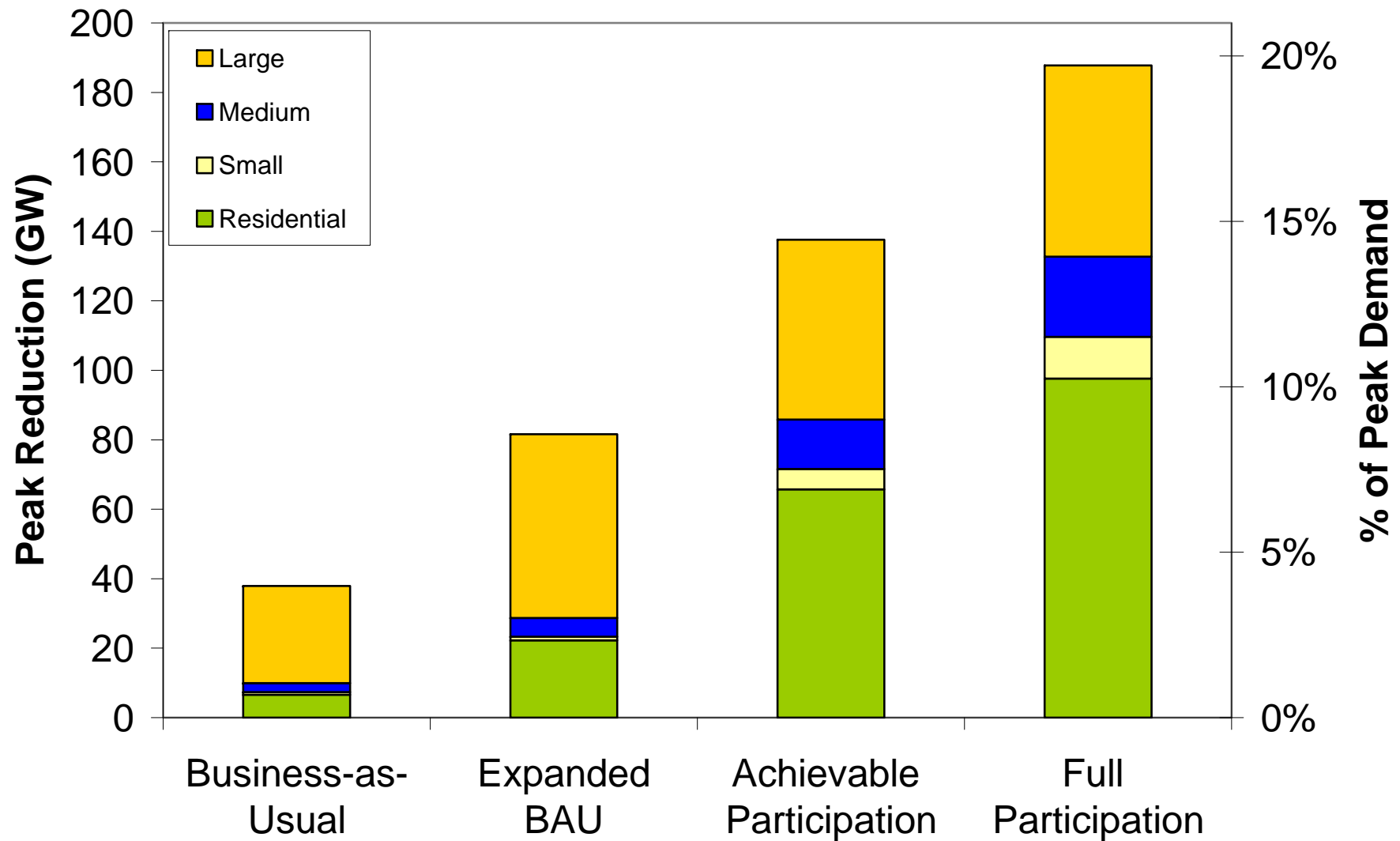
U.S. Peak Demand & NADRP



DR Potential by Program Type (2019)



DR Potential by Customer Class (2019)



Range of State Results (Achievable Participation Scenario)

Gigawatt Basis

- Texas (13.2 GW)
- Florida (11 GW)
- California (8.8 GW)
- Hawaii (0.2 GW)
- Vermont (0.01 GW)
- Alaska (0.01 GW)

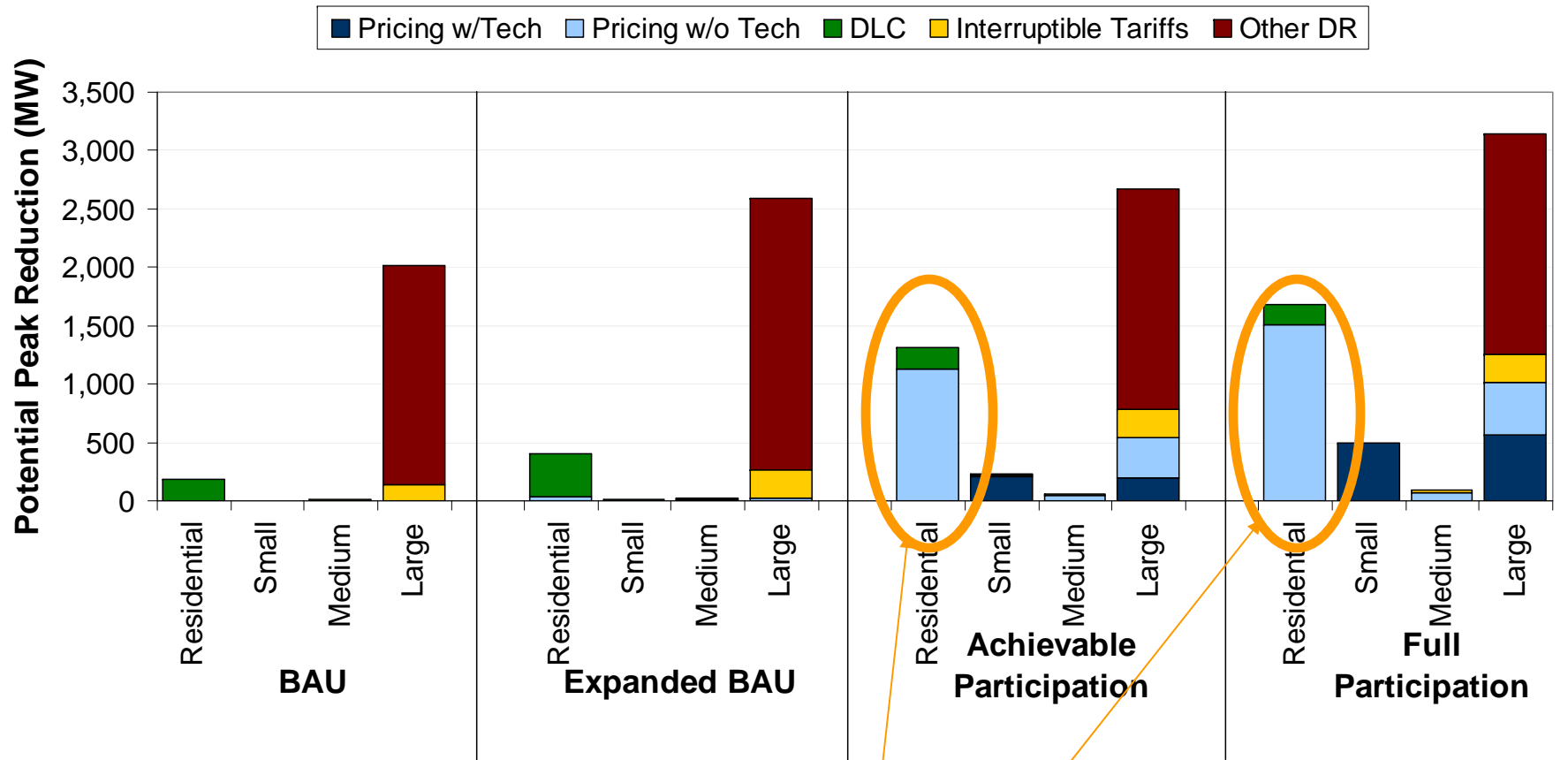
Peak Load Fraction

- Conn. (26%)
- Maryland (24%)
- Maine (22%)
- Wisconsin (8.5%)
- Hawaii (8.5%)
- Alaska (4.6%)

Illinois Results

Illinois DR Potential in 2019, by Scenario

(2019 System Peak = 35.9 GW)

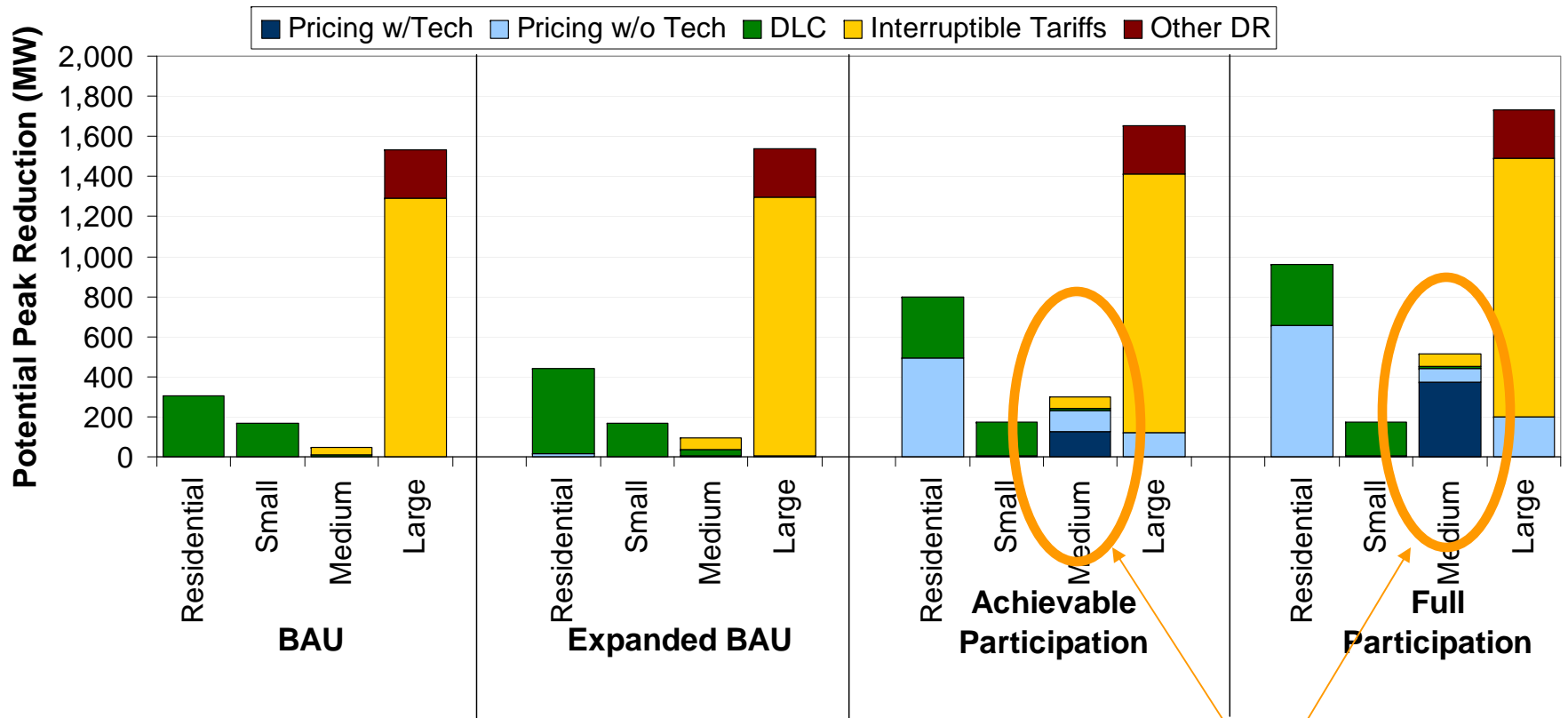


Enabling Technologies Not Cost-Effective for Residential

Minnesota Results

Minnesota DR Potential in 2019, by Scenario

(2019 System Peak = 17.8 GW)

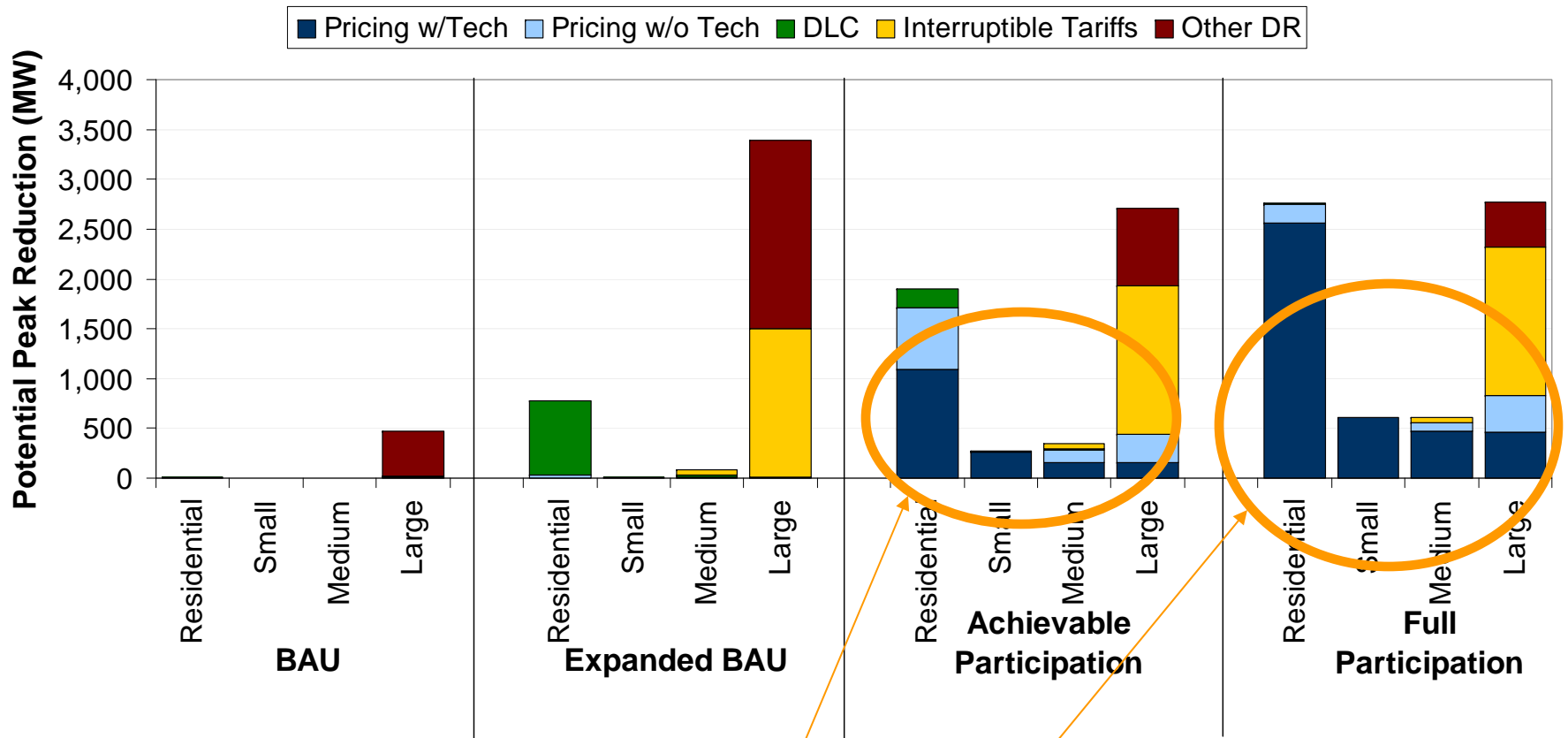


Enabling Technologies Cost-Effective for Medium C&I only

Ohio Results

Ohio DR Potential in 2019, by Scenario

(2019 System Peak = 38.6 GW)



Enabling Technologies Cost-Effective for all classes

Barriers

- Disconnect between wholesale and retail prices
- Measurement and verification challenges
- Lack of advanced metering
- Lack of interoperability and open standards
- Lack of customer awareness

Recommendations

- Educate customers about demand response, AMI, dynamic pricing
- Share program information with utilities, state and local regulators
- Coordinate programs at wholesale and retail levels
- Develop standards for measurement and verification at wholesale and retail

Build Your Own Estimate

viewerSTATE CA

FERC National DR Potential Assessment

Results Viewer

FSC FREEMAN, SULLIVAN & CO. The Brattle Group Global Energy Partners, LLC

State or Region: CA

Update Viewer Results

Year	System Peak (without DR)	BAU	% Reduction	Expanded BAU	% Reduction	Achievable Participation	% Reduction	Full Participation	% Reduction
2009	58,395	55,208	5.5%	53,934	7.6%	53,547	8.3%	53,343	8.7%
2010	59,479	55,984	5.9%	54,770	7.9%	53,988	9.2%	53,573	9.9%
2011	60,606	56,812	6.3%	55,616	8.2%	54,449	10.2%	53,693	11.4%
2012	61,814	58,020	6.1%	56,640	8.4%	55,084	10.9%	53,840	12.9%
2013	62,930	59,135	6.0%	57,605	8.5%	55,553	11.7%	53,898	14.4%
2014	64,052	60,258	5.9%	58,638	8.5%	56,509	11.8%	54,792	14.5%
2015	65,183	61,389	5.8%	59,693	8.4%	57,482	11.8%	55,700	14.5%
2016	66,326	62,532	5.7%	60,764	8.4%	58,427	11.9%	56,554	14.7%
2017	67,404	63,610	5.6%	61,771	8.4%	59,300	12.0%	57,332	14.9%
2018	68,500	64,705	5.5%	62,795	8.3%	60,188	12.1%	58,121	15.2%
2019	69,677	65,883	5.4%	63,901	8.3%	61,155	12.2%	58,987	15.3%

CA System Peak Demand Forecasts by Scenario

RESULTS VIEWER / SCENARIO INPUTS / SCENARIO RESULTS / SCENARIO CALCULATIONS / INPUTS DATABASE / RESULTS DATABASE

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