



**EDISON ELECTRIC
INSTITUTE**

The FERC National Action Plan for Demand Response and its Meaning to EEI

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Overview

- A look at the sentences in the plan
- A look at some national / regional numbers
- A look at some other agencies (DOE, EPA)
- Other issues to think about
- Q & A

Plan Sentences (1a)

- “Use demand response to meet national energy independence and security goals in EISA 2007.”
- Energy Independence / Security = Oil Oil DR?
- Oil as % of total electric generation fuel in US:
 - 1978 – 16.5%
 - 1988 – 5.5%
 - 1998 – 3.6%
 - 2008 - 1.1%

Plan Sentences (1b)

- Oil as a % of total used for electricity in:

Region	2005	2009
New England	9%	1%
Mid Atlantic	6%	1%
South Atlantic	6%	2%

- How much used? 52.3 Million Barrels in 2008 (3 days)
 - Alaska 14.8%, Hawaii 77.3% of in-state production in 2008
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Plan Sentences (2)

- Coalition formed to provide “technical assistance to the states in order to implement DR programs.”
- How many states operate DR programs?
- DR is now a regional program, isn't it?
- Another possible idea: Technical assistance to regions that don't currently operate DR programs.

Plan Sentences (3a)

- Coalition plan for “creation of a national communications program”
- A national communication program for regional activities?
- Who is the ultimate audience?
- What is the message?
- Which communications medium(s) do you want to use to reach the audience?

Plan Sentences (3b)

- When should the communications program start? Parallel messages from coalition members?
 - How will it compete against other messages:
 - “Cash for Energy Star Appliances” messages
 - “Federal Tax Credits for Efficiency expire on 12/31/2010” – Hurry up!
 - How long should it last?
 - How much budget? Out of which pocket(s)?
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Plan Sentences (4)

- Coalition “development of tools and materials for use by customers, states, and demand response providers.”
- Tools and materials provided to customers when they join a DR program – how will these differ? Or should they?
- Issue of state or regional or utility role is critical, in terms of the interactions with the customer.

Plan Sentences (5)

- A lot of good information in the report.
- Need to “think outside of the box” at larger forces at work that will have a direct and significant impact on DR.
- Issue #1 – What is happening with electric usage? Let’s look at the numbers...

EIA Numbers (1)

- 2008 versus 2007: EIA data for Jan. 2008-Dec. 2008 vs. Jan. 2007-Dec. 2007:
- Residential Sales down **0.9%**
- Commercial Sales flat **0.0%**
- Industrial Sales down **1.8%**
- Transportation Sales down **5.8%**
- Total Sales (all sectors) down **0.8%**
- Source: EIA *Retail Sales of Electricity to Ultimate Customers* July 2010

EIA Numbers (2)

- EIA *Retail Electric Sales to Ultimate Customers* Report shows for 2009 vs. 2008:
 - Residential Sales down 1.2%
 - Commercial Sales down 1.0%
 - Industrial Sales down 12.6%
 - Transportation Sales down 0.1%
 - Total Sales (all sectors) down 4.2%
 - Overall sales declined for 2 years in a row.
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EIA Numbers (3a)

- 2010 versus 2009: EIA data for Jan. 2010-Aug 2010 vs. Jan. 2009-Aug 2009:
- Residential Sales up **7.5%**
- Commercial Sales up **1.9%**
- Industrial Sales up **7.0%**
- Transportation Sales up **1.0%**
- Total Sales (all sectors) up **5.3%**
- Source: EIA *Monthly Flash Estimates of Electric Power Data* Oct 2010

EIA Numbers (3b)

- But, looking at rolling average (Sept. 2009- Aug 2010 versus Sept. 2008-Aug 2009):
- Residential Sales up **4.8%**
- Commercial Sales up **1.0%**
- Industrial Sales up **1.8%**
- Transportation Sales up **0.5%**
- Total Sales (all sectors) up **2.6%**
- Source: EIA *Monthly Flash Estimates of Electric Power Data* Oct 2010

EIA Numbers (4)

- Was most of this due to weather only?
- Above average heating degree days in Jan/Feb 2010 (remember “Snowmageddon?”)
- EIA – 21.1% more cooling degree days 2010 over 2009.
- Washington DC – 67 days over 90 F (tied record)
 - 2109 cooling degree days in 2010 (36.1% > normal)
 - Normal for DC is 1549
 - 1430 cooling degree days in 2009 (7.7% < normal)
- Sources: EIA *Monthly Flash Estimates of Electric Power Data* Oct 2010 and Washington Post, 9/25/10 and 10/19/10

More Numbers from DC

- What happened with PEPCO peak loads?
 - 2007 – 6,858 MW
 - 2008 – 6,727 MW
 - 2009 – 6,299 MW
- What happened in 2010?
 - Record hot summer (eight heat waves, 6 record highs, 6 record “high lows”, four 100 F + degree days)
 - Area with lower unemployment than the rest of the US
 - Area with federal government facilities

More Numbers from DC (2)

- PEPCO peak demands for the summer of 2010:
- June 2010 – 6,523 MW (6/24, 100 F, day 5 of heat wave)
- July 2010 – 6,625 MW (7/6, only 99 F, day 3)
- August 2010 – 6,411 MW (8/11, only 98 F, day 4)
- Sept. 2010 – 6,312 MW (9/1, day 4 of heat wave)

- Still 230+ MW below the 6,858 MW of 2007

PJM Numbers (1)

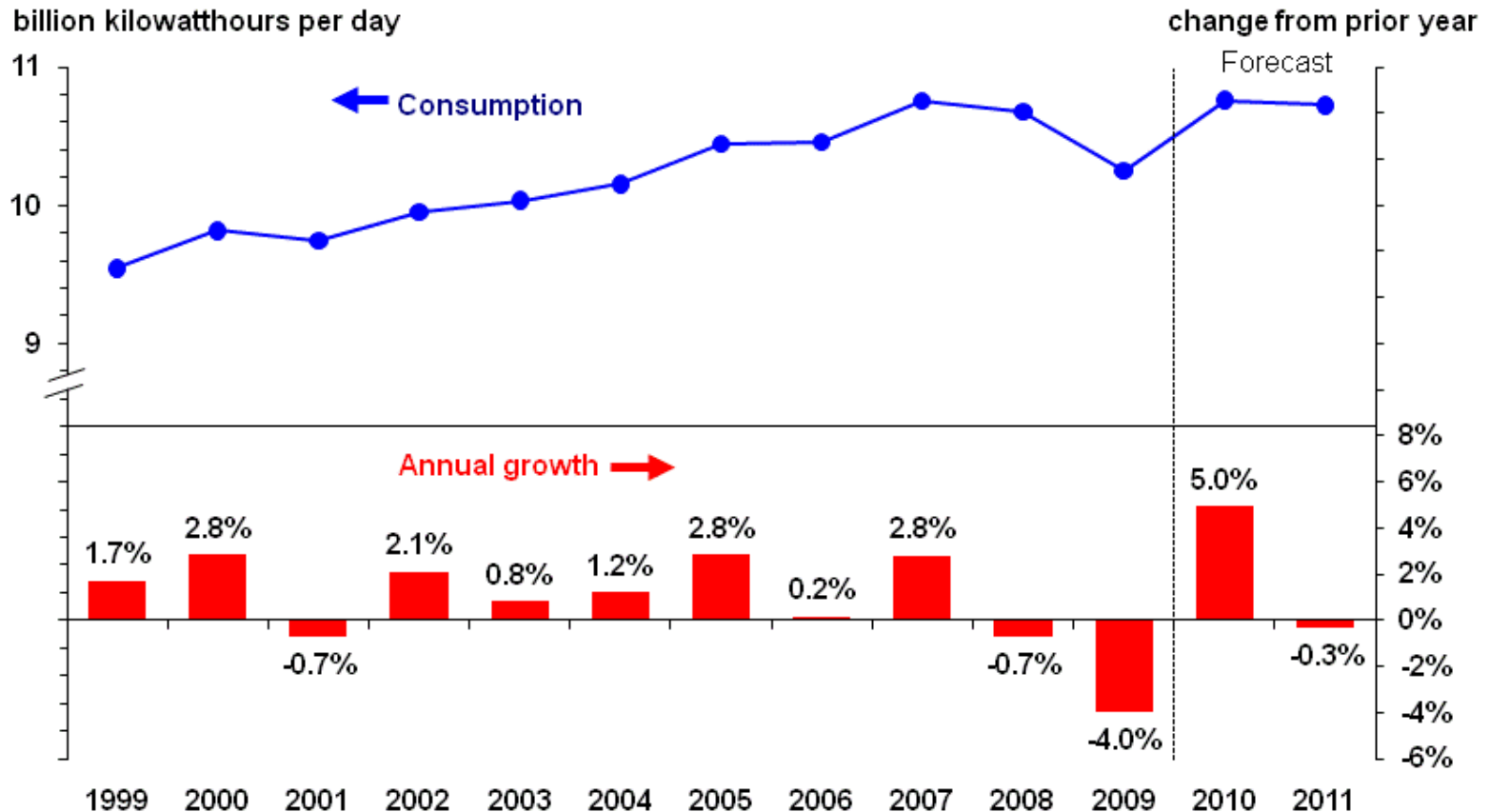
- What is happening with PJM?
- 2006 – 144,644 MW (270 MW DR, 250 MW voluntary)
- 2007 – 139,428 MW (after 1,945 MW of DR)
- 2008 – 130,100 MW (projected peak: 136,310 MW)
- 2009 – 126,805 MW (projected peak: 134,430 MW)
- What happened in 2010?
 - Projected peak of 135,750 MW (peak set on 7/6)
 - 8,525 MW of DR resources available (called on 7/7)
 - Hot summer throughout region

PJM Numbers (2)

- 2010 projected peak: 135,750 MW (May 2010)
- July 6, 2010 – 136,680 MW (after DR initiated)
- How much did DR provide?
 - Even if it provided 7,900 MW, the peak demand would still have been lower than in 2006!
 - Even if it provided 2,700 MW, the peak demand would have been lower than in 2007!
- Available capacity: 162,903 MW 19.2% reserve margin
- What's going on? Larger Forces.....

EIA Short Term Forecast - October 2010

U.S. Total Electricity Consumption



Source: Short-Term Energy Outlook, October 2010



Large Force #1 - Economy

- Industrial loads have not recovered – “structural” loss for economy?
- Housing Issue – more vacancies
- Unemployment - more frugal on purchases, including energy
- Residential / Commercial construction are still down 30-40% compared to a few years ago.

Large Force #2 – Codes/Standards

- Appliance Standards – DOE at warp speed to meet court orders, EPACK 2005, EISA 2007.
 - April 2010 Residential Water Heater rule
 - Central AC / Heat Pump rule by next spring
- Building Codes
 - ASHRAE 90.1-2004 11% more efficient than 1999
 - 2007 version 4% better than 2004, 2010 is 20% >
 - IECC – 2009 version 12% better than 2006, 2012 version just passed, probably 25% > 2006 (homes).

Large Force #2a – Codes/Standards

- Impacts of Appliance Standards from FERC DR National Action Plan report, Appendix B
 - Detroit Edison residential AC DLC program
 - 0.85 kW – 2009 diversified per customer reduction
 - 1.20 kW – diversified per customer reduction in 1999
 - 29% reduction per customer
 - “This decrease in load reduction is due to the increase in efficiency of central air conditioning units over the years”. (page B-9)
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Large Force #3 – EPA Rules

- Described as “regulatory train wreck”
- Power plants and Clean Air Act – 1/2/2011
- Industrial Boiler HAP MACT rule – new and existing boilers over 10 Million Btu/hr capacity
- NAAQS (ground level ozone standard) “non-attainment” areas will increase
- The rules and implementation could have a huge impact on current / future choices and DR.

Large Force #4 – Smart Grid Apps

- Over 60 million smart meters will be installed by 2019 (Institute for Electric Efficiency report)
- Many residential appliances will be “smart grid enabled” by 2015
- Impacts
 - More “Automated DR”
 - More appliances that can be called during DR periods
 - More choices for customers

One Other Issue (1)

- *Greenwire*, 10/26/2010, “PG&E finds 38 pipeline leaks in wake of deadly blast”.
- “PG&E also detailed plans to strategically reduce gas service this winter so that customers won’t notice the effect of state-mandated reductions in pipeline pressure.” (emphasis added)
- “But if PG&E is required to keep operating the San Francisco Peninsula’s lines at 300 pounds per square inch, customers within San Francisco could have their gas service cut if the temperature dips to 32 degrees” (emphasis added)

One Other Issue (2)

- *Washington Post*, 10/30/2010, “Could it Happen Here?” “Development brings homes closer to high-volume gas lines”.
- Williams Company is applying to FERC to build 1.44 miles of new 42 inch pipeline and replace 1.35 miles of pipeline in Prince William and Fairfax counties, Virginia.
- “Our pipeline is at capacity right now” said a Williams spokesman. “We’re replacing an existing pipeline with a larger pipeline that will relieve bottlenecks”. (emphasis added).
- What kind of other program could help?

Q & A

- The floor is open!