Integrating Energy Efficiency into System Planning

NEEP Annual EM&V Forum
October 12, 2011
Albany, New York
PJM as Part of the Eastern Interconnection with ATSI & Duke Integration

KEY STATISTICS

- PJM member companies: 710+
- Millions of people served: 61
- Peak load in megawatts: 162,230
- MWs of generating capacity: 184,992
- Miles of transmission lines: 62,214
- GWh of annual energy: 832,331
- Generation sources: 1,340
- Square miles of territory: 213,900
- Area served: 13 states + DC
- Internal/external tie lines: 247

- 26% of generation in Eastern Interconnection
- 28% of load in Eastern Interconnection
- 19% of transmission assets in Eastern Interconnection

21% of U.S. GDP produced in PJM

As of 4/1/2011
• Energy Efficiency (EE) Programs may participate as a Resource in the PJM 3-Year Forward Capacity Market

• Requirements to participate
  – Submit Initial M&V Plan (capacity value is based on performance over defined peak summer hours)
  – M&V protocols designed to capture load drop that would not otherwise have occurred or would have occurred at later date
  – May participate for up to 4 consecutive years
  – Resources that clear in the auction incur a firm commitment and are subject to financial penalty for non-compliance
Current PJM Planning Practice

- PJM produces an “unrestricted” load forecast and separate assumptions for Demand Resources (DR) and Energy Efficiency (EE)
  - Existing energy efficiency is in the unrestricted load forecast to the extent it is captured in historical metered loads
- DR and EE “forecasts” are based on amounts cleared in forward capacity auctions
- DR and EE are not part of the load model
- DR and EE assumptions held constant beyond Year 3
• PJM planning studies set
  
  Study Load = Unrestricted load – EE

• Planning studies that examine summer capacity emergency conditions further reduce load by DR

• Procedures in place to ensure DR and EE are not counted as both a load reducer and a resource
Growth of PJM Demand Side Products

Demand Side Participation in Capacity Market

- Active Load Management
- Interruptible Load for Reliability
- RPM and FRR DR (value in chart - amount offered in UCAP and FRR commit)
- Energy Efficiency

RPM Implemented

Years:
- 2005/2006
- 2006/2007
- 2007/2008
- 2008/2009
- 2009/2010
- 2010/2011
- 2011/2012*
- 2012/2013
- 2013/2014
- 2014/2015
In addition to the baseline study, PJM performed sensitivity analyses to assess potential impact of three public policy initiatives:

- Renewable Portfolio Standards
- Environmental Regulations
- State Goals for DR and EE

Results were for informational purposes only
EE Developments In Past Year

• Regional Planning Process Task Force:
  – Formed in late 2010
  – The RPPWG will evaluate the need to expand transmission planning criteria, or existing scenario planning procedures to include a broader range of assumptions.
  – EE has not been addressed yet

• FERC Order No. 1000:
  – Among other things, requires Transmission Planners to “consider” transmission needs driven by Public Policy Requirements. This may include EE.