PJM Regional Transmission Planning Experience

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HARVARD ELECTRICITY POLICY GROUP
- Ongoing and cyclical
- 15 year planning horizon
- RTEP issued each year

- Baseline analysis
- Interconnection analysis
- Coordinated planning with adjacent areas
Planning Process Uncertainty

• Generation Interconnection Volumes and Project Withdrawals
  – As many as 125 requests over 6-month queue during 2007/08
  – 88% queue drop-out rate on a per MW basis

• Substantial Number of Wind Projects, particularly in Western PJM

• Substantial Merchant Transmission Withdrawals to NY in the queue
  – Significant west-to-east transmission required for deliverability
  – Impacts snowball through all subsequent projects

• Reduction in Demand Forecast Due to Economic Downturn

• Penetration of Demand Response

• Generation Retirement - 18,000 MW of at-risk generation
Generation Queue Request Volumes

REQUESTS

QUEUE

A B C D E F G H I J K L M N O P Q R S T U1 U2 U3 U4 V1 V2 V3

2006 2007 2007 2006 2007 2008 2009

3-month queues
Active Generation in Queue

- Wind, 44,455.9
- Natural Gas, 22,905
- Coal, 7,891
- Nuclear, 7,595
- Solar, 286.475
- Oil, 915.9
- Other, 494.8
- Biomass, 357.19
- Hydro, 5,210
- Methane, 200.18
- Wood, 158.4
- Diesel, 16
2009 Load Forecast vs. 2008 Load Forecast

PJM Summer Peak Forecast Comparison

- 2008 Forecast
- 2009 Forecast


Ranges: 130,000 to 175,000
Demand Side Participation in Capacity Market

Prior to RPM Implementation

RPM Implemented

- RPM, EE
- RPM, DR
- RPM, ILR
- ALM

2005/2006
2006/2007
2007/2008
2008/2009
2009/2010
2010/2011
2011/2012
2012/2013
• Reliability Criteria – The Bright Line Test Requirement
• Interaction With State Siting Proceedings
• Result
  – Required in service date oscillates year to year
  – State proceeding delays / case withdrawal
  – Risk of future reliability challenge and market intervention
• Added to the RTEP in 2007 to resolve multiple overloads on 500 kV facilities across the central Pennsylvania / Allegheny Mountain corridor

• Need for the project assumed the TRAIL line is placed in-service by June 2011

• Based on the 2009 RTEP the Amos – Kemptown project is required to resolve widespread thermal and reactive problems starting June 1, 2014
• Project driver: Thermal and reactive criteria violations

• Required in-service date based on the 2008 RTEP was June 1, 2013

• Updated analyses done as part of the 2009 RTEP shows that the required in-service date for the project can be deferred until June 1, 2014