



# PJM's Outlook for Electricity Resources and Demand



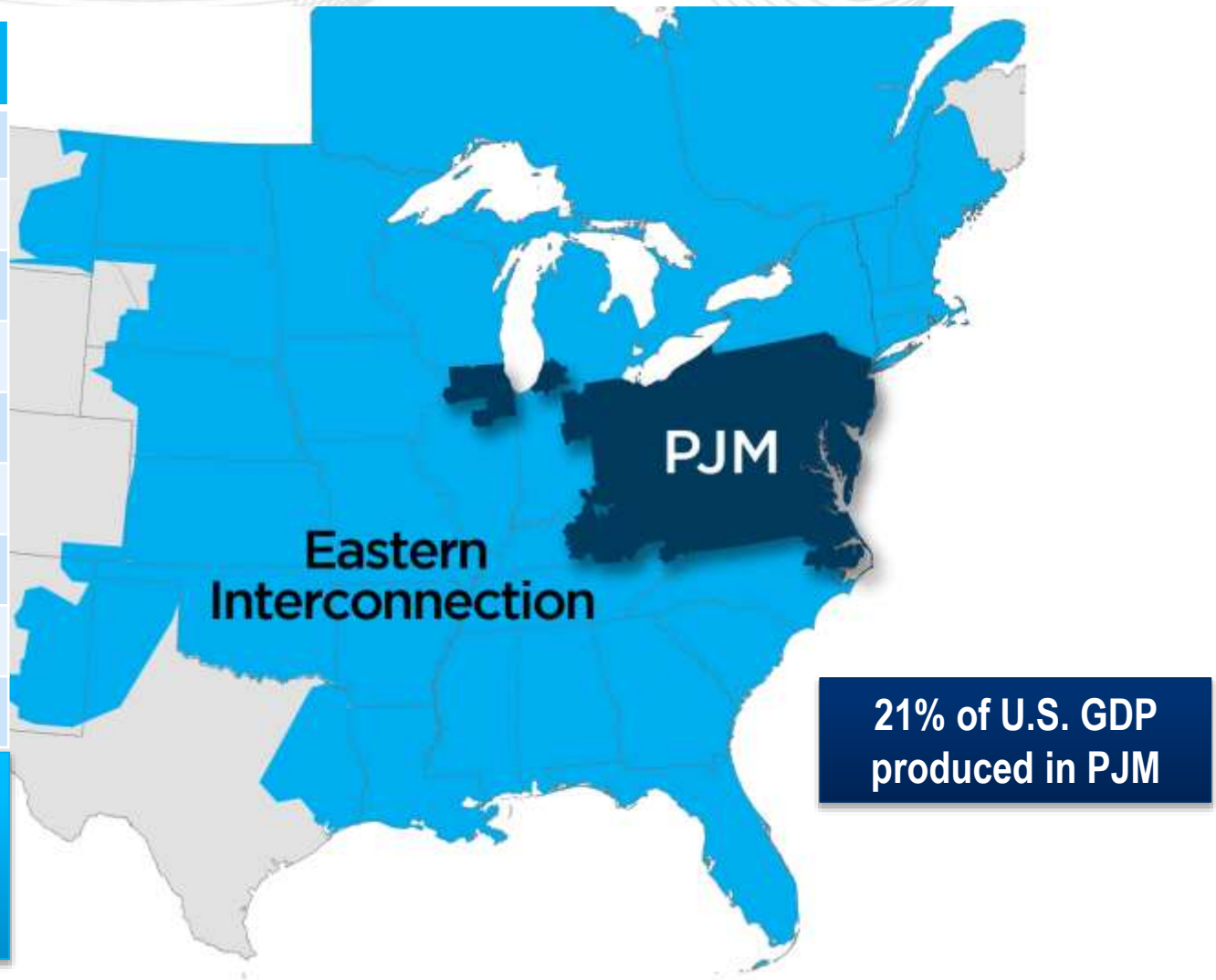
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Managing Partner, State Government Affairs  
PJM Interconnection

NASEO's 2017 Energy Policy Outlook Conference  
February 9, 2017

## Key Statistics

Member companies	960+
Millions of people served	61
Peak load in megawatts	165,492
MW of generating capacity	171,648
Miles of transmission lines	81,736
2014 GWh of annual energy	792,580
Generation sources	1,304
Square miles of territory	243,417
States served	13 + DC

- 27% of generation in Eastern Interconnection
- 28% of load in Eastern Interconnection
- 20% of transmission assets in Eastern Interconnection



As of 5/2016

## Reliability

- Grid Operations
- Supply/Demand Balance
- Transmission monitoring

1

## Regional Planning

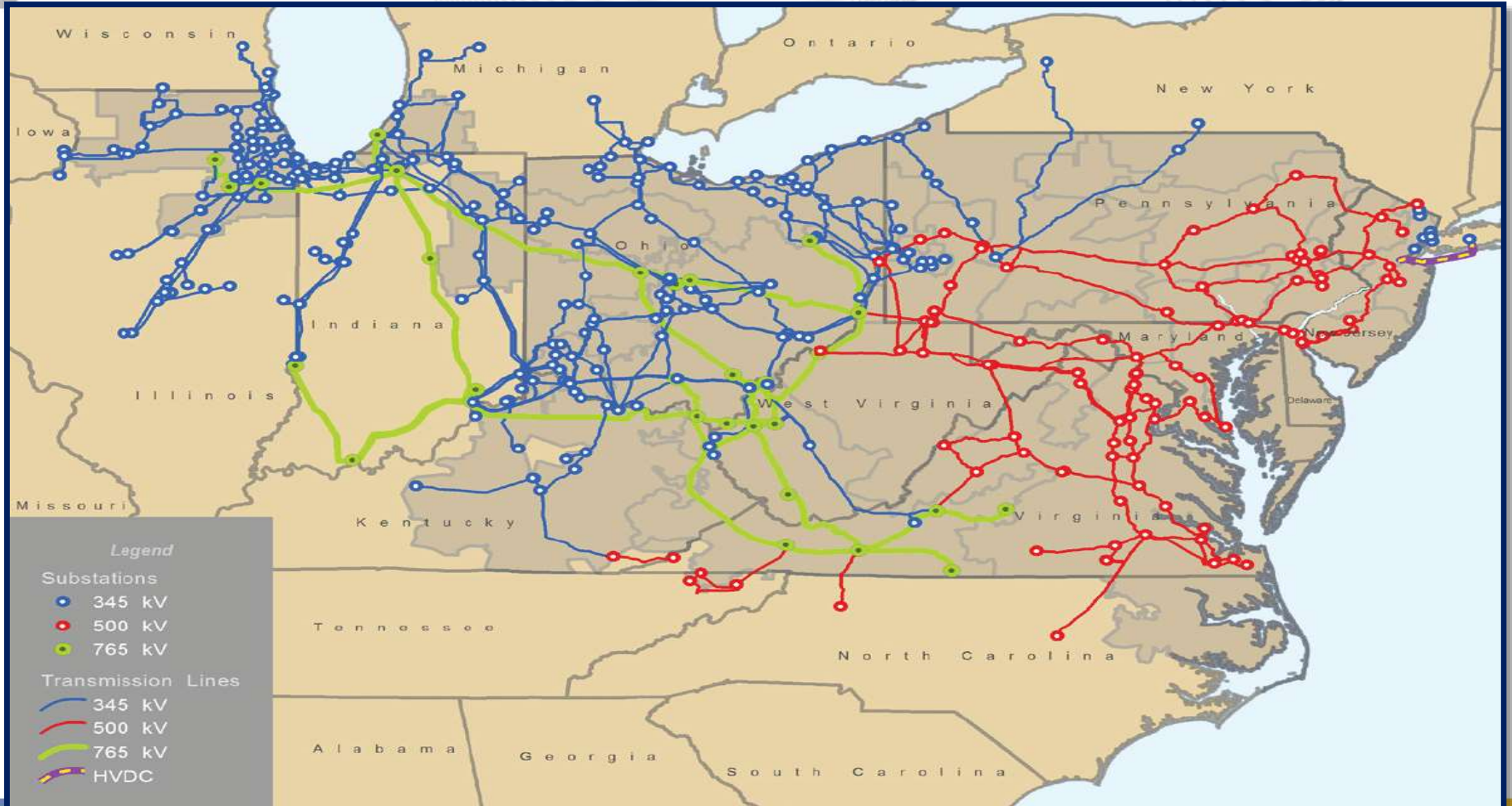
- 15-Year Outlook

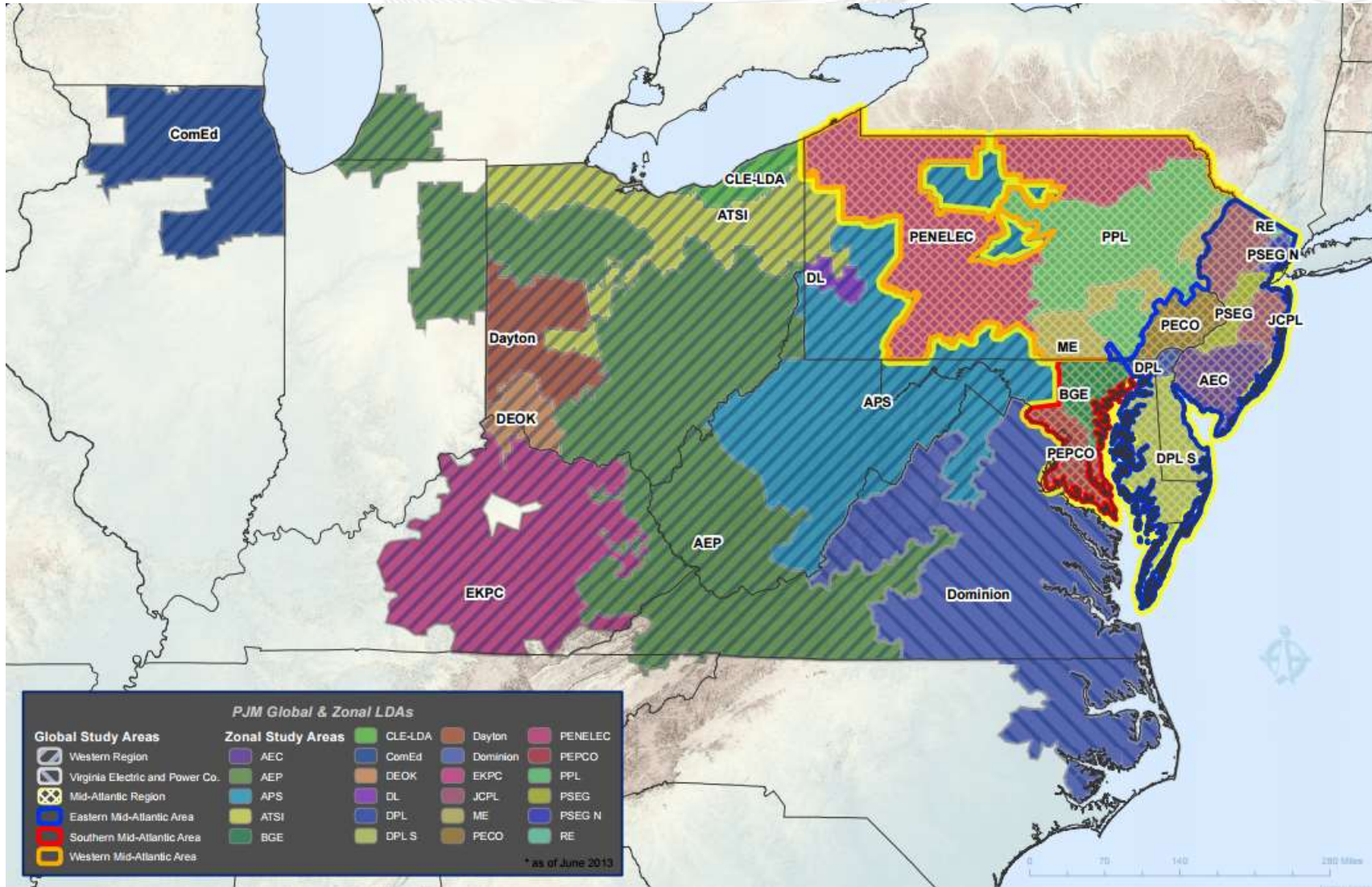
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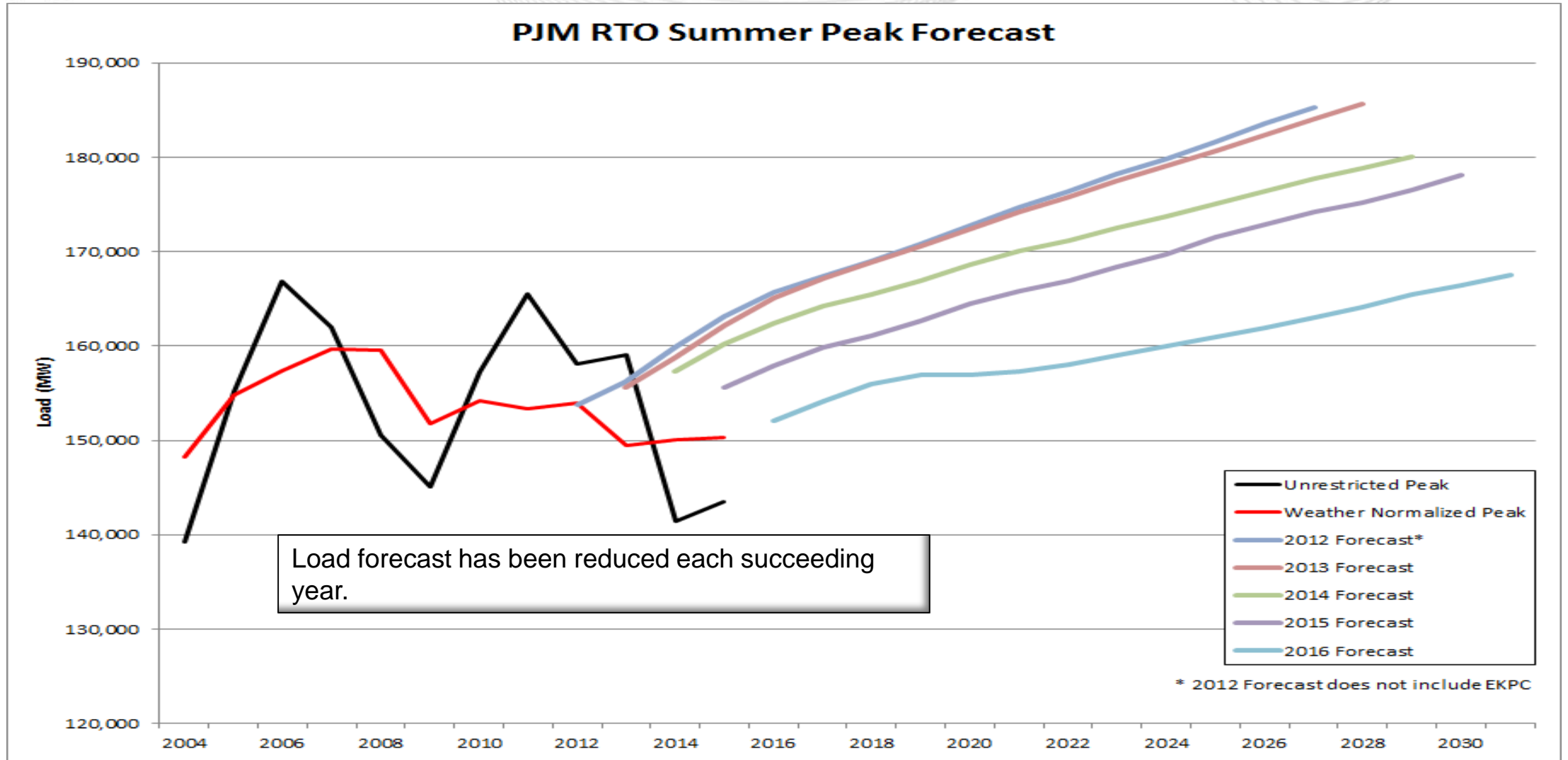
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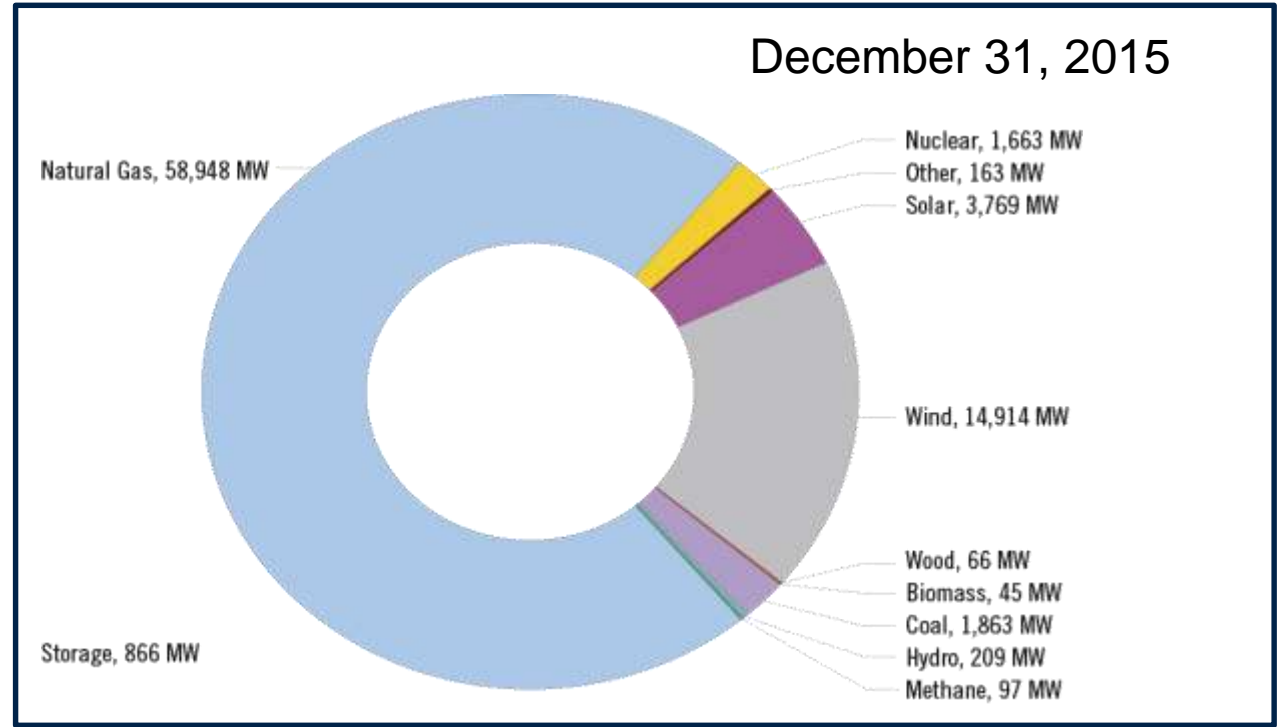
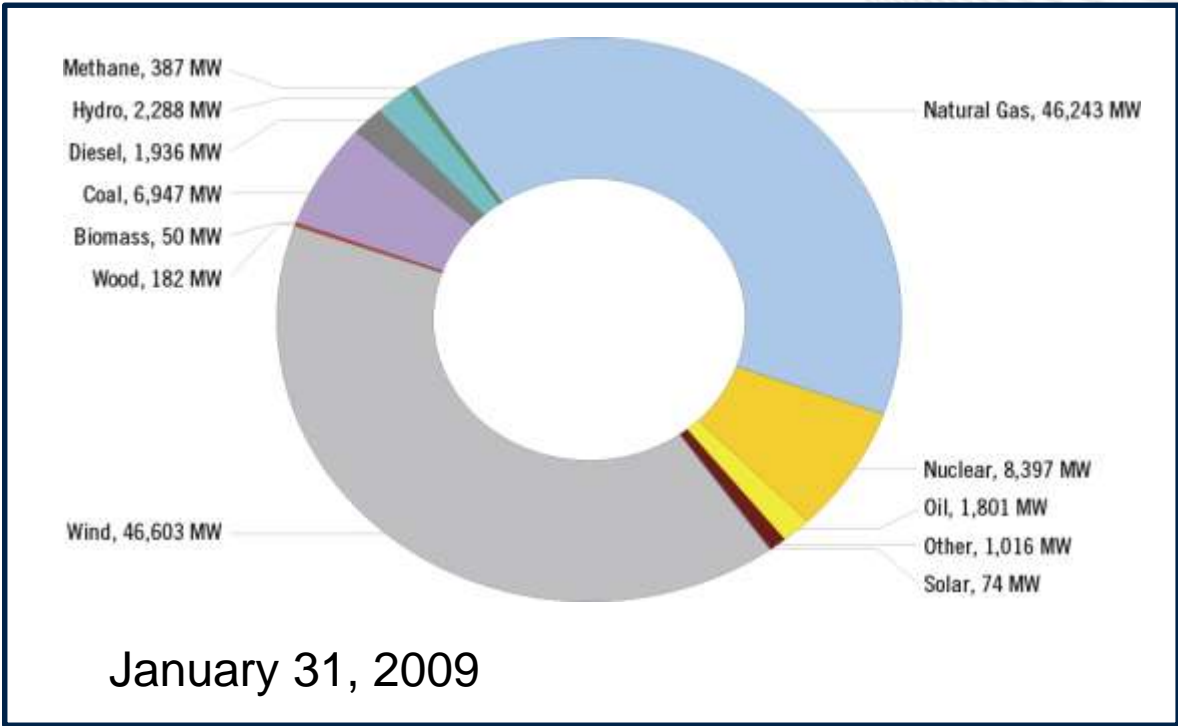
## Market Operation

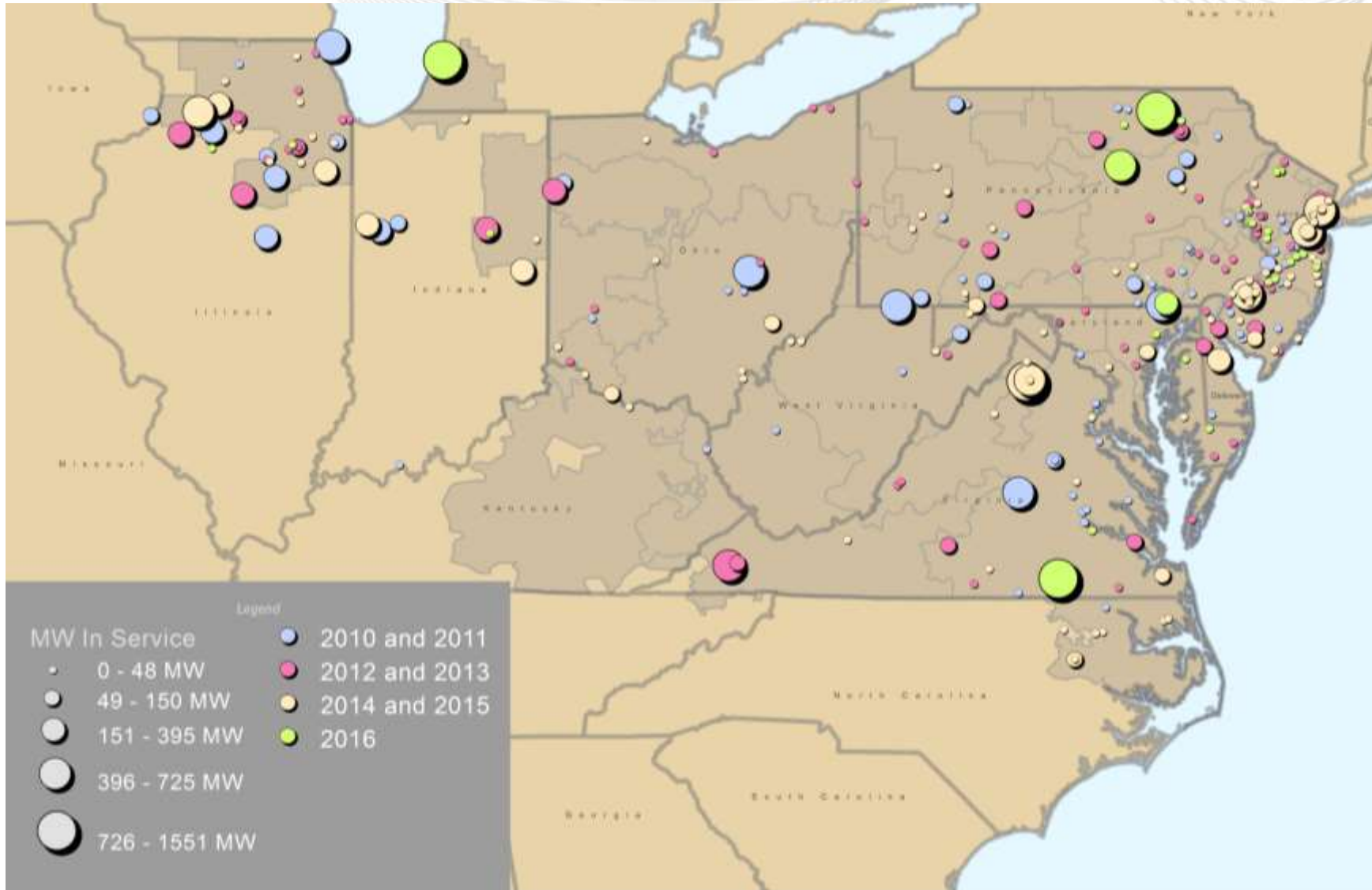
- Energy
- Capacity
- Ancillary Services





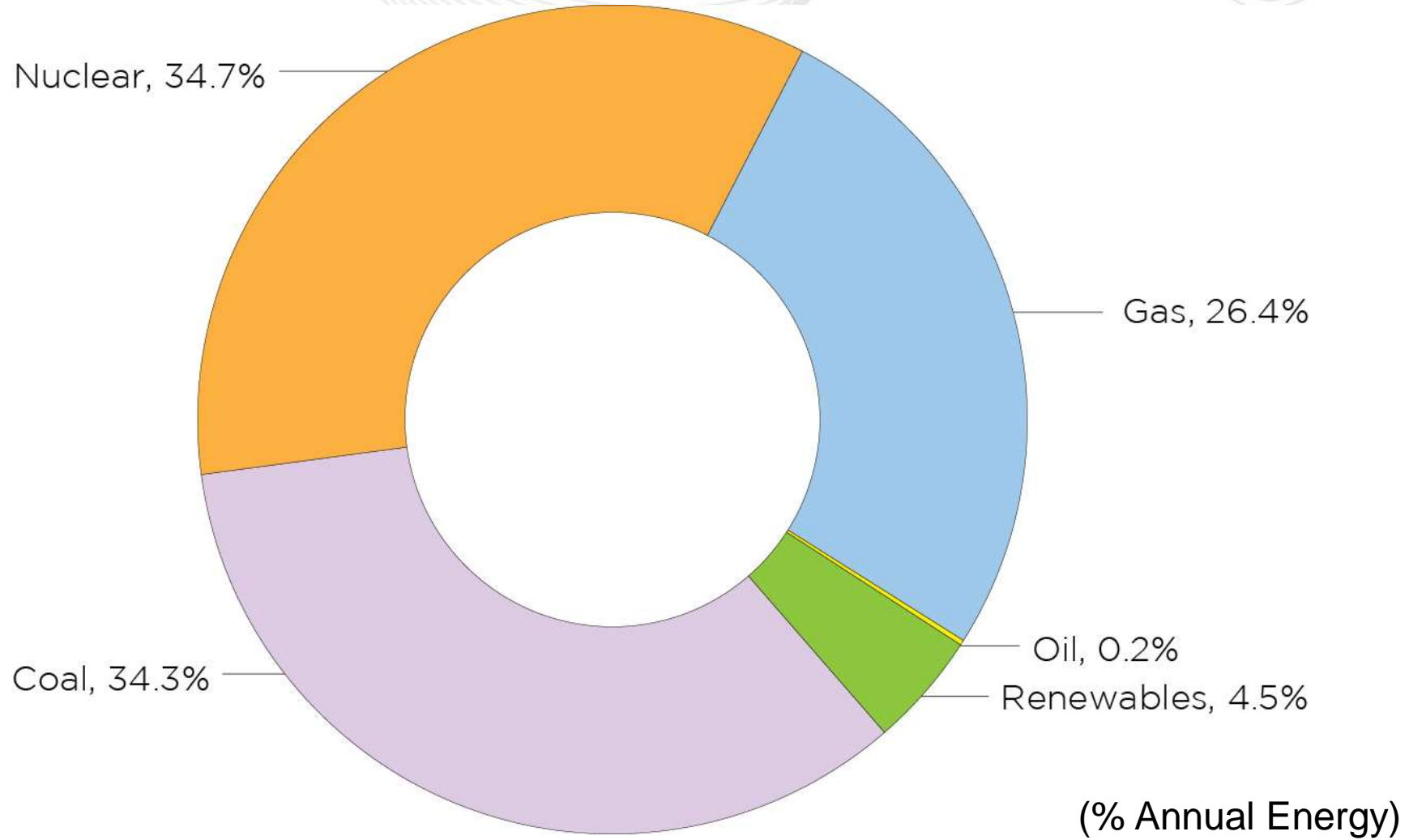




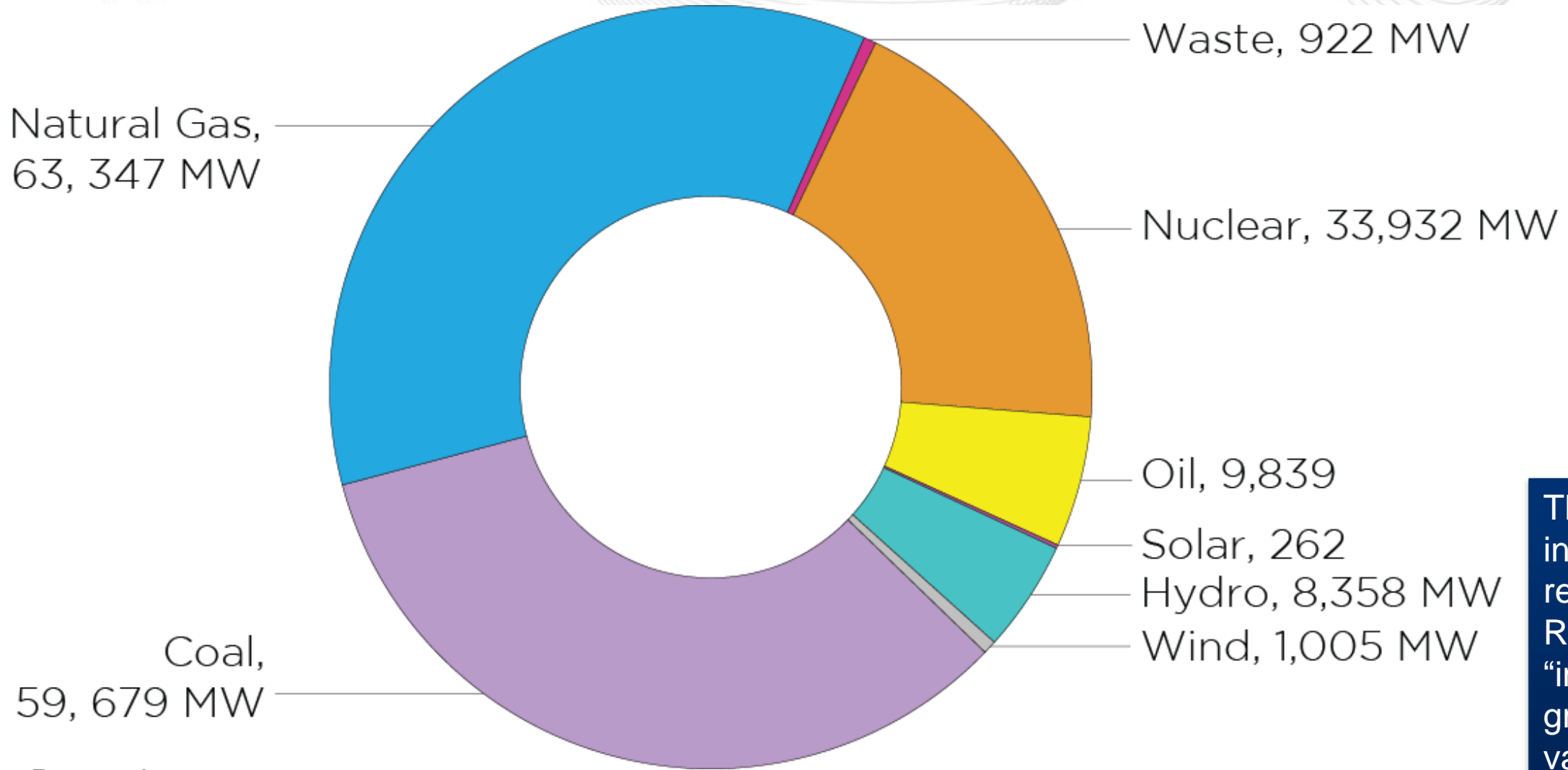




## 2016 PJM System Mix



# 2016 Existing PJM Installed Capacity



Natural Gas,  
63,347 MW

Waste, 922 MW

Nuclear, 33,932 MW

Oil, 9,839

Solar, 262

Hydro, 8,358 MW

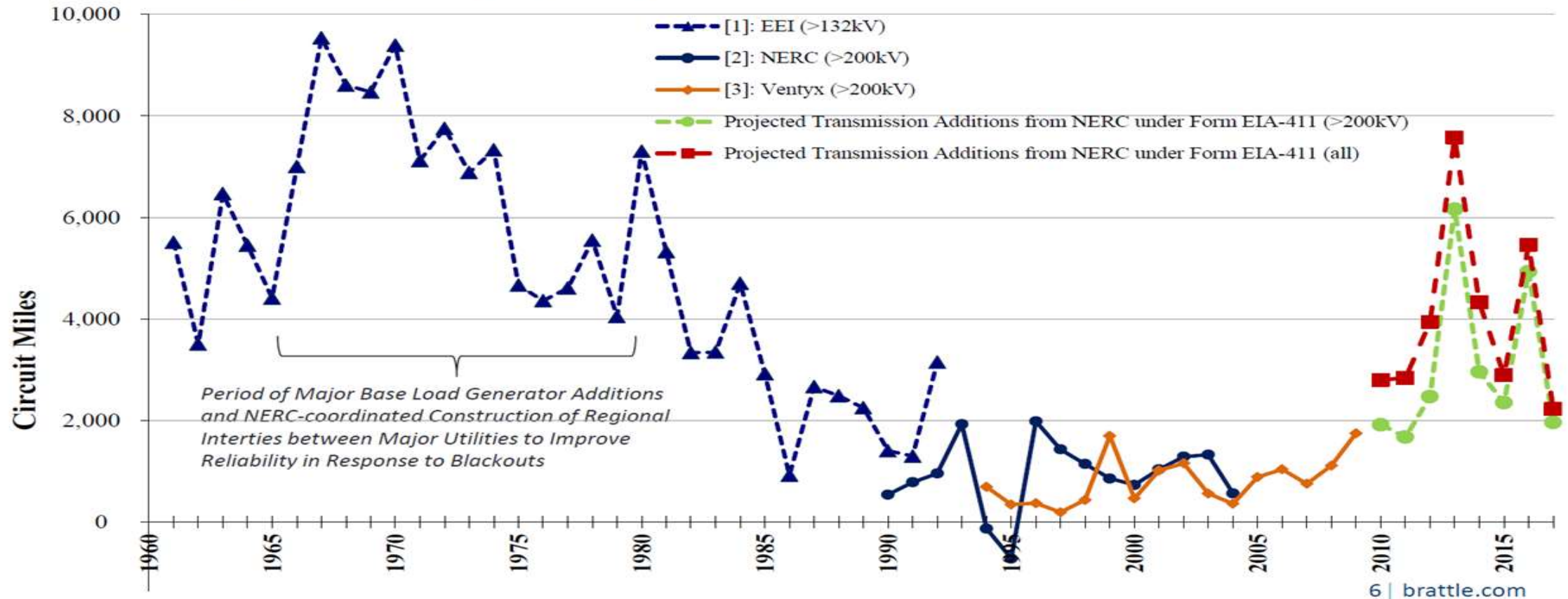
Wind, 1,005 MW

Coal,  
59,679 MW

The numbers in this figure represent RPM-eligible "iron-in-the-ground" MW values.

December 31, 2016

- Most of the existing grid was built 30-50+ years ago
- Even relatively high recent and projected circuit miles additions are below levels of additions in 1960s and 1970s

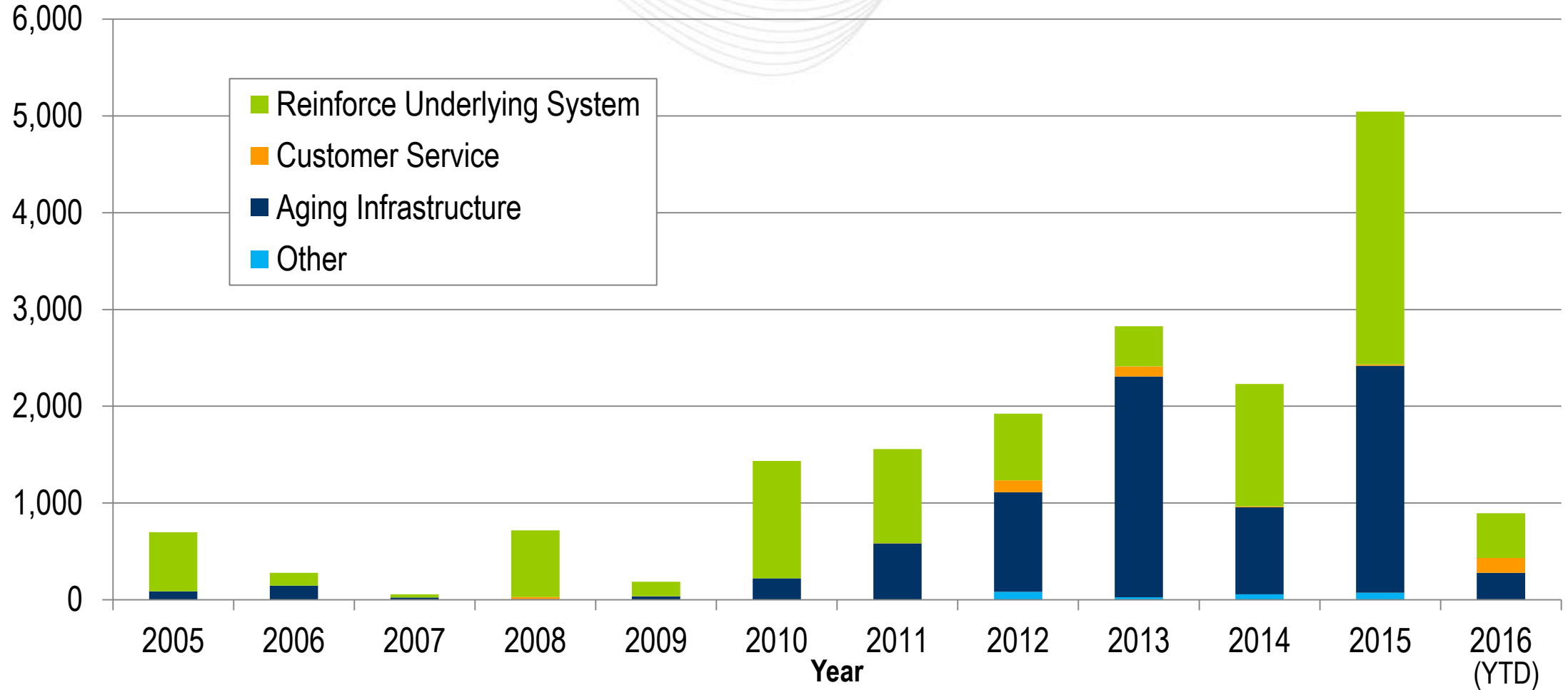


\*Investment Trends and Fundamentals in US Transmission and Electricity Infrastructure; July 17, 2015 Brattle Presentation to JP Morgan Investor Conference



# Transmission Owner Supplemental Project Cost by Year

Cost Estimate  
(\$Millions)



# Resilience Criteria

- **NERC**
  - Infrastructure resilience is the ability to reduce the magnitude and/or duration of disruptive events. The effectiveness of a resilient infrastructure or enterprise depends upon its ability to anticipate, absorb, adapt to, and/or rapidly recover from a potentially disruptive event
- **NERC Severe Impact Resilience Task Force**
  - Severe Impact Resilience: Considerations and Recommendations
    - ‘Preventing and Responding to Physical Attacks’
      - *“Consider ways to improve security when designing or refurbishing existing BPS facilities”*

