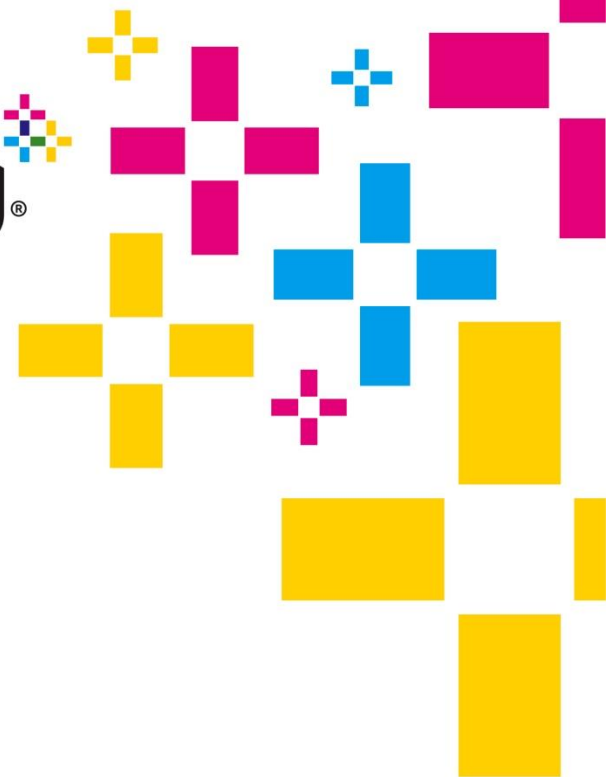




nrg<sup>®</sup>



# Markets in Transition

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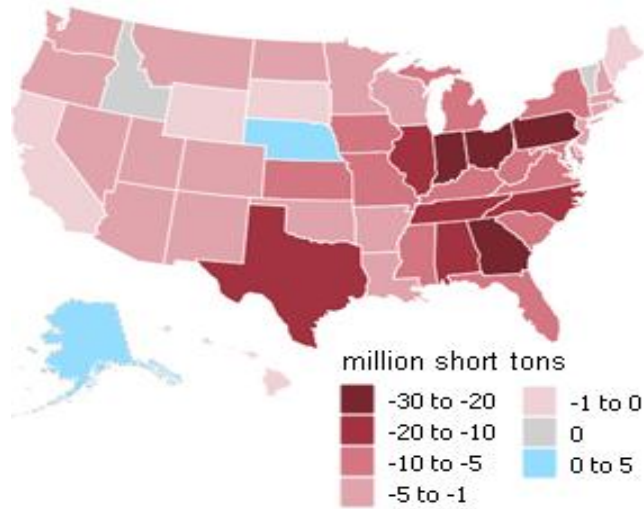
Kelli Joseph, Ph.D.

Director, Market and Regulatory Affairs  
Energy Economics Conference, Houston, TX

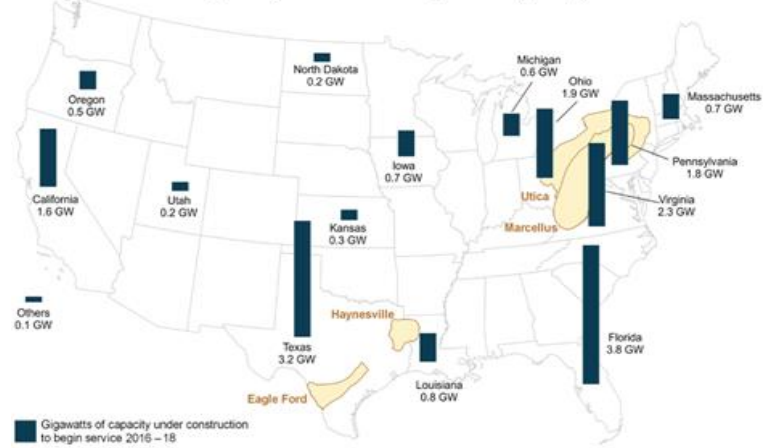
Dec 7, 2016

# Three Significant Trends

# Change in power sector coal demand 2007-15

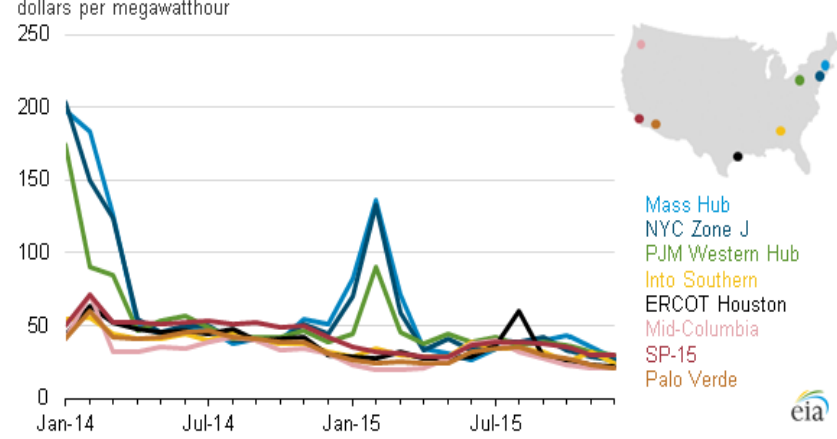


# U.S. gas-fired capacity additions by state (GW), 2016-18



Source: U.S. Energy Information Administration *Electric Power Monthly*, Table 6.5. "Planned U.S. Electric Generating Unit Additions," data as of January 2016.  
 Note: Gas-fired capacity additions include plants completed and under construction in 2016-18.

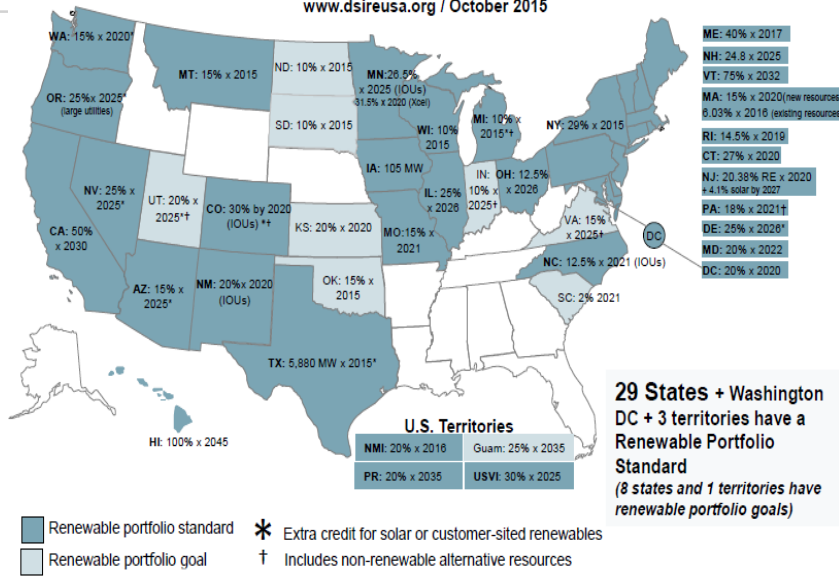
# Monthly average on-peak electricity prices at key trading hubs (2014-15)





# Renewable Portfolio Standard Policies

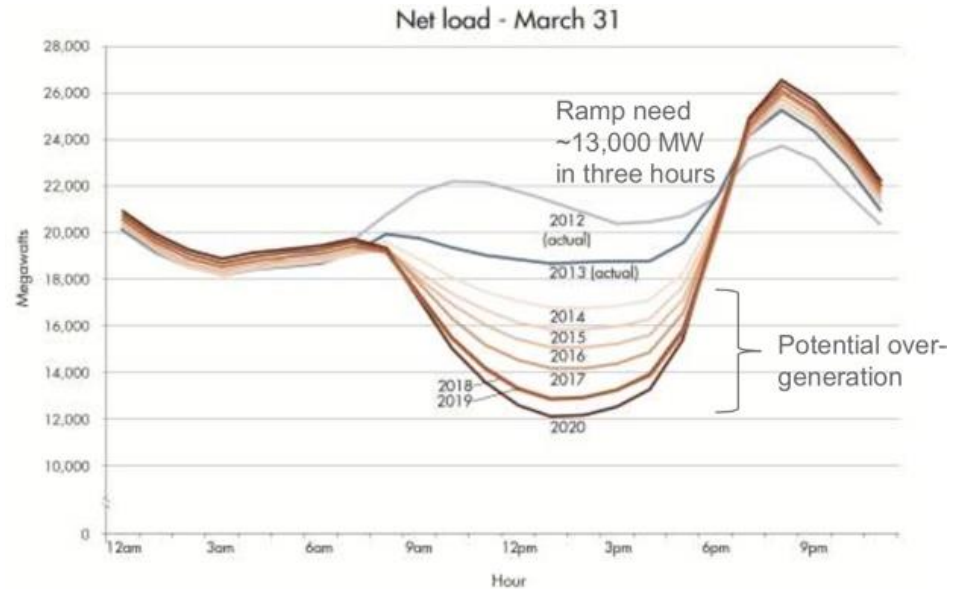
www.dsireusa.org / October 2015



# Value of "d" Storage

# RECs

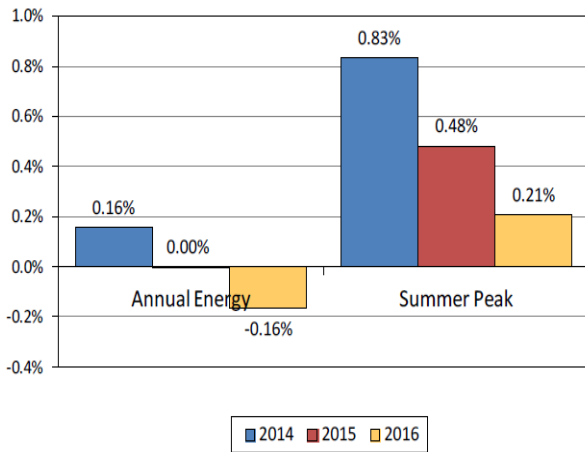
# NEM



# Little to no Load Growth

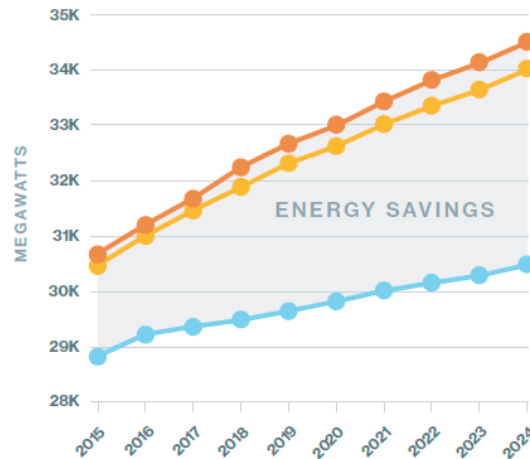
## NYISO

Ten-Year Annual Average Growth Rates  
Annual Energy & Summer Peak



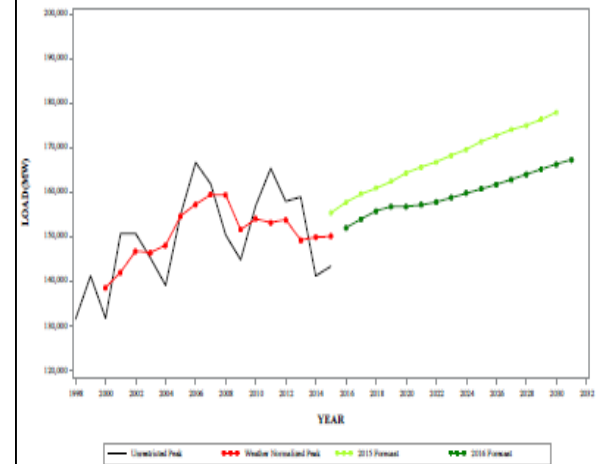
## ISO-NE

Summer Peak Demand (MW)  
With and Without EE and PV Savings



## PJM

SUMMER PEAK DEMAND FOR PJM RTO  
GEOGRAPHIC ZONE



- Slower economic growth in some States
- Energy Efficiency and Behind-the-Meter Resources

**What does it all mean?**

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## **Energy production in transition**

- **Energy Markets**
  - Price Formation
  - ZECs?
  - Carbon Pricing?

## **Grid in transition**

- **Capacity Markets**
  - More important
  - Performance Incentives
  - ZEC Impact