



**NARUC**

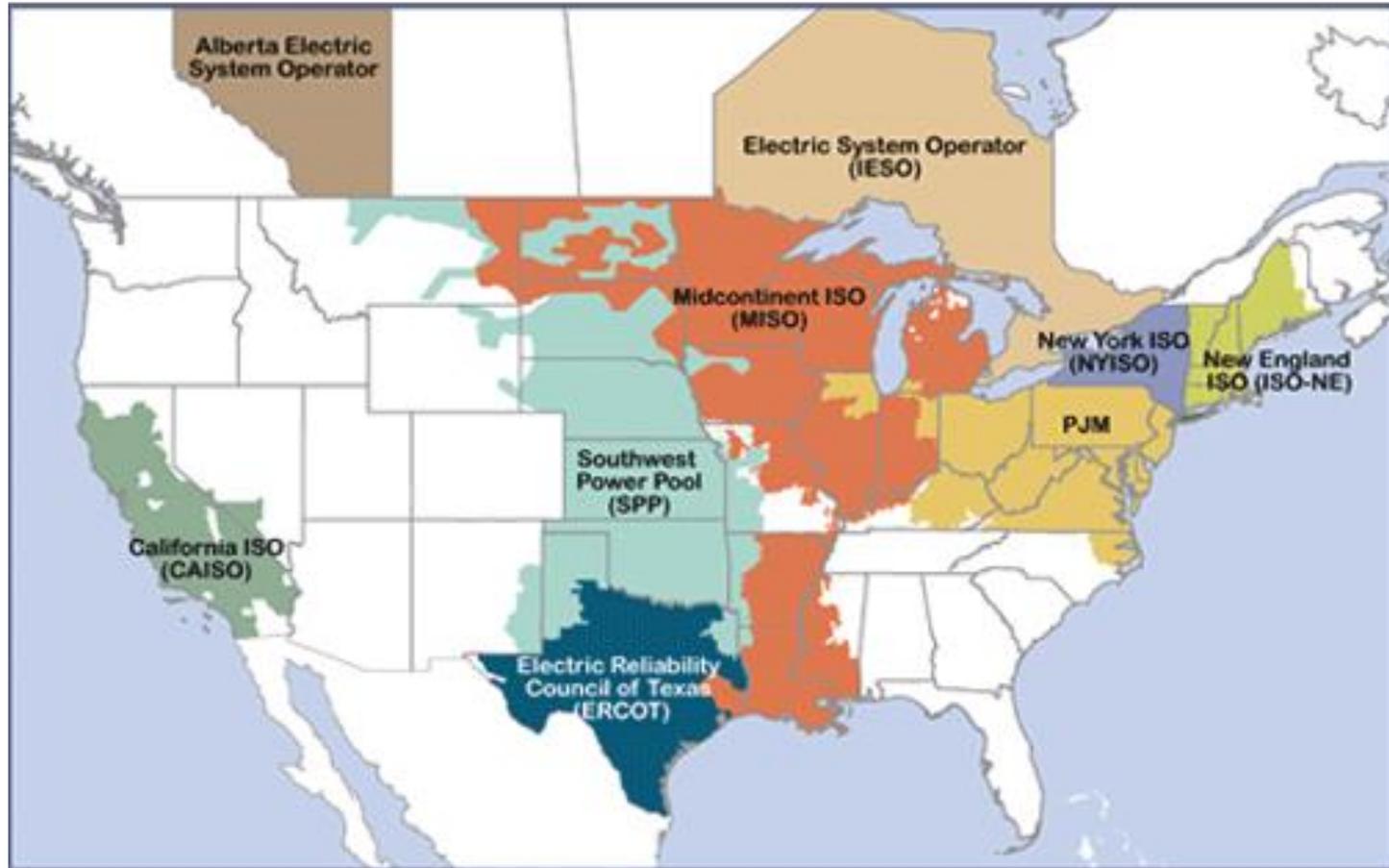
*Serving the consumer interest  
by seeking to improve the  
quality and effectiveness  
of public utility regulation  
in America.*

# ***Session Two: Encouraging Flexibility***

**Commissioner Anne E. Hoskins  
Maryland Public Service Commission**

**EU-US Energy Regulators Roundtable  
Madrid, Spain  
April 25, 2016**

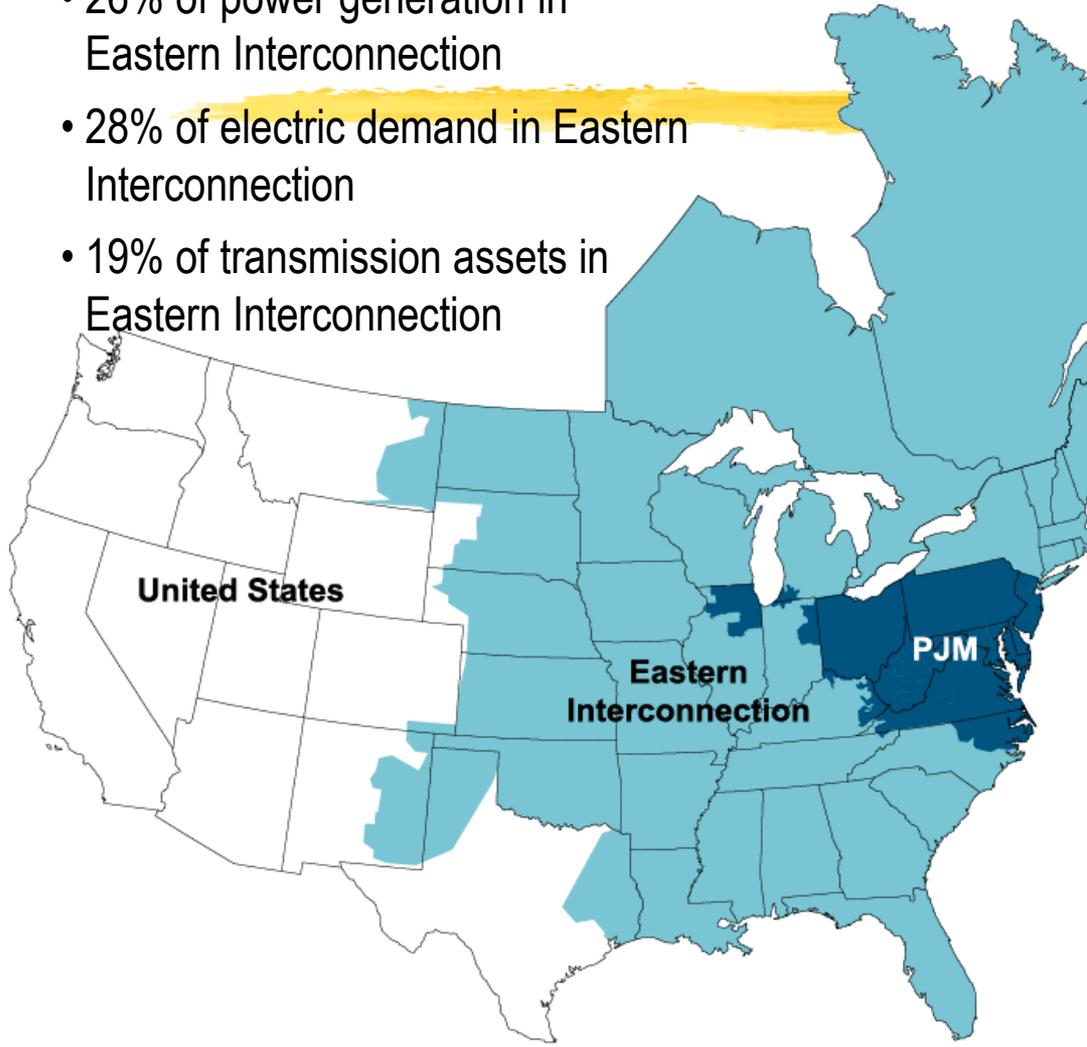
# Regional Transmission Organizations (RTO)



Source: FERC, 2015

# PJM Wholesale Electric Power Market

- 26% of power generation in Eastern Interconnection
- 28% of electric demand in Eastern Interconnection
- 19% of transmission assets in Eastern Interconnection



## KEY STATISTICS

|   |                |
|---|----------------|
| PJM member companies                    | 800            |
| millions of people served               | 60             |
| peak load in megawatts                  | 163,848        |
| MWs of generating capacity              | 185,600        |
| miles of transmission lines             | 62,591         |
| GWh of annual energy generation sources | 832,331        |
| square miles of territory area served   | 214,000        |
| Internal/external tie lines             | 13 states + DC |
|   | 142            |

**21% of U.S. GDP  
produced in PJM**

As of 6/2012

# PJM Markets Overview

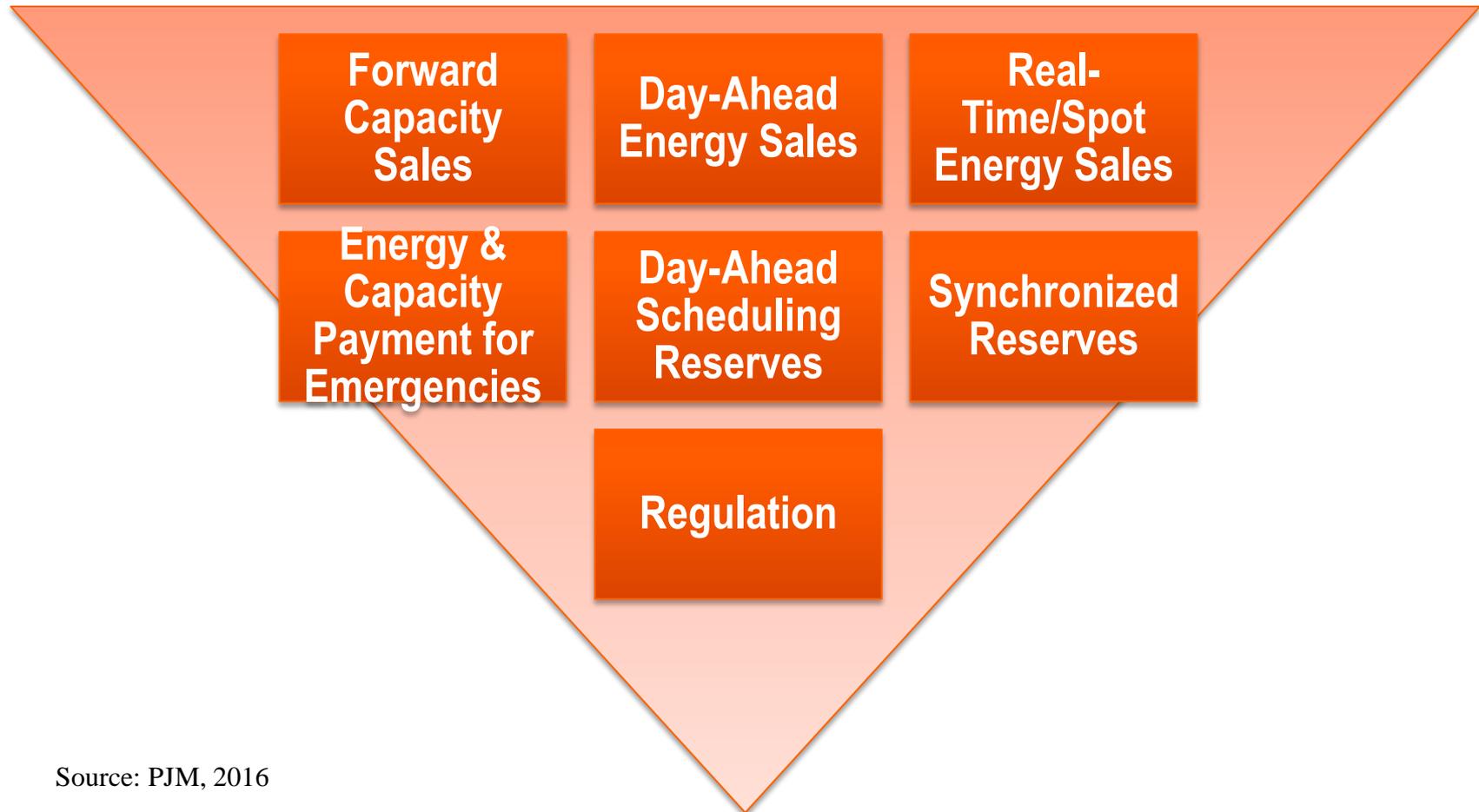


⌘ Energy Market

⌘ Capacity Market

⌘ Ancillary Services Market

# Demand-Side Response: Opportunities in PJM Markets



# Evolution of Demand-Side Response Initiatives

## ⌘ Trends

- ☑ Increase in customer commitment to curtail demand during high price periods
- ☑ Smart Grid Technology deployment
- ☑ Retail rate innovation

## ⌘ Operational Implications

- ☑ Increase in customer response to price
- ☑ Aggregated demand resources providing high quality grid services
- ☑ Increasing operational confidence in DR performance

# Distribution-level Issues



- ⌘ Demand Response at state/local utilities
- ⌘ Third party competitive suppliers engaging commercial and industrial customers
- ⌘ Selling energy efficiency into capacity market
- ⌘ Distributed generation: microgrids & battery storage used by states to improve local flexibility, reliability and resiliency

# “Grid of the Future”



- ⌘ Grid modernization proceedings are underway in some states
- ⌘ Planning capacity varies among states and utilities
  - ☑ Permits different approaches but more difficult to implement best practices uniformly