



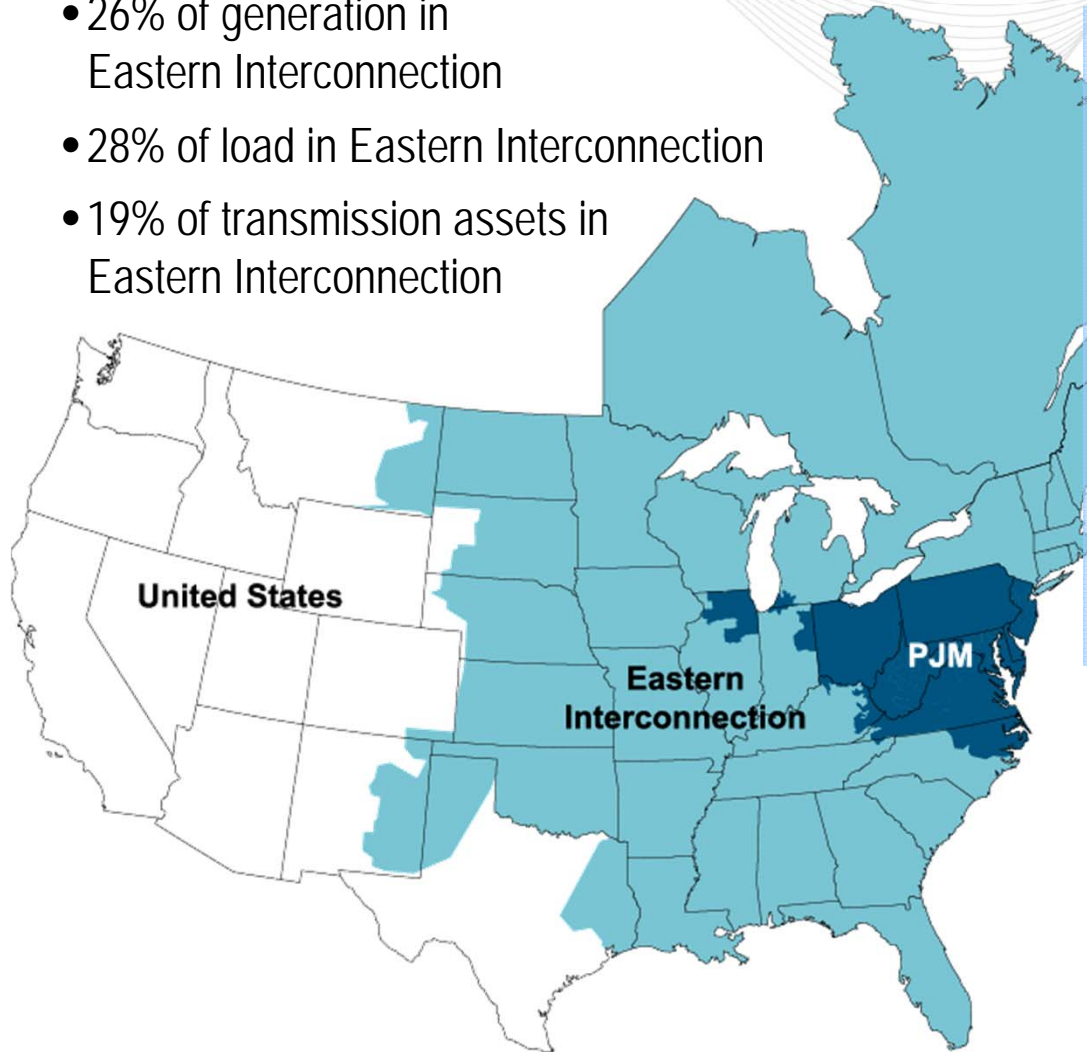
# Summer 2012 PJM Reliability Assessment

Pennsylvania Public Utility Commission  
June 7, 2012



# PJM as Part of the Eastern Interconnection

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



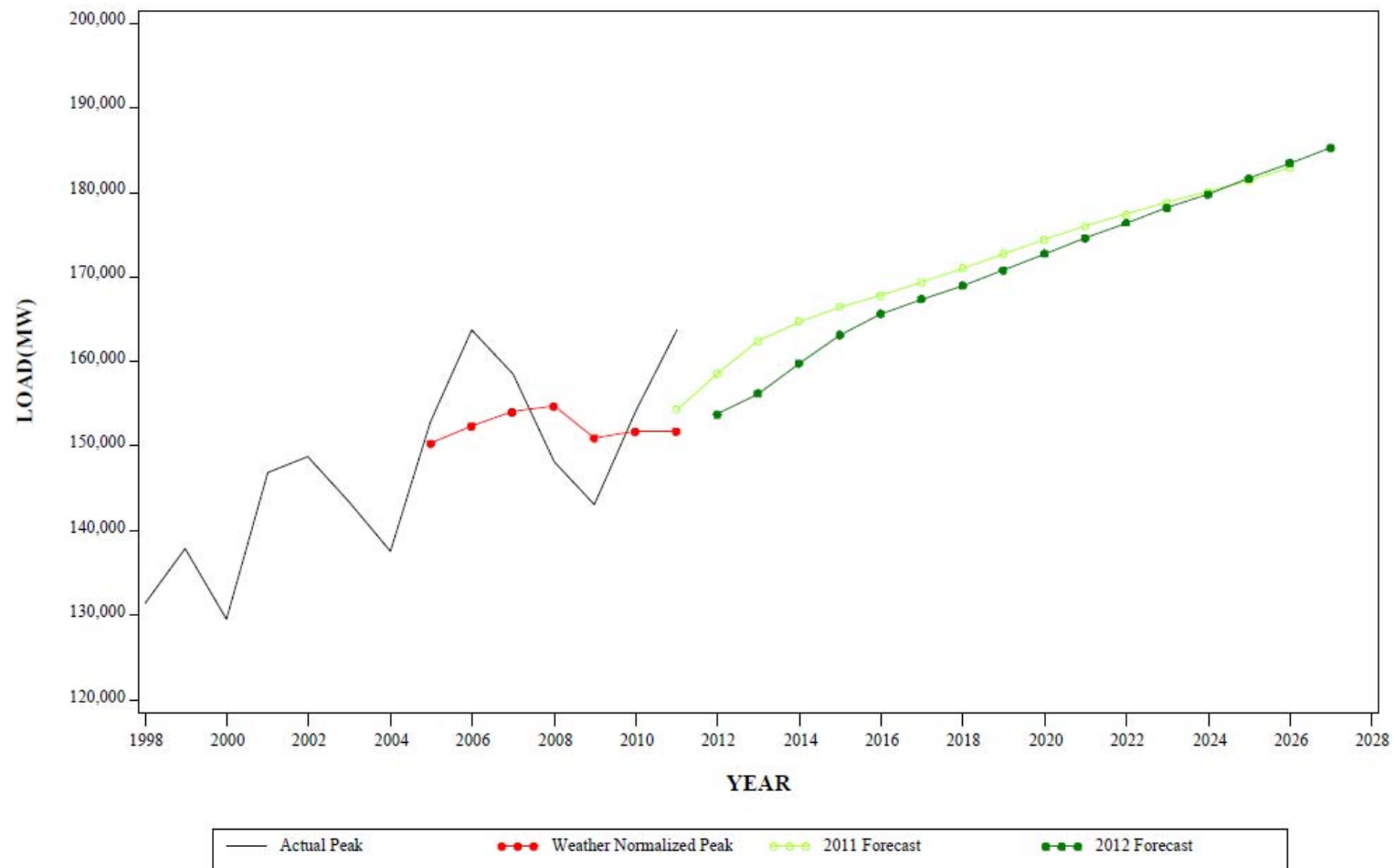
## KEY STATISTICS

PJM member companies	750+
millions of people served	60
peak load in megawatts	163,848
MWs of generating capacity	185,600
miles of transmission lines	65,441
GWh of annual energy generation	832,331
generation sources	1,365
square miles of territory area served	214,000
externally facing tie lines	13 states + DC
	142

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

As of 1/4/2012

**SUMMER PEAK DEMAND FOR PJM RTO  
GEOGRAPHIC ZONE**





# PJM Load and Capacity Comparison: 2012 vs. 2011

## 2012 (with DEOK)

Forecast Load (MW) Total	Demand Response and Energy Efficiency (MW)	Forecast Load Less Demand Response (MW)	Installed Generation Capacity (MW)	Reserve Margin (MW)	Reserve Margin	Required Reserve Margin
153,780	10,230 <sup>1</sup> (est.)	143,550	185,180	41,630	29.0%	15.6%

<sup>1</sup>Includes 654MW of Energy Efficiency

## 2011 (without DEOK)

Forecast Load (MW) Total	Demand Response and Energy Efficiency (MW)	Forecast Load Less Demand Response (MW)	Installed Generation Capacity (MW)	Reserve Margin (MW)	Reserve Margin	Required Reserve Margin
148,940	11,897	137,043	180,400	43,357	31.6%	15.5%

<sup>1</sup>Includes 75 MW of Energy Efficiency

2011 (Actual Peak Load: 158,016 MW on July 21, 2011 at HE 17)

**Forecast Load** – Expected peak demand, based on normal weather (Total Internal Demand-TID)

**Demand Response** – Contractually interruptible load and other customer load willing to be interrupted at the direction of PJM. Compliance check is performed at end of summer.

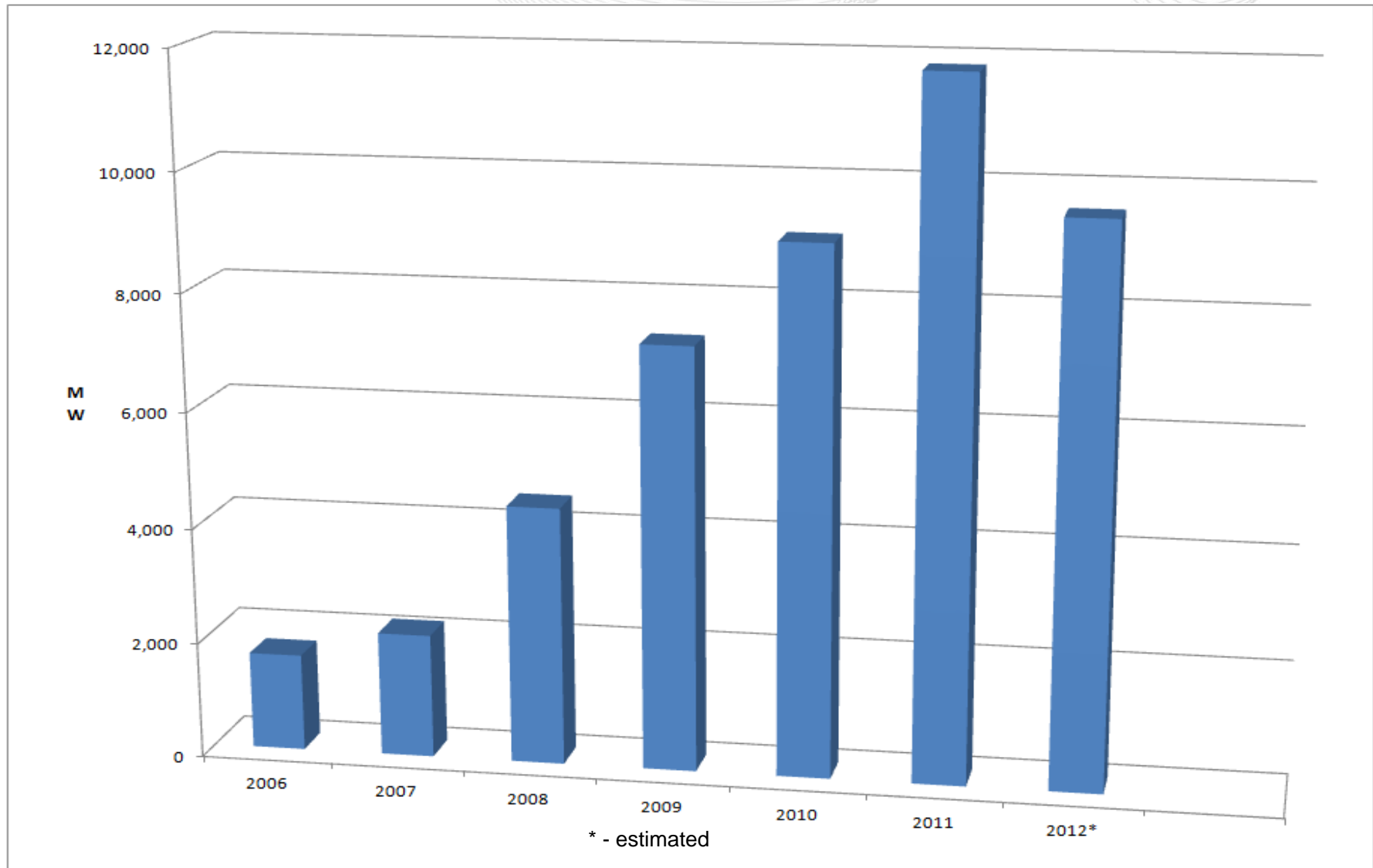
**Forecast Load Less Load Management** – Expected peak demand after demand response has been implemented (Net Internal Demand-NID)

**Installed Generation Capacity** – Total MW amount of deliverable generation inside PJM (Installed Capacity)

**Reserve (MW)** – Installed Generation Capacity minus Net Internal Demand

**Reserve Margin (%)** – Reserve expressed as a percent of Net Internal Demand

**Required Reserve Margin (%)** – PJM required planning reserve, as determined by the RPM process (Installed Reserve Margin-IRM)



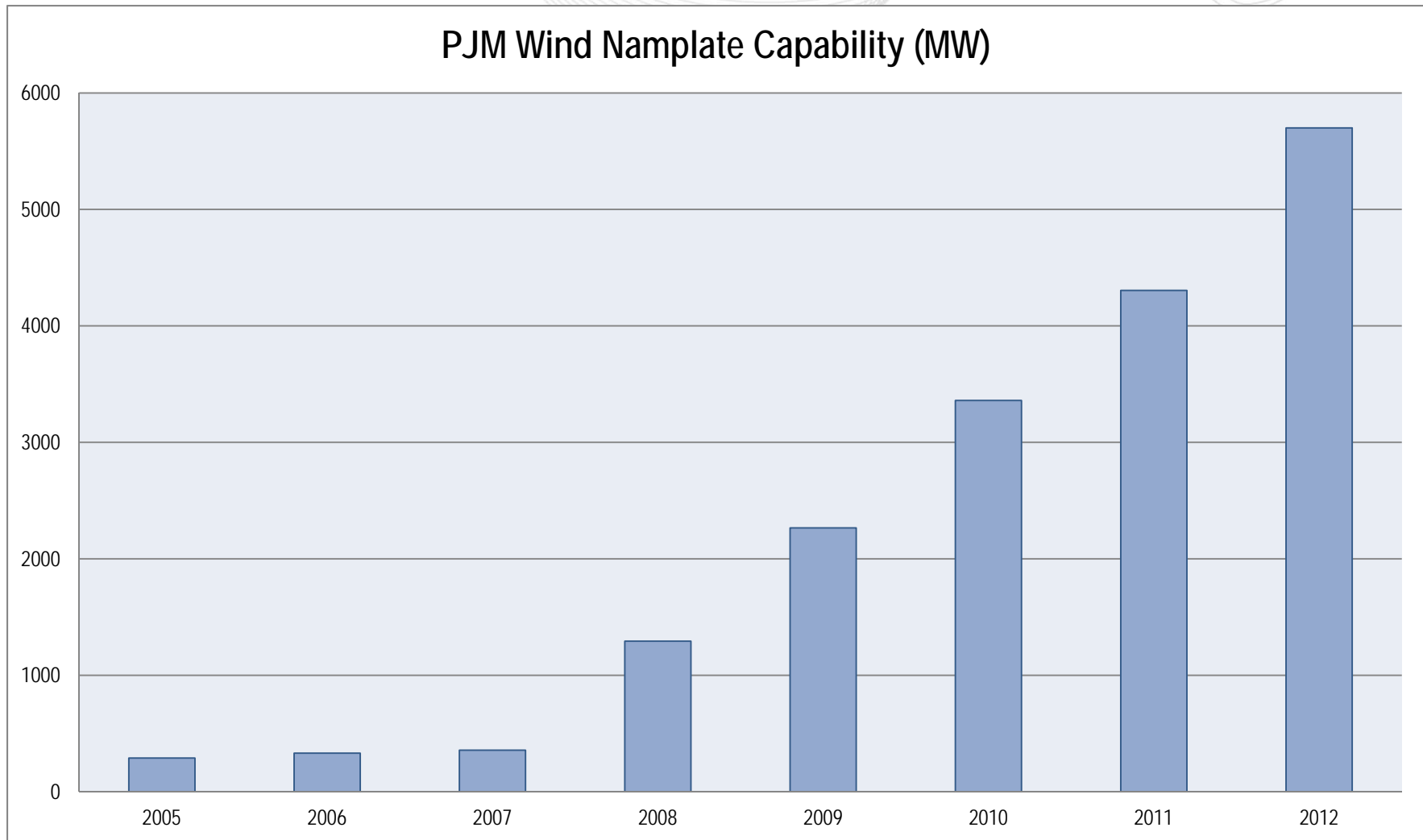
- Compensated through RPM
- Operational control turned over to PJM
- Requirements regarding number of interruptions, duration of interruptions, lead time, etc.
- PJM verifies compliance

<u>Year</u>	<u># of LM Events</u>	<u>Year</u>	<u># of LM Events</u>
2005	2	2008	0
2006	2	2009	0
2007	1	2010	6
		2011	3

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- 2012 Economic Load Response registrations (preliminary):  
318 MW

- Historically about 6% of PJM capacity is “forced out” of service during the peak summer period
- Scheduled generator maintenance is coordinated to minimize peak period impacts
- Water levels are expected to be normal for hydro units
- PJM has about 1,300 MW of energy-only generation
- Projected to have 5,720 MW of wind generation by 6/1/2012
  - 877 MW in Pennsylvania





- PJM Operations Assessment Task Force (OATF) Summer Operating Study

<http://www.pjm.com/-/media/committees-groups/committees/oc/20120508/20120508-item-07-oatf-2012-summer-study-results.ashx>

- NERC Summer Assessment

<http://www.nerc.com/files/2012SRA.pdf>

- Joint MISO/PJM Operations Coordination Meeting

- PJM Spring Operator Seminar (10 sessions – over 700 operators attended)

- PJM Emergency Procedures Drill – May 22, 2012

<http://www.pjm.com/-/media/committees-groups/committees/oc/20120508/20120508-item-05-2012-summer-emergency-procedures-drill.ashx>

- PJM expects to be able to reliably serve expected peak loads—peak loads are expected to be slightly higher this summer vs. last summer's weather-normalized loads
- Amount of Demand Response is down slightly from summer 2011, but DR has increased significantly since 2006 —helping to offset the impact of generator retirements
- Transmission system is expected to perform adequately based on applicable criteria