



Reliability of the U.S. Electric System and Environmental Regulation

APRIL 26, 2012

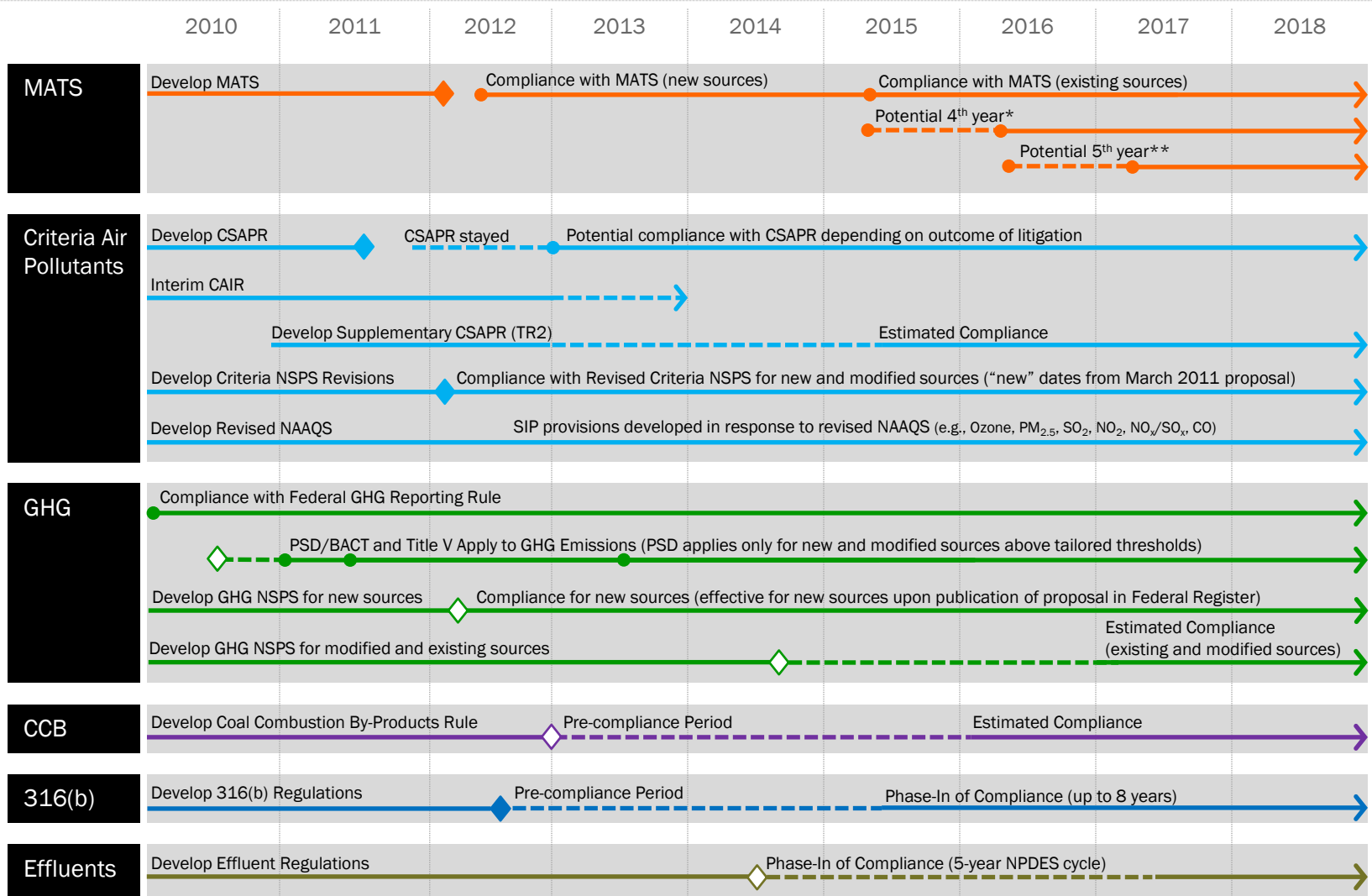
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ICAC Annual Meeting
Hilton Head, South Carolina



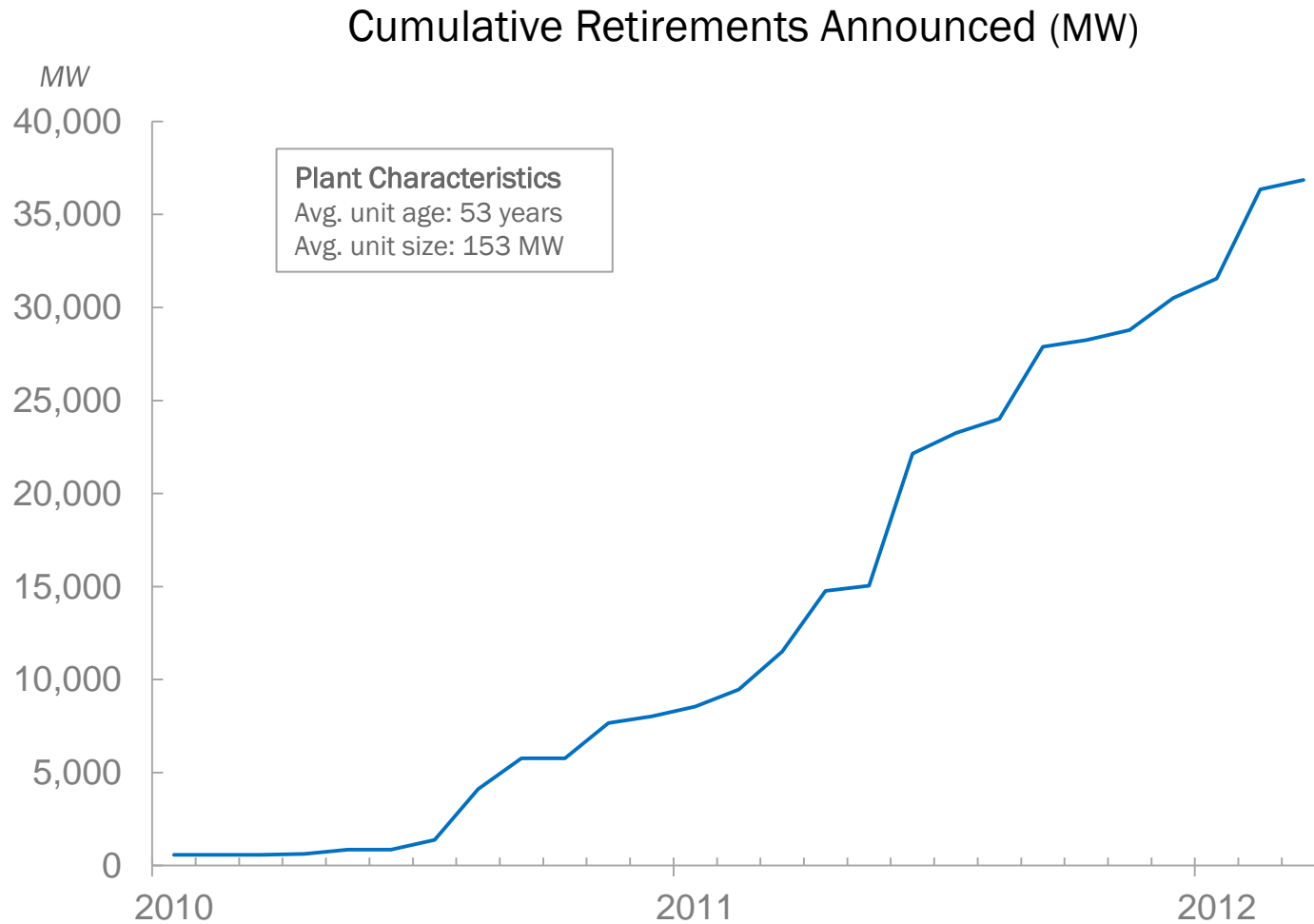
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EPA Regulatory Roadmap for the Electric Sector



*Sec. 112(i)(3)(B) authorizes EPA/states to provide up to one additional year to comply with standards if necessary for the installation of controls.
 ** Enforcement discretion per EPA's December 2011 memorandum.

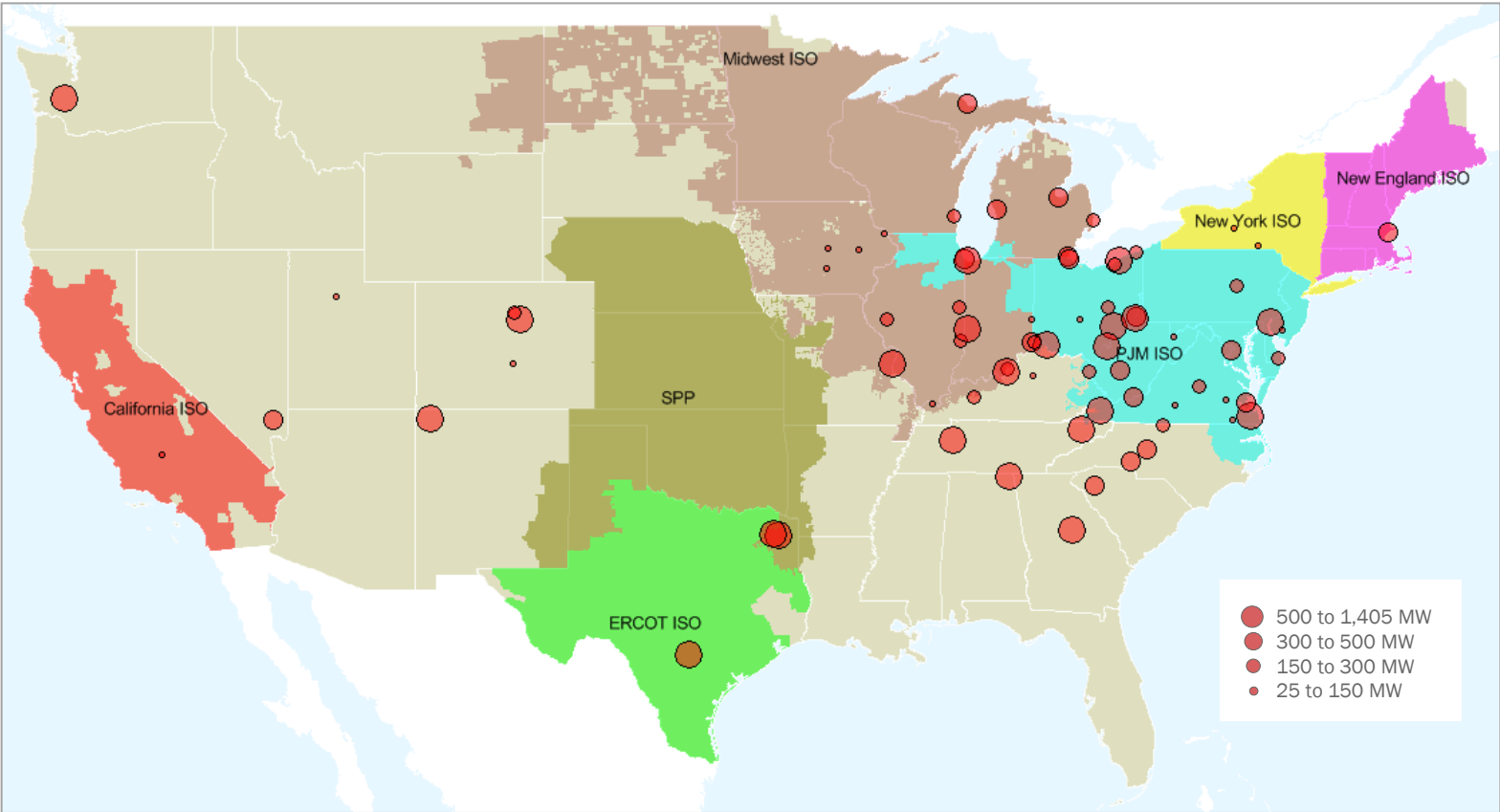
Coal Plant Retirements Announced Since 2010



Sources: MJB&A

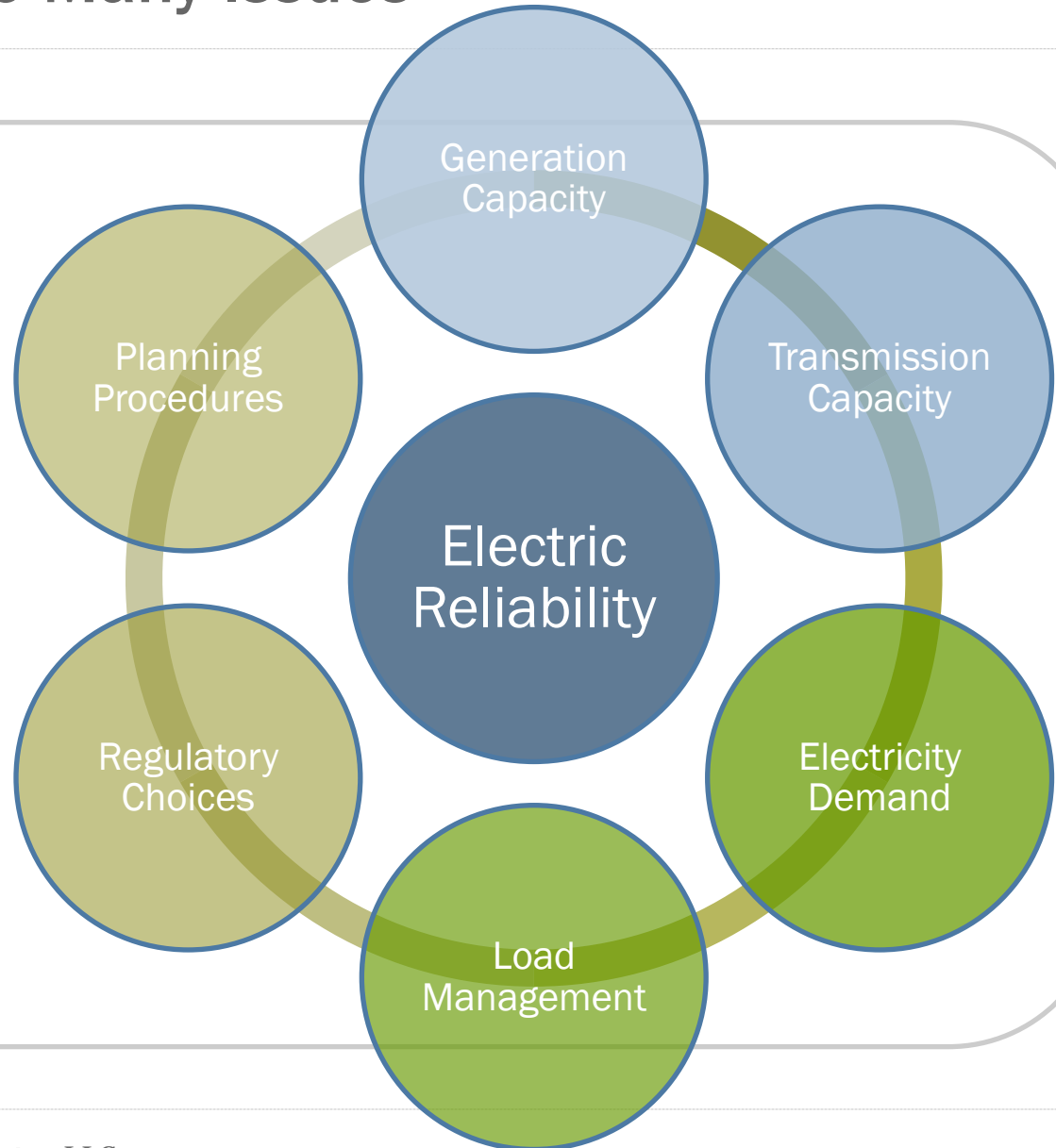
Location of Announced Retirements

Coal Plant Retirement Announcements Since 2010



Source: MJB&A Analysis based on MJB&A tracking, EPA NEEDS 4.10, Ventyx Velocity

Reliability is Tied to Many Issues



Market Conditions

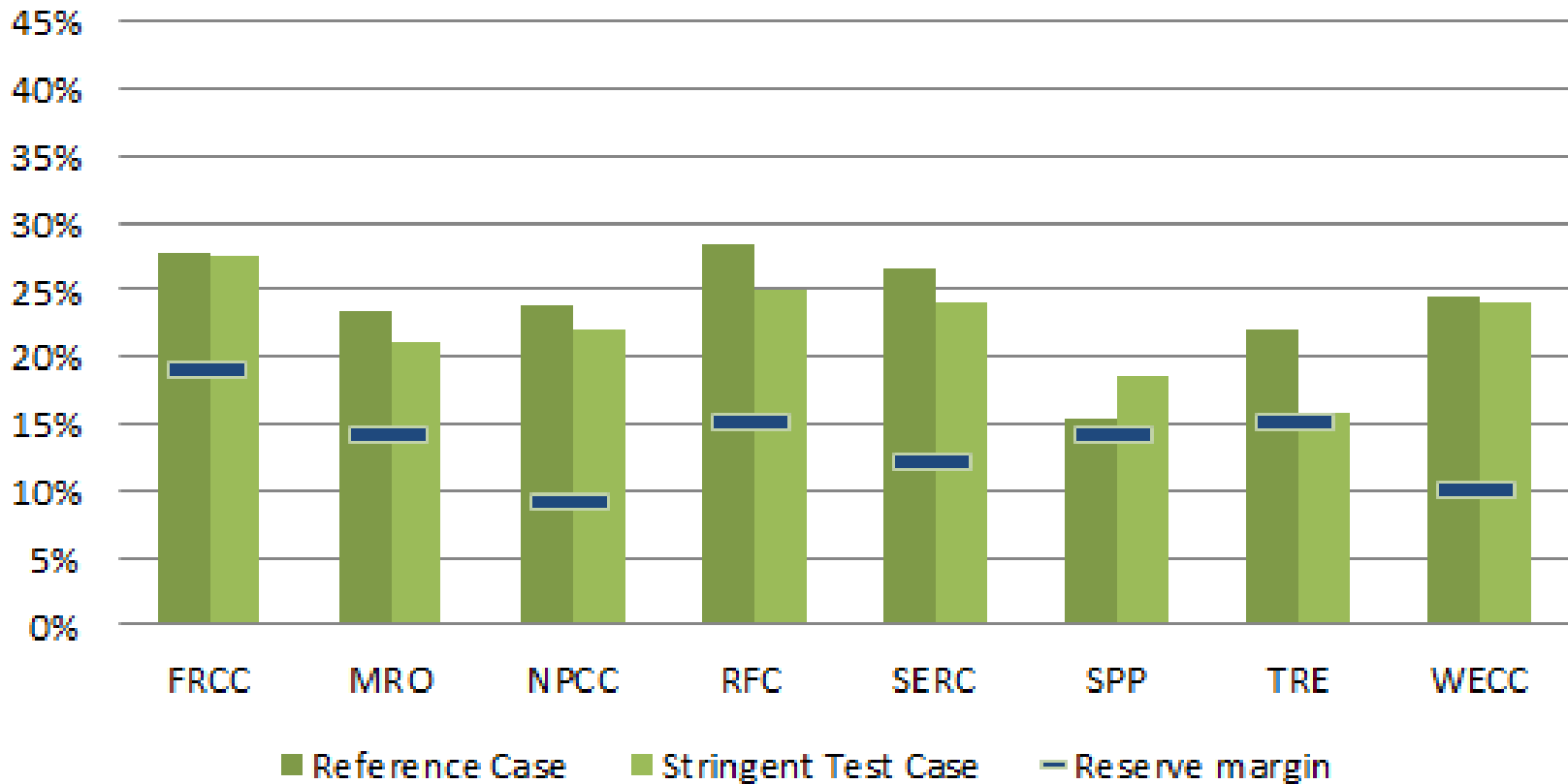
- Aging generation fleet and distribution system
- Weak demand growth
- Shifting fuel prices
- Negative investment outlook

Key Concepts

- 1. Resource Adequacy:** sufficient resources, in the form of available generation and demand response capacity, to meet peak demand in a given region
- 2. Grid Reliability:** transmission adequacy, voltage support, and system stability

Reserve Margins and Targets in 2015

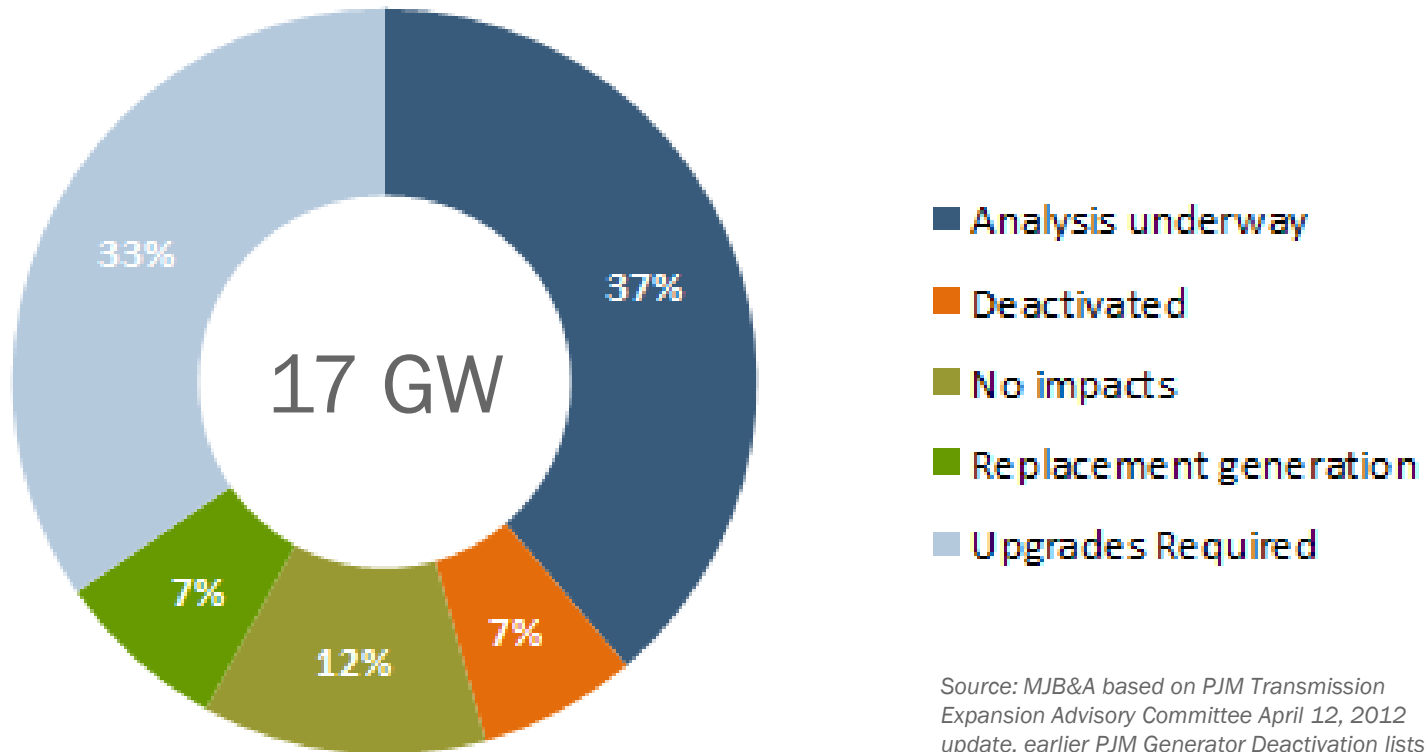
DOE analysis projects that target reserve margins can be met in all regions under stringent assumptions



Source: U.S. DOE. Resource Adequacy Implications of Forthcoming EPA Air Quality Regulations. December 2011.

PJM Interconnection

PJM Progress in Evaluating Deactivation Requests

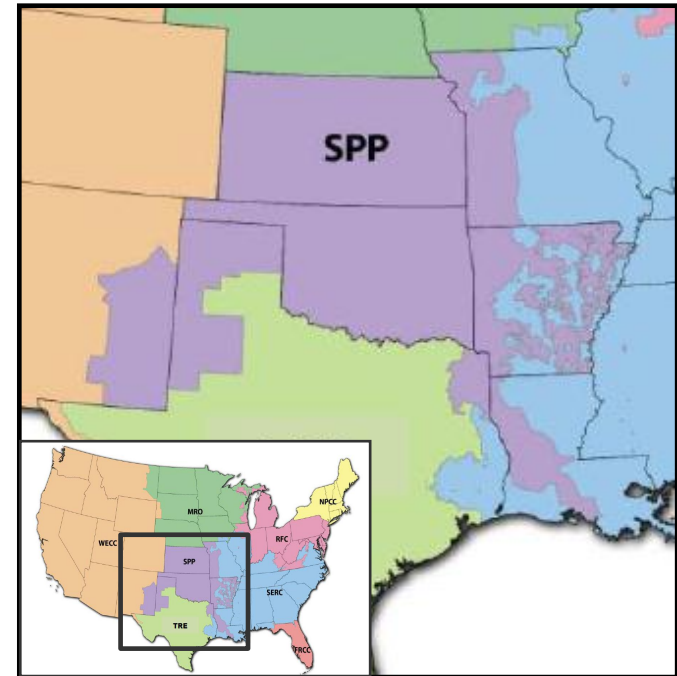


Source: MJB&A based on PJM Transmission Expansion Advisory Committee April 12, 2012 update, earlier PJM Generator Deactivation lists, and various press reports used to confirm plans.

Southwest Power Pool

- Staff delivered a report to the Strategic Planning Committee on the effects of MATS and CSAPR Rules in 2013 and 2015 (April 9, 2012).
- Results based on survey of companies in the region.
- The lowest generation capacity margin over the three years would be about 22% in the summer of 2015, compared with SPP's targeted capacity margin of about 12%.
- Still evaluating impacts on SPP transmission plan.

SPP Region



ERCOT

- ERCOT's projected reserve margin is only slightly above target levels
- The reserve margin for this summer was increased from 12.11% to 13.86% when Luminant announced plans to keep the Monticello coal plant (1,130 MW) on-line.
- Texas experienced the hottest summer on record in 2011 – emergency procedures were initiated on seven days due to low operating reserves (no rotating outages).
- ERCOT is an “energy only” market – no capacity market. ERCOT is evaluating whether energy only approach is sufficient to ensure resource adequacy.

ERCOT Region



Source: ERCOT

ISO New England

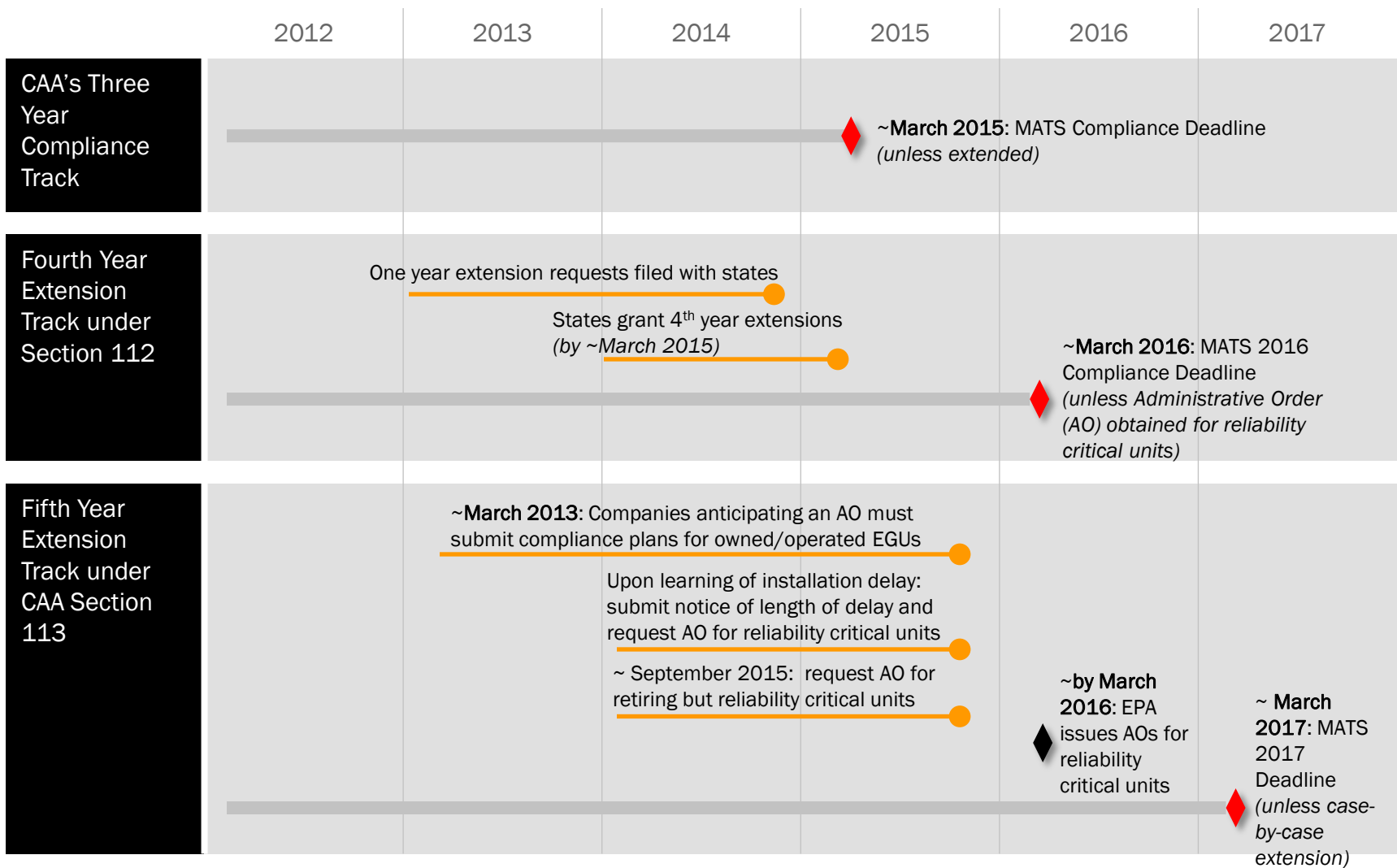
- On April 2-3, 2012, ISO New England completed its sixth forward capacity market auction to procure resources for 2015-2016.
- Preliminary results indicate that the region was able to procure sufficient resources to meet its reliability needs:
 - 30,757 MW of generating resources
 - 3,628 MW of demand resources
 - 1,924 MW of imports
 - 2,853 MW of excess supply
- Existing power plants and demand resources may submit “delist” bids to withdraw from the capacity market. Those bids are evaluated to determine whether the resource is needed to ensure reliability on the power system.
- Final auction results and any resources retained for reliability will be filed with FERC by the end of the month.



MATS

- Compliance/retirement extensions to address reliability
- Reduced stringency of PM standard
- Limited use provision for oil-fired units

Compliance Timing Options for MATS



PJM, MISO and SPP have already started requesting information about compliance plans to coordinate outages, understand retirements, and assess any reliability concerns.

Issues to Watch

- On-going PJM reliability assessment and May capacity auction
- Report on resource adequacy in ERCOT due June 1
- FERC-NARUC Reliability Forum – next meeting scheduled for July 2012
- FERC Whitepaper on MATS Extensions – next steps unclear
- NERC Long-Term Reliability Assessment will be published in October timeframe

Appendix

NERC Regions

