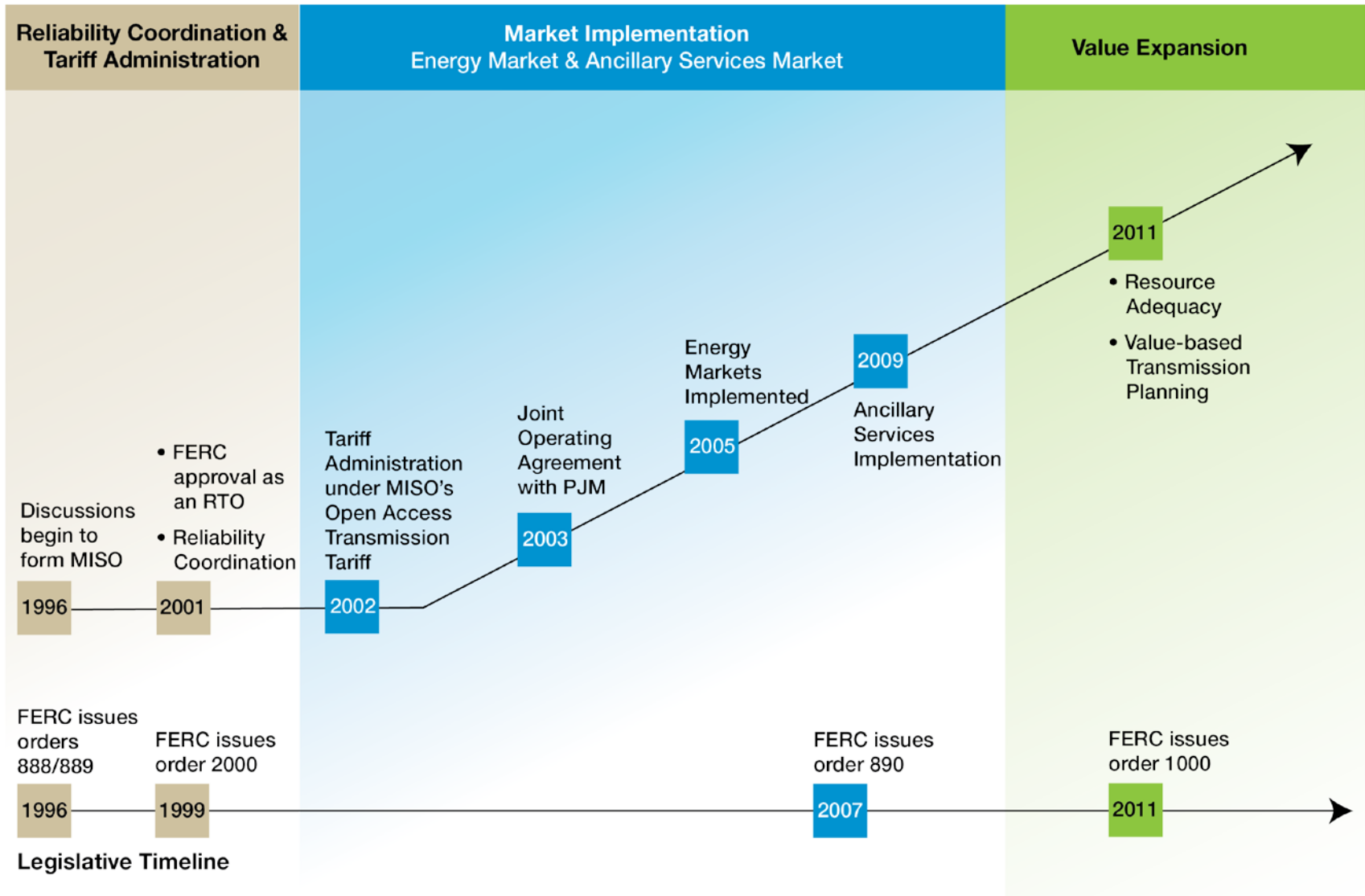


IURC Summer Assessment

John Bear
MISO
President & CEO

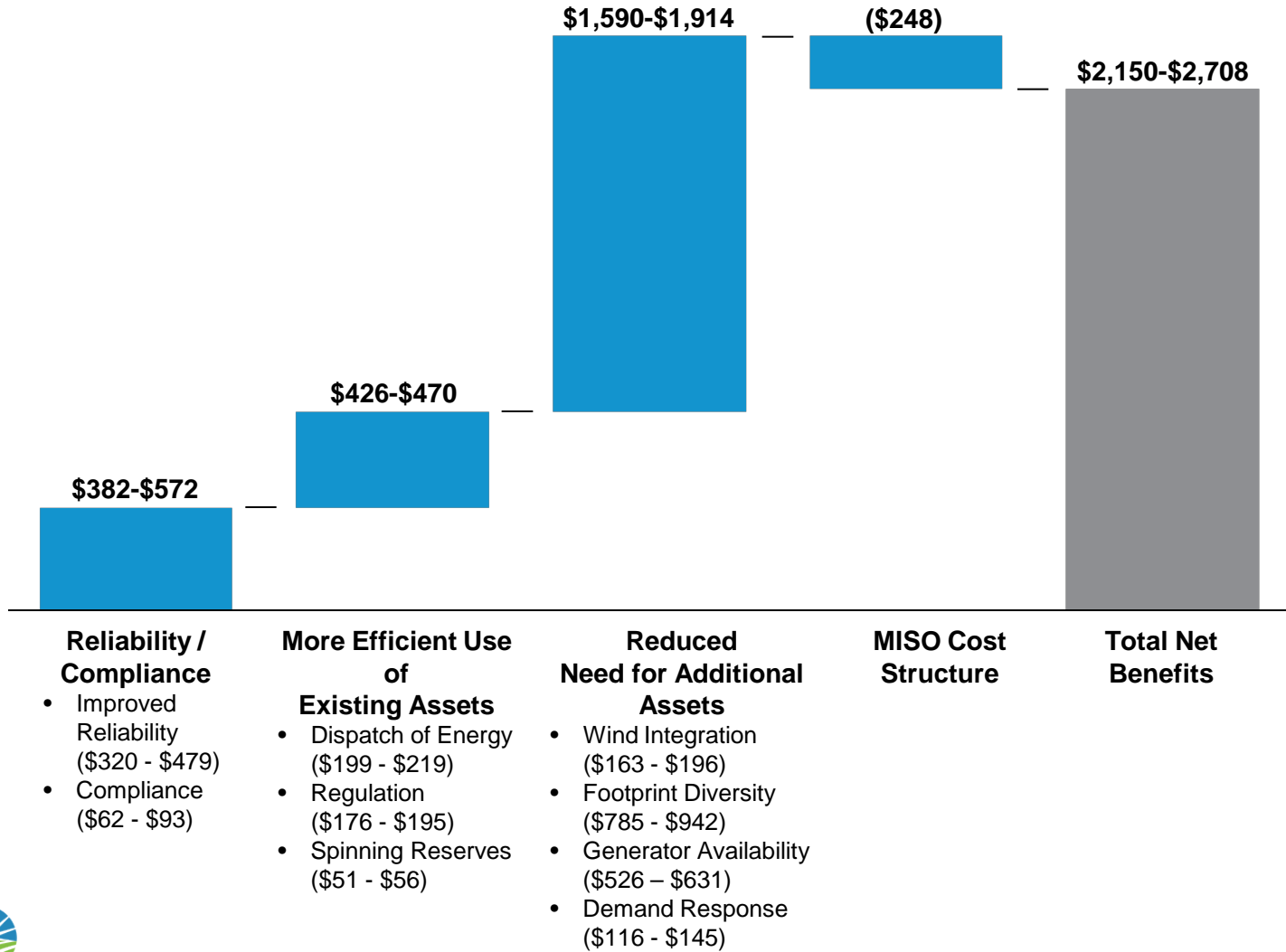
May 29th, 2012

MISO was established from FERC compliance but growth has been driven by value creation



The MISO 2011 Value Proposition

Benefit by Value Driver
(in \$ millions)



Summer 2012 Overview

- MISO expects to have adequate resources to reliably serve 2012 summer demand
- However, MISO's resource portfolio will evolve over the next five years, significantly altering the resource mix and reducing the reserve margin
- The portfolio transition poses significant challenges, requiring regional coordination and cooperation

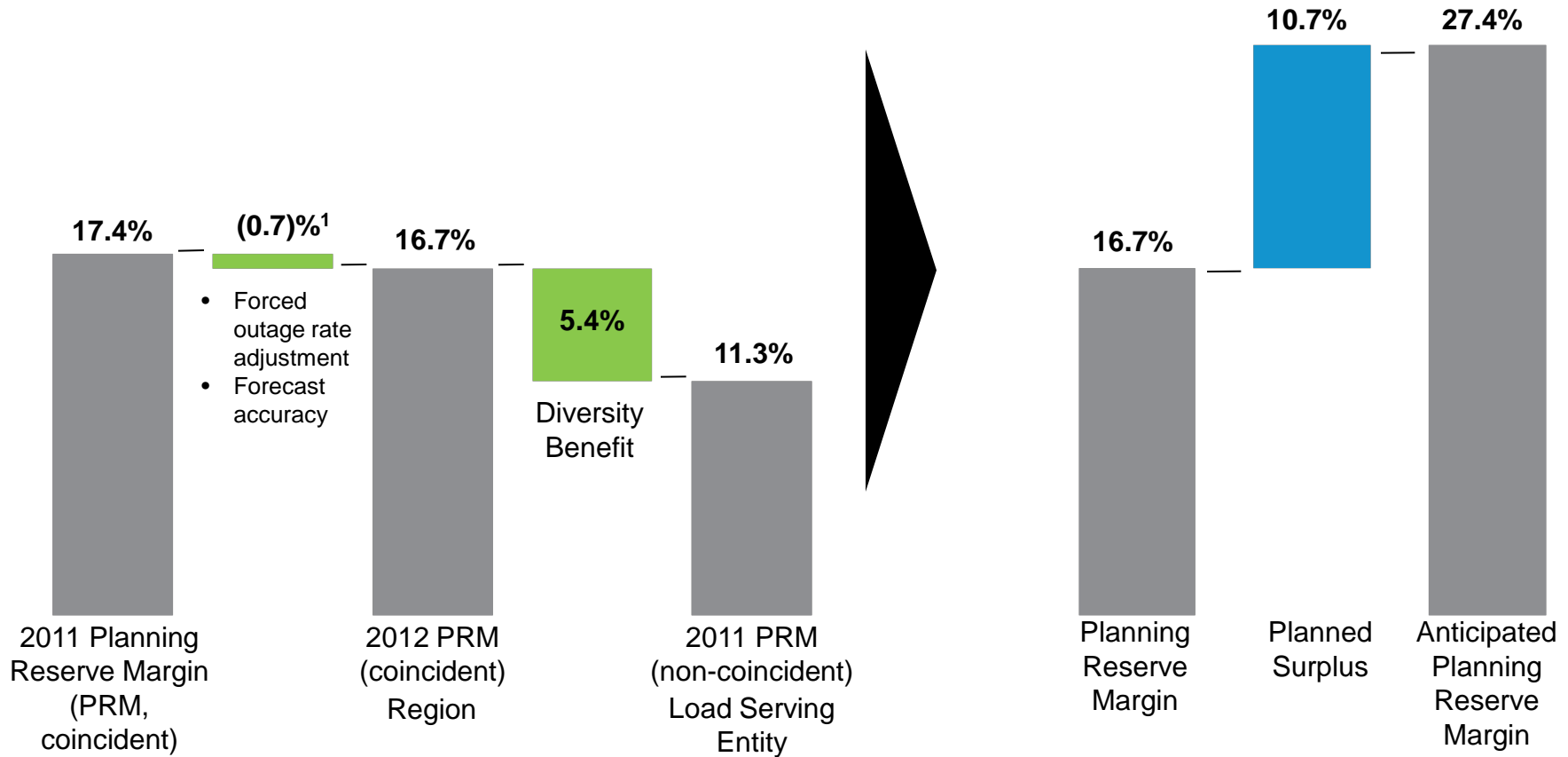
MISO's current resource adequacy construct enables capacity sharing while leveraging traditional bilateral methodologies

- Setting planning reserve margins
 - Load serving entity establishes load forecast
 - MISO establishes/recommends planning reserve margin based on Loss of Load Expectation Study
 - Local regulators have authority to modify for their jurisdiction
- Term: Currently monthly → moving to annually
- Clearing obligation is met by bringing resources to meet load forecast plus their planning reserve margin
 - Owned resources
 - Controlled resources
 - Voluntary capacity auction
- Penalty: Failure to meet resource obligation results in a settlement charge based on Cost of New Entry (CONE) – currently \$90,000 megawatt/month

For the 2012 summer season, there are sufficient resources to manage weather, load, and outage uncertainty

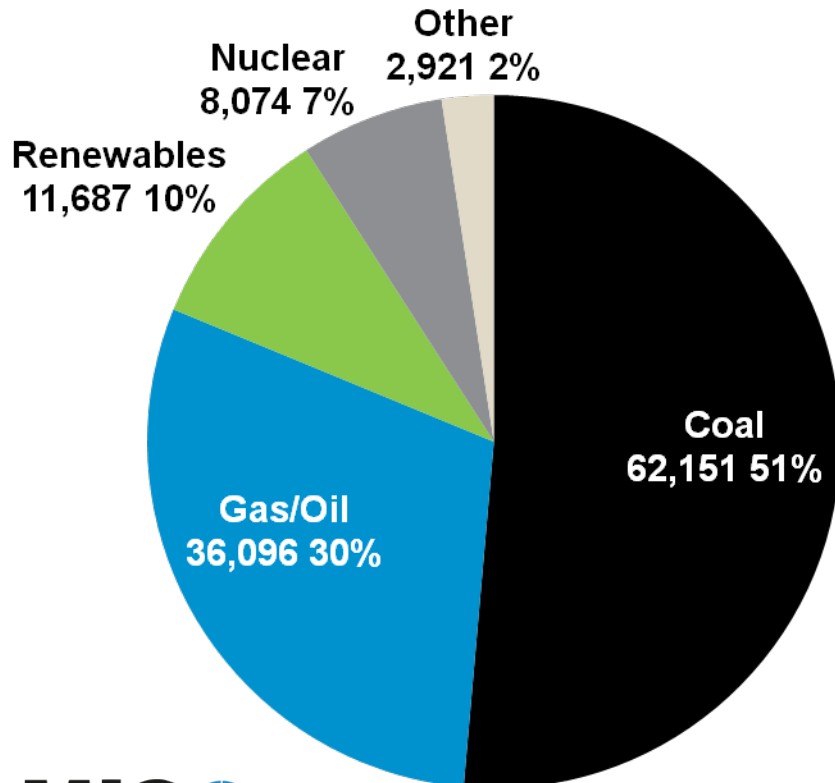
Reserve Margin Change

Reserve Margin 2012

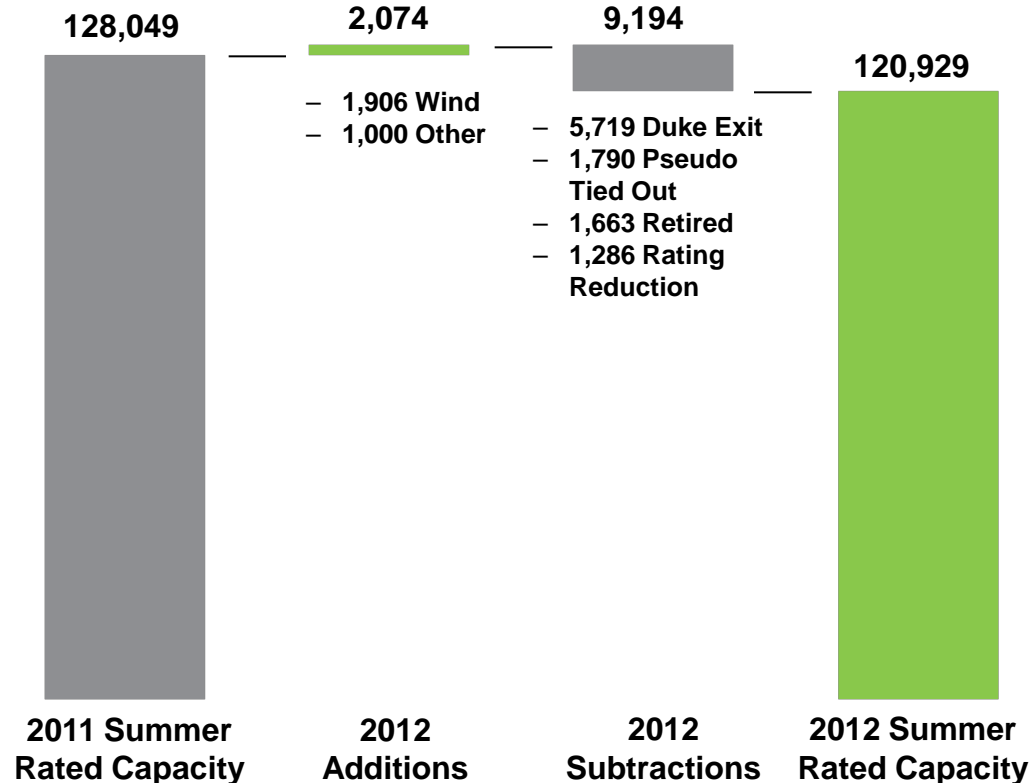


The primary changes from last year are driven by changes in capacity registered in MISO's resource adequacy process

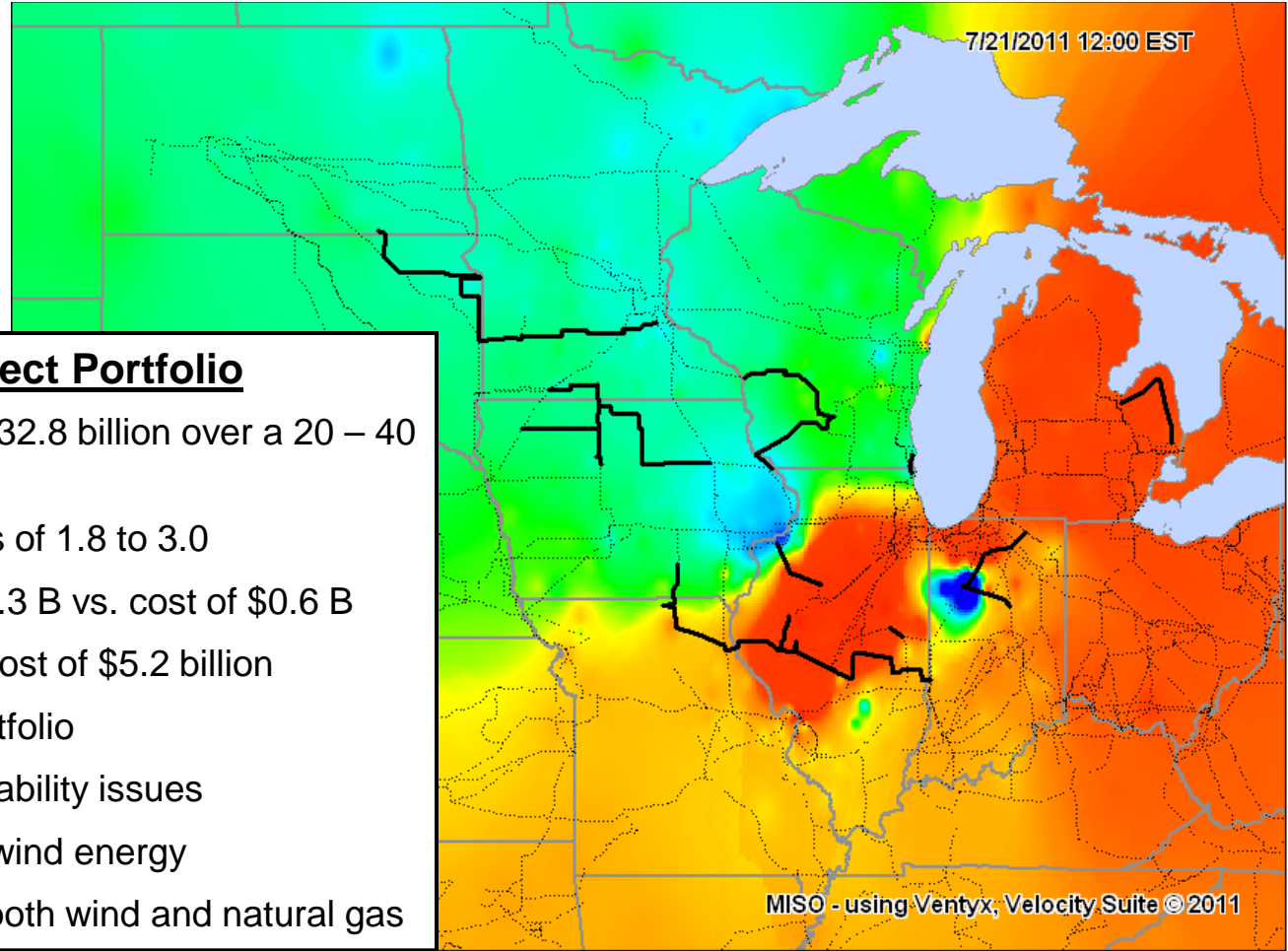
2012 Forecasted Summer
Rated Capacity 120,929 MW



2011 – 2012 Summer Rated Capacity, MWs



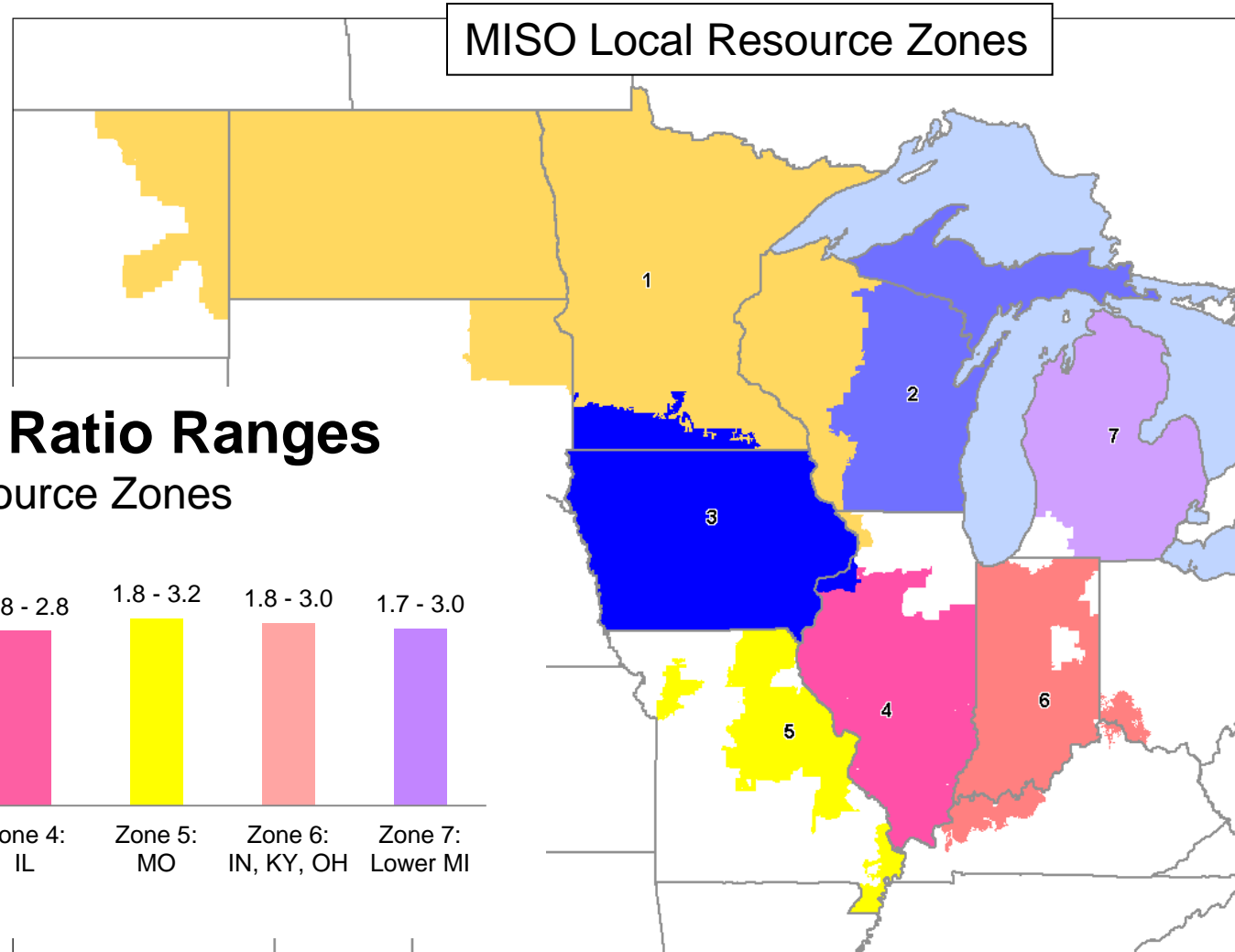
New transmission identified in the Multi-Value Project portfolio will relieve congestion and improve capacity sharing



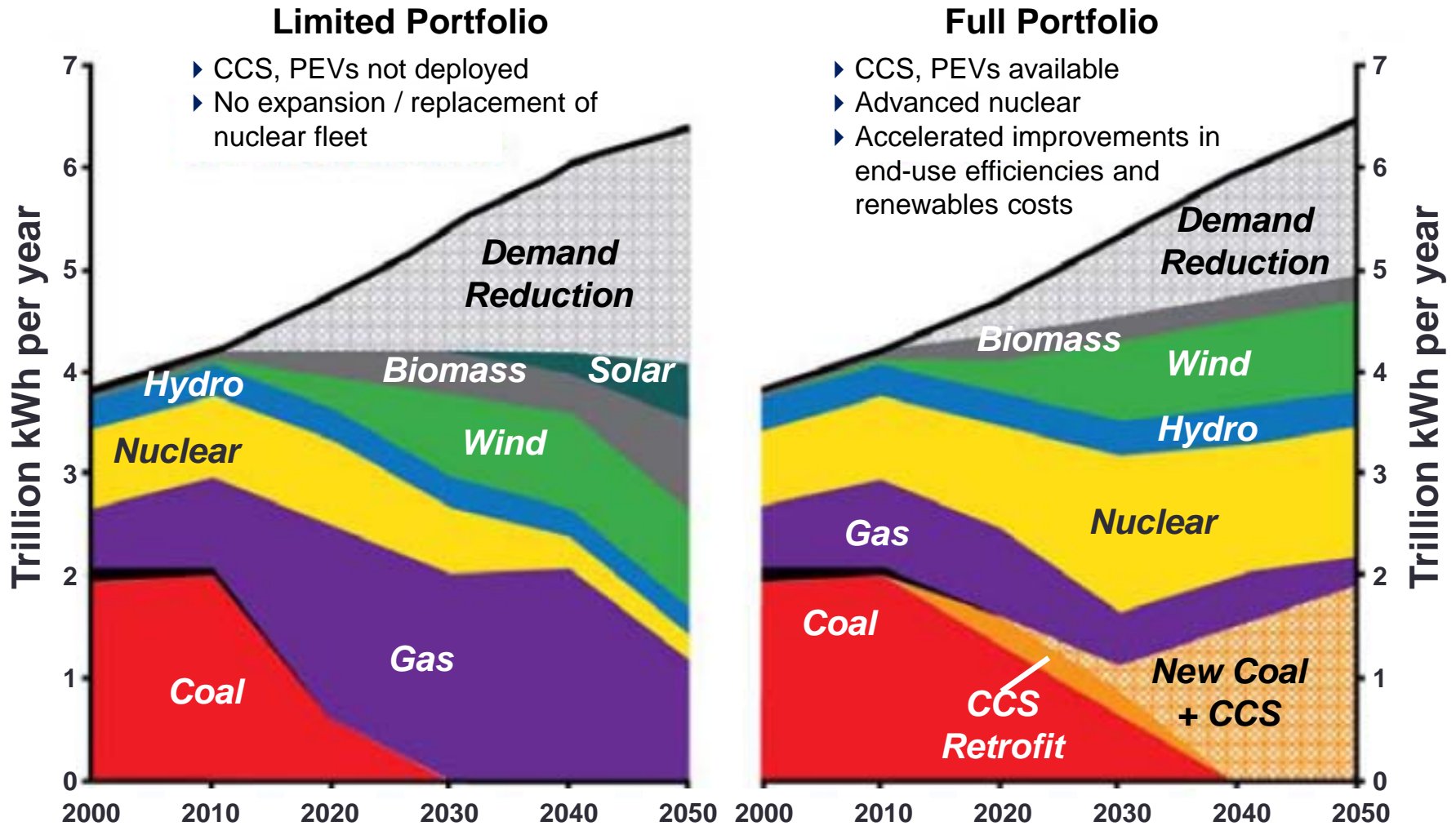
Multi-Value Project Portfolio

- Total net benefit of \$6.7 to \$32.8 billion over a 20 – 40 year life
- Provides benefit / cost ratios of 1.8 to 3.0
- Provides annual value of \$1.3 B vs. cost of \$0.6 B
- Total portfolio construction cost of \$5.2 billion
- 17 elements in the MVP portfolio
- Resolves 650 elemental reliability issues
- Enables 41 million MWh of wind energy
- Supports energy zones for both wind and natural gas

Benefits (and costs) from the MVP portfolio are distributed throughout MISO and local resource zones



Technology development/adoption will be a key driver of the evolution of the nation's resource portfolio ...



The EPA rules significantly impact the MISO region's coal fleet

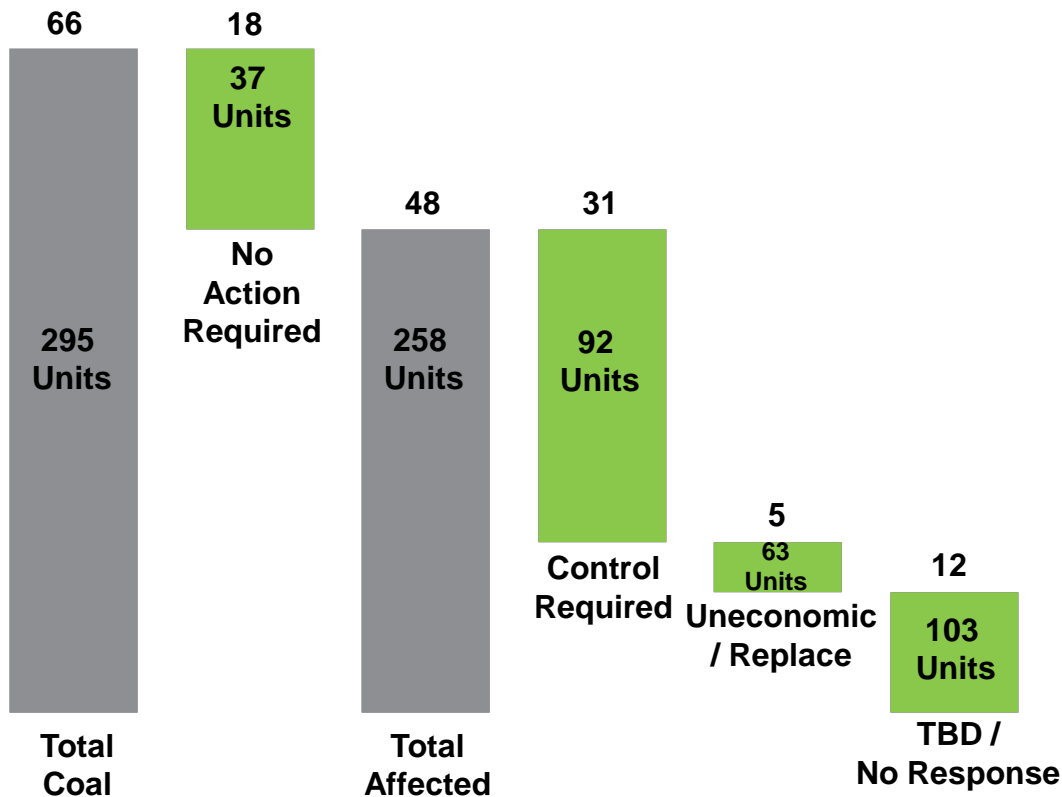
EPA Rules

- Cross State Air Pollution
 - Currently under stay
- Mercury and Air Toxins Standard
 - Effective March 2015

Impact Rules

- \$33 billion of capital costs to the system
- Average energy prices could increase by \$1 to \$5/MWh
- 13 GW retirements would erode installed reserve margins by 12 percentage points

Coal Resources Affected – 1st Quarter Survey
Capacity, GW



GWs Impacted	Survey Results (06/2012)	66	18	48	31	5	12
	MISO Study (10/2012)	66	9	57	44	13	-

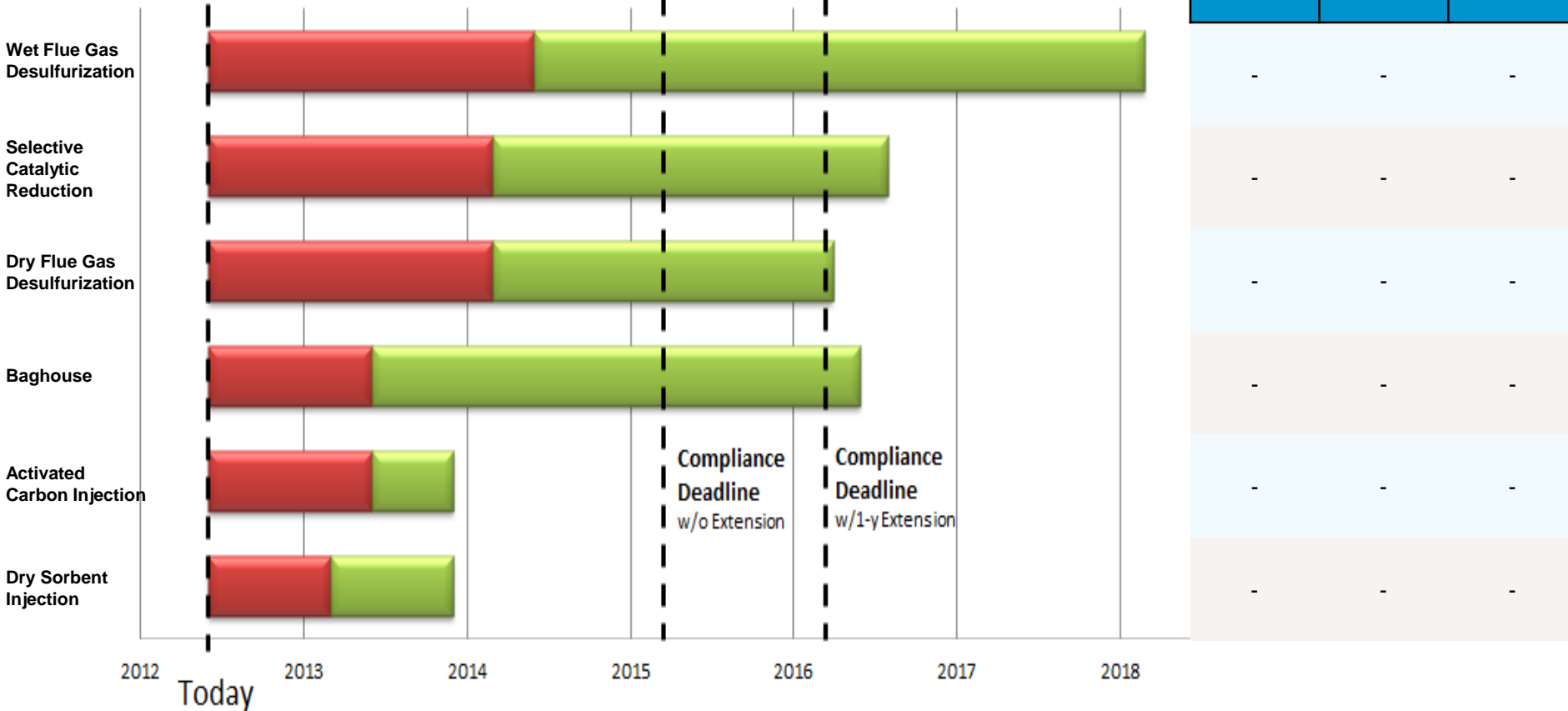


Supply chain analysis suggests that if decisions are not made soon, options become limited

Revised XX/XX/XX

Retrofit Project Timeline Relative to MATS Compliance Deadlines

GW Required	GW Scheduled	GW Contracted
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■ Minimum Time for Design, Permit, Construction and Installation
■ Maximum Time for Design, Permit, Construction and Installation

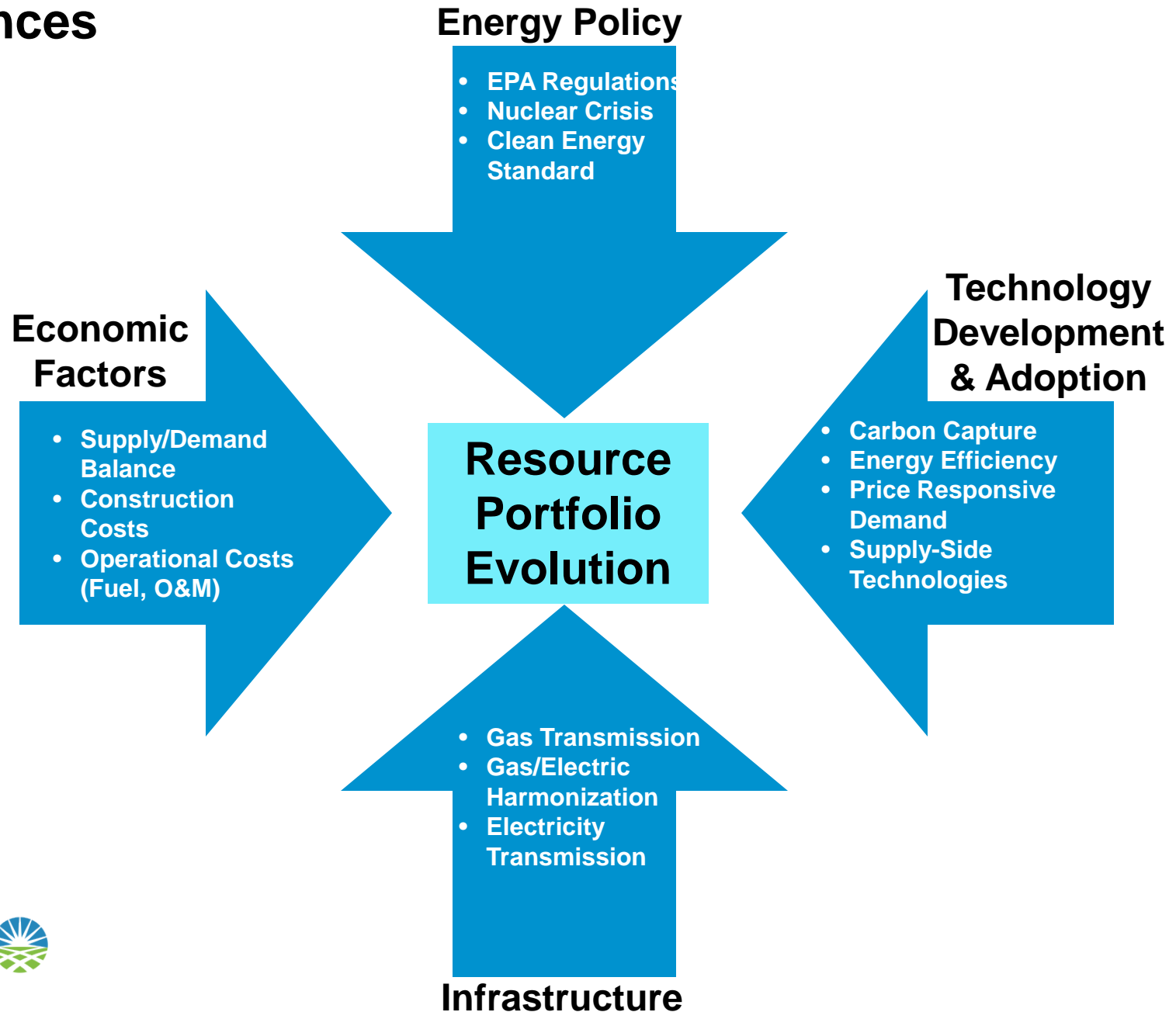
To reliably and efficiently facilitate the transition, MISO is regionally coordinating

- Planning
 - Outage scheduling
 - Criteria
 - Coordination
 - Supply chain
 - Transmission impacts and requirements
 - Seams coordination
 - Gas/electric harmonization
- Resource adequacy
 - Retirement evaluation
 - Systems support resource designation
 - Resource validation
 - Integration with states' integrated resource plans

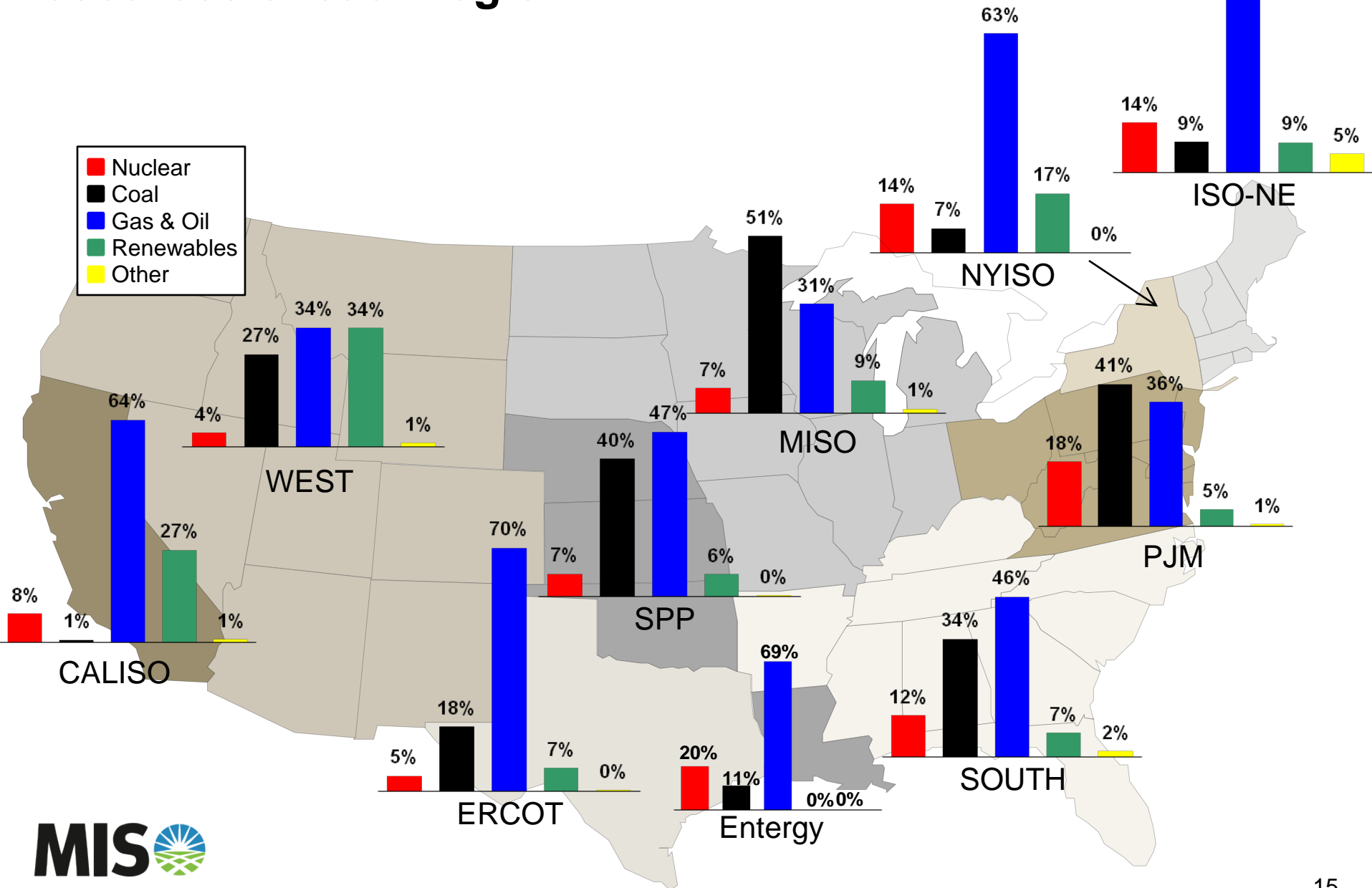
Appendix



The future resource portfolio will be shaped by multiple influences

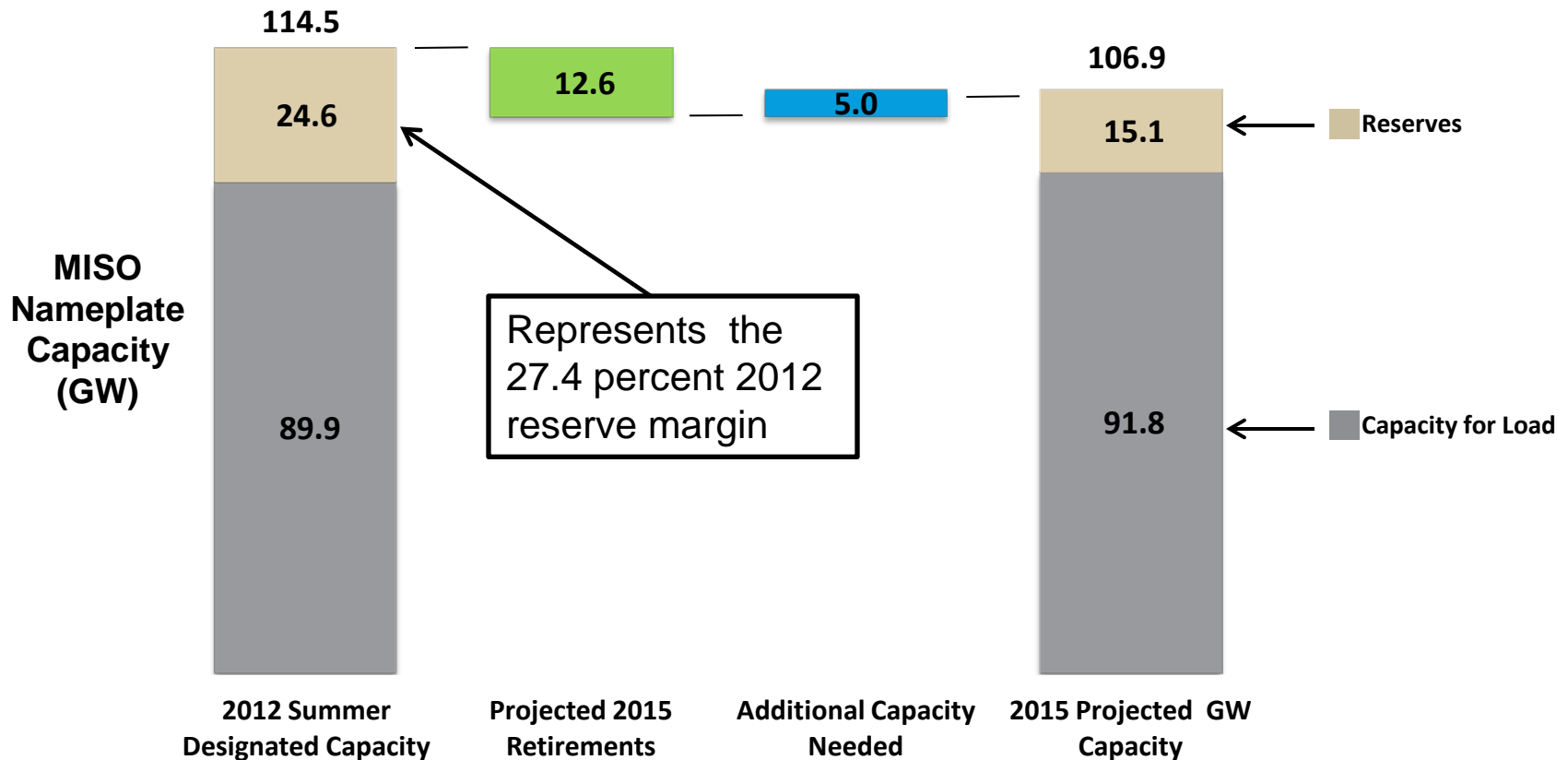


Resource portfolios vary across the US reflecting the resources of each region

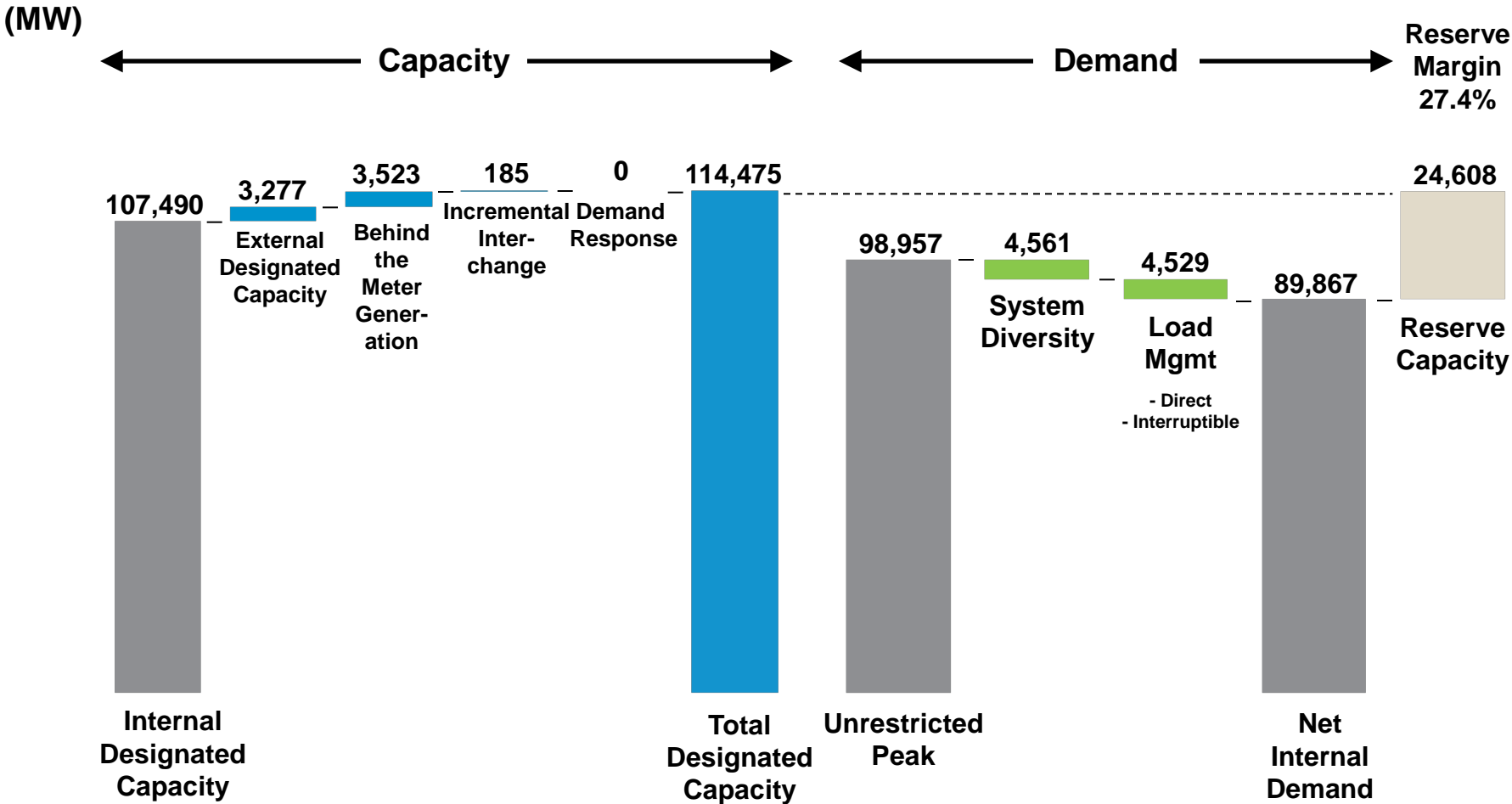


5.0 GW of capacity may be needed by 2015 to maintain an appropriate planning reserve margin of 16.5%

Resource Adequacy Projected for 2015



2012 Summer Assessment forecasts a 27.4% reserve margin



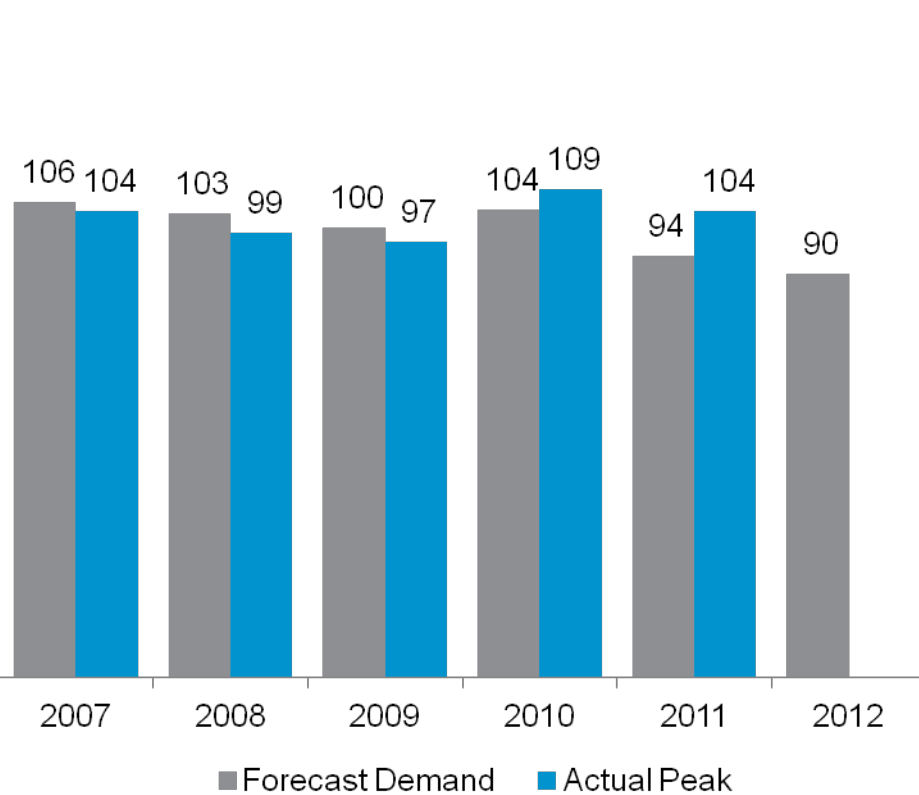
2011	107,645	4,894	3,608	--	49	116,196	102,727	4,674	4,211	93,842	22,354
2010	121,644	5,549	4,042	--	49	131,284	112,701	5,072	3,341	104,288	26,996
2009	109,189	4,331	4,216	--	339	118,074	107,149	4,677	2,372	100,101	17,973



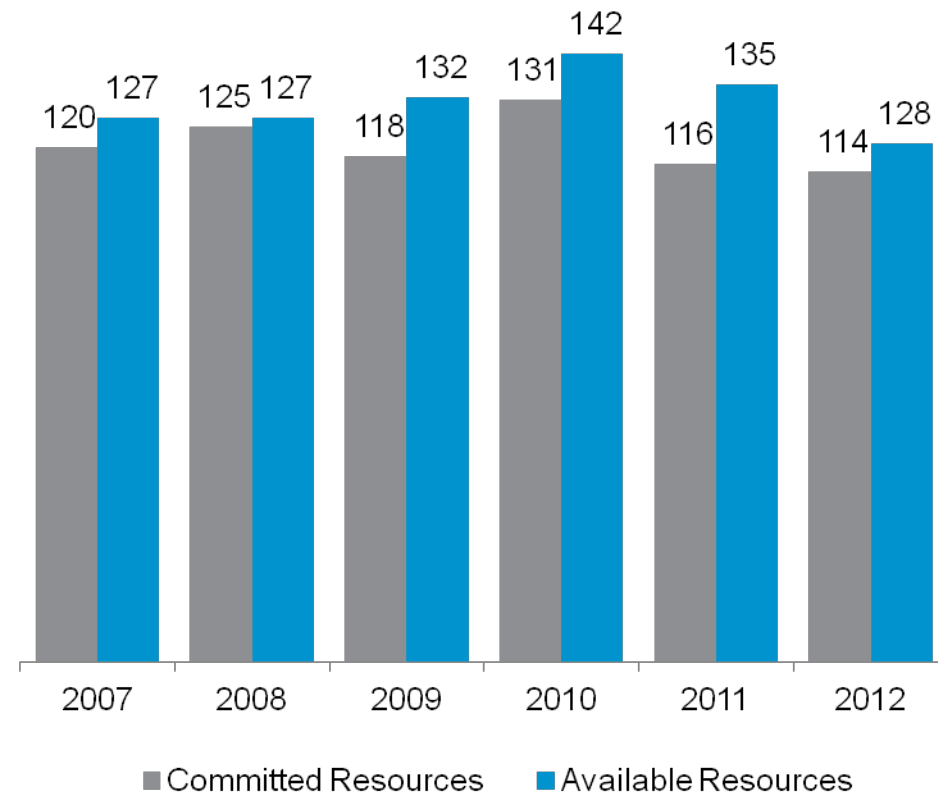
Note: MISO did not forecast Incremental Interchange prior to 2012

MISO capacity and estimated demand decreased primarily due to the exits of FirstEnergy and Duke Ohio

MISO Peak Demand (in GWs)



MISO Resources (in GWs)

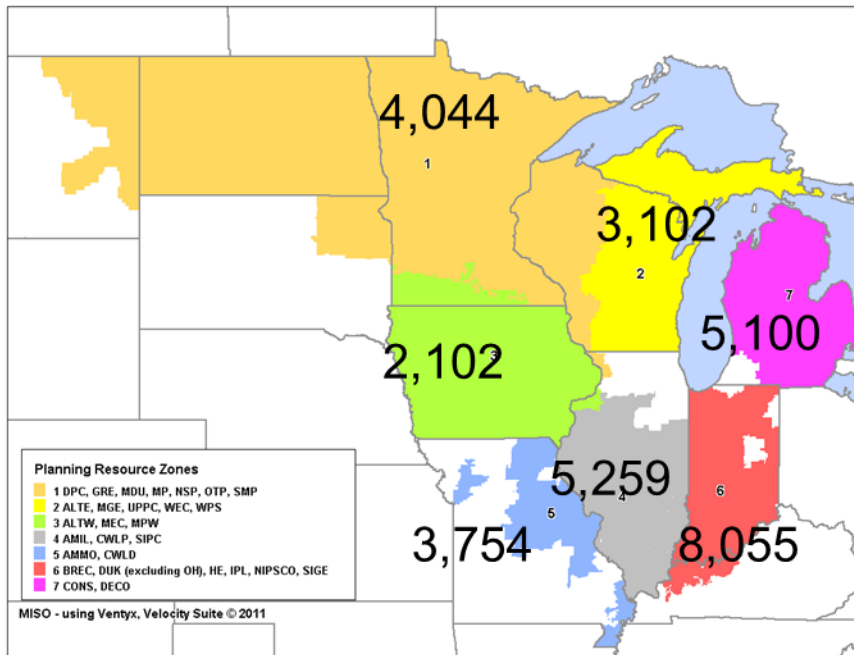


Note: Forecasted demand is a net number, but actual peak does not net load modifying resources (LMR).

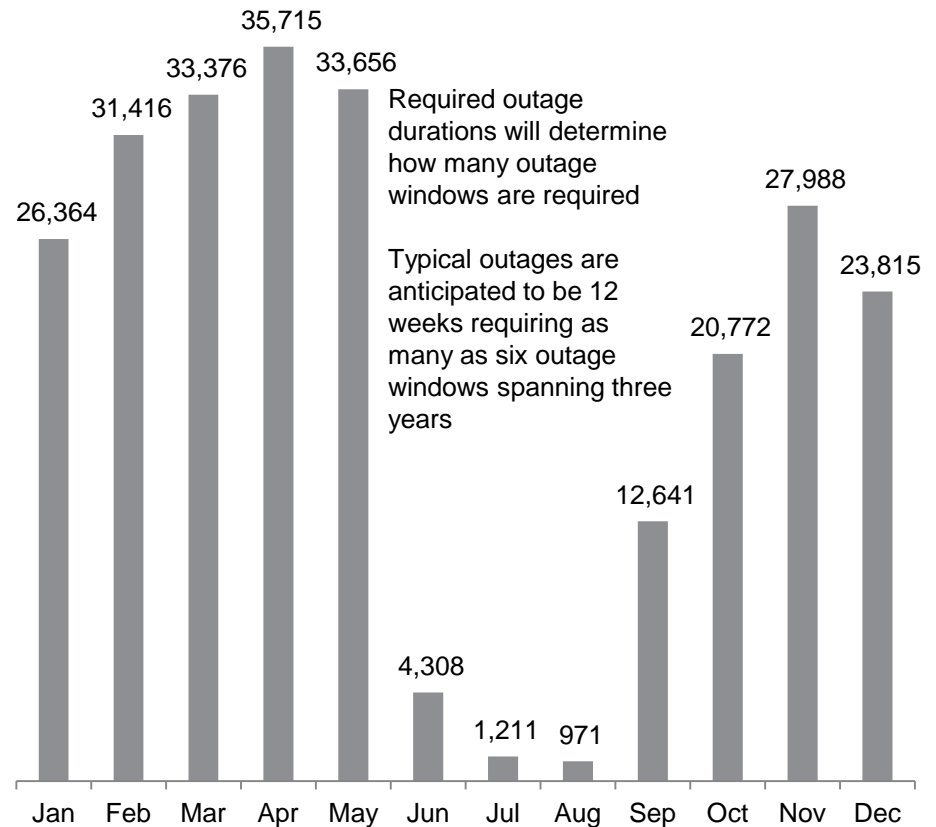
Note: Available resources includes 100% of nameplate capacity for all resources, including wind.

2012 MISO projected outage limits (maintenance margin)

February 2012 Maintenance Margin by Zone - MW



2012 Aggregate Maintenance Margin by Month - MW



Planning Reserve Margin Requirements are the margin required to reliably serve load at a 1 day in 10 years Loss of Load Expectation (LOLE)

Planning Reserve
Margin

Requirement

Explanation

MISO Coincident Peak

16.7%

- Reserve margin required on hour in which the Midwest ISO load peaks

Load Serving Entity Non-Coincident Peak

11.32%

- Reserve margin required by load serving entity based on their individual peak hour

Unforced Capacity

3.79%

- Capacity resource value reflecting the historical performance of the assets

Our role is focused on a few key value-added areas

What We Do

Provide independent transmission system access

Deliver improved reliability coordination through efficient market operations

Coordinate regional planning

Foster platform for wholesale energy markets

Implications

- Equal and non-discriminatory access
- Compliance with FERC requirements

- Improved regional coordination
- Enhanced system reliability
- Lowest cost unit commitment, dispatch and congestion management

- Integrated system planning
- Broader incorporation of renewables

- Encourage prudent infrastructure investments
- Facilitation of regulatory initiatives