A large, light gray sunburst graphic is centered on the page, with its rays extending towards the bottom and sides. The rays are of varying lengths and are separated by white spaces, creating a fan-like effect.

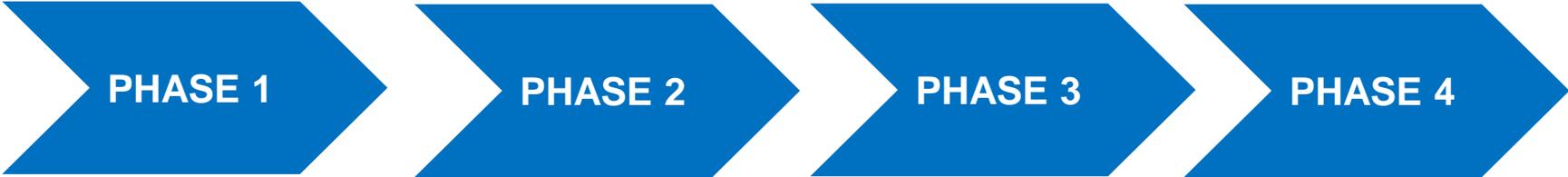
# **Indiana Utility Regulatory Commission 2014 Summer Reliability**

**John Bear, President and CEO**  
**April 30, 2014**

# Executive Summary

- MISO projects adequate reserves to meet 2014 Summer Peak demand
- The reduced reserve margins from 2013 reflect tighter supply due to retirements and will result in a higher probability of calling emergency only resources
- MISO continues to coordinate with neighbors as we seek to eliminate barriers and inefficiencies across adjoining seams to maximize value for consumers
  - During the polar vortex, MISO successfully managed system assets within the its region while also supporting and assisting neighboring entities in their efforts to do the same
- The outlook for 2015/2016 illustrates a significant reduction in resources across the footprint
- MISO is exploring the feasibility of establishing a seasonal resource adequacy model to reflect changing conditions

# The generation fleet in MISO is being affected by time, fuel prices and multiple phases of environmental regulations



Nature of Regulation

MATS

Carbon regulations (GHG)

Water regulations, coal combustion and updated National Ambient Air Quality Stds.

???

Compliance Dates

2015/2016

2018-2020 Implementation

TBD

Impacts

- Significant Coal Retirements
- Outage Coordination Challenges
- Shrinking Reserve Margins
- Growing Dependence on Natural Gas

- June 2014 Rule Release
- Pressure on Reserve Margins
- Increased Dependence on Natural Gas

**These factors will culminate in the erosion of reserve margins**



# Resource Adequacy Basics

## MISO Responsibility

- Ensure electric reliability in all time frames
- Facilitate economically efficient operations and planning

## Setting Planning Reserve Margins

- Load Serving Entities (LSEs) establish load forecast
- MISO establishes planning reserve margin
- Local regulators have the authority to modify for their jurisdiction

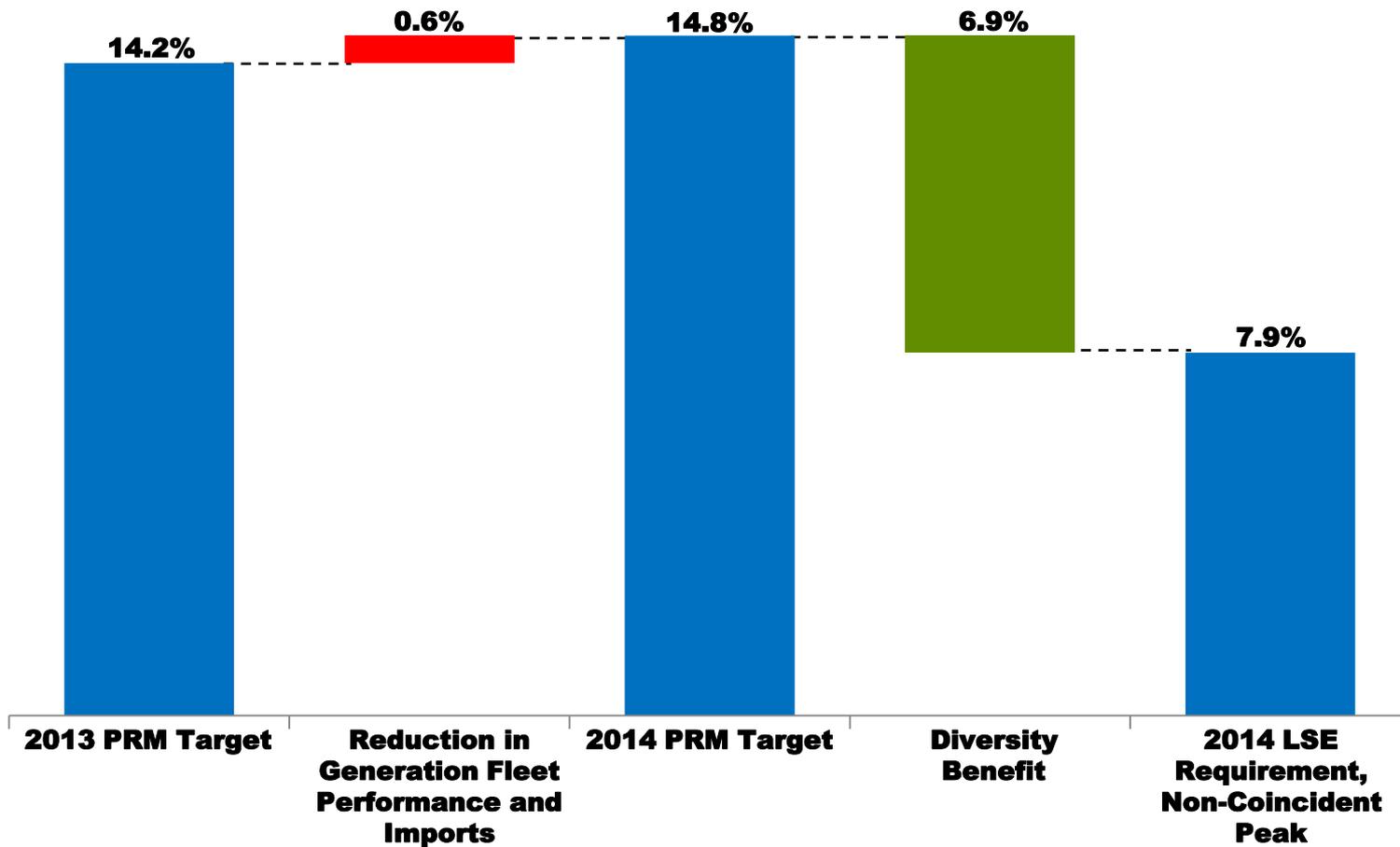
## Meeting Planning Reserve Margins

- LSEs must meet their load forecast plus their planning reserve margin - this can be done through
  - Owned resources
  - Controlled resources
  - Voluntary capacity auction

# 2014 Resource Adequacy Overview

- MISO projects adequate reserves to meet 2014 Summer Peak demand but a reduced reserve margin and the tightening of supply results in a higher probability of calling emergency only resources this summer
- The region's resource portfolio is undergoing significant change which will result in reduced reserve margins
  - MISO-wide 2014 reserve margin target: 14.8%
  - MISO-wide summer 2014 anticipated reserve margin: 15%
  - Reserve requirement is higher due to fleet performance and reduced neighboring reserve margins
- Reserve Margin reductions from prior years mostly due to approved retirements, suspensions and removal of non-firm imports

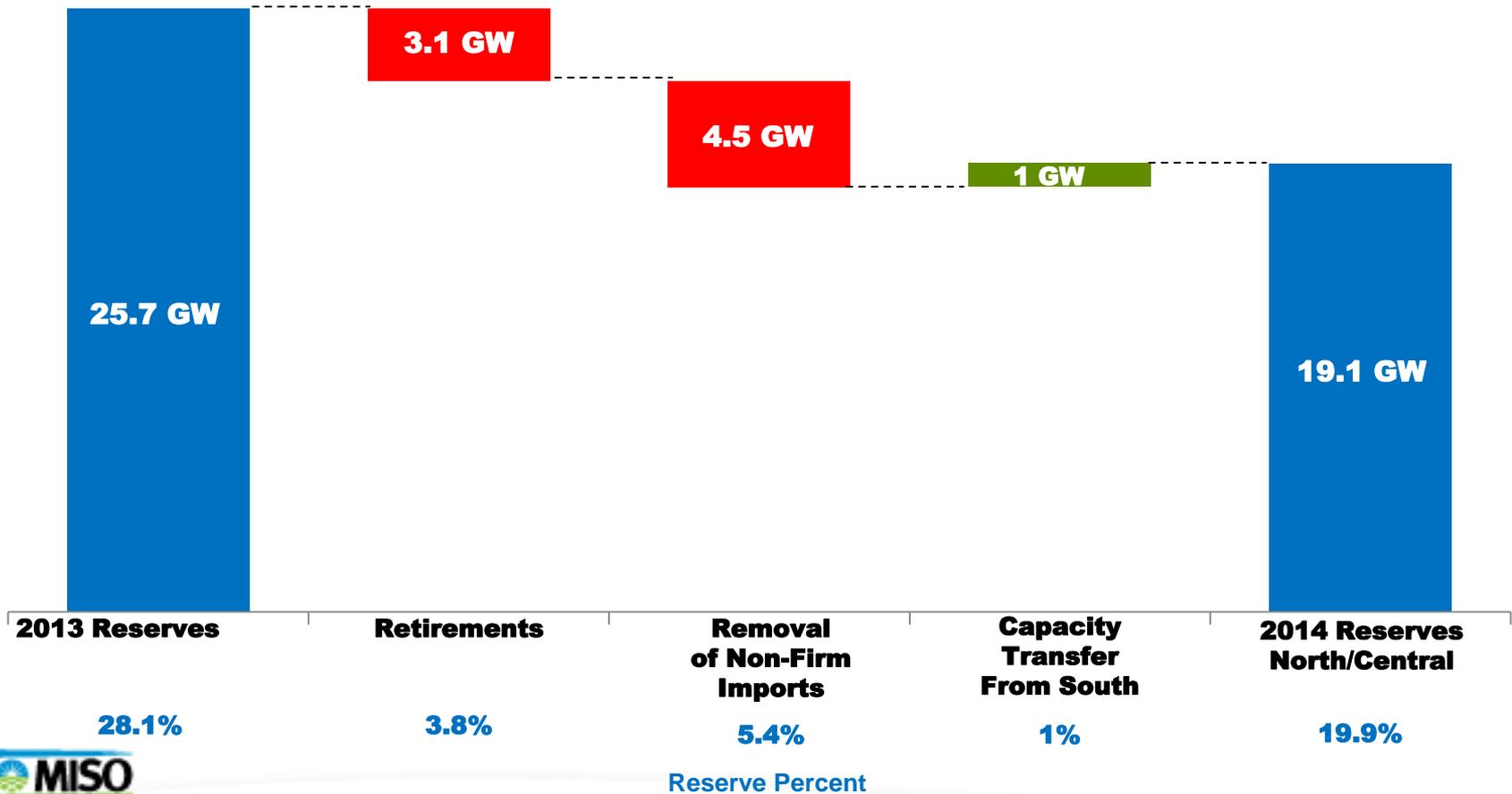
# Planning Reserve Requirement 2013 – 2014



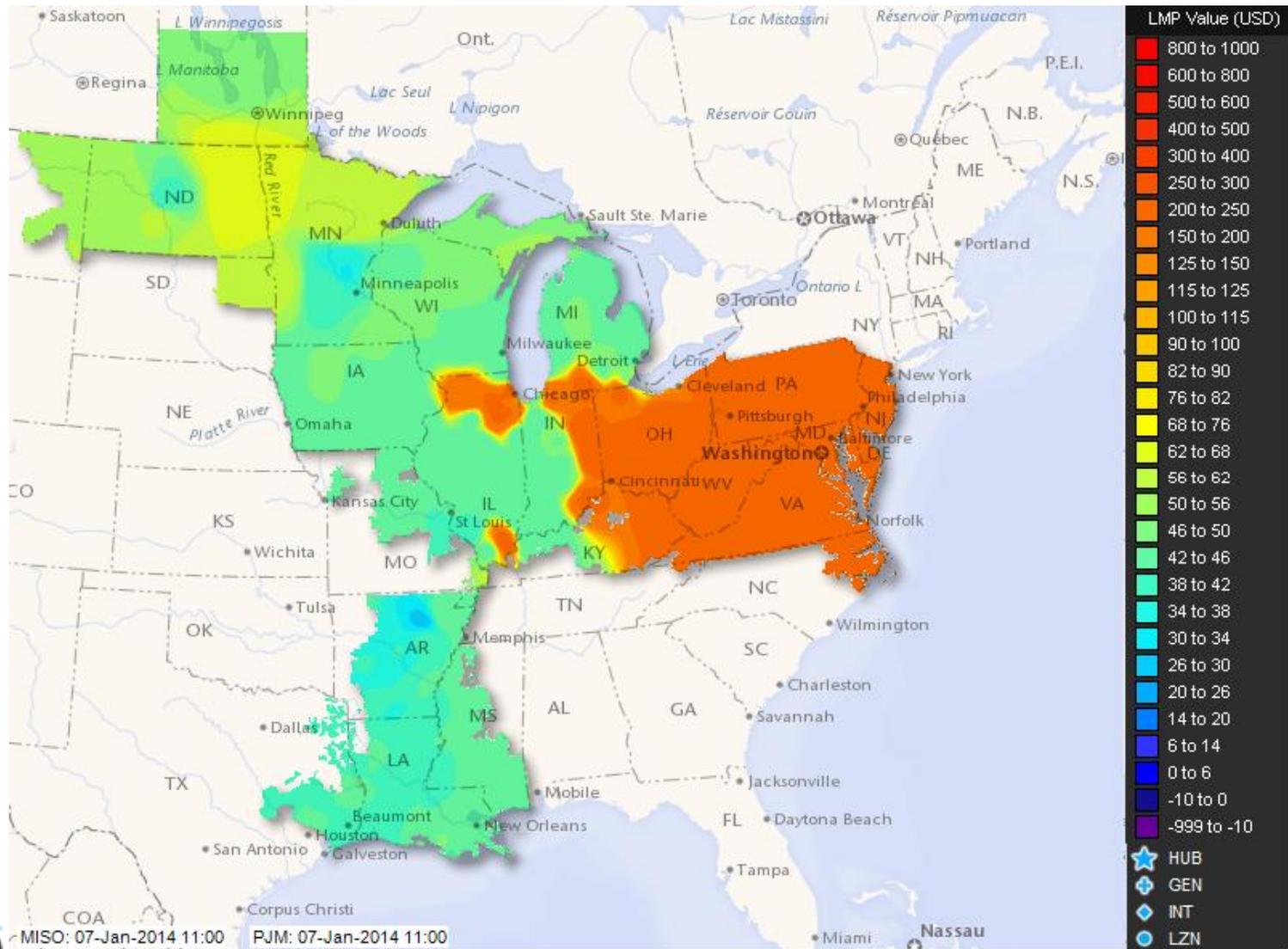
# Reserve Margins are Tightening

## North and Central Region

In GWs



# Joint and Common Market Pricing – January 7, 2014

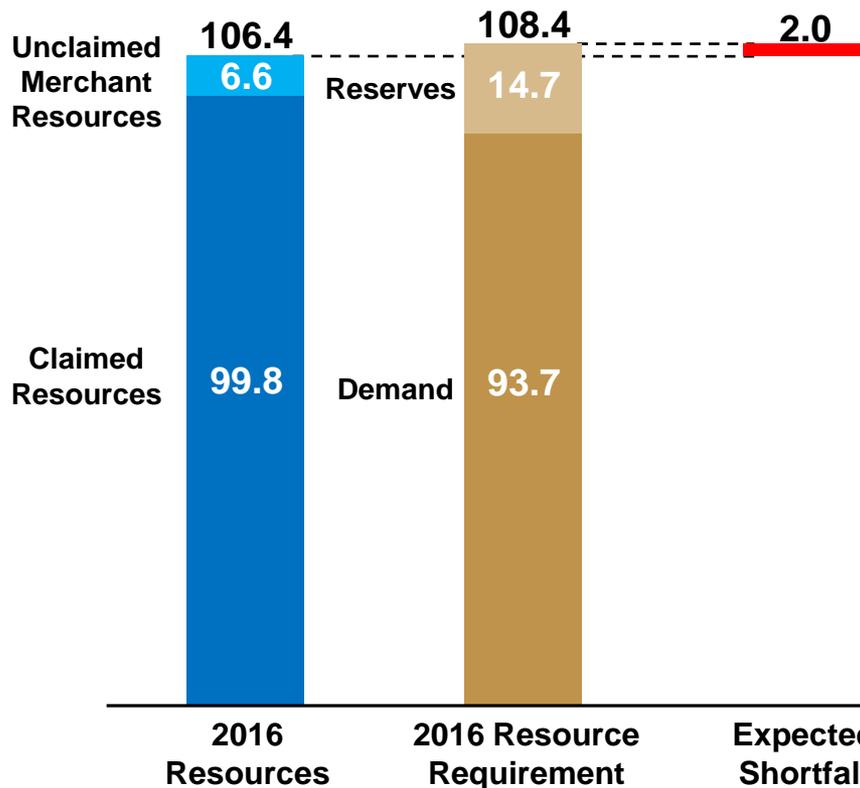


# 2016 Resource Adequacy Forecast

## As of January 31, 2014

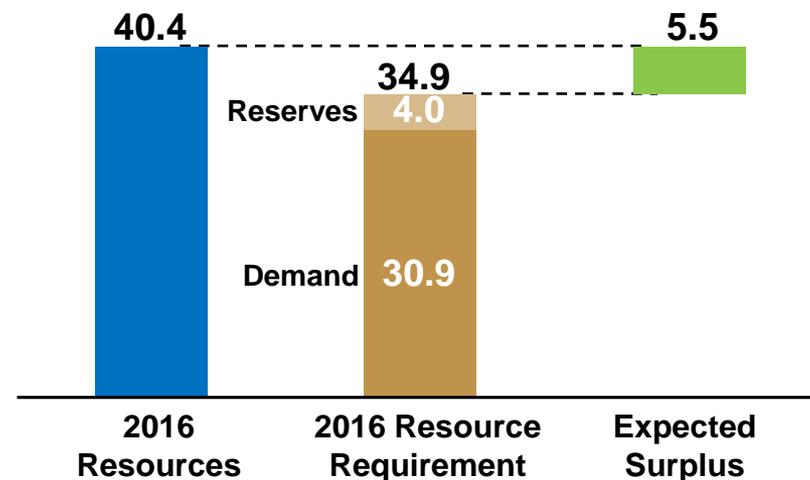
### Central & North Regions

In GW



### South Region

In GW



# MISO's Efforts to Improve Resource Utilization

- Evaluate potential solutions and cost/benefit to stranded capacity resources under varying conditions (4<sup>th</sup> Quarter 2014)
- Establish specific availability and use conditions of load modifying resources (Fall 2014)
- Eliminate barriers to efficient energy and capacity transactions across seams (Initial report – Summer 2014)
- Evaluate seasonal nature of resource and reserve requirements (2015)
  - Gas/Electric harmonization
- Evaluate infrastructure requirements (ongoing)

# Executive Summary

- MISO projects adequate reserves to meet 2014 Summer Peak demand
- The reduced reserve margins from 2013 reflect tighter supply due to retirements and will result in a higher probability of calling emergency only resources
- MISO continues to coordinate with neighbors as we seek to eliminate barriers and inefficiencies across adjoining seams to maximize value for consumers
- The outlook for 2015/2016 is concerning from a resource adequacy perspective across the footprint
- MISO is exploring the feasibility of establishing a seasonal resource adequacy model to reflect changing conditions

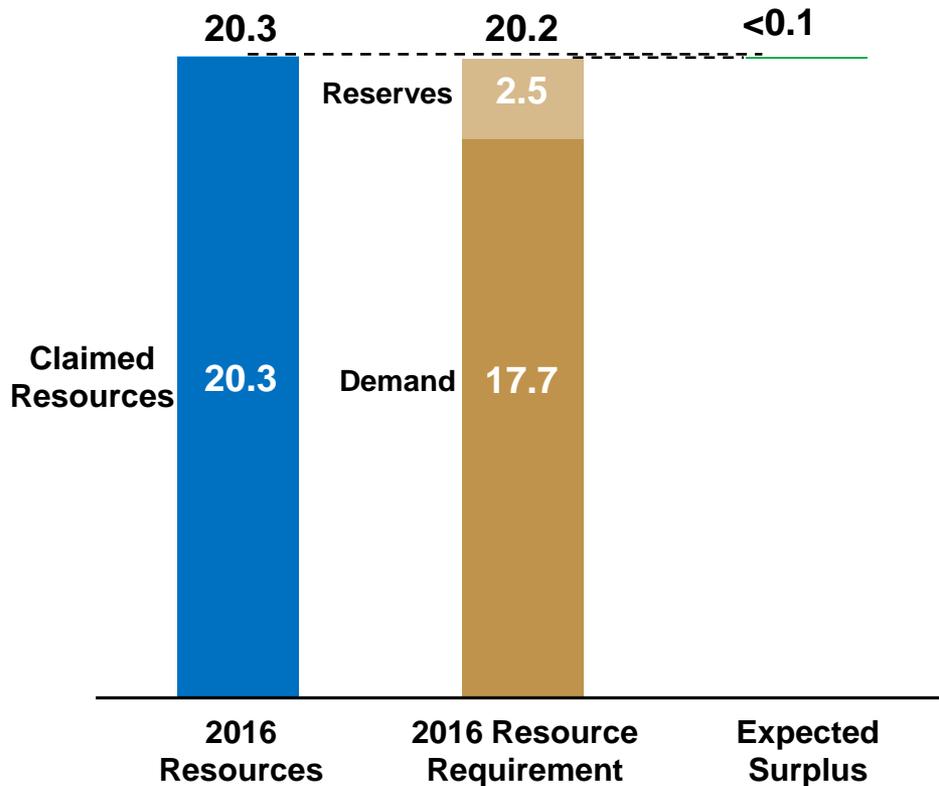
# Appendix

# Zone 6: All or Parts of IN and KY

As of January 31, 2014

## In GW

## Observations



### Resources

- Reported retirements 1,657 MW less than Long Term Reliability Assessment

### Demand

- Reported demand 847 MW less than Long Term Reliability Assessment

# Factors driving both supply and demand forecasts are indicative of persistent uncertainty and illicit caution

- **Demand Reductions**

- Current survey shows an aggregated 2016 demand of 93.7 GW
  - This is a -0.75% annual growth rate for the next three years
  - MISO's weather-adjusted annualized growth rate is 1.5% since 2009 (would imply a 2016 load of 100.2 GW)
  - The annual growth rate in the most recent Long Term Reliability Assessment is 0.8% (would imply a 2016 load of 98.1 GW)

- **Resource Increases**

- 3.2 GW of previously uncounted resources are included
- 3.5 GW of generators were reclassified from retirement / low confidence to high confidence - Investment and approvals are required to firm up these resources

- **Unclaimed Merchant Generation**

- Results include 6.6 GW of generation not currently contracted to serve load