

Florida Public Service Commission

2011 Ten-Year Site Plan Workshop

FRCC Presentation

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President & CEO

September 7, 2011

Agenda

- **FRCC Load & Resource Plan**
 - Load forecast, generation additions, reserve margins, DSM, fuel mix, Renewables
- **FRCC Reserve Margin**
- **Generator and Transmission Maintenance Scheduling**
- **Inter-Regional Transmission Planning**
- **FRCC Fuel Reliability**
 - Fuel Reliability Working Group (FRWG)
 - Gas Study Project
 - Fuel Issue Response Coordination

Florida Reliability Coordinating Council

The purpose of the Florida Reliability Coordinating Council is to ensure and enhance the reliability and adequacy of the bulk electricity supply in Florida, now and into the future.

FRCC

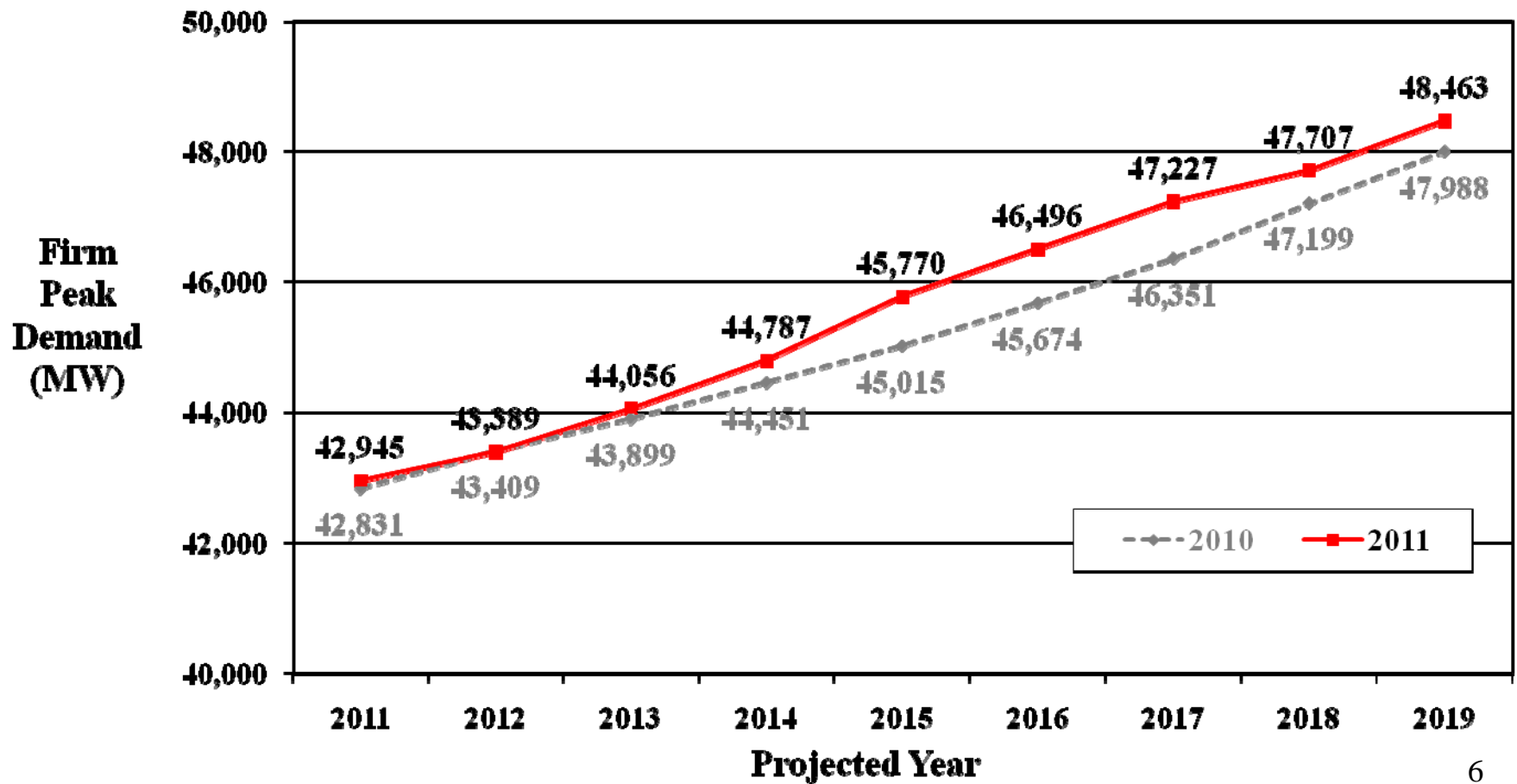
Load & Resource

Plan

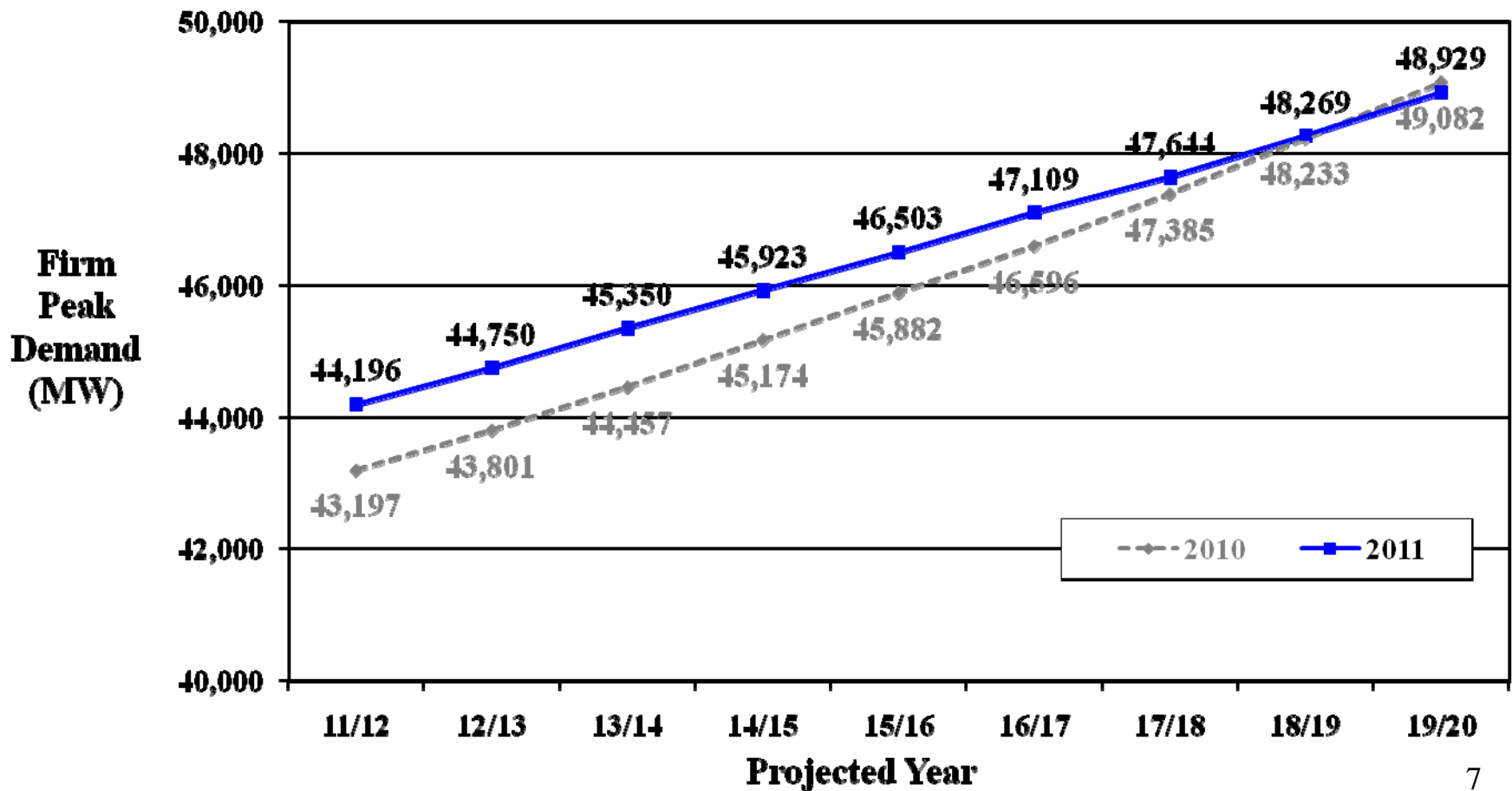
Load Forecast Factors

- Florida unemployment decreased over 2010
- Population picking up momentum in 2011
- Residential customers and energy sales are higher; commercial and industrial are down
- Load Management additions have slowed down in the 2011 TYSP
- Forecasted winter peaks are slightly higher in the short-term; summer peaks are slightly higher in the long-term

Comparison of 2010 vs. 2011 FRCC Firm Peak Demand Forecast (Summer)



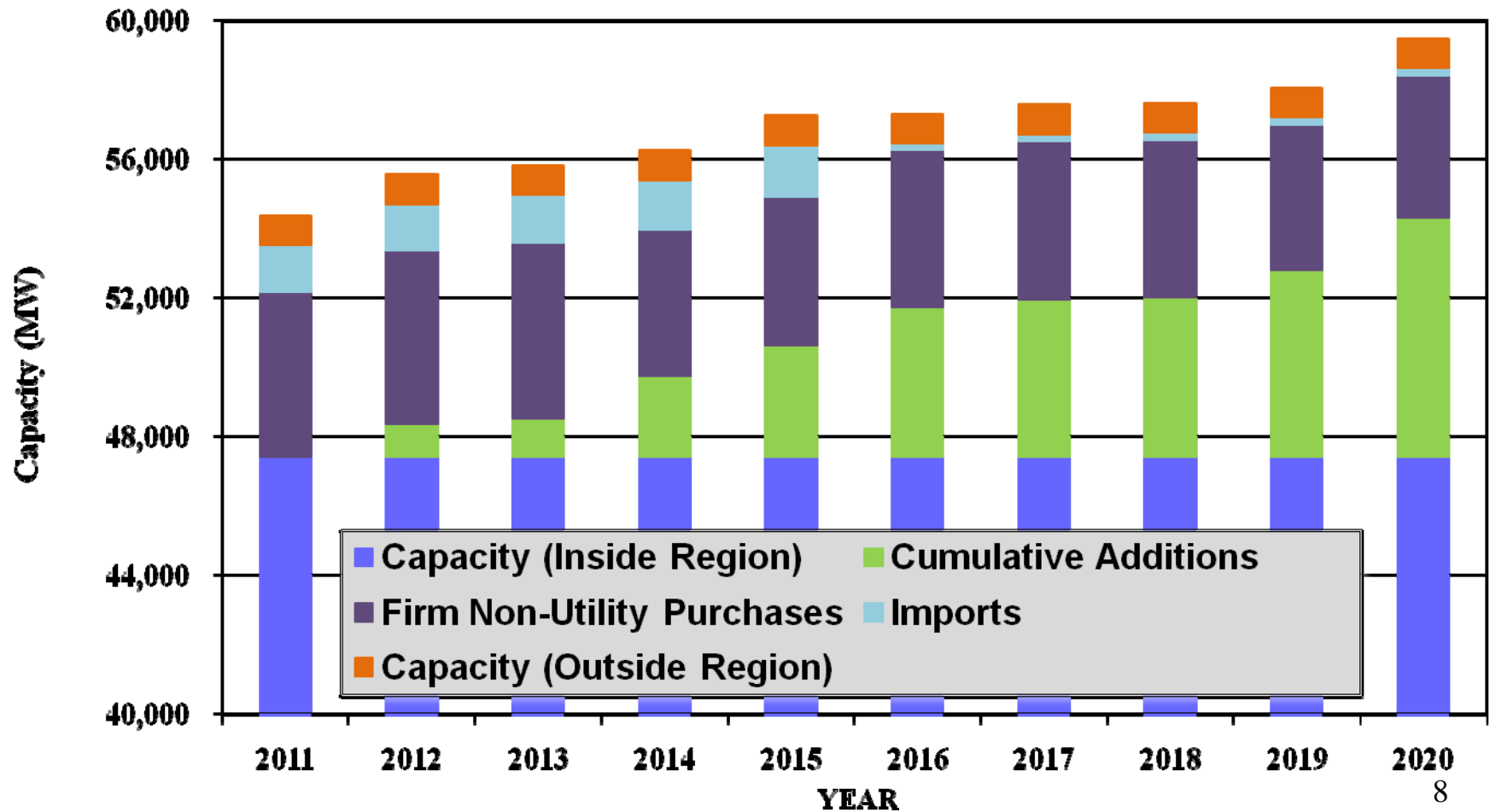
Comparison of 2010 vs. 2011 FRCC Firm Peak Demand Forecast (Winter)



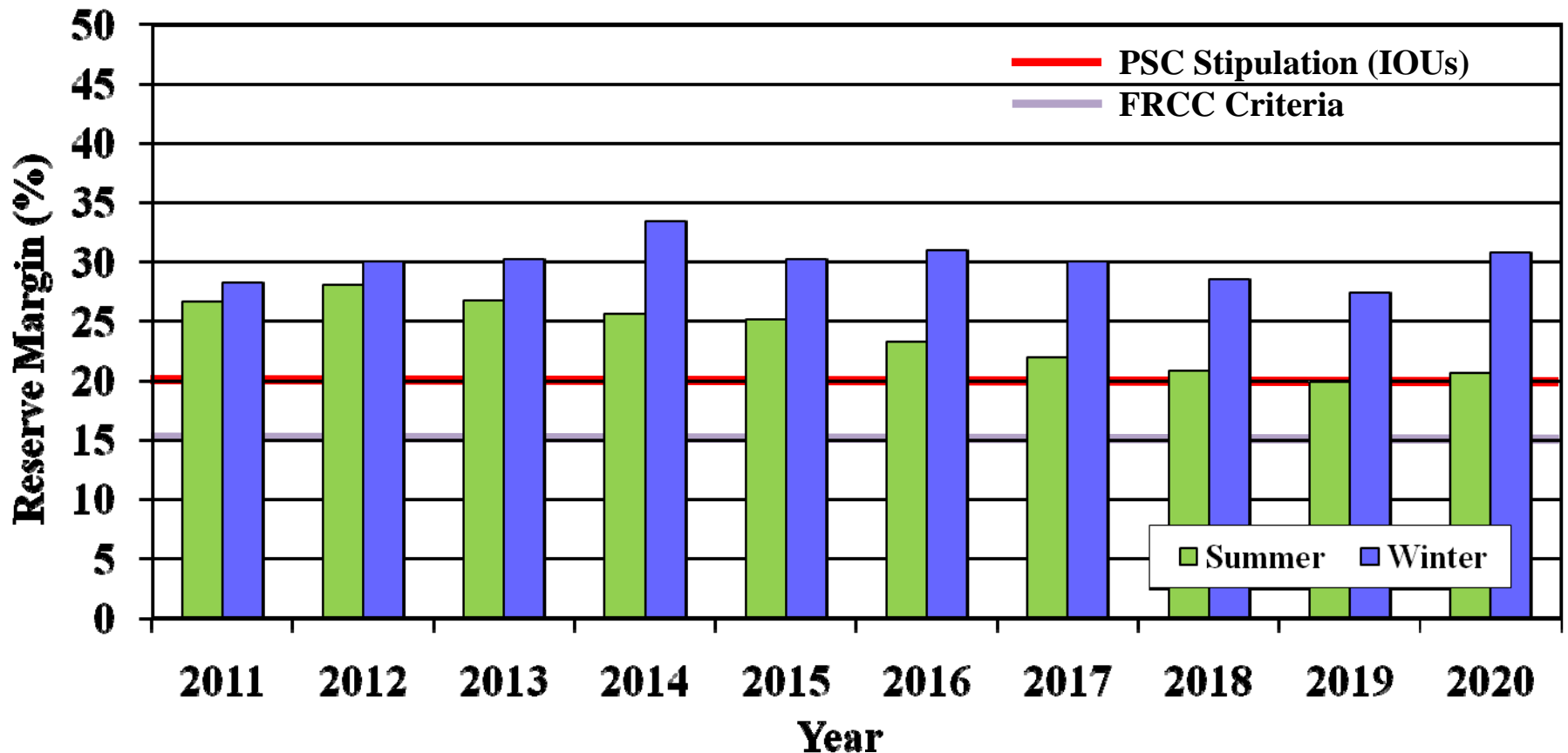
Load & Resource Plan

Total Available Capacity

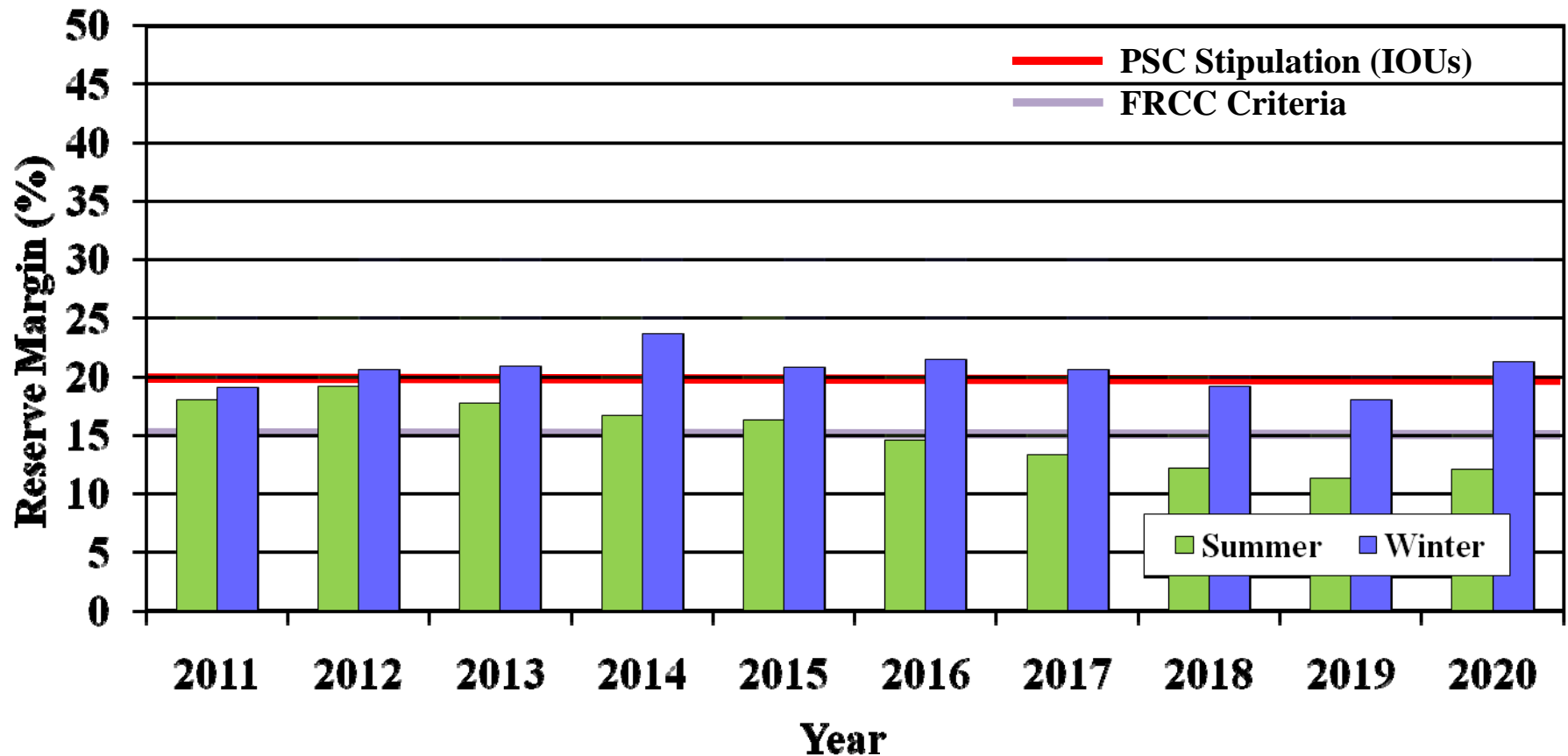
(Summer)



Load & Resource Plan FRCC Planned Reserve Margin



Load & Resource Plan FRCC Planned Reserve Margin (without exercising LM/INT)



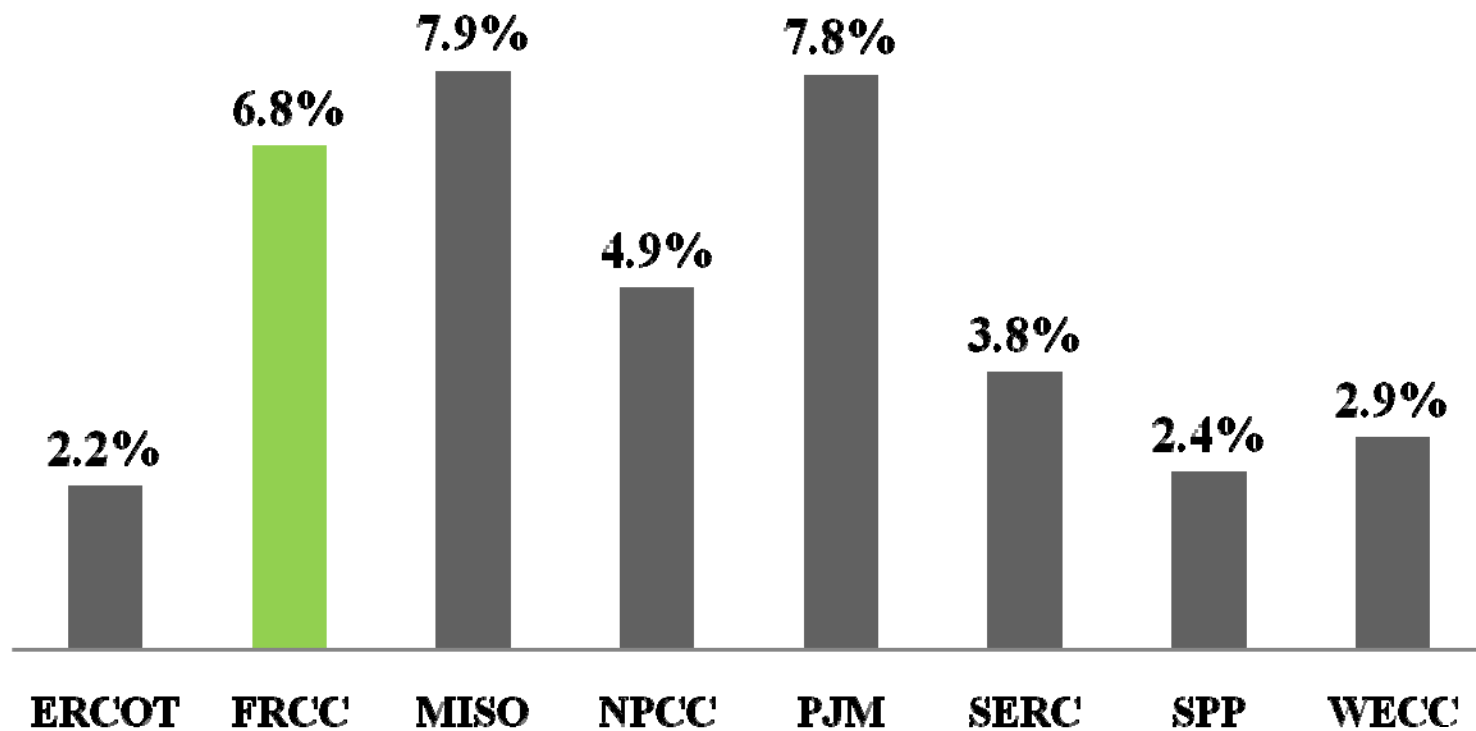
FRCC Reliability Assessment Reserve Margin Review

- Ensure that the Regional Planning Reserve Margin meets the 15% FRCC Criteria
- Planned Reserve Margin equals or exceeds 20% for all peak periods for the next ten years (with the availability of dispatchable LM/INT)

Load & Resource Plan

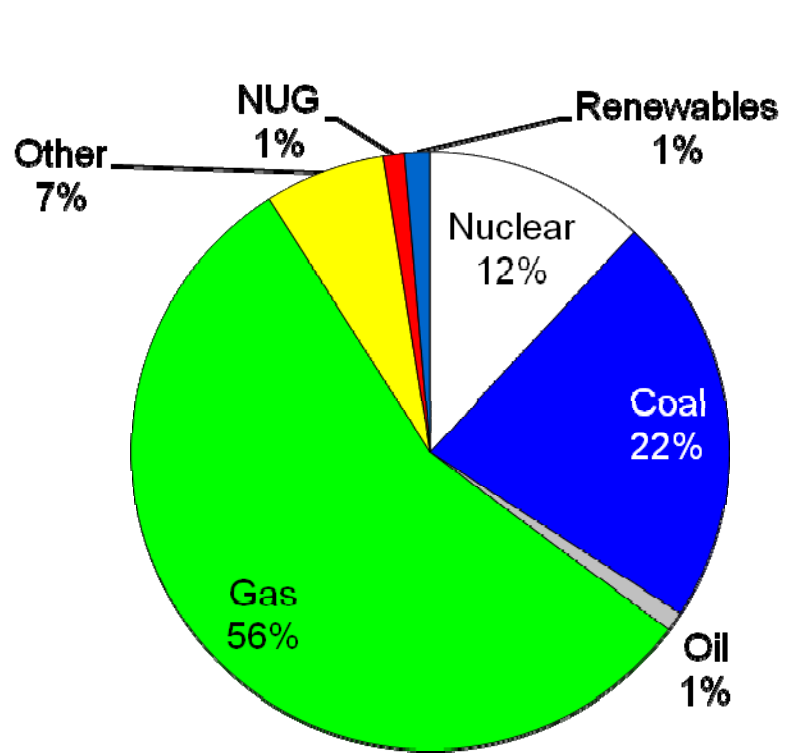
Dispatchable Demand Side Management as a Percentage of Regional Peak

Summer 2011

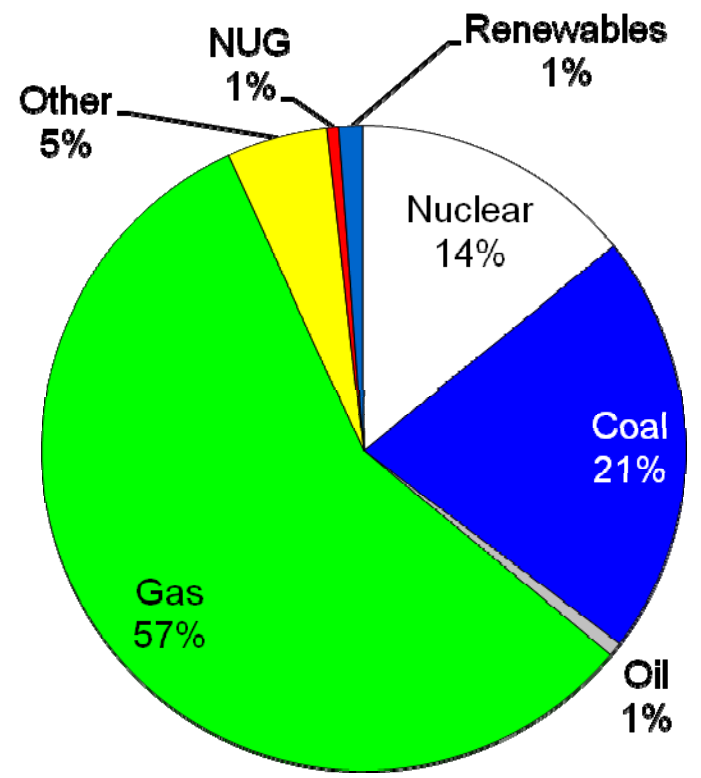


Fuel Mix (Energy)

Net Energy for Load (GWh)



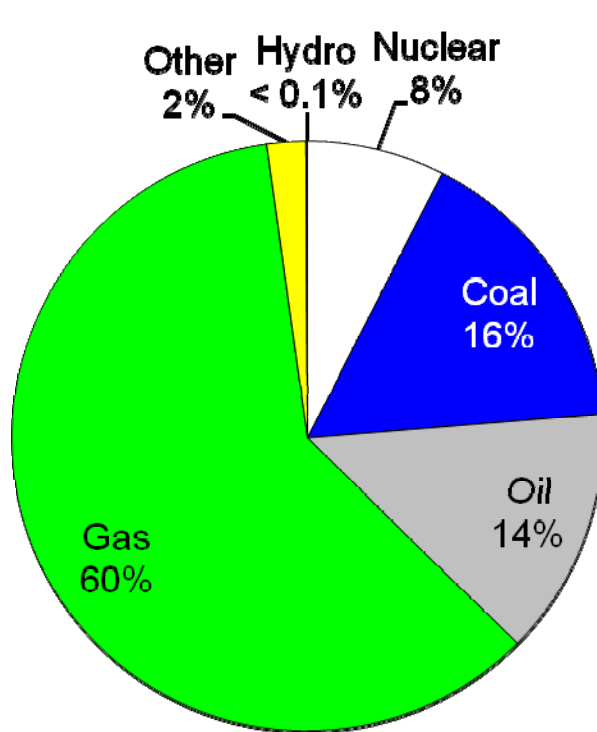
2011
225,326 GWh



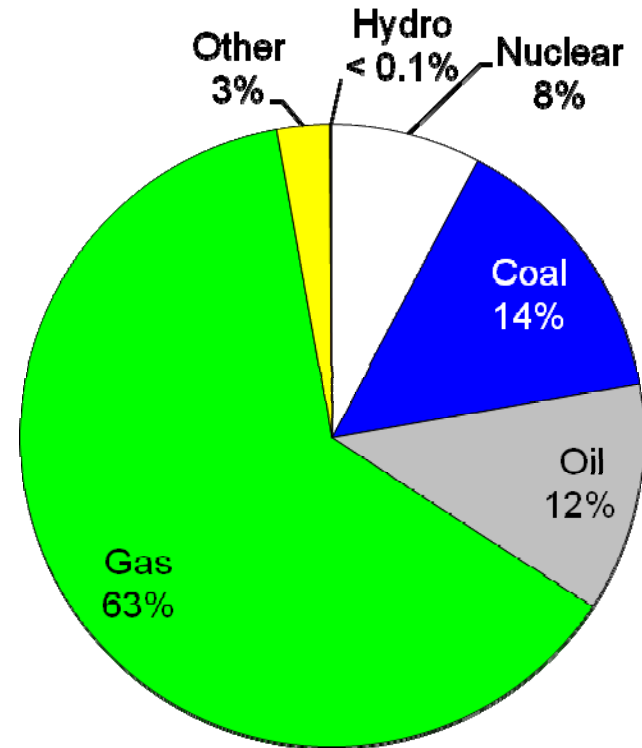
2020
260,660 GWh

Fuel Mix (Capacity)

Summer Capacity (MW)

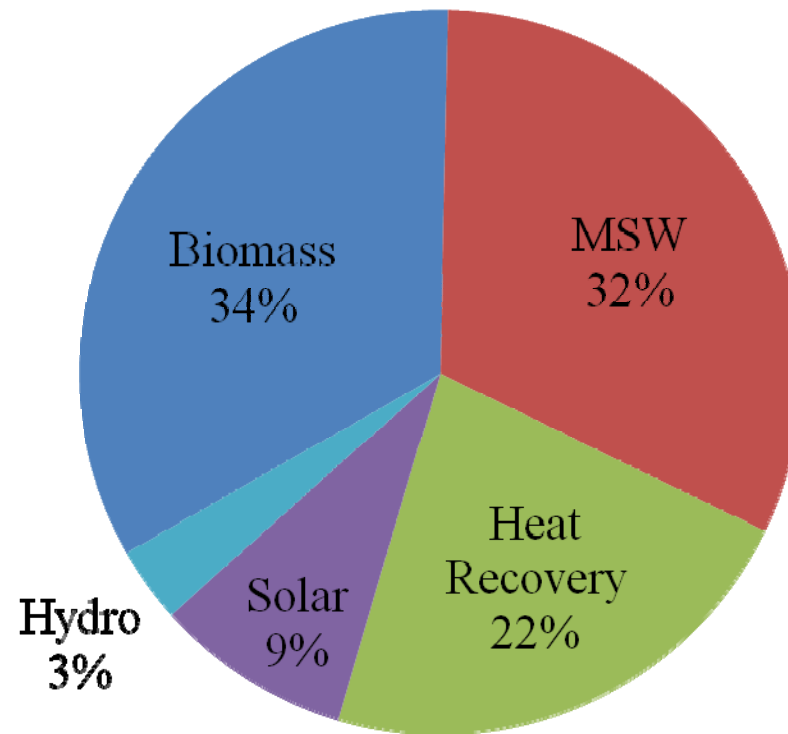


2011
52,157 MW



2020
58,409 MW

2011 Renewable Resource Capacity



1,282 MW

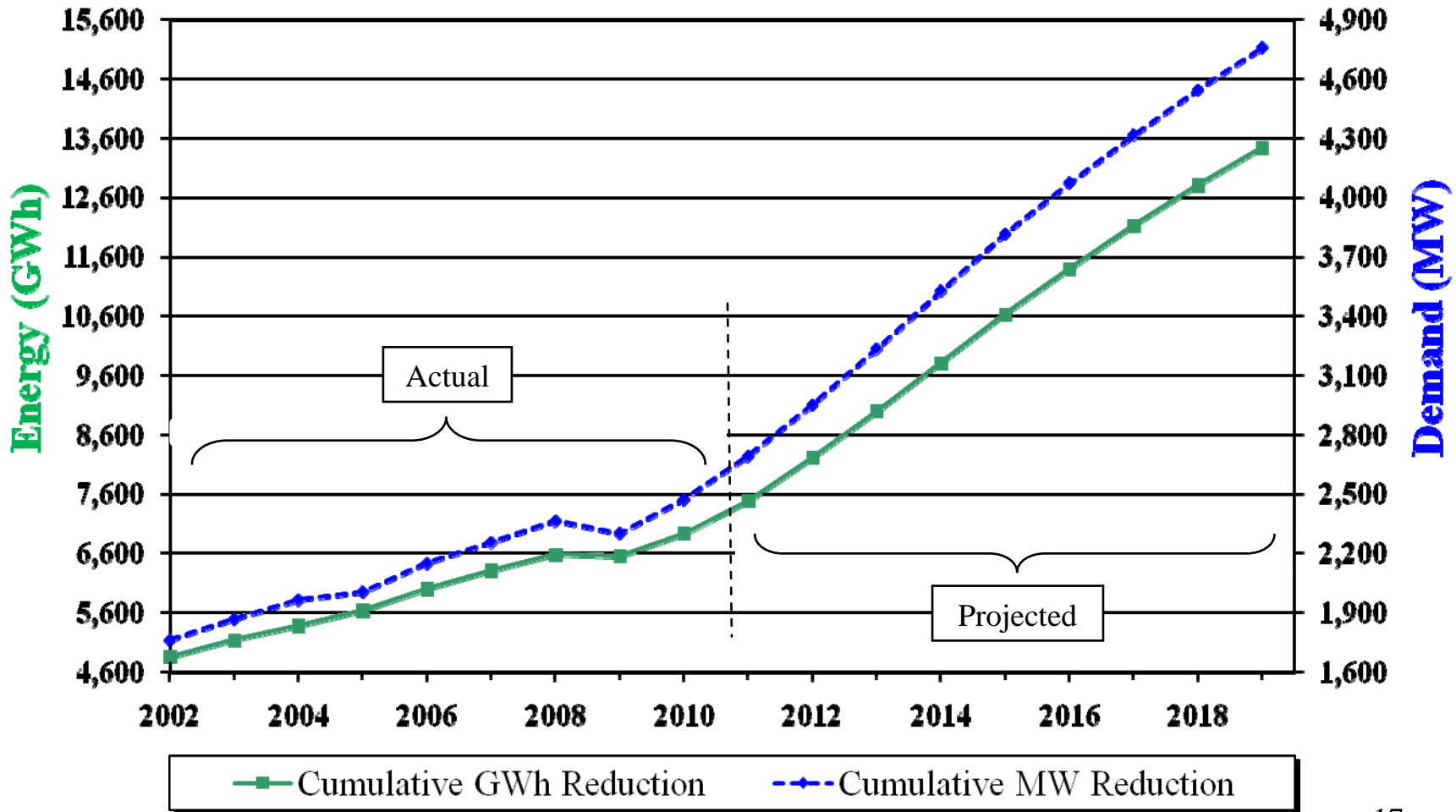
Renewables Capacity Forecast

Existing Renewables Capacity	1,282 MW
Planned Additions (thru 2020)*	
Biomass	308 MW
Landfill Gas	18 MW
Municipal Solid Waste	75 MW
Solar PV	325 MW
Solar Projects (other)	39 MW
Wind	0 MW
TOTAL	765 MW

* Contains non-TYSP data

Conservation

Cumulative Energy (GWh) & Summer Demand (MW) *



* Excludes LM and INT

Nuclear Outlook

Existing Nuclear Capacity

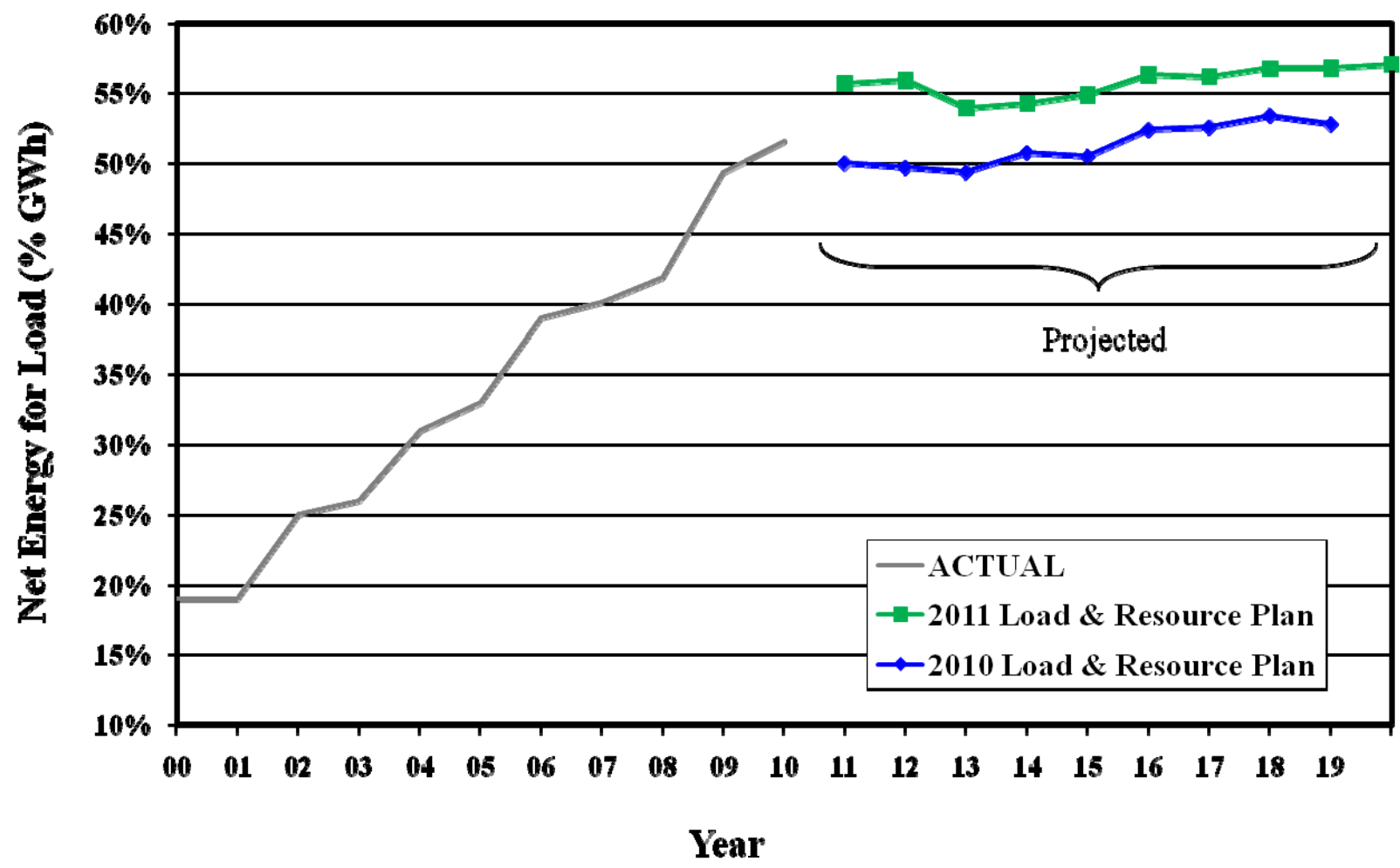
Crystal River 3	849 MW *
St. Lucie 1 & 2	1,678 MW
Turkey Point 3 & 4	<u>1,386 MW</u>
Total	3,913 MW

Planned

Crystal River 3 (uprate)	~ 7 MW (2011)
St. Lucie 2 (uprate)	20 MW (2011)
St. Lucie 1 (uprate)	122 MW (2012)
St. Lucie 2 (uprate)	~ 108 MW (2012)
Turkey Point 3 (uprate)	109 MW (2012)
Crystal River 3 (uprate)	~ 156 MW (2013)
Turkey Point 4 (uprate)	<u>109 MW</u> (2013)
Total	~ 631 MW

* Extended Outage

Energy Production from Natural Gas



FRCC Load & Resource Assessment Conclusion

The results of the resource adequacy review indicate that the FRCC Region has planned adequate resources to remain reliable for the next ten years.

Generation & Transmission Maintenance Scheduling

- Centralized outage system utilized by Utilities to schedule generation and transmission outages
- Equipment Status Report updated and reviewed by Utilities monthly

Generator Maintenance Scheduling

- Monthly unit outage forecast compiled by FRCC and distributed to Utilities
- Forecasted monthly Reserve Margins provided to PSC
- FRCC coordination among Utilities to ensure adequate Reserve Margins maintained for all periods

Coordination and Reliability Studies

- FRCC conducts coordinated transmission and generation outage studies:
 - Next-day
 - 7-day
 - 28-day
 - Seasonal Studies
- FRCC conducts conference calls on a weekly basis to resolve issues related to generation and transmission outages

Inter-Regional Transmission Planning

- Coordination of modeling information
 - Eastern Interconnection Reliability Assessment Group (ERAG) Multiregional Modeling Working Group (MMWG) develops and maintains a library of models
 - Models include proposed system expansion plans
 - Models are the basis for reliability assessments
- FRCC Studies / Assessments
 - Include detail models of Southeastern area of SERC
 - Monitor the FL-SOU interface
 - Evaluate facilities on both sides of the interface
 - Potential issues coordinated with the FL-SOU Coordinating Group²⁴

Inter-Regional Transmission Planning (cont)

- Pursuant to FERC Order 1000
 - Develop an inter-regional transmission coordination procedure
 - Develop a process to address cost allocation of efficient cost-effective inter-regional transmission solutions

2011 FRCC Fuel Reliability

- Fuel Reliability Working Group (FRWG)
- Gas Study Project
 - Pipeline Interruptions / Compressor Station Failures
 - Fuel Oil Storage
 - Assess Current Natural Gas Infrastructure Deliverability/Reliability
- Fuel Issue Response Coordination
 - Tools and Plans

Fuel Reliability Working Group

- Dedicated group of FRCC / Member representatives
- Continue to review interdependencies of fuel availability and electric reliability
- Coordinate regional responses to fuel issues and emergencies
 - Oversight of the FRCC Gas Study Project
 - Support for real-time emergency response (i.e., storms)
 - Provide input on regional fuel reliability positions for NERC Regional Reliability Assessments
- Natural Gas (NG) Focus
 - NG energy production continues to grow
 - Continue to assess existing natural gas delivery infrastructure to serve growing demand

Gas Study Project Analyses

- Failure of Gulfstream, Cypress or FGT lines
- Compressor Failure Analyses
- Analyses continues on oil storage
- Diversity of gas pipeline interconnects
- Conservative assessment assumption
- Near-term “Regional” assessments

Natural Gas

Capacity into Florida has Increased

Major changes since 2005:

- Mobile Bay area storage capacity held by FRCC Members has increased from 0.160 Bcf/day to 1.06 Bcf/day
- Delivery capacity from onshore sources has increased from 0.5 Bcf/day to 1.5 Bcf/day
- Since 2005 - Total design capacity into Florida has increased from 3.24 Bcf/day to 4.35 Bcf/day
- Impacts to supply by hurricanes mitigated with stored NG and onshore sources.
- Limited activity on Liquid Natural Gas projects

Fuel Reliability Coordination Tools and Plans

- *FRCC Generating Capacity Shortage Plan*
- *FRCC Operations - Hurricane Manual*
- *FRCC Communications Protocols – Reliability Coordinator (RC), Generator Operators and Natural Gas Transportation Service Providers*
- Continued cooperation between pipelines and FRCC
- Fuel Oil backup is key to reliability for catastrophic failures

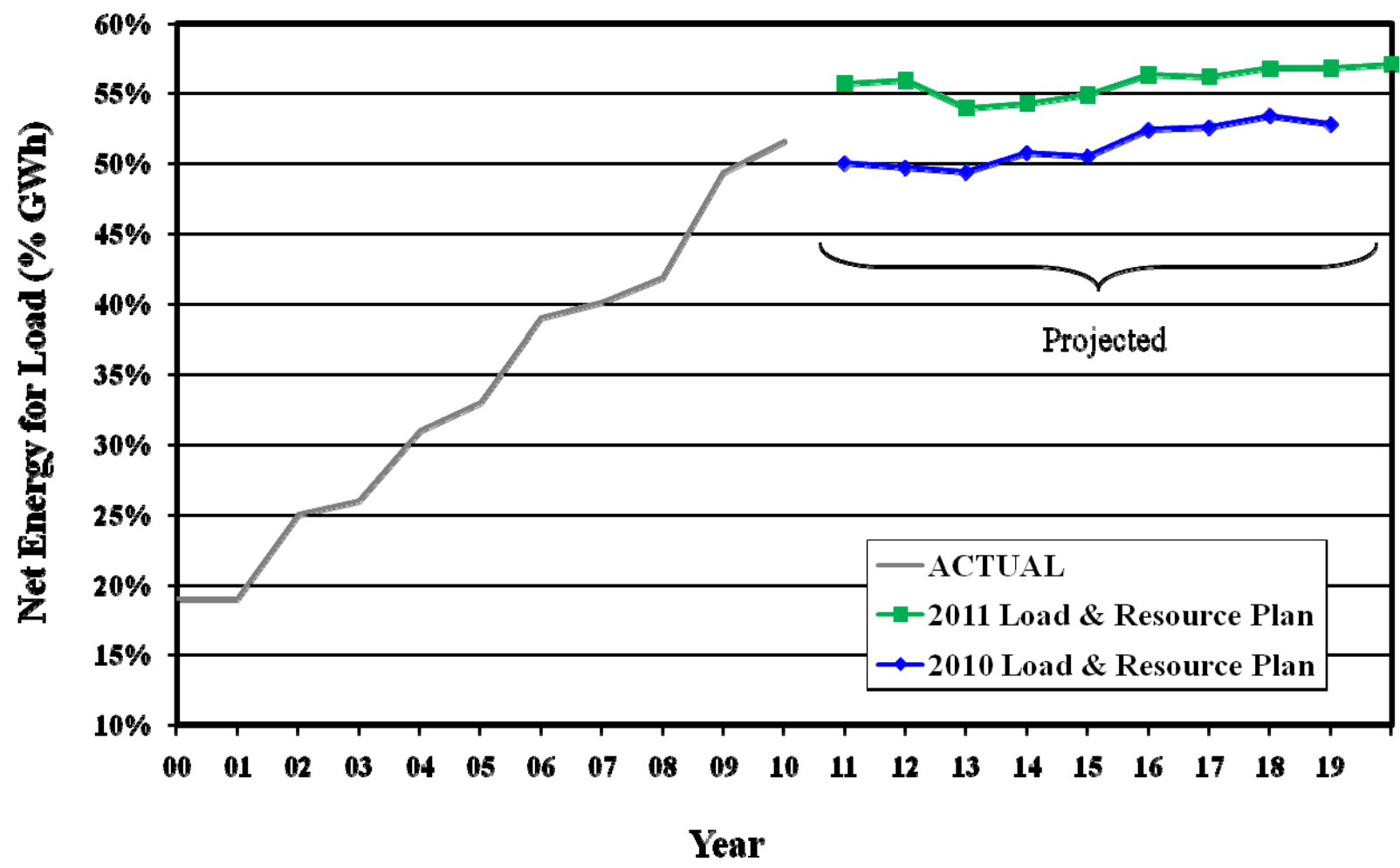
Summary

- FRCC Operating Committee
 - Continues to promote fuel reliability awareness
 - Continues to refine processes for minimizing impacts of fuel issues (all types of fuels)
 - Performs proactive near-term fuel assessments & studies
- NG capacity into Florida has increased
- Access to NG storage and onshore sources has increased
- FRCC communications plans are in place with pipeline operators
- RC coordinates with State Capacity Emergency Coordinator and pipeline operators when fuel supply is threatened

Summary (cont.)

- FRWG will continue its efforts:
 - Review ERCOT February load shed event
 - Looking for lessons learned
 - Continue evaluation of Gas / Electric interdependencies
 - Gas / Electric compression station
 - Electrical needs of compression stations – controls
 - Pipeline communications during emergencies
 - Assess gas infrastructure capabilities
 - Continue evaluation of fuel oil storage
- The FRCC continues to look at NG infrastructure on a Regional basis to identify potential generating capacity issues

Energy Production from Natural Gas



Conclusion

- In the near term, FRCC does not anticipate any fuel transportation issues affecting resource capabilities considering:
 - Fuel diversity
 - Current fuel supply, pipeline capacity and pipeline diversity
 - Alternate fuel capability of generation
- In the longer term, the step change from the 2010 forecast and projected increases in energy production from natural gas highlight that close coordination will be required to ensure that gas delivery capacity remains adequate

Questions ?