



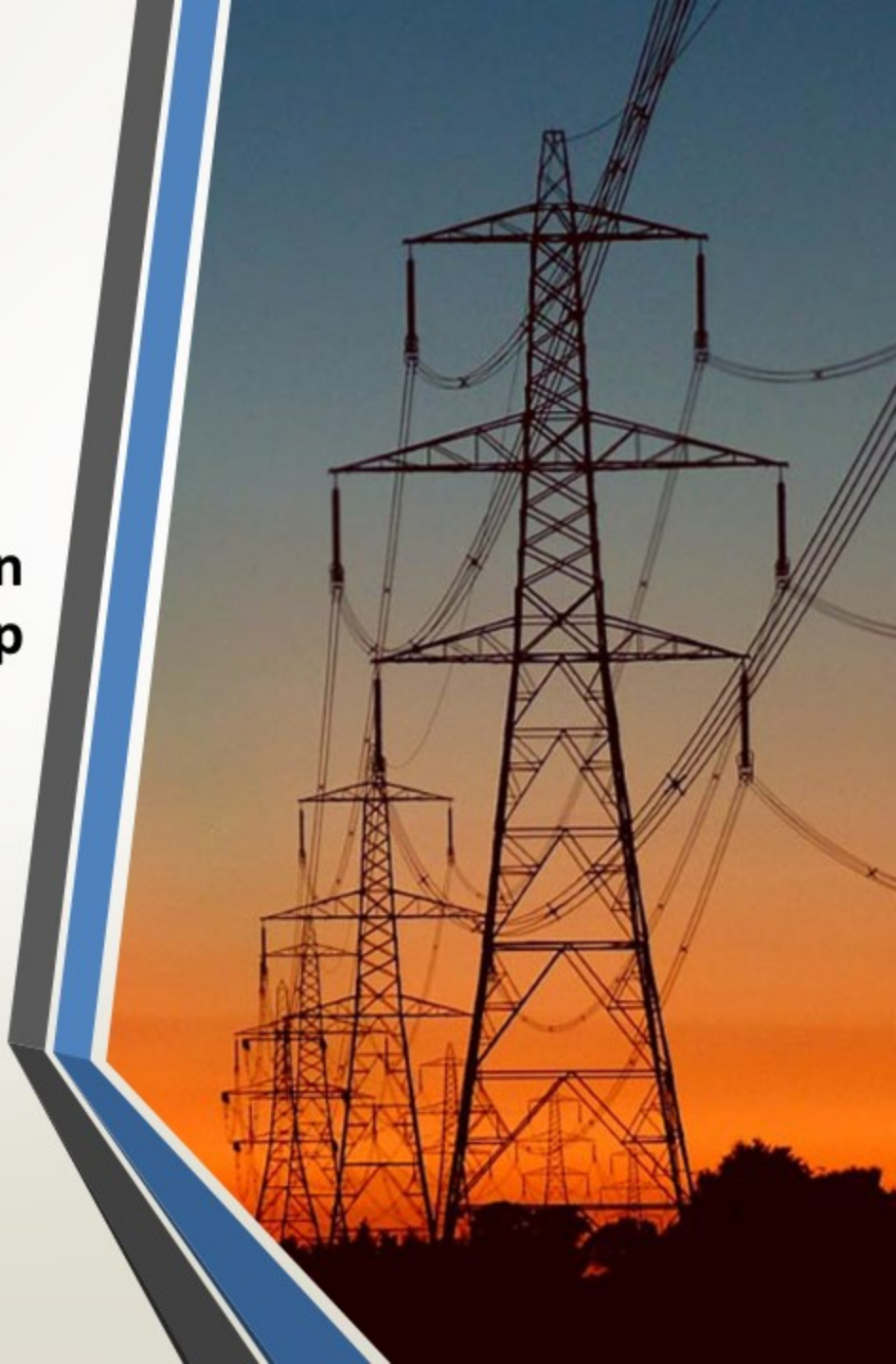
Florida Public Service Commission 2020 Ten-Year Site Plan Workshop FRCC Presentation

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President & CEO

Florida Reliability Coordinating Council, Inc.

August 18, 2020





Vision: To be the premier organization for grid reliability and security in North America.

Mission: To coordinate a safe, reliable and secure bulk power system with our Members.

Agenda

2020 Load & Resource Plan

- Summary
- Gulf Power Company Integration
- Integrated Resource Planning Process
- Load Forecast and Demand-Side Management (DSM)
- Generation Additions (including batteries), Reserve Margins, Fuel Mix, and Renewable Resources
- Reliability Considerations of Utility Solar Generation Additions
- Natural Gas Infrastructure in Florida
- COVID-19 Impacts

2020 Load & Resource Plan Summary

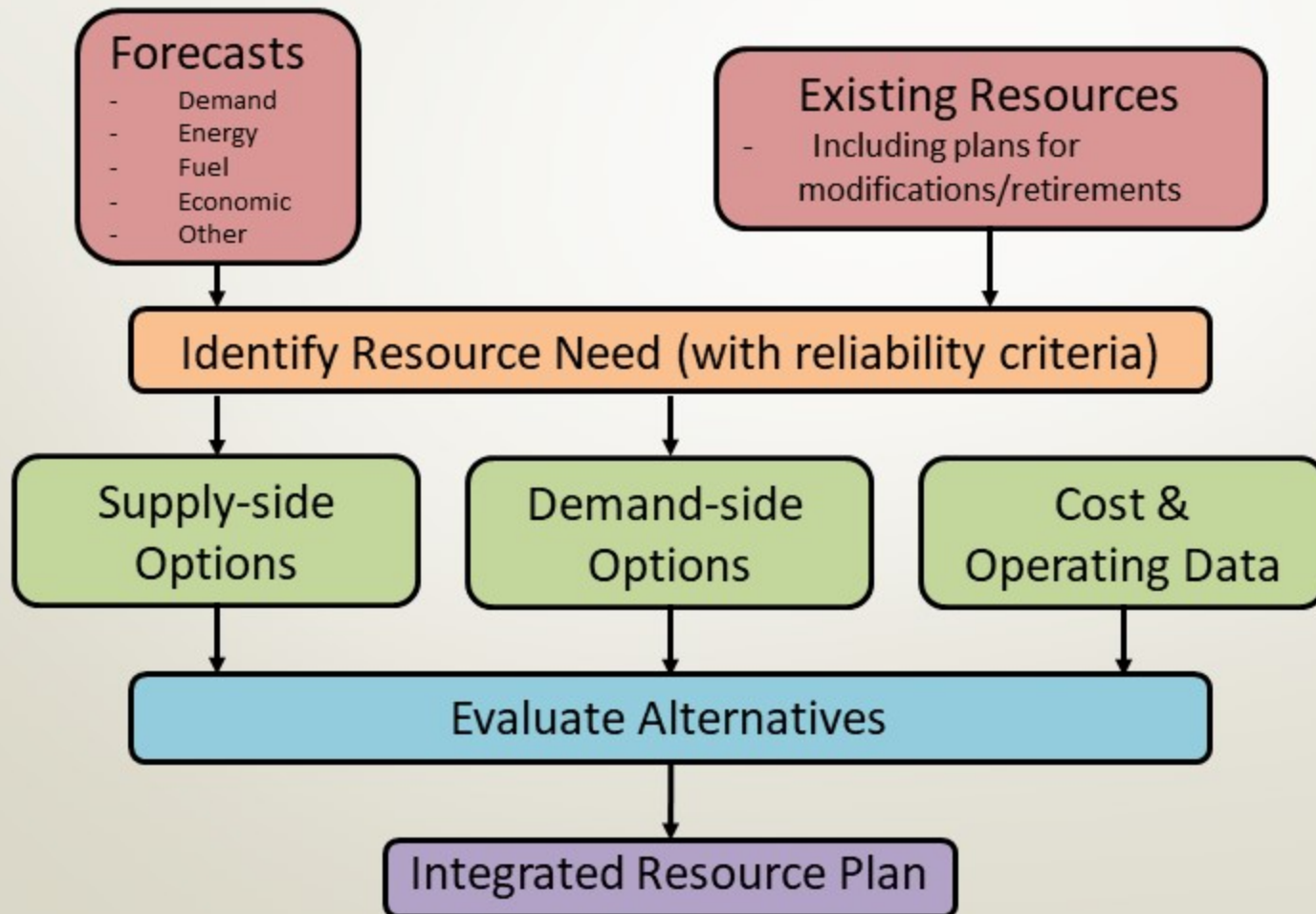
Over the next ten years

- Firm peak demand and energy sales forecasts are comparable to 2019 TYSP; continue to show growth
- Over 12,150 MW of new firm generation planned
- Planned Reserve Margins above 20%
- Demand Response reduces firm summer peak (MW) by 6.1% in 2029
- Energy Efficiency Codes and Standards are projected to reduce peak demand by 5.1% in 2029
- Reserve Margin increasingly dependent upon firm Demand Response in later years
- Renewables increase from 4% to 13% (energy)
- Utilities' Ten-Year Site Plans filed 4/1 and did not⁴ consider impacts of COVID-19

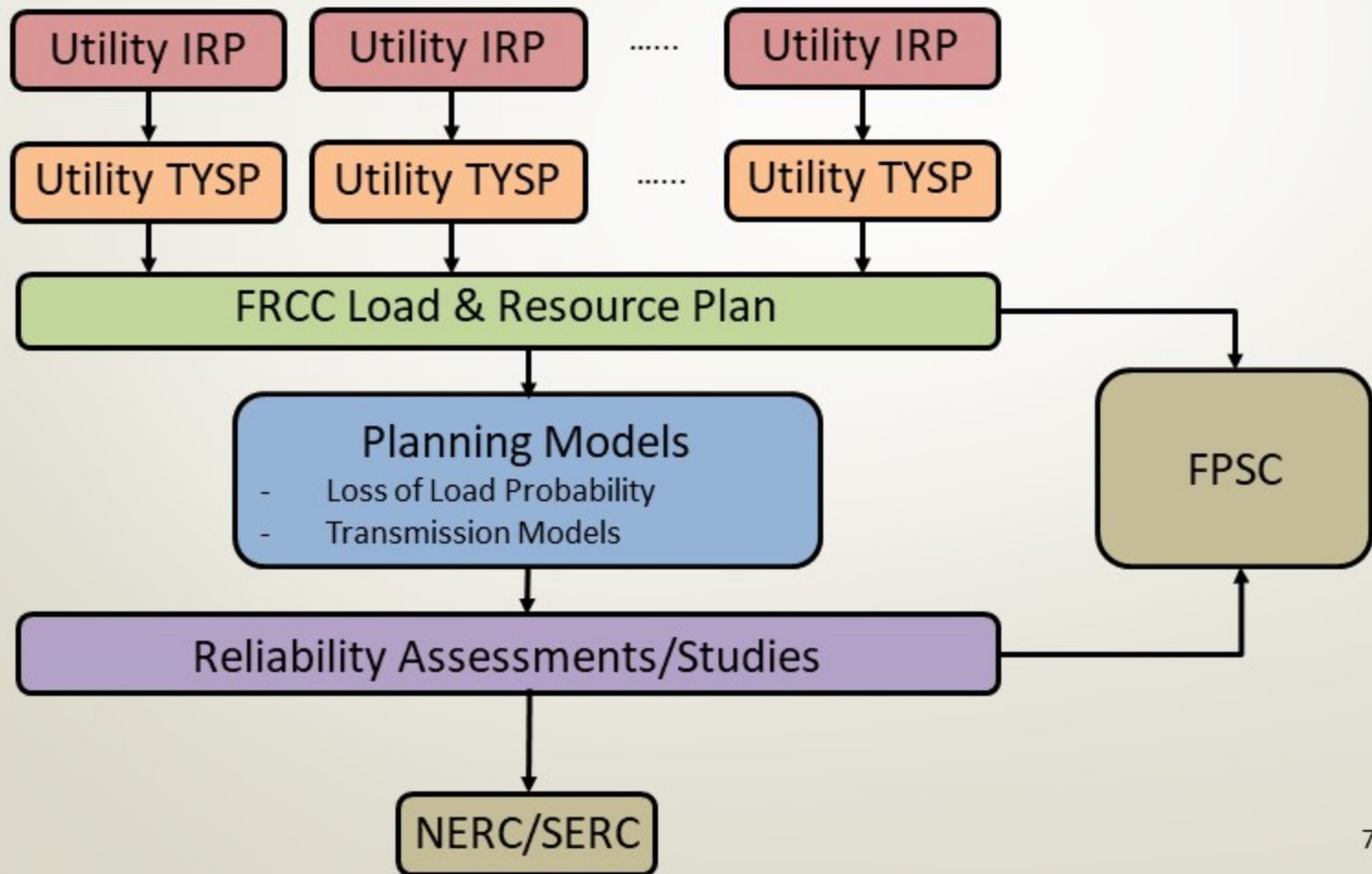
FPL IRP/Gulf Integration

- On January 1, 2019, Gulf Power Company (Gulf) became a subsidiary of NextEra Energy, Inc. which also owns FPL.
- In previous Load and Resource Plans, Gulf's data was only shown within the State section of the report.
- FPL expects to integrate Gulf, creating a single electric operating system on January 1, 2022.
- Approximately 2,350 MW of existing generation is being added to the FRCC Region.
- Gulf Power loads have been added to 2019 forecasts to better compare 2019 to 2020 data

Utility Integrated Resource Planning (IRP) Process Overview



FRCC Planning Process Overview



Load Forecast and DSM^{1,2,3}

- Firm summer peak demand (MW) growth similar to 2019, at 1.10% per year
- Forecasted energy sales (GWh) growth similar to 2019 TYSPs; at 0.75% per year
- Demand Response reduces firm summer peak (MW) by 6.1% in 2029
- Energy Efficiency Summer Peak reductions in 2029
 - Mandated Codes and Standards: 5.1%
 - Utility-Sponsored Energy Efficiency/Energy Conservation: 1.4%

¹ In this year's report the growth rate was calculated using 8 years of data from 2022-2029 to normalize the impact of Gulf Integration on 1/1/2022.

² Demand-Side Management (DSM) is made up of Demand Response (DR) and Utility-sponsored Energy Efficiency/Energy Conservation (EE/EC).

³ Projected impacts of Energy Efficiency codes and standards included in all utilities' forecasts.

Load Forecast Factors*



Florida unemployment (actual) has continued to decrease*



Population growth is projected to remain strong



Wage and income growth have not kept pace with employment growth



EE codes and standards and distributed solar dampen energy use growth



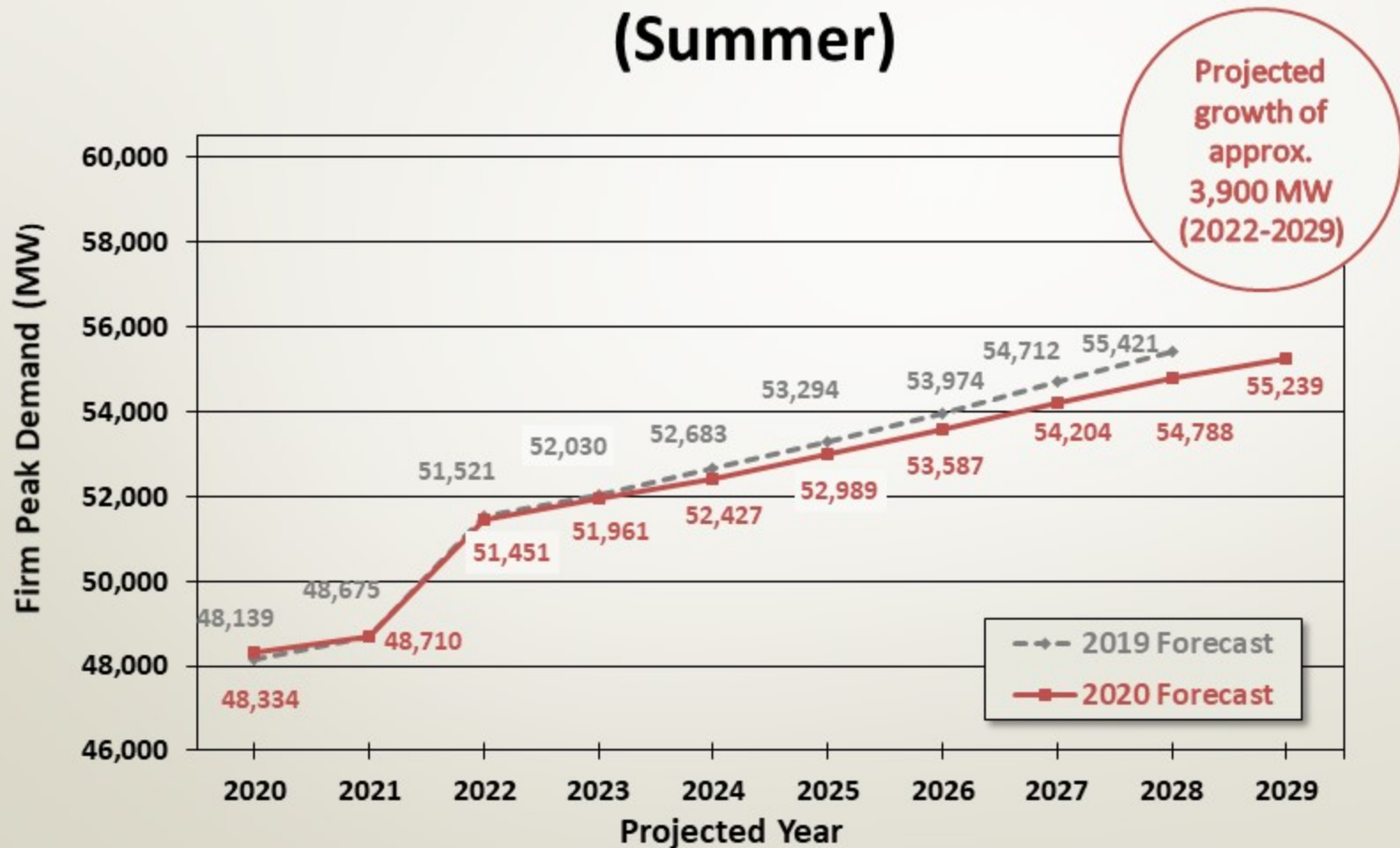
Commercial customer forecasts affected by online commerce



EV impact grows to 500 MW by 2029

*Utilities' TYSP filed 4/1 and did not consider impacts of COVID-19

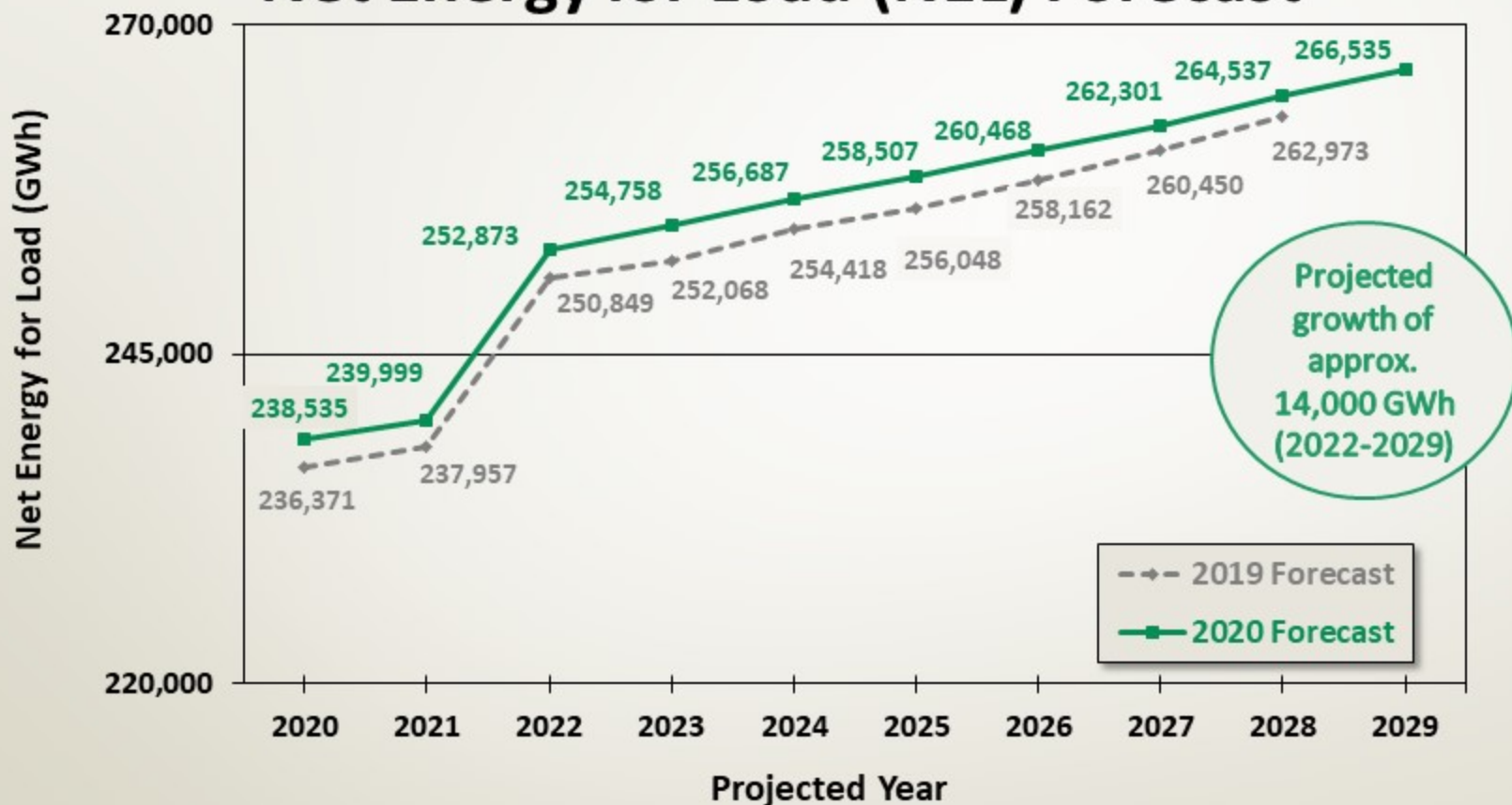
Comparison of 2019 vs. 2020 Firm Peak Demand Forecast^{1,2} (Summer)



¹ Firm Peak Demand includes impacts of DSM (cumulative Demand Response and incremental (2020-on) utility-sponsored Energy Efficiency/Energy Conservation) as well as Energy Efficiency Codes and Standards.

² For the Years 2022 and beyond, the 2019 forecast includes legacy Gulf Power load projected in Gulf Power's most recent independent Ten-Year Site Plan filing to foster a better understanding of overall year-over-year growth.

Comparison of 2019 vs. 2020 Net Energy for Load (NEL) Forecast^{1,2}

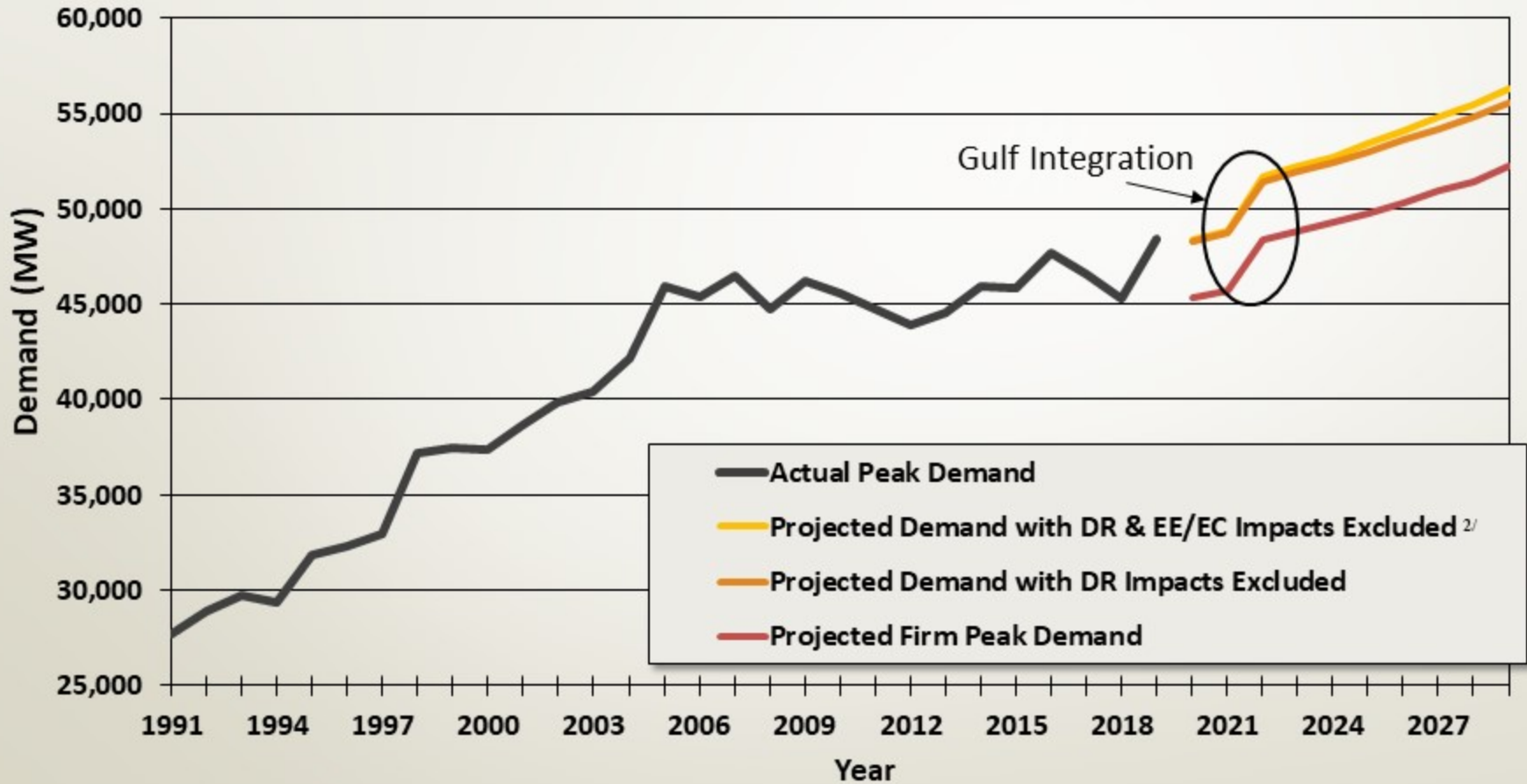


¹ Firm Peak Demand includes impacts of DSM (cumulative Demand Response and incremental (2020-on) utility-sponsored Energy Efficiency/Energy Conservation) as well as Energy Efficiency Codes and Standards.

² For the Years 2022 and beyond, the 2019 forecast includes legacy Gulf Power load projected in Gulf Power's most recent independent Ten-Year Site Plan filing to foster a better understanding of overall year-over-year growth.

Summer Peak Demands

Actual and Forecasted^{1,2,3}

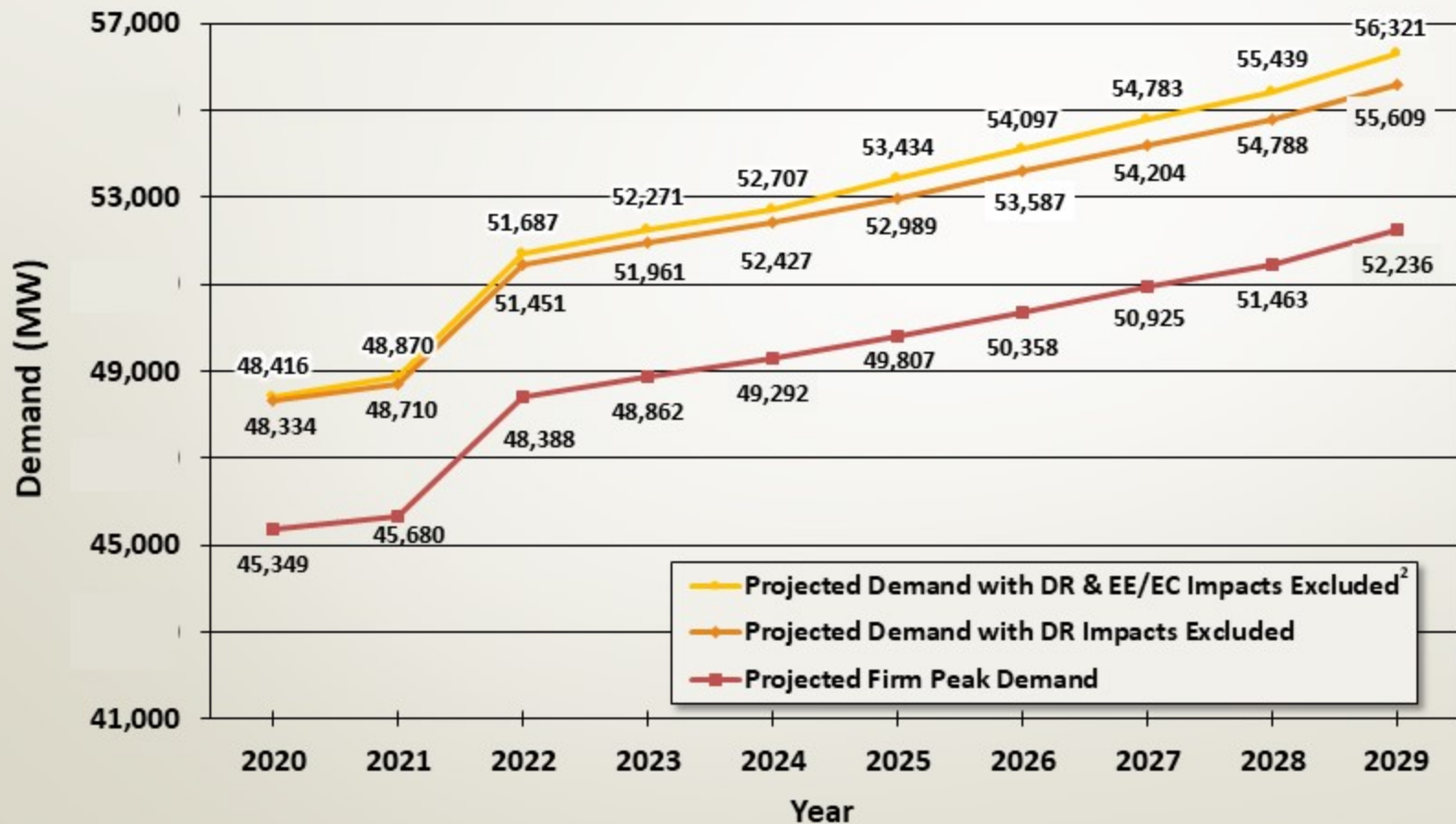


¹ Projected impacts of Energy Efficiency codes and standards are included in all projections.

² Impacts from cumulative Demand Response (DR) and incremental (2020-on) utility-sponsored Energy Efficiency/Energy Conservation (EE/EC) programs are excluded.

³ As of 1/1/2022, capacity, demand, and energy data will include the integration of Gulf into FPL. The data presented for years 2022 through 2029 is for the single integrated system (FPL).

Forecasted Summer Peak Demands^{1,3}

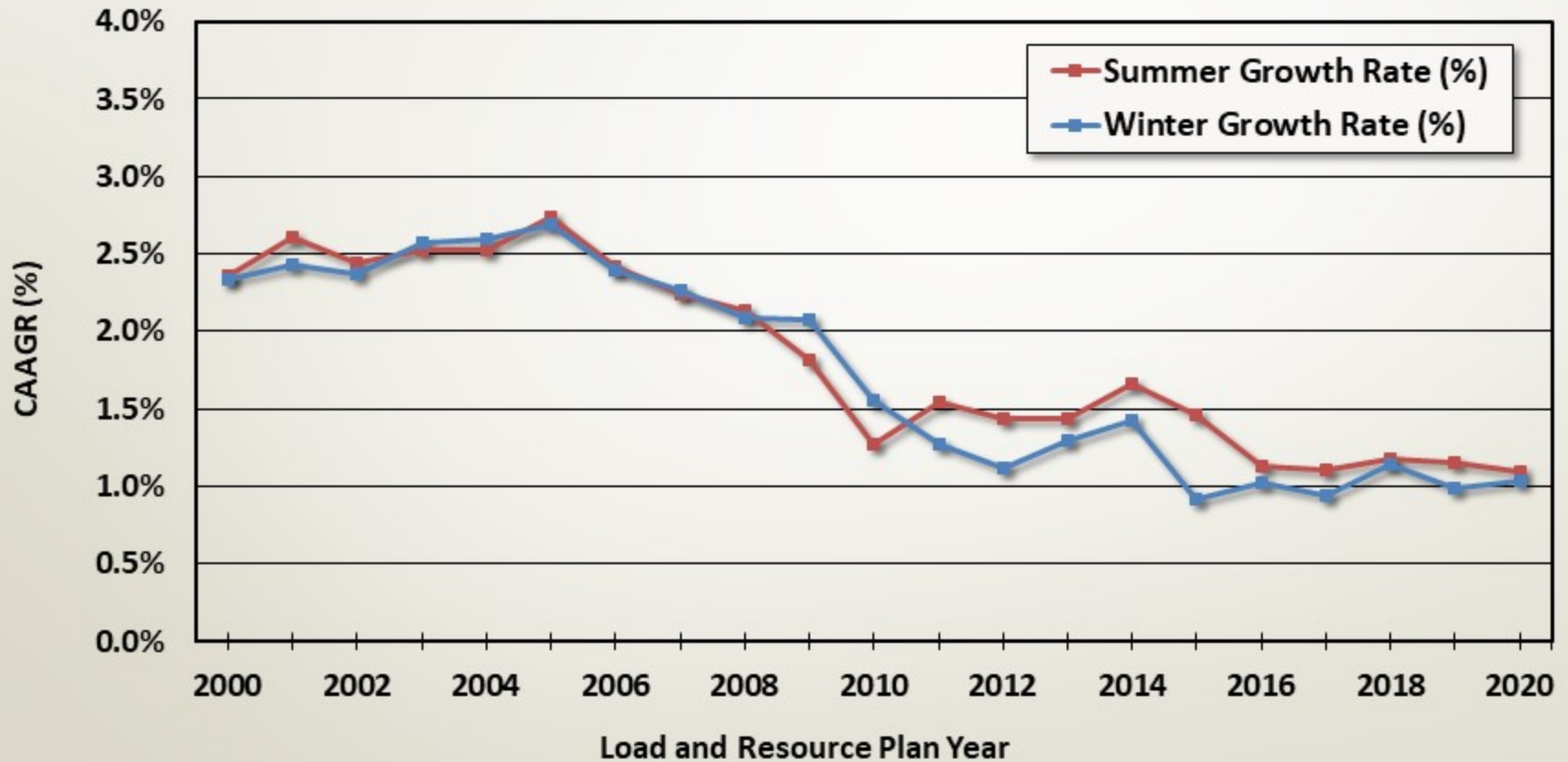


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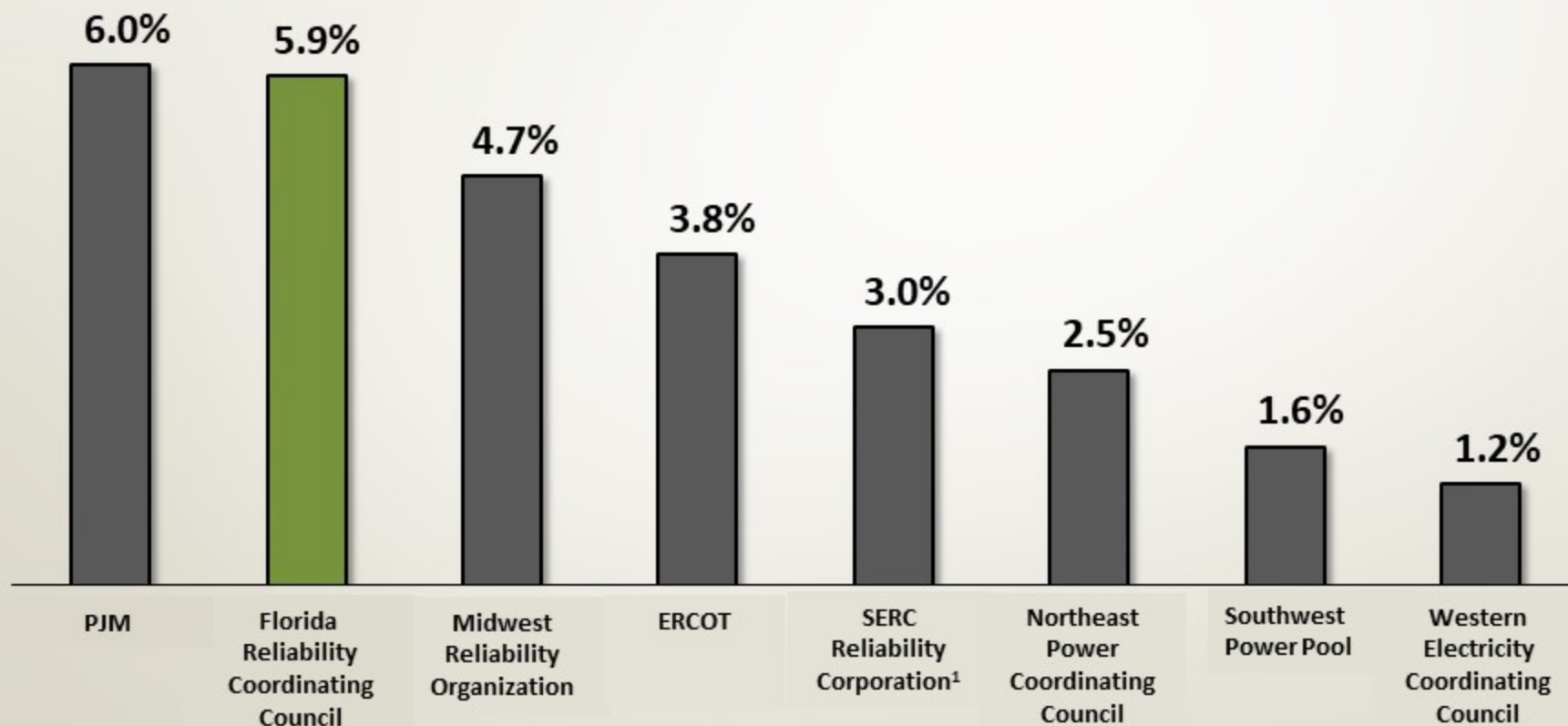
Historical Compound Average Annual Growth Rate^{1,2} for Firm Peak Demand (MW)



¹ Projected growth rate from prior forecasts

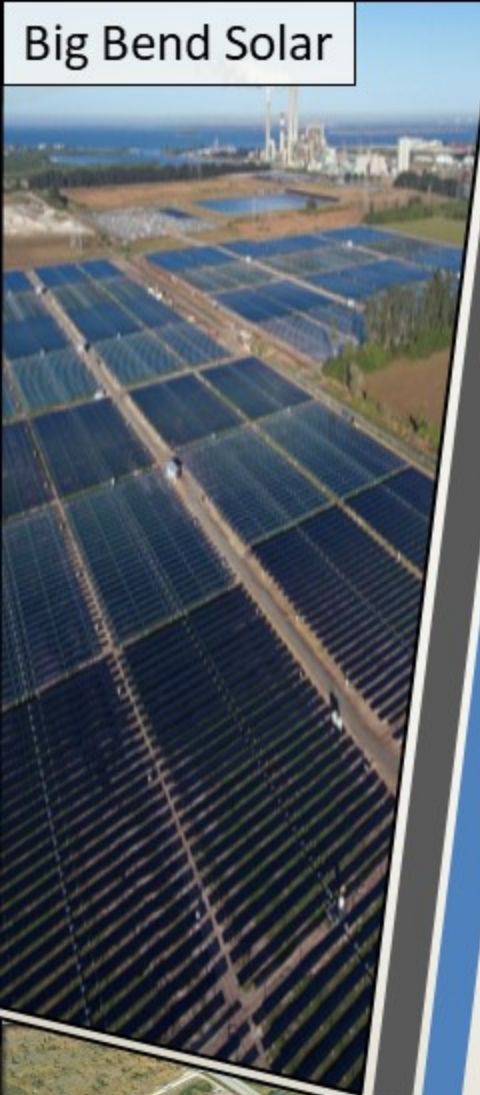
² In this year's report the growth rate was calculated using 8 years of data from 2022-2029 to normalize the impact of Gulf Integration on 1/1/2022

Demand Response as a Percentage of Peak Demand Summer 2020



Source: North American Electric Reliability Corporation's (NERC) 2020 Summer Reliability Assessment (<https://www.nerc.com/pa/RAPA/ra/Pages/default.aspx>)

¹ Excluding FRCC (FL-Peninsula) Subregion



Big Bend Solar

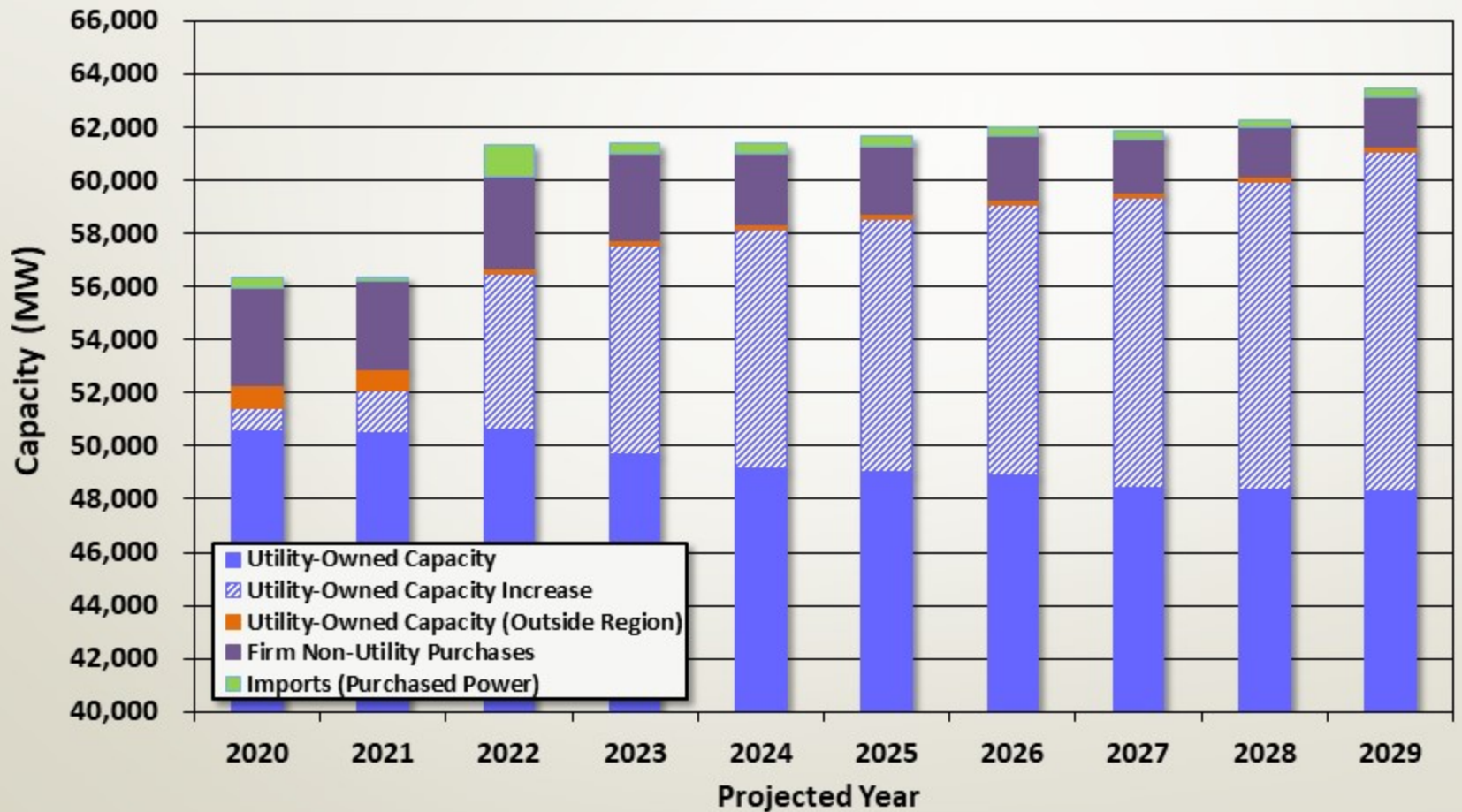


Stanton Solar

Capacity Additions and Reserve Margins

- 12,150 MW of new generation planned over the next ten years
 - Includes approximately 4,500 MW of firm solar
 - Average firm capacity value from solar in FRCC region is 42%
 - Includes 1,400 MW of battery storage
- 5,100 MW of retirements
- Planned Reserve Margins projected to remain above 20% over the next ten years
- Reserve Margin increasingly dependent upon firm Demand Response in later years

Projected Total Available Capacity¹ (Summer)



¹ As of 1/1/2022, capacity, demand, and energy data will include the integration of Gulf into FPL. The data presented for years 2022 through 2029 is for the single integrated system (FPL).

Incremental Firm Capability Changes over 10-yr Planning Horizon by Fuel Type in MW¹



¹ As of 1/1/2022 capacity, demand and energy data will include the integration of Gulf into FPL. The data presented for years 2022 through 2029 is for the single integrated system (FPL).



Nuclear Outlook is Stable in 10-yr Horizon

Existing¹ Nuclear Capacity (Summer)

St. Lucie 1	981 MW
St. Lucie 2	986 MW
Turkey Point 3	837 MW
Turkey Point 4	821 MW
	<hr/>
	3,625 MW

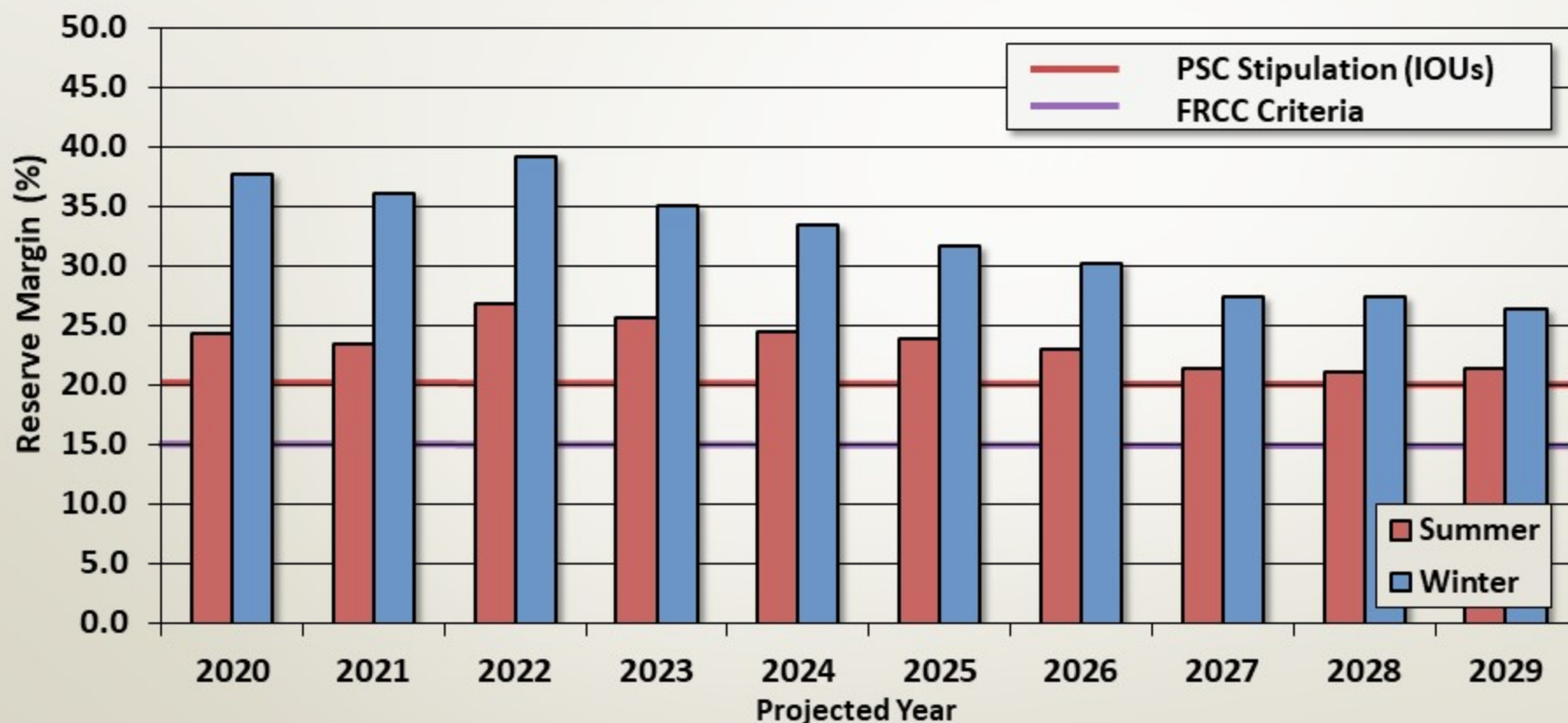
Planned Nuclear Capacity (Summer)

Turkey Point 4 Upgrade (11/2020)	20 MW
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¹ Existing generation as of December 31, 2019

Planned Reserve Margin^{1,2,3} (Based on Firm Load)

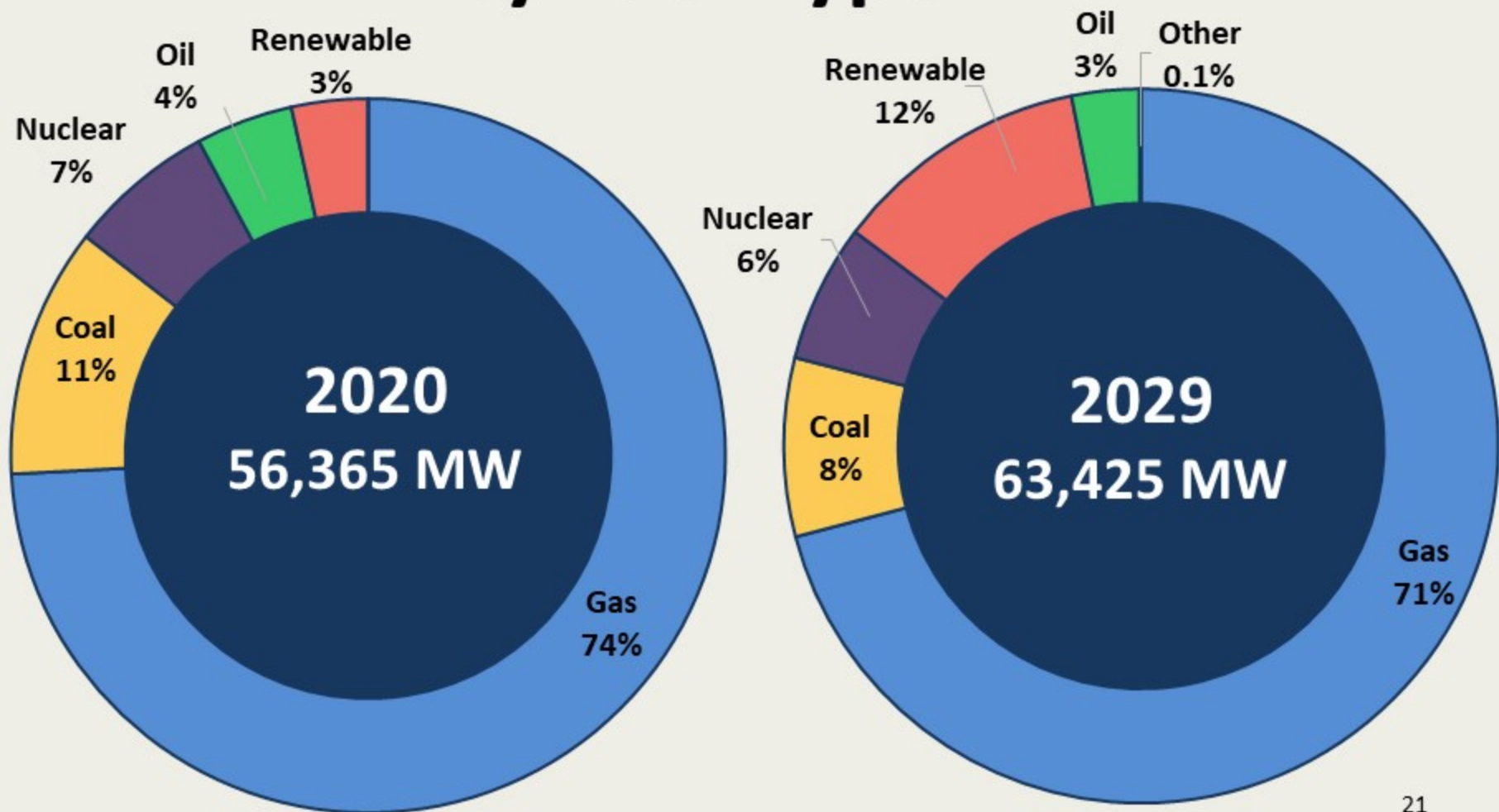


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Forecasted Firm Summer Capacity by Fuel Type^{1,2}

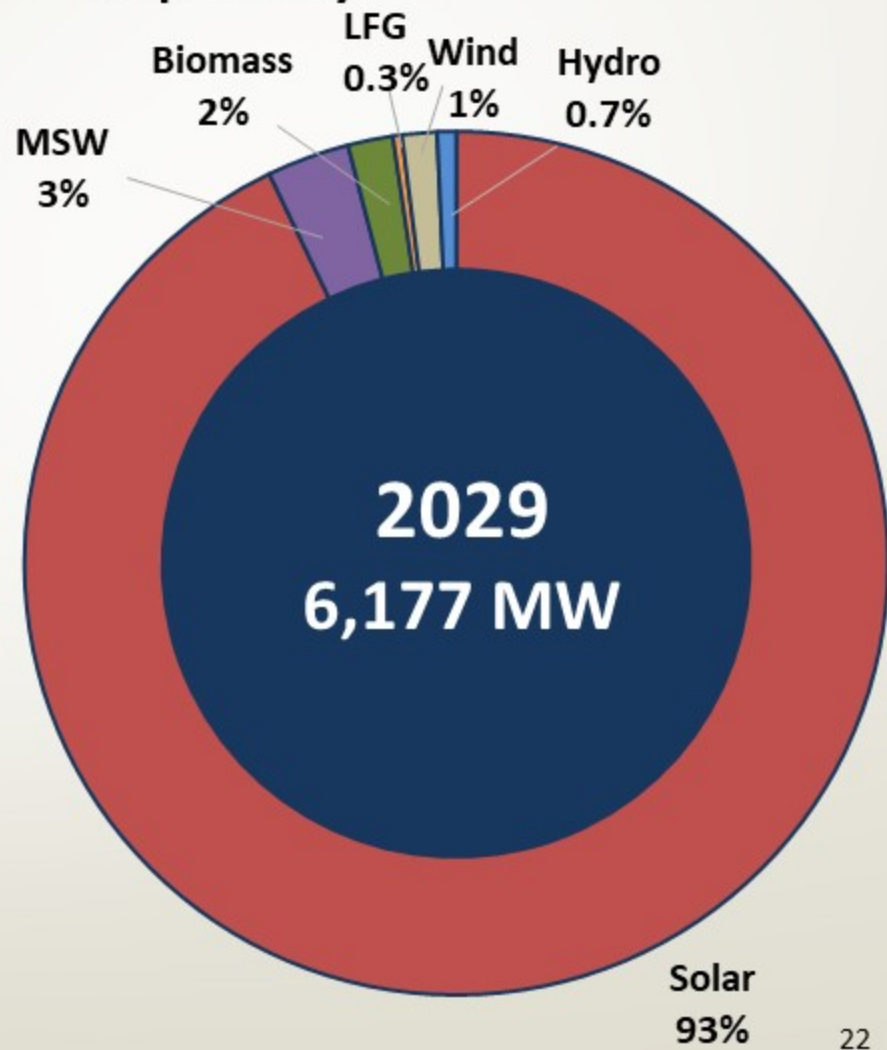
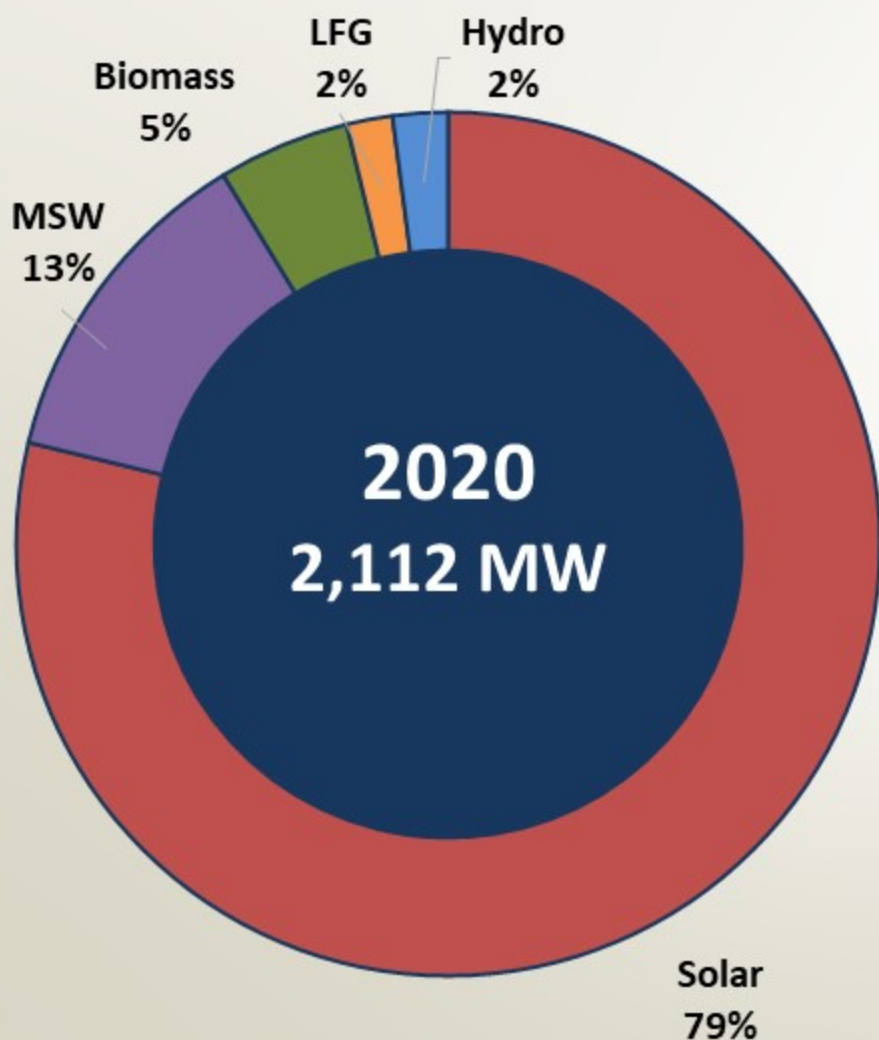


¹ As of 1/1/2022, capacity, demand and energy data will include the integration of Gulf into FPL. The data presented for years 2022 through 2029 is for the single integrated system (FPL).

² Excludes Firm Demand Response.

Forecasted Renewable Mix

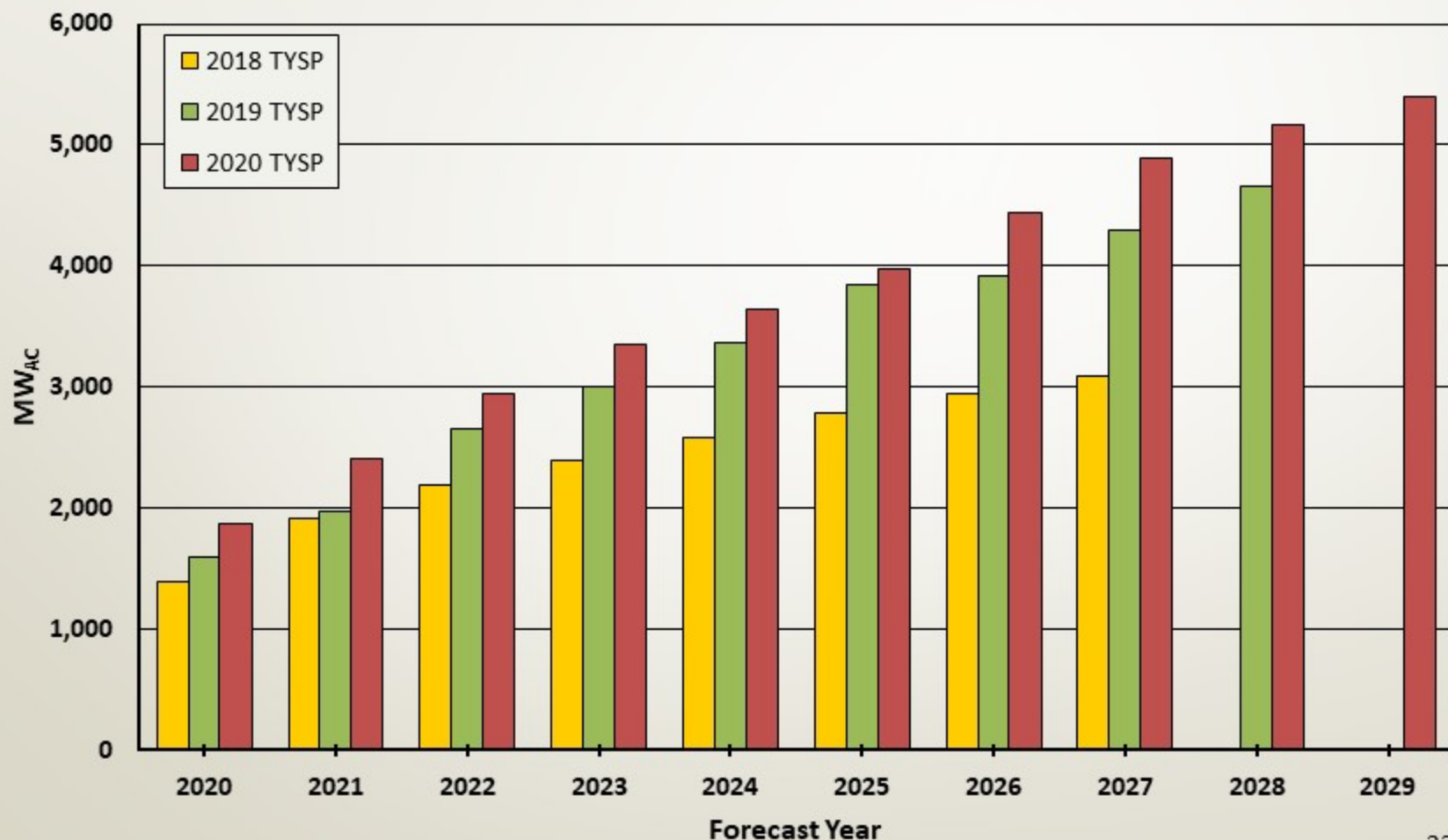
Firm Summer Capacity



¹ As of 1/1/2022, capacity, demand, and energy data will include the integration of Gulf into FPL. The data presented for years 2022 through 2029 is for the single integrated system (FPL).

2018-2020 TYSP Forecasted Solar¹

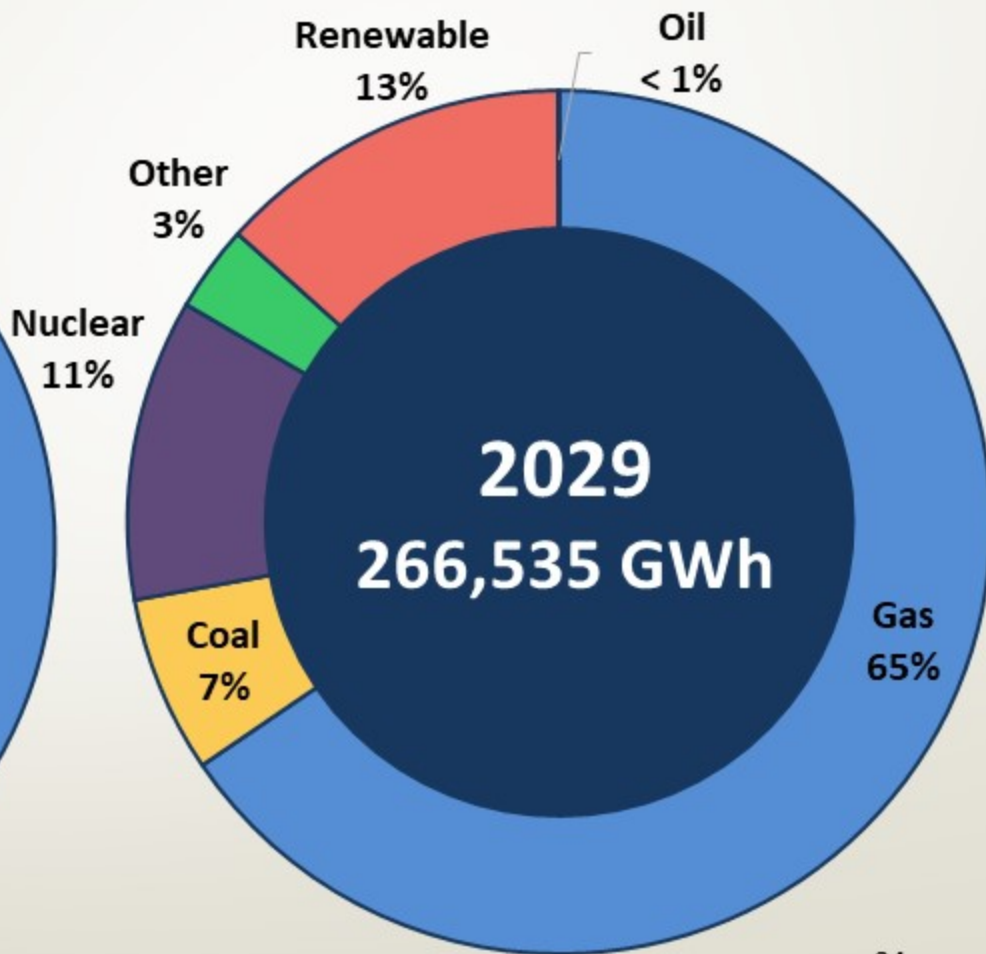
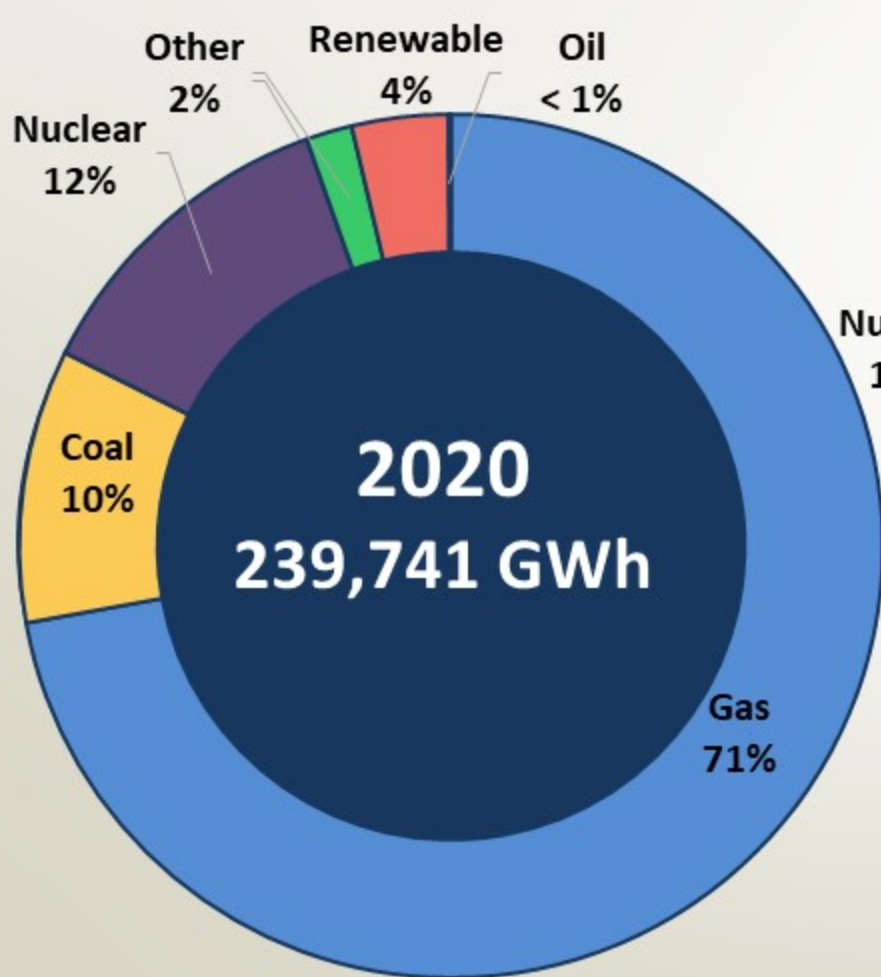
Firm Summer Capacity



¹ As of 1/1/2022, capacity, demand, and energy data will include the integration of Gulf into FPL. The data presented for years 2022 through 2029 is for the single integrated system (FPL).

Forecasted Fuel Mix¹

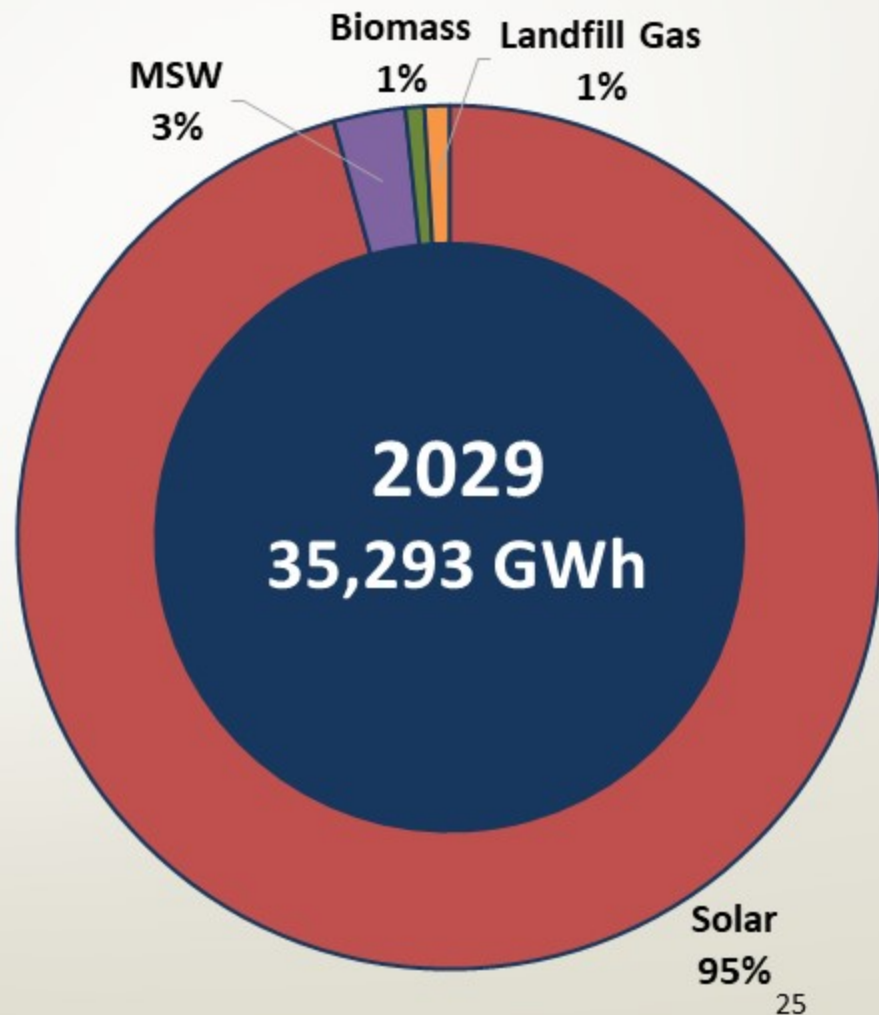
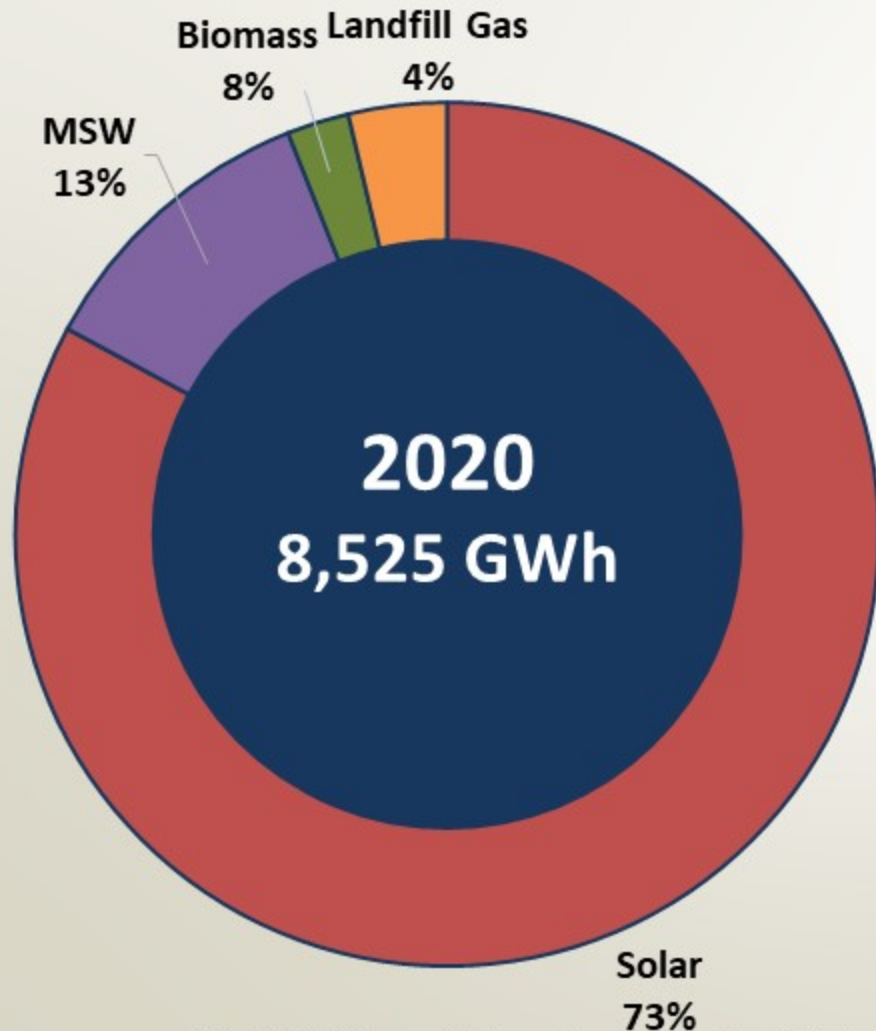
Net Energy for Load (GWh)



¹ As of 1/1/2022 capacity, demand, and energy data will include the integration of Gulf into FPL. The data presented for years 2022 through 2029 is for the single integrated system (FPL).

Forecasted Renewable Mix¹

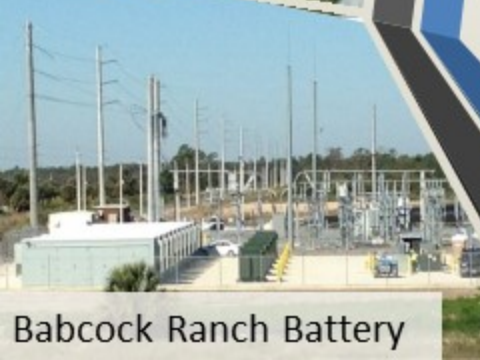
Total Energy Served



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Perry Solar



Babcock Ranch Battery

Reliability Considerations of Utility Solar Generation Additions

- No significant operational impacts at current levels
- Utilities continue developing experience with operations, dispatch, and output forecasting
- Utilities are using tools and monitoring capability to manage increased solar
- Monitoring other parts of the country that have higher penetration rates
- Member utilities assign varying firm capacity values to utility solar

Natural Gas Infrastructure in Florida



- Maintain a comprehensive gas infrastructure model and utility fuels database
- Perform periodic reliability analysis
- Compare gas infrastructure assessments to TYSPs forecasted needs based on economic dispatch
- Gas infrastructure on pace with generation additions
- Coordinate regional response to fuel emergencies with utilities and pipelines
- Gas generation with alternate fuel capability remains between 64-66%

Conclusion

Based on 2020 TYSPs, planned Reserve Margins above 20% for all peak periods for the next ten years

Meeting the Reserve Margin target increasingly reliant on Demand Response in later years

Renewables increase from 4% to 13% (energy)

Gas infrastructure supports planned generation

Questions?