



Santee Cooper Resource Planning

Stakeholder Working Group Meeting #9
October 14, 2025



Welcome and Agenda

Stewart Ramsay, Facilitator, VANRY Associates

Meeting Agenda



10:00 – 10:10	Welcome and Agenda	Stewart Ramsay, VANRY
10:10 – 10:40	Working Group Business	Clay Settle
10:40 – 11:15	Review 2025 IRP Update	Clay Settle
11:15 – 11:25	BREAK	
11:25 – 11:40	Legislative Impacts on IRPs from Act 41	Clay Settle
11:40 – 11:50	Wind Study Update	Clay Settle & Bob Davis
11:50 – 12:00	BREAK	
12:00 – 12:50	2026 Reserve Margin and ELCC Update	Joel Dison
	2026 Integration Study Overview	
12:50 – 1:00	Meeting Closeout	Stewart Ramsay, VANRY

Guest Speakers



Joel Dison

Technical Manager, PowerGEM



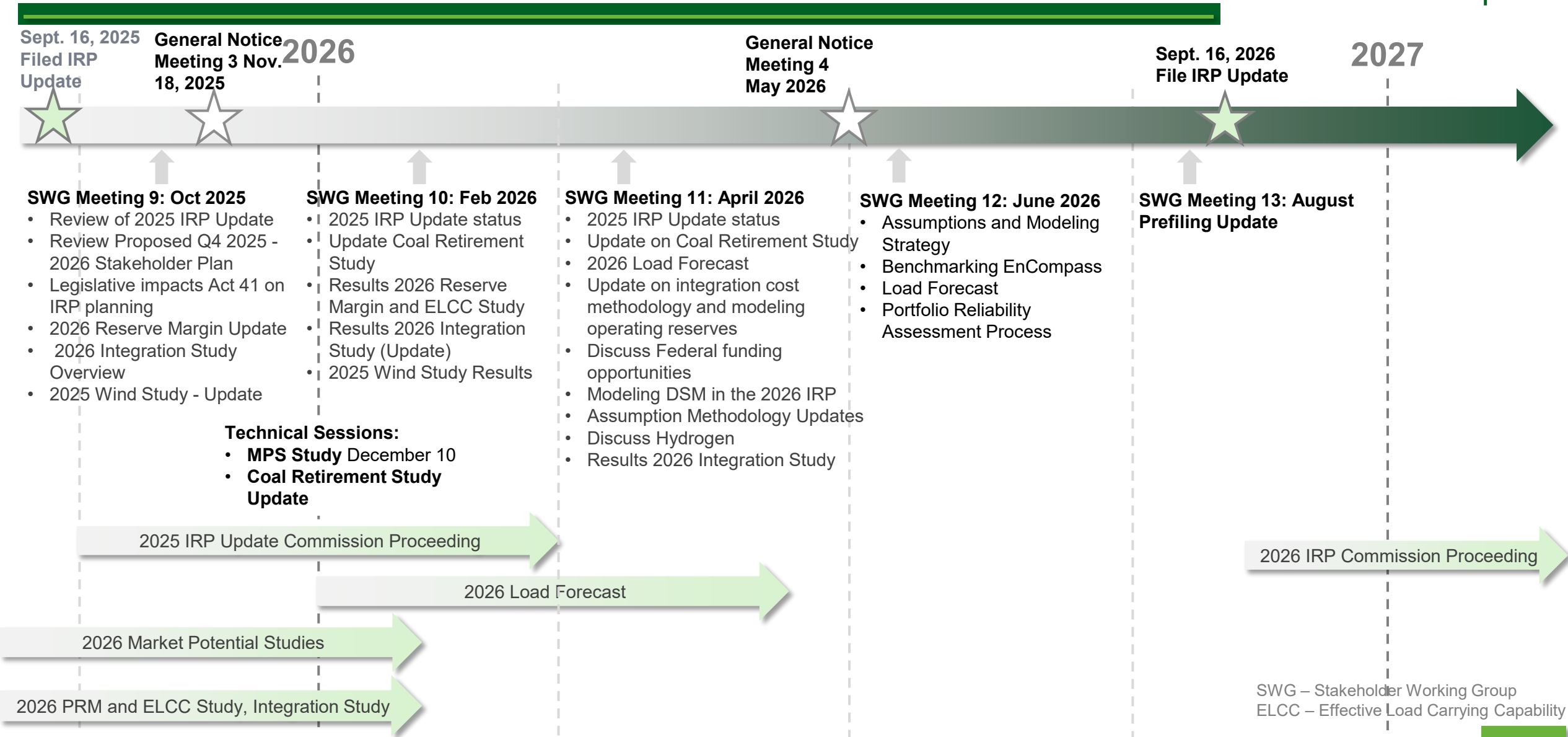
Working Group Business

Clay Settle, Senior Manager Resource Planning

Review of Action Items

Meeting Identified	Action Item	Progress
Meeting 7	SWG Members to suggest topics for the November General Notice Meeting.	Open for discussion – no suggestions received
Meeting 7	Resource Planning to provide a list of drivers that may be contributing to changes to the fuel price forecast to SWG members	Done. Discussed in SWG meeting 8.
Meeting 7	Consider a sensitivity that allows the model to choose the Joint NGCC as a selectable resource.	Done. Discussed in SWG meeting 8.
Meeting 8	Update members on the solar wind study progress, specifically whether results likely to be available for the October 14th meeting	Study underway, update to be provided today.
Meeting 8	Request to share relevant information regarding ITC modeling for Santee Cooper to consider	No feedback received

SWG Schedule – Preliminary Proposal



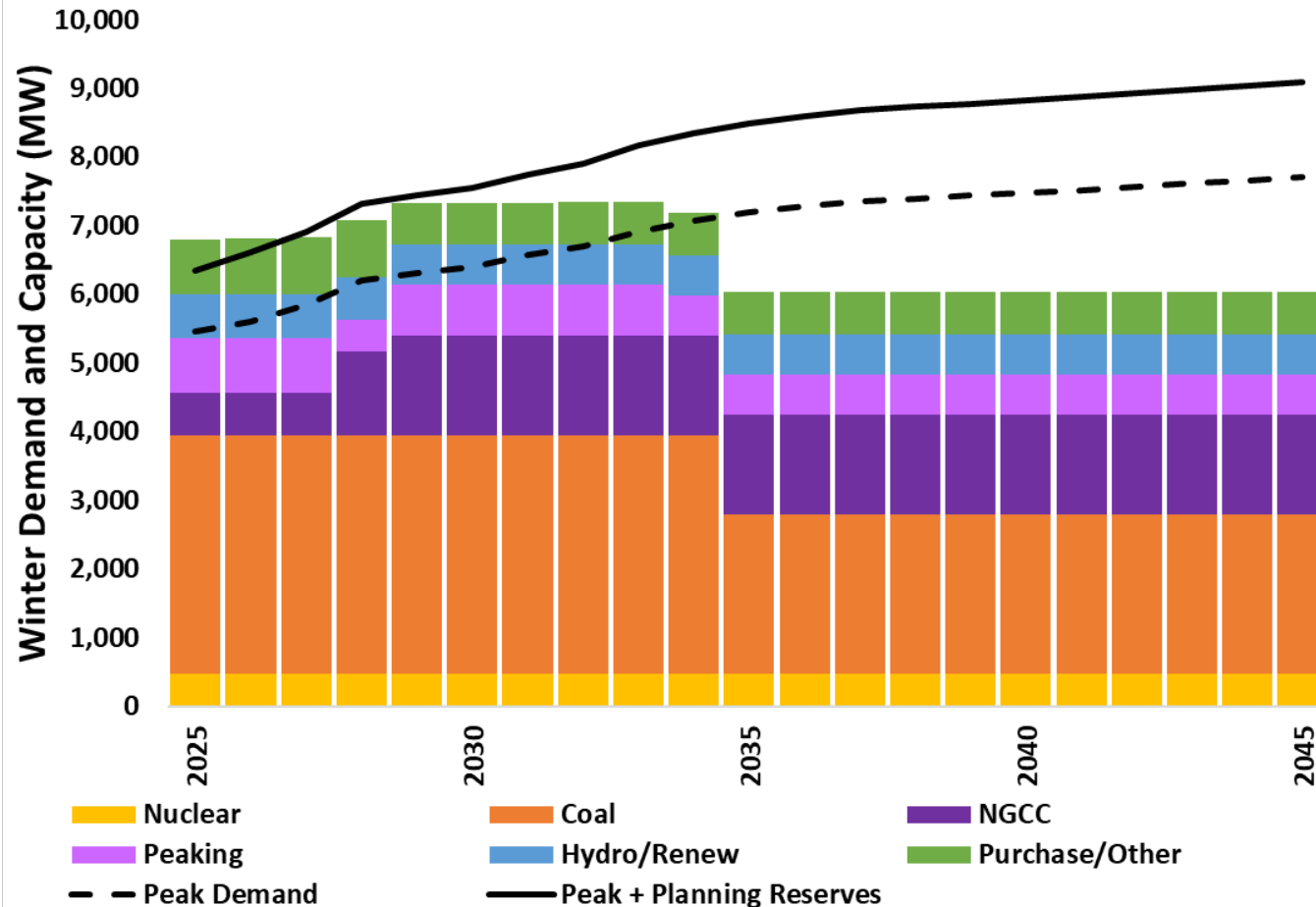


Review 2025 IRP Update

Clay Settle, Senior Manager Resource Planning

2025 IRP Update - Capacity Need

Combined System Supply and Peak Demand Balance Winter



- Capacity need starting in 2027 and grows to approximately 2,000 MW after assumed retirement of Winyah Generating Station
- Winyah will be retired when sufficient resources are available to reliably serve growing load

2025 IRP Update Overview

Resource Changes Through 2040	Capacity Additions (Retirements) (MW)					
	2023 Preferred Portfolio	2023 Portfolio Re-Optimized	2025 Optimized Portfolio	2025 Portfolio with Solar	2025 Portfolio Update	GHG 2024 Rule Portfolio
Retirements						
• Winyah (2031)	(1,150)	0	0	0	0	0
• Winyah (2032/2033)	0	(1,150)	(1,150)	(1,150)	0	(1,150)
• Winyah (2035)	0	0	0	0	(1,150)	0
• Cross (2032)	0	0	0	0	0	(2,330)
• HH/MB (2034)	(165)	(165)	(165)	(165)	(165)	(165)
Joint NGCC						
• 2031-2033	1,020	998	998	998	998	998
Other New NGCC						
• 2031-2033	0	1,296	1,296	1,296	0	1,296
• 2034-2040	0	0	0	0	1,296	0
New Peaking						
• 2028-2031	0	107	107	107	107	107
• 2032-2033	0	0	0	0	0	2,244
• 2034-2040	112	449	449	449	449	449
New Solar						
• 2026-2033	2,150	1,500	0	100	100	1,200
• 2034-2040	550	0	0	700	700	1,550
New BESS						
• 2026-2033	0	300	300	300	300	300
• 2034-2040	350	0	0	0	0	0
New Wind						
• 2029-2033	0	0	0	0	0	0
• 2034-2040	0	0	0	0	0	200

2025 IRP Update Overview

Comparison of NPV Power Costs for Reference Case (\$B)

Portfolios	NPV Power Costs	Difference to 2023 Portfolio Re-Optimized	
2023 Portfolio Re-Optimized	\$37.3	2025 Optimized Portfolio	(\$0.6)
2025 Optimized Portfolio	\$36.7	2025 Portfolio with Solar	(\$0.4)
2025 Portfolio with Solar	\$36.8	2025 Portfolio Update	(\$0.5)
2025 Portfolio Update	\$36.8	GHG 2024 Rule Portfolio	\$6.4
GHG 2024 Rule Portfolio	\$43.7		

Ranking of Potential Portfolios for Evaluation Metrics

Portfolios	NPV Power Cost	Mini-max Regret	Reliability Uncertainty	Fixed Cost Obligation	Fuel Cost Resiliency	CO2 Emissions	Generation Diversity	Clean Energy	Load Sensitivity
2023 Portfolio Re-Optimized	4	1	5	4	1	2	1	2	2
2025 Optimized Portfolio	1	3	1	1	4	4	4	5	3
2025 Portfolio with Solar	3	2	2	3	3	3	3	3	4
2025 Portfolio Update	2	4	2	2	2	5	2	4	1
GHG 2024 Rule Portfolio	5	5	4	5	5	1	5	1	5

Average Metric Rank

Portfolios	Composite Average	Rank
2023 Portfolio Re-Optimized	2.7	3
2025 Optimized Portfolio	2.5	1
2025 Portfolio with Solar	2.9	4
2025 Portfolio Update	2.5	1
GHG 2024 Rule Portfolio	4.3	5

Resource Portfolio Impact

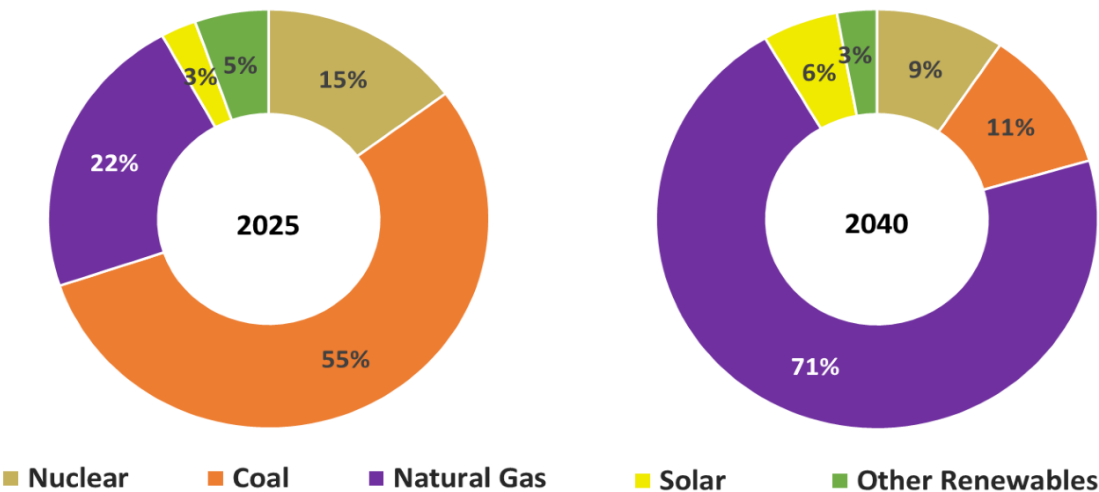
Enhanced reliability through addition of new dispatchable resources

Reduced coal reliance

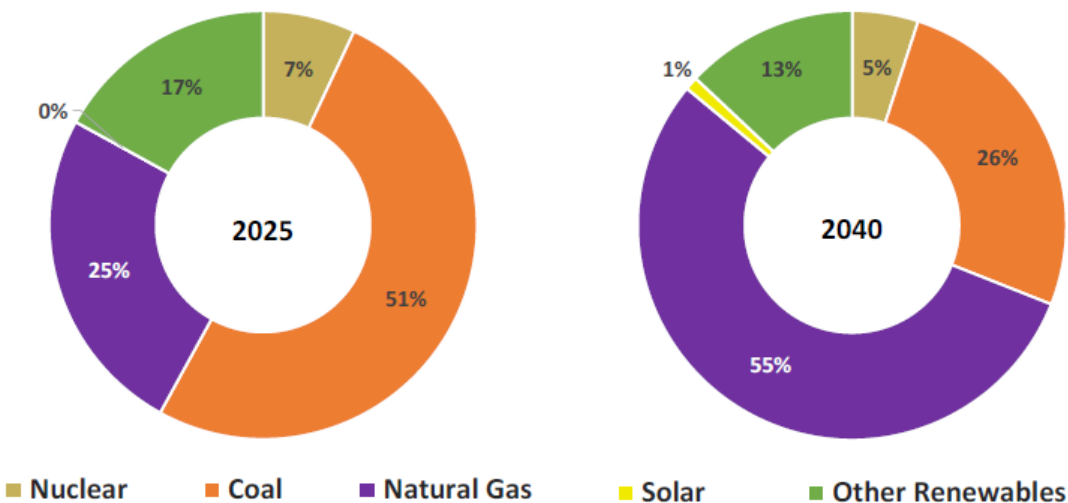
Addition of flexible peaking through CTs and BESS

New efficient NGCC

Generation by Resource Type (GWh, Energy)



Projected Capacity Mix by Fuel Type



Short-Term Action Plan

- Continue working with DESC to develop the Joint NGCC project
- Continue to coordinate with Central in the approvals and implementation required to support the Winyah LM6000s – CECPCN application filed on August 28, 2025
- Complete BESS solicitation process and continue coordination with Central on planned BESS additions
- Complete evaluation and pursue short-term purchases to ensure near-term capacity needs
- Work with Central and developers to complete the Solar PPA process
- Conduct future solar procurements regularly

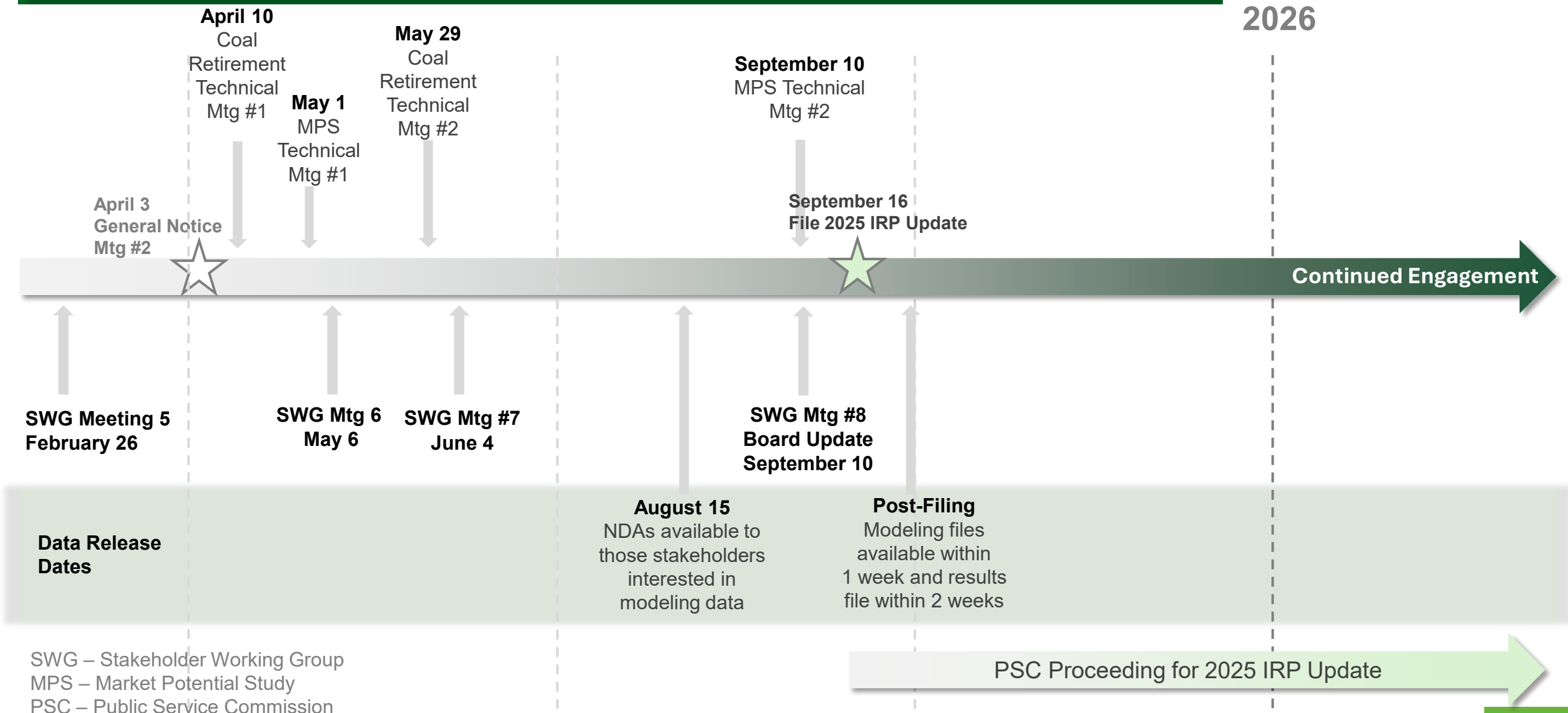
Short-Term Action Plan

- Continue to coordinate with Central in developing the load forecast and monitor changes in potential new large customers. And engage with stakeholders in discussing methodology
- Continue to monitor environmental regulations
- Complete studies identified in the 2023 IRP and 2024 IRP Update Short-Term Action Plans, and comply with Order 2024-171 and 2025-244 requirements
 - Cross retirement and associated transmission studies
 - Planning Reserve Margin, Effective Load Carrying Capability, Renewable Integration Studies
 - Demand Side Management Market Potential Study
 - Wind Feasibility Study

Continue to engage stakeholders to provide updates on these studies

2025 Stakeholder Sessions

2026



SWG – Stakeholder Working Group
MPS – Market Potential Study
PSC – Public Service Commission

2025 IRP Update

Commission Procedural Schedule

Schedule Item	Date	Days Between
Santee Cooper's IRP Update filed with the Commission	September 16, 2025	
ORS to File a Report regarding Santee Cooper's IRP Update	December 15, 2025	90
Intervenors/Other Parties of Record to File Comments Regarding Santee Cooper's IRP Update	January 12, 2026	28
Santee Cooper's Reply Comments in Response to ORS's Report and All Other Parties' Comments to ORS' Report	January 26, 2026	14
Proposed Order Due	TBD	
Commission Issues Final Order	TBD	

- IRP Update PSC Docket: [Detail for 2025-18-E](#)



Break

Returning at 11:25



Legislative Impacts on IRPs from Act 41

Clay Settle, Senior Manager Resource Planning

Act 41 – Triennial IRP Impacts

Transmission, S.C. Code Ann. § 58-37-40(B)(1)(j)

- Address updates to the utility's transmission plan under the utility's open access transmission tariff pursuant to the federal jurisdictional planning process.

Transmission, S.C. Code Ann. § 58-37-40(B)(1)(j)(i)-(v)

- When applicable, describe planned transmission improvements specific to the siting of new resources expected to impact interconnection constraints or other operations of the systems and describe how alternate transmission technologies were evaluated in developing solutions for identified transmission needs for interconnecting resources.
- The report must also include how the utility evaluates transmission investments.

Act 41 – Triennial IRP Impacts

Commission's Review

- Act 41 provides that it should focus on, S.C. Code Ann. § 58-37-40(C)(2).
 - “decisions which the applicant must make in the near-term based on the triennial [IRP] under consideration at the time.”
 - “give due consideration as to the resources and actions necessary for the utility to fulfill compliance and reliability obligations pursuant to the Federal Energy Regulatory Commission, the North American Electric Reliability Corporation, the SERC Reliability Corporation, and the Nuclear Regulatory Commission requirements, as well as environmental requirements applicable to resources serving customers in this state.”
- Matters related to the scope and sufficiency of an electrical utility's demand-side management plans and activities shall be considered exclusively in IRP proceedings conducted pursuant to S.C. Code Ann. § 58-37-20.

Act 41 – Triennial IRP Impacts

Commission's Review

- Act 41 also modified two of the balancing factors the Commission must consider in approving an IRP to ensure that economic development and industry retention are taken into account
 - “resource adequacy and capacity to serve anticipated peak electrical load, including the need for electric capacity and energy required to support economic development and industry retention in . . . [Santee Cooper]’s service territory and to meet applicable planning reserve margins” and (b) “consumer affordability and least reasonable cost considering the resources needed to support economic development and industry retention, and other risks and benefits.” S.C. Code Ann. § 58-37-40(C)(2)(a)



Wind Study Update

Clay Settle, Senior Manager Resource Planning

Wind Study Update

- Santee Cooper has engaged DNV Energy USA, INC (“DNV”) to perform a feasibility assessment for onshore wind energy development in South Carolina
- **Scope of Work Summary**
 - Feasibility assessment of potential wind development in South Carolina
 - Project development timeline assessment
 - Capital and operating cost benchmarking
 - Provide wind production profiles for South Carolina
- **Schedule Summary**
 - Study Duration: July – October
 - Finalize Study: November
 - Discuss study overview and results with stakeholders: February 2026



Break

Returning at 12:00



Review 2025 Reserve Margin Study

Joel Dison, Project Lead PowerGEM

Santee Cooper Reserve Margin Analysis

Project Update





Study Overview

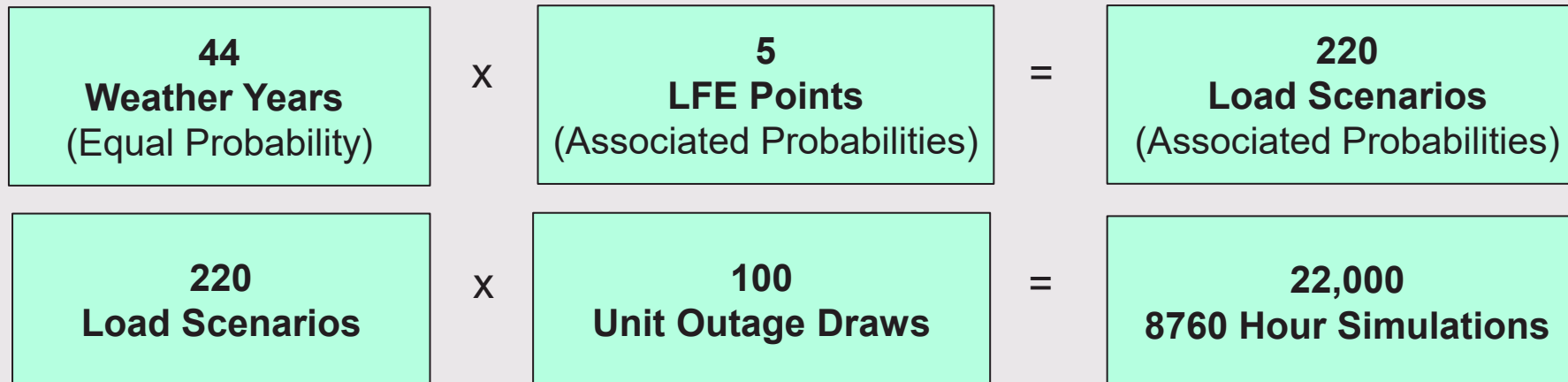


Study Parameters

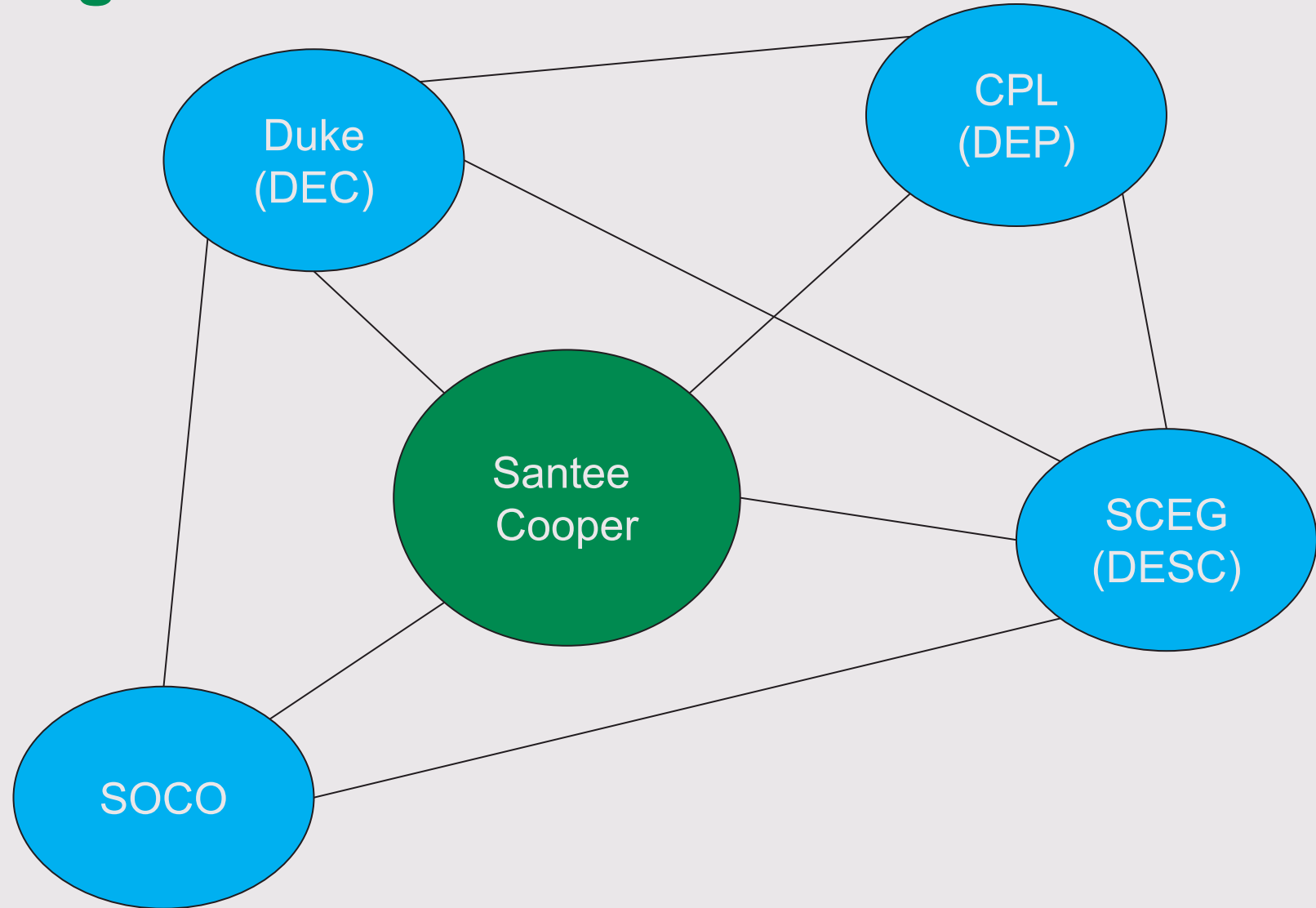
- Study Year: 2030
- Historical Weather Years: 1980-2023
- Regions (Balancing Authority Areas) Modeled
 - Santee Cooper
 - Southern
 - Duke Energy Carolinas
 - Duke Energy Progress
 - Dominion Energy of SC
- Assumed resource generation mix from 2024 IRP Update by 2030
 - Existing Resources, 240 MW BESS, Central 672 MW NSR PPAs, 1,500 MW Solar additions
- Load Curtailment: Maintain Minimum Regulating Reserves of 100 MW

SERVIM Framework

- **Capture Uncertainty in the Following Variables**
 - Weather (44 years of weather history: 1980-2023)
 - Impact on Load and Resources (hydro, wind, PV, temp derates on thermal resources)
 - Economic Load Forecast Error (distribution of 5 points)
 - Unit Outage Modeling (1000s of iterations)
- **Multi-Area Modeling – Pipe and Bubble Representation**
- **Total Base Case Scenario Breakdown:**



System Configuration



Significant Changes Since Prior Reserve Margin Study

- Loads
 - Updated to include historical load data, 2021-2023 added to historical load data
 - Utilized the LF25-01 load forecast as base forecast
- GADS (Generation Availability Data System)
 - Updated generation outage assumptions to consider GADS data and Santee Cooper SME input
- Load Scaling
 - Load scaling to consider both Santee Cooper and Central load forecasting historical sample size of 25 years (Santee Cooper assumes 20 years historical and Central assumes 30 year historical)
- Data Centers
 - Potential data center load treated as separate load shape, does not increase under weather events as compared to the native load

Preliminary Winter Planning Reserve Margin Results

Base Case: 20.01%

Sensitivities

- Islanded System: 32.06%
- Alternate Renewable Penetration: 20.03%
 - Reduced solar additions by 50 percent
- High HLF Load Penetration: 19.42%
 - Doubled data center load
- Low Transmission Import: 20.53%
 - Reduced Santee Cooper import capability by 50 percent



2026 Integration Study

Joel Dison, Project Lead PowerGEM

Solar Integration Study

- **Purpose**

- To identify the operating reserves necessary to integrate solar resources into the Santee Cooper system.

- **Procedure**

- Establish a 5-minute dispatch base case that is calibrated to 0.1 days/year LOLE.
 - No Solar resources
 - Ancillary services at a reasonable level
 - Determine the number of flexibility violations that exist in that base case
 - Add solar resources
 - Re-calibrate to 0.1 days/year LOLE by removing resources as appropriate
 - Determine the number of flexibility violations that exist in that case
 - Number and size of tranches TBD
 - Add operating reserves
 - Determine the operating reserves necessary to return the system to base case flexibility violations



Meeting Closeout

Stewart Ramsay, Facilitator, VANRY Associates

Meeting Closeout

- Review and agreement for meeting action items
- Vanry will send the meeting summary to members for review
- Next working group meeting
 - Targeting February 2026
 - Please let us know if a member would like to present on a topic
- Next general notice meeting targeted for November 18, 2025
- Feedback on Stakeholder Schedule requested by November 14, 2025

Thank you!

Please complete our survey
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