



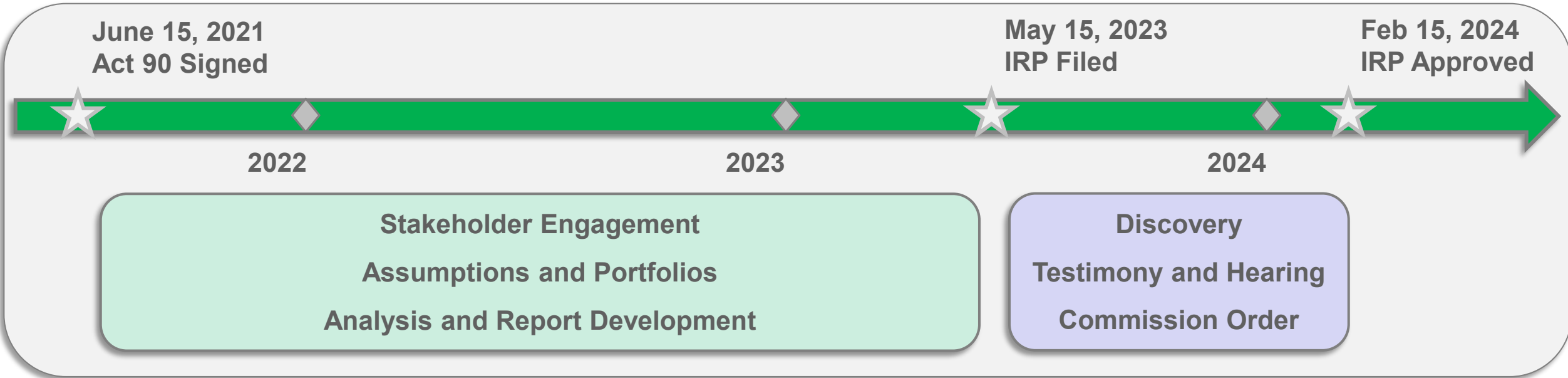
Santee Cooper Resource Planning Stakeholder Working Group Meeting #1 April 25, 2024

Welcome

Rahul Dembla
Chief Planning Officer
Santee Cooper



2023 Integrated Resource Plan

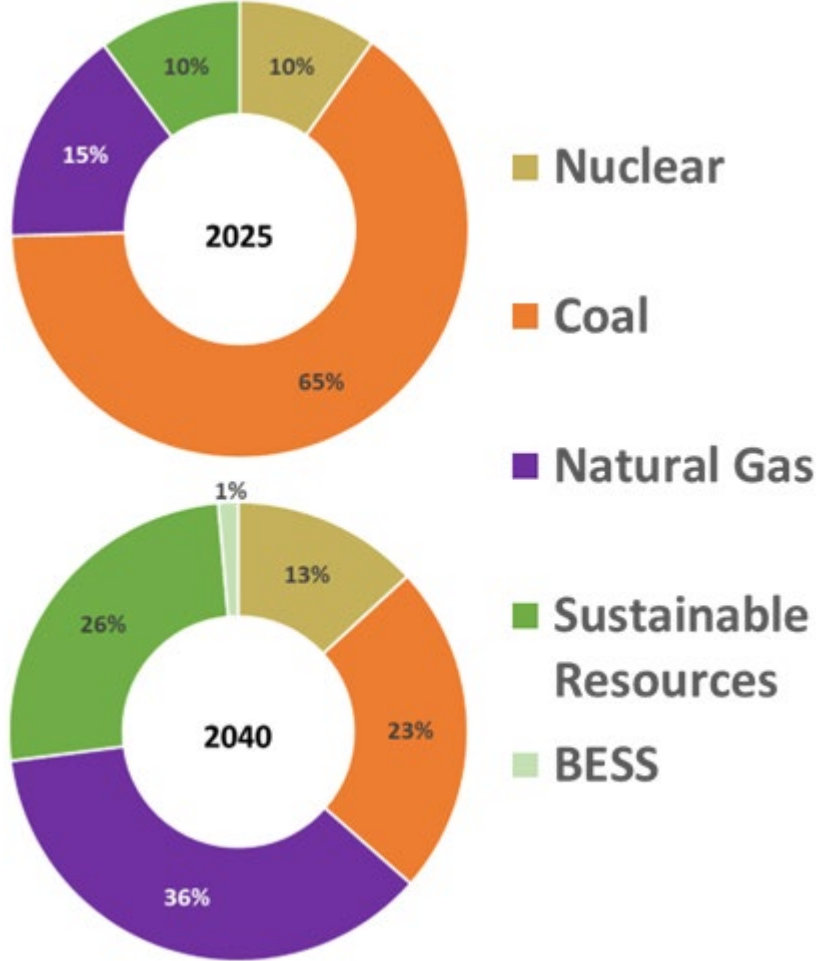


- Thank you to those who participated in the 2023 Integrated Resource Plan (IRP) stakeholder process and the proceeding at the Public Service Commission (PSC)
- We recognize this was a significant commitment of your time and resources
- We are committed to continued and robust engagement with stakeholders and recognize the value it adds to our ongoing planning

Preferred Portfolio Summary

- Retire Winyah Generation Station year end 2030
- Includes Central’s three Non-Shared Resources, Power Purchase Agreements
- Develop a large Natural Gas Combined Cycle (NGCC) resource in 2031 to coincide with the retirement of Winyah
- Adds substantial amount of solar: 1,800 MW by 2031 and 2,700 MW total by 2040
- Battery Energy Storage Systems (BESS) and peaking resources in the 2030s, as needed

Percentage of Total Generation (MWhs, Energy) by Resource Type



Introductions and Meeting Outcomes

Clay Settle

Manager Resource Planning
Santee Cooper

Stewart Ramsay

Meeting Facilitator
VANRY Associates



Santee Cooper, nFront, and Vanry Members



Rahul Dembla
Chief Planning Officer
Santee Cooper



Jane Campbell
Sr. Director Resource Planning
Santee Cooper



Clay Settle
Manager Resource Planning
Santee Cooper



Stewart Ramsay
Meeting Facilitator
VANRY Associates



Bob Davis
Executive Consultant
nFront Consulting



Jonathan Nunes
Executive Consultant
nFront Consulting

Member Introductions



- Name?
- Organization?
- Role?
- Prior IRP experience?

Category	Organization/Individual
Regulatory/Government	Office of Regulatory Staff South Carolina Department of Consumer Affairs South Carolina Department of Natural Resource South Carolina Dept. of Health and Environmental Control
Central	Central Electric
Industrial Customers	Industrial Customer Association – J. Pollock Century Aluminum Nucor Messer Google
Municipal Customer	South Carolina Association of Municipal Power Systems
Residential/Commercial	3 Representatives
NGOs	Carolina Clean Energy Business Association Conservation Voters of South Carolina Coastal Conservation League Southern Alliance for Clean Energy Southern Environmental Law Center Sierra Club

Agenda – Approximate Times



1:00 pm Welcome

1:10 pm Introductions and Meeting Outcomes

1:40 pm Member Discussion of the Working Group

2:10 pm Stakeholder Engagement Plan

2:30 pm BREAK

2:40 pm Santee Cooper Resource Planning Update

3:00 pm 2023 IRP Public Service Commission Order and Short Term Action Plan

3:30 pm Priority Topics for the Working Group

4:00 pm BREAK

4:10 pm Technical Presentation on Load Forecast Methodology

4:40 pm Closing

We have successfully launched the Stakeholder Working Group

- Members understand the commitment required of them to participate
 - Support the Charter and are prepared to align on the mission and objectives
 - Clear on logistics, meeting timeframes, communication, etc.
- Members are aware of commitments required of Santee Cooper from the 2023 IRP
 - Short-Term Action Plan (STAP)
 - other commitments made during the 2023 proceeding
- Members have weighed in on the list of priority topics and topics for future working group meetings

1st order of business

- Members have provided feedback on current Santee Cooper load forecast methodology updates

Member Discussion of the Working Group

Clay Settle

Manager Resource Planning

Santee Cooper

Working Group Mission and Objectives



Provide a wide range of perspectives and expertise to inform the development of IRPs that are in the best interest of Santee Cooper's customers and the State of South Carolina

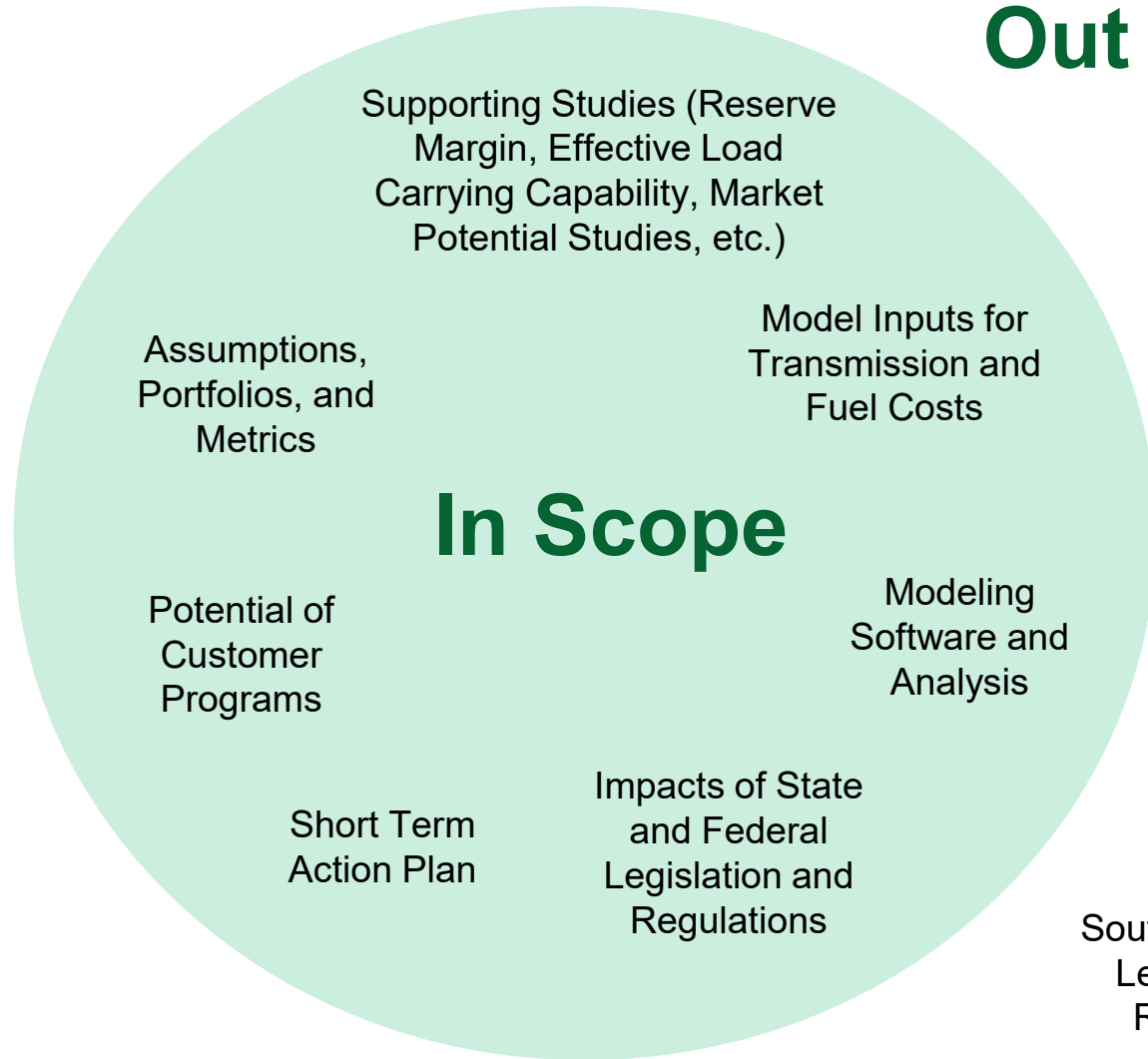
Our objectives:

- Create an open dialogue around Santee Cooper's IRP
- Provide the opportunity to share wide-ranging and diverse opinions on the planning process, analysis, and the contents of the IRP
- Provide a forum for more in depth and technical discussion of the analysis, and the tradeoffs inherent to integrated resource planning
- Collaborate and discuss how diverse perspectives and approaches could advise and benefit Santee Cooper's IRP

Proposed Scope of Working Group Topics



Is there anything that members feel strongly should move from out of scope to in scope? Or the reverse, from in scope to out of scope?



Out of Scope

Implementation of Resource Plans

Santee Cooper and Member Confidential Information During Meetings

Rate Structures and Rate Studies

Design of and Implementation of Customer Programs

South Carolina Legislative Reforms

Proposed Working Group Logistics

- Target: meet every 3-4 months
- Materials posted publicly on the IRP web page
- Members can provide feedback at meetings and use the Forum
- Members can use Santee Cooper contacts to:
 - Suggest meeting topics or request to present at an upcoming meeting
 - Request technical meetings
 - Provide feedback on the process and suggest improvements
- Santee Cooper will file meeting summaries with the Public Service Commission
- Speaking on behalf of the working group



- Is anything unclear about how the working group will operate?
- Are you concerned about anything that we haven't discussed?
- What hasn't been asked or discussed? What else would you like to share?

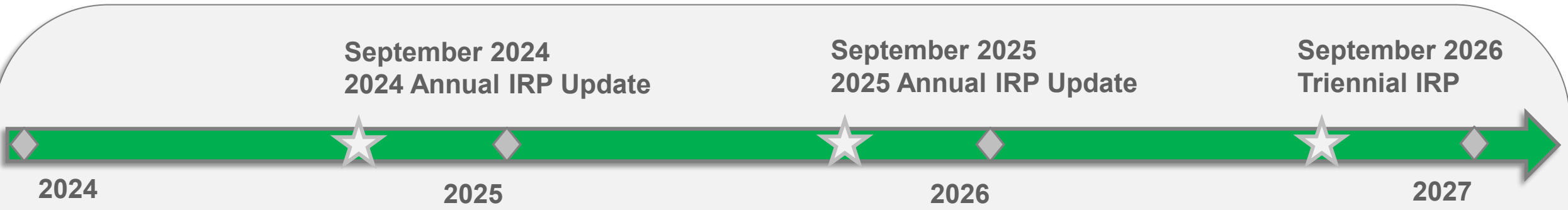
Stakeholder Engagement Plan

Jane Campbell

Senior Director Resource Planning
Santee Cooper



Plan for Stakeholder Engagement



Types of Meetings

- General Notice Meetings following a similar process to the 2023 IRP
- Stakeholder Working Group Meetings with a set group of individuals
- Technical Meetings as requested

Common Elements for All Meeting Types

- Independent Facilitator with virtual format
- IRP web page with materials
- Summaries filed with the Commission

Plan for Stakeholder Engagement



Meeting Type	Proposed Frequency	Attendees	Materials Posted to the IRP Web Page	Topics
General Notice	2024 – 1 Meeting 2025 – 2 Meetings 2026 – TBD	Open to the public and anyone who registers	Presentation Video Recording Meeting Summary	High-level overview focused on inputs and results for IRP filings and supporting studies PSC and statutory required topics
Working Group	Meet every 3-4 months	Set group of members	Presentation Meeting Summary	Determined by members PSC and statutory required topics
Technical Meetings	As requested by any stakeholder	Those who request, will also invite working group members	Meeting Summary	In-depth technical discussion on specific topics



- Suggested improvements for the general notice meetings based on the 2023 process?
- Anything in the plan that you don't see that you would like to see?
- Any suggestions based on your participation or experience participating in other utility stakeholder processes or in other stakeholder processes?

BREAK

Returning at 2:40 PM

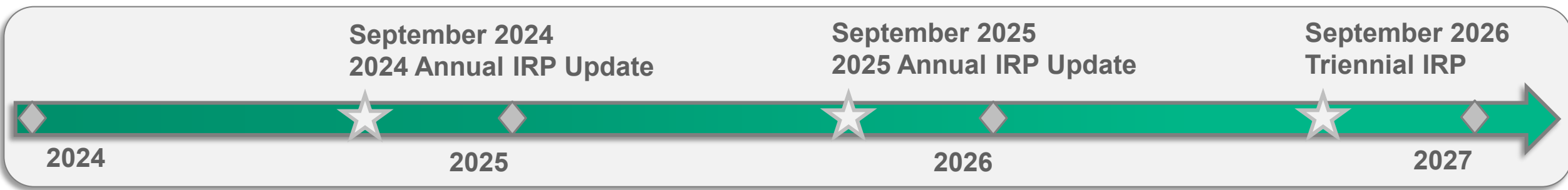
Santee Cooper Resource Planning Update

Rahul Dembla

Chief Planning Officer
Santee Cooper



Current and Future Planning Initiatives



Fulfilling Santee Cooper's Planning Obligations

- Executing the Short-Term Action Plan (STAP) and working with Central
- Continuing stakeholder engagement
- Monitoring regulatory developments
- Preparing to file the 2024 IRP Annual Update and future IRPs
- Beginning long term evaluations and studies for future IRPs

2023 IRP Public Service Commission (PSC) Order and Short Term Action Plan

Clay Settle

Manager Resource Planning
Santee Cooper

2023 PSC Order Requirements



ORS Recommendations

- Santee Cooper is directed to review and address the recommendations of the ORS witness to discuss seven issues with stakeholders no later than the 2026 IRP.

PA Consulting Recommendations

- Santee Cooper is directed to consider other approaches to load forecasting and resource portfolio analysis to plan for future industrial load growth due to economic development and provide updates to the Commission in future IRP filings.
- Santee Cooper is directed to incorporate actual solar additions and any updates to future planned solar additions in its annual IRP Updates.
- Santee Cooper is directed to continue to evaluate natural gas combined cycle shared resources in the analyses conducted for future IRP updates and IRPs.

Intervenor Recommendations

- Santee Cooper shall continue in the stakeholder meetings to discuss and consider recommendations and concerns raised by Intervenor in this docket and continue consideration of issues that may be material to future IRP updates and IRPs.

ORS Recommendations

- **Recommendation D1:** ORS found Santee Cooper’s 2023 IRP commodity price forecasts (natural gas, coal, and CO2) were reasonable. However, ORS recommended Santee Cooper continue to discuss in the Stakeholder Working Group the commodity price forecasts to address a sufficient amount of variation and risk.
- **Recommendation E1:** ORS recommended Santee Cooper investigate higher penetrations of solar and wind resources in the next Effective Load Carrying Capability (“ELCC”) study and to discuss the results in a future Stakeholder Working Group session.
- **Recommendation E3:** Santee Cooper did not model operating reserve logic when it performed expansion plan modeling. While ORS did not find Santee Cooper’s modeling approach to be unreasonable, ORS recommended integration costs and associated modeling methodologies, including modeling operating reserves, be discussed further in the Stakeholder Working Group.
- **Recommendation E4:** ORS recommended Santee Cooper discuss the potential impacts of the United States Environmental Protection Agency Clean Air Act Section 111 Regulation of Greenhouse Gas Emissions from Fossil Fuel-Fired Electric Generating United Proposed Rule (“Proposed Rule”) in the Stakeholder Working Group. In addition, ORS recommended the Company consider including a sensitivity scenario in the 2024 IRP Update to address the proposed rule if adopted and not stayed.

ORS Recommendations

- **Recommendation F2:** Currently, Santee Cooper assumes Winyah will retire in 2031 and Cross will continue to operate, though Santee Cooper recognizes further evaluation of the Cross retirement date needs to be performed. ORS recommended Santee Cooper discuss in the Stakeholder Working Group the scope for further studies to analyze any potential cost savings that might accrue to ratepayers from retirement of these coal units.
- **Recommendation G1:** While Santee Cooper discussed qualitative reliability impacts of the portfolios in its 2023 IRP, the Company did not initially provide a quantitative reliability comparison of the portfolios. ORS recommended Santee Cooper discuss the development of a quantitative reliability metric in the Stakeholder Working Group.
- **Recommendation G2:** Santee Cooper estimated that \$1.5 billion in transmission investment costs would be required to replace the Cross Generating Station if the station is retired. ORS recommended Santee Cooper perform additional investigations to determine if other, more cost-effective transmission and/or replacement generation options may exist. Furthermore, ORS recommended Santee Cooper discuss the methodology it would use to estimate transmission investment costs associated with the retirement of Cross in the Stakeholder Working Group.

Intervenor Recommendations



- Scenario that allows economic retirement of the coal units, on a per unit basis, allowing phased retirement as an option for both Winyah and Cross (additional specifics for the scenario)
- Transmission planning analysis that identifies “no-regret” investments and considers additional strategies
- Accelerated deployment of carbon free resources, including increasing the annual solar addition modeling assumption
- Scenario that considers EPA’s Section 111 Rules
- Hybrid portfolio that considers a smaller gas build and increased battery storage and solar resources (additional specifics for the scenario)
- Consider retiring Winyah to avoid ELG and bridging the gap before new supply side resources are available with an RFP for short-term PPAs
- Improve the sophistication of battery modeling (several suggestions included)
- Conduct an ELCC study for onshore and offshore wind
- Utilize CC and CT cost assumptions that reflect public data and realistic gas price transportation costs
- Conduct a transmission impact analysis that includes scenarios that utilize the existing transmission infrastructure at Winyah

Short Term Action Plan

- Work with Central to address near-term capacity needs
- Begin Natural Gas Combined Cycle implementation including engaging with Dominion on the potential for jointly developing a project
- Conduct evaluations for future IRPs
 - Cross retirement options
 - Retirement of Hilton Head and Myrtle Beach Combustion Turbines (CTs)
 - Demand Side Management (DSM) implementation
 - BESS pilot project
 - Evaluate wind resources
- Begin solar implementation using the approved Competitive Procurement for Renewable Energy process

Priority Topics for the Working Group

Clay Settle

Manager Resource Planning

Santee Cooper

Next Meeting Proposed Topics

- 2024 Annual IRP Update
 - Assumptions and inputs
 - Results of near-term resource evaluations with Central
 - Portfolio analysis
 - Sensitivity analysis, including EPA Section 111
 - Metrics, including reliability metric
- Santee Cooper will share and ask for feedback on the items listed above prior to filing each Update and Triennial IRP

Proposed Priority Topics List

- Load forecasting and resource portfolio analysis to plan for future industrial load growth
- Enhancing the modeling of BESS resources
- Retirement of Hilton Head and Myrtle Beach CTs
- Cross retirement analysis and potential cost savings
- EPA 111 rules and compliance pathways
- Portfolio metrics, including a reliability metric
- Effective Load Carrying Capability studies that evaluate higher penetrations of solar and wind resources
- Integration costs and associated methodologies, including modeling operating reserves
- Transmission studies to evaluate required investments and options for retirement of Cross Generating Station

BREAK
Returning at 4:10 PM

Technical Presentation on Load Forecast Methodology

Greg McCormack

Senior Manager Financial Forecast

Carl Ciullo

Financial Analyst



Load Forecast | Timeline

2023 IRP

- Load Forecast was prepared in May 2022

2023 Load Forecast

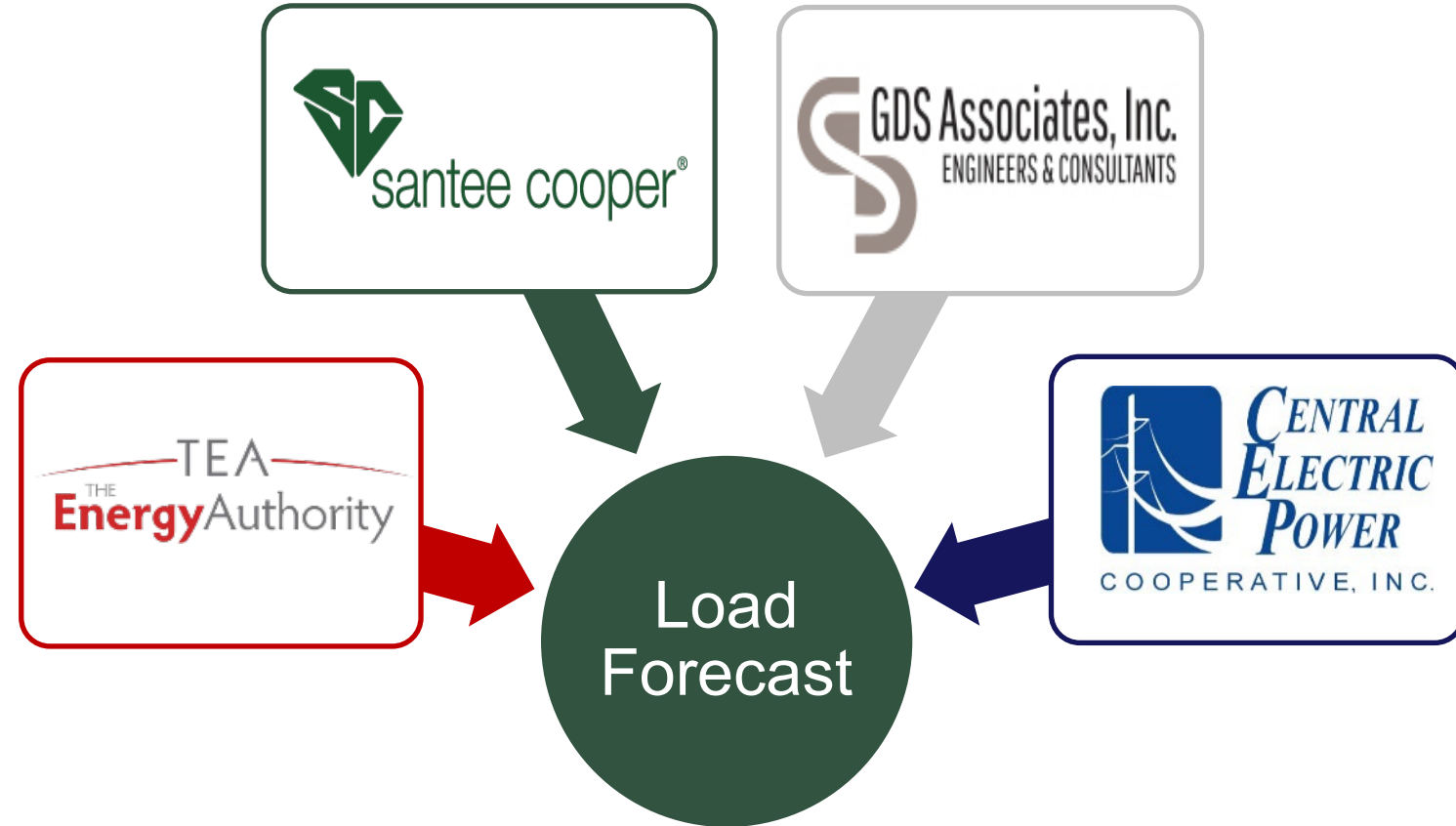
- Base load forecast was prepared in May 2023
- Revised twice during 2023 to incorporate new large customer signings

2024 Load Forecast

- Expected to be completed in May 2024
- Will incorporate feedback from this group and necessary methodology changes

- Base load forecast is currently in development
 - Economic data and results are being finalized
 - Evaluating potential changes to methodologies
- 2024 Load Forecast will be basis for 2024 IRP Annual Update

- The corporate load forecast is a planning tool that forecasts the energy and peak demand needs of our customers.
- Development is a collaborative effort with input from various experts and stakeholders



Load Forecast Review | Customer Groups



Class	Customer Segment Composition	Originator
Distribution System Residential and Commercial	<ul style="list-style-type: none"> Approximately 204,000 direct served accounts, comprising 15% of system energy 	GDS
Industrial	<ul style="list-style-type: none"> 31 large industrial customers served directly by Santee Cooper, comprising 24% of the system energy 	Santee Cooper
Central	<ul style="list-style-type: none"> Wholesale customer serving 19 distribution cooperatives, comprising 58% of system energy 	Central
Off-system and Municipal Sales	<ul style="list-style-type: none"> Wholesale sales to Bamberg, Georgetown, PMPA, Seneca, and Waynesville (NC) Sales to PMPA are on a partial requirements basis Off-system sales comprise 3% of system energy 	Santee Cooper, GDS, and Customer

Note: Percent based on 2023 IRP forecasted system energy.

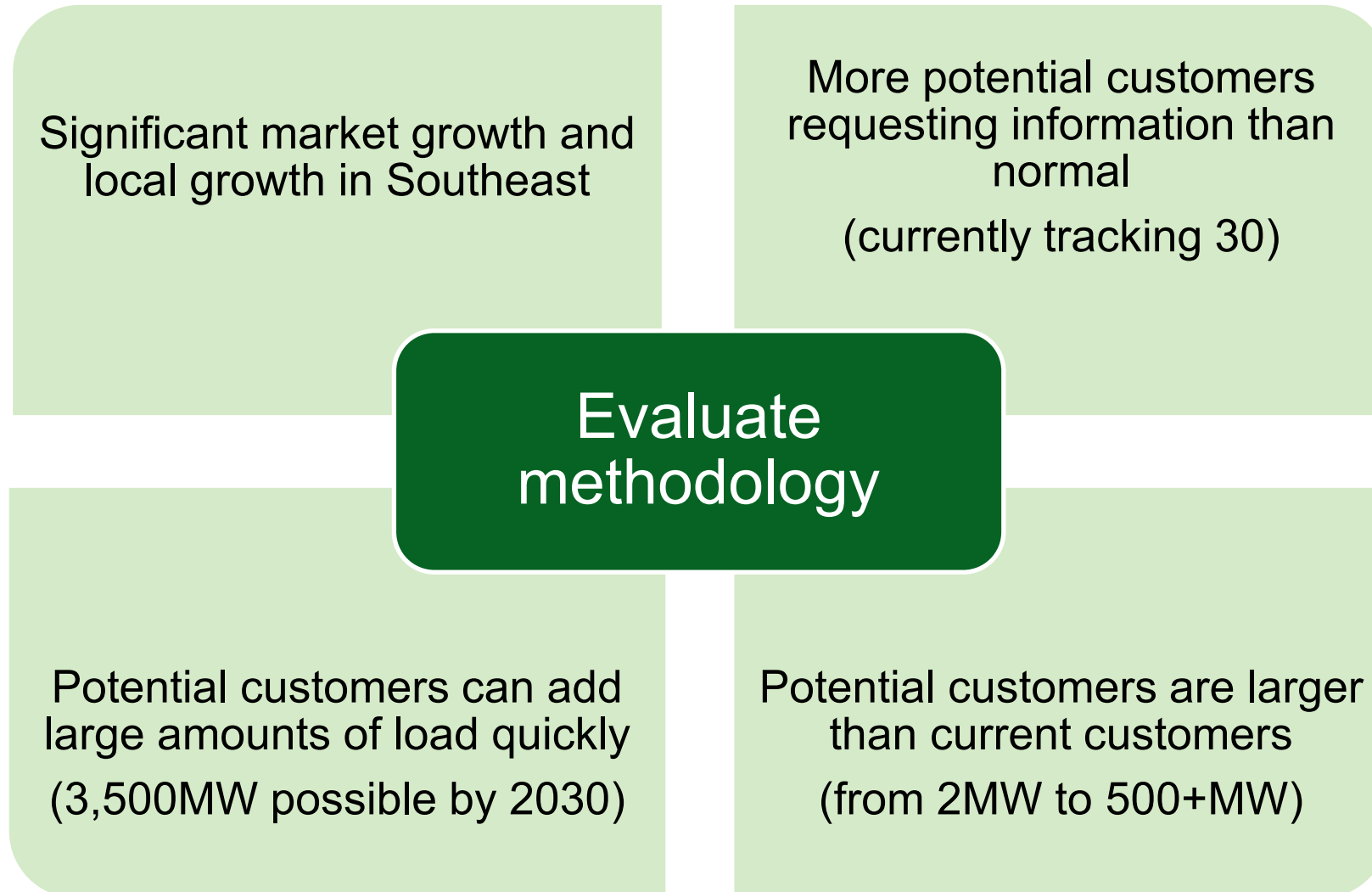
- Direct Serve - Residential and Commercial
 - Statistically adjusted end-use models
 - Refined through discussion with distribution system staff
 - Post-modeling adjustments for electric vehicle and rooftop solar impacts
- Direct Serve - Industrial
 - Basis is contractual agreement and historical consumption
 - Refined using input from customers regarding future operations
- Central Electric Power Cooperative
 - Prepared by Central staff
 - Statistically adjusted end-use models
 - Refined through discussion with local Cooperatives
- Off-system and Municipal
 - Various methods depending on customer

Load Forecast Review | 2023 IRP Load Forecast – Winter Demand

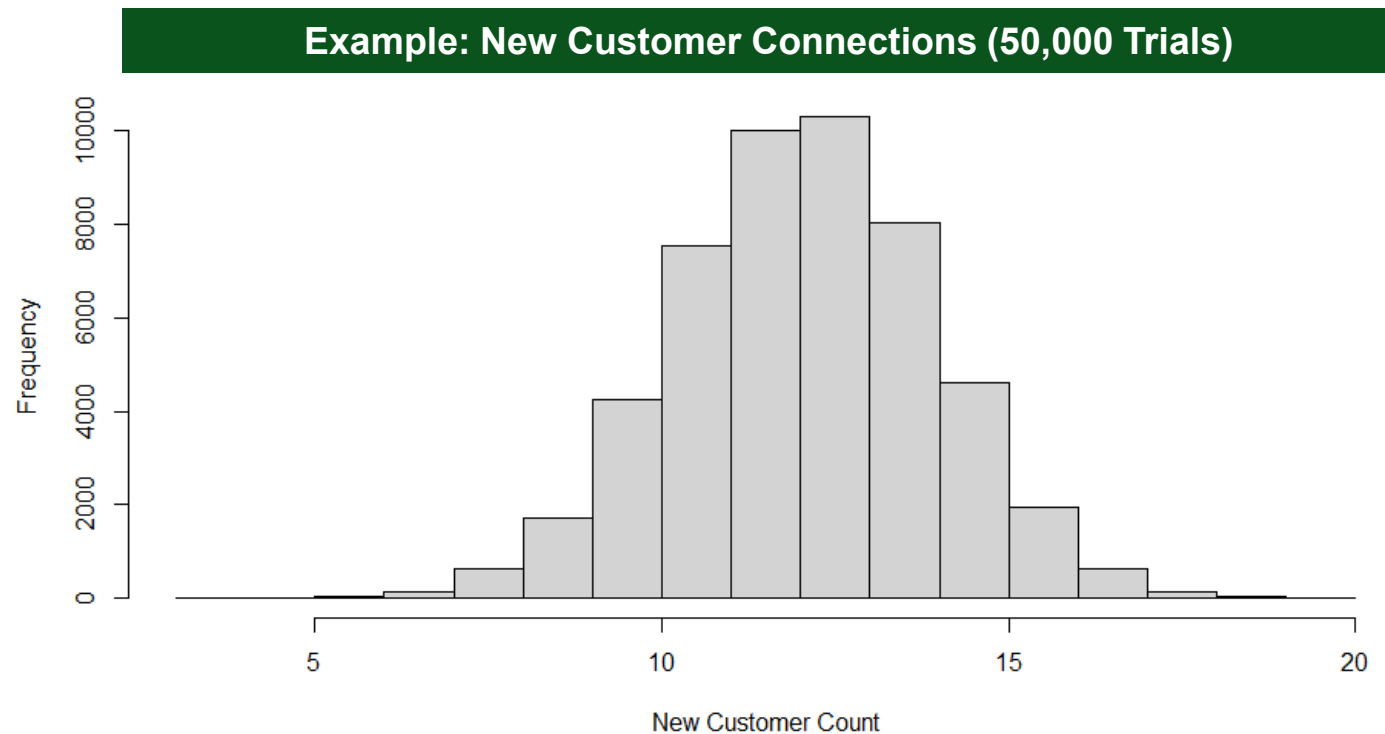


“Santee Cooper should engage stakeholders to **discuss the additional economic development in the state and how best to incorporate and anticipate new loads into its load forecast....**the Commission remains cognizant that these new loads are appearing quickly, creating additional energy and capacity constraints.” — SCPSC – Docket # 2023-154-E





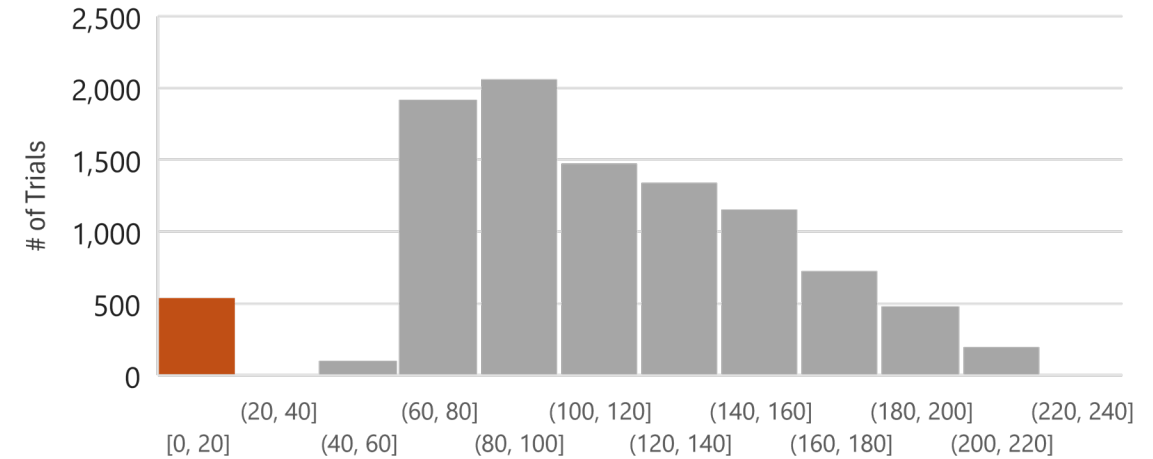
- Stochastic analysis is commonly used to model potential outcomes for uncertain future scenarios
- The results provide a range of outcomes and likelihood of occurrence
- Provides structure and creates a meaningful, actionable forecast from limited information



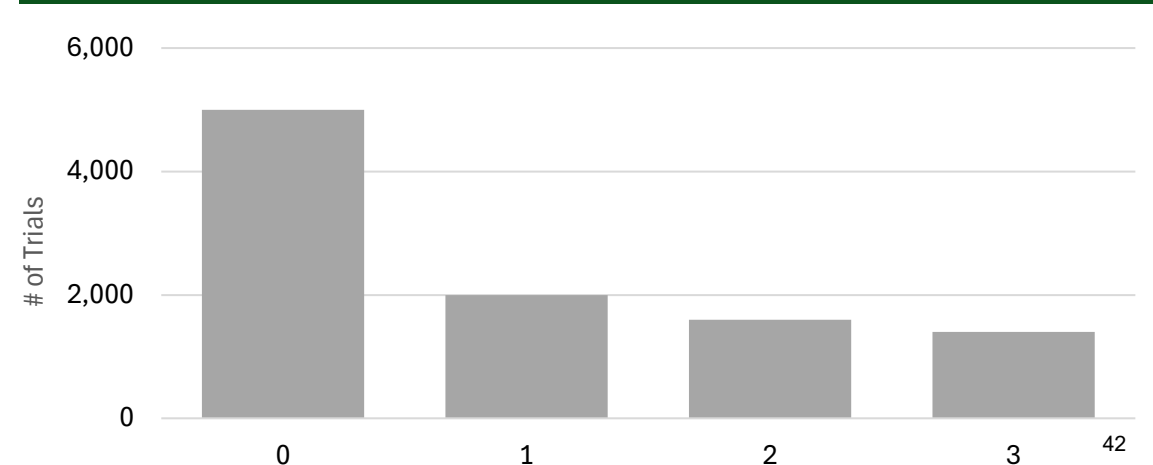
- **Likelihood of Connection**
 - Binary variable to determine if customer locates on system
 - Uniform distribution (randomized to match probability)
- **Magnitude Adjustment**
 - Adjustment to reflect lower usage than projected
 - Triangle distribution (trend to internal projection)
- **Siting Delay**
 - Potential delay in customer connection of 0-3 years
 - Left-skewed (no delay)
- **50,000 Trials**

Example Customer (MW, 10,000 Trials)

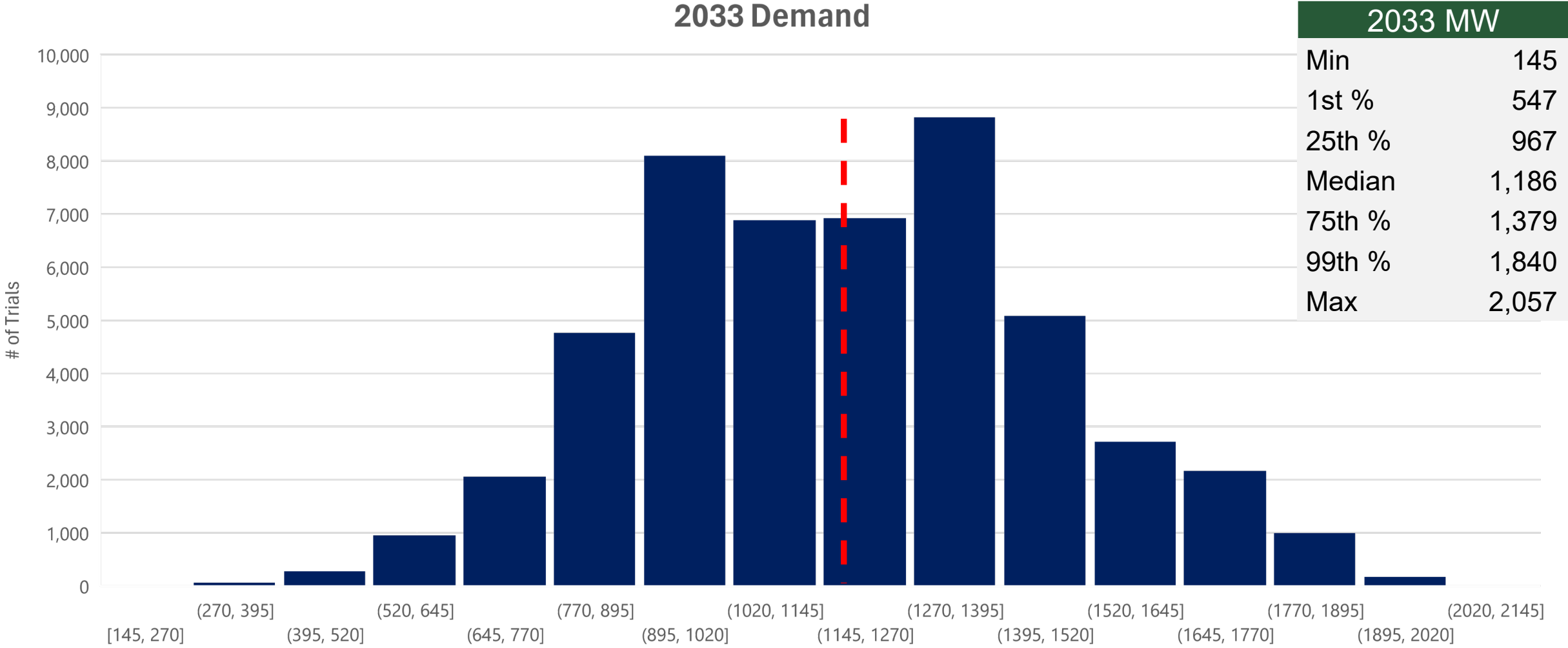
230MW projection, 95% connection, 30% magnitude



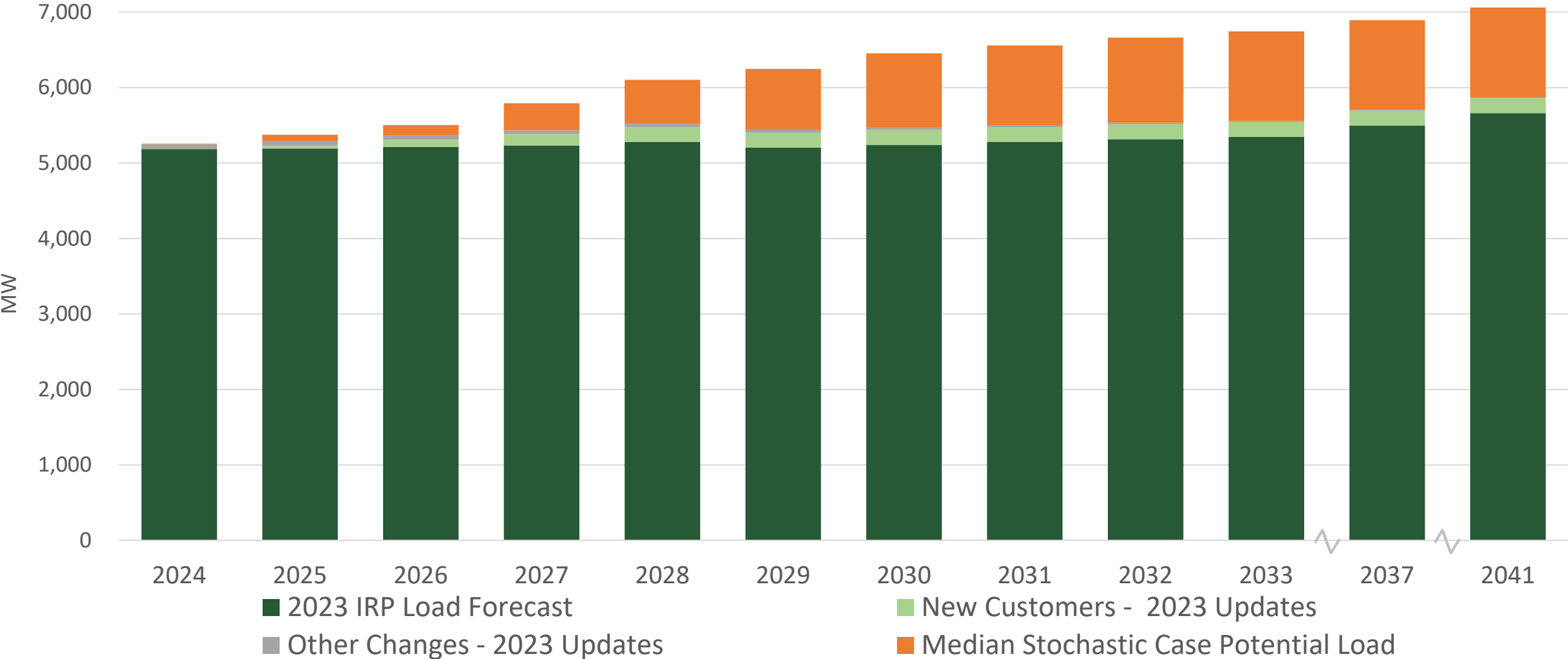
Example Siting Delay (Number of Years, 10,000 Trials)



Load Forecast Update | Preliminary Stochastic Analysis Results



Load Forecast Update | Preliminary Forecast with Stochastic Results





Evaluating information for potential customers:

- Last year, five “potential” customers signed service agreements
- In 2024:
 - One potential customer signed a service agreement
 - One potential customer withdrew expressions of interest
 - Four new potential customers have requested information

Closing

Clay Settle

Manager Resource Planning
Santee Cooper

Stewart Ramsay

Meeting Facilitator
VANRY Associates

- Review of and agreement on action items
- Homework
 - Review priority topics and provide feedback
 - Review the IRP web page and Forum
 - Review the meeting summary: Vanry to send on 5/7 and members to respond with comments by 5/17

- Next Meeting
 - Propose 6/19 as the date for our next meeting
 - Proposed Agenda
 - Review and report out on action items
 - Review of feedback received
 - Review of priority topics
 - 2024 Annual IRP Update
 - Would anyone like to present on a priority topic or lead a conversation?
Please let Clay or Will know by the end of May

Meeting Outcomes Achieved?

We have successfully launched the Stakeholder Working Group

- Members understand the commitment required of them to participate
 - Support the Charter and are prepared to align on the mission and objectives
 - Clear on logistics, meeting timeframes, communication, etc.
- Members are aware of commitments required of Santee Cooper from the 2023 IRP
 - Short-Term Action Plan (STAP)
 - other commitments made during the 2023 proceeding
- Members have weighed in on the list of priority topics and topics for future working group meetings

1st order of business

- Members have provided feedback on current Santee Cooper load forecast methodology updates

Thank you!

We would like to hear from you about your experience at this session.

**Please complete our survey
that will appear in your browser as you leave the meeting**