

PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA

**In re: 2023 Integrated Resource Plan for the South
Carolina Public Service Authority**

Docket No. 2023-154-E

SUPPLEMENTAL TESTIMONY of

DEVI GLICK

ON BEHALF OF

SIERRA CLUB

January 29, 2024

1. INTRODUCTION AND PURPOSE OF TESTIMONY

1 **Q Please state your name and occupation.**

2 A My name is Devi Glick. I am a Senior Principal at Synapse Energy Economics, Inc.
3 (Synapse). My business address is 485 Massachusetts Avenue, Suite 3, Cambridge,
4 Massachusetts 02139.

5 **Q Are you the same Devi Glick who previously filed direct and surrebuttal**
6 **testimony in this docket?**

7 A Yes.

8 **Q What is the purpose of your supplemental testimony?**

9 A The purpose of my supplemental testimony is to respond to PA Consulting’s (“PA”
10 or “the Consultant”) Independent Review of Santee Cooper’s 2023 Integrated
11 Resource Plan (“PA Consulting Report”) that it prepared for the South Carolina
12 Public Service Commission (“the Commission”).

13 I highlight the key findings from PA Consulting’s Report that align with Sierra
14 Club’s (and other intervenor’s) findings, discuss my concerns with PA Consulting’s
15 position on several critical issues, and reiterate my concerns on several topics on
16 which PA Consulting was silent.

1 **Q Have you had an opportunity to review the PA Consulting Report of Santee**
2 **Cooper’s 2023 Integrated Resource Plan?**

3 A Yes.

4 **Q Please summarize your main takeaways from the PA Consulting Report.**

5 A Overall, the PA Consulting Report reflects a comprehensive review of Santee
6 Cooper’s IRP, reinforces many areas of concern that were highlighted by Sierra
7 Club and other intervenors (including overly restrictive solar limits and an over-
8 reliance on coal) and provides the Commission with actionable and reasonable
9 recommendations to follow going forward (including not approving the Shared
10 Resource as currently proposed). There are, however, several critical issues where
11 I disagree with PA Consulting’s position, most notable its support for Santee
12 Cooper’s decision not to model the proposed greenhouse gas regulations under
13 Section 111 of the *Clean Air Act*. On these issues, I recommend the Commission
14 not accept PA Consulting’s position and recommendations and revisit those made
15 by Sierra Club and other intervenors.

2. MANY OF PA CONSULTING’S KEY FINDINGS AND RECOMMENDATIONS ARE ALIGNED WITH THOSE ALREADY PUT FORWARD BY INTERVENORS

1 **Q Please summarize the key findings from PA Consulting’s report that you**
2 **believe the Commission should heed and follow.**

3 A PA Consulting calls attention to Santee Cooper’s unnecessarily restrictive solar
4 build limit and limited consideration of battery energy storage systems (BESS). Its
5 report highlights the risks with Santee Cooper’s plan to continue relying on coal
6 assets, questions whether Santee Cooper actually needs a gas plant of the size
7 proposed, and agrees with other intervenors that the Company’s modeling
8 assumptions limit its exploration of renewables and early fossil retirements.

9 **Q What were PA Consulting’s findings and recommendations regarding Santee**
10 **Cooper’s modeling of solar?**

11 A PA Consulting echoes the concerns from intervenors that Santee Cooper’s limiting
12 of solar PV additions to 300 MW a year between 2026–2030 is overly restrictive.¹
13 One of PA Consulting’s three main recommendations is for Santee Cooper to raise
14 that limit to at least 550 MW a year beginning in 2026 and focus on procuring more
15 solar PV.² PA Consulting acknowledges procurement challenges that Santee

¹ Independent Review of Santee Cooper’s 2023 Integrated Resource Plan. PA Consulting. [Referred to hereafter as PA Consulting Report], at 30.

² *Id.* at 8.

1 Cooper had in the past and encourages Santee Cooper to take a more proactive
2 approach with procurement targets, resource acquisition strategy, and cost
3 assumptions.³

4 This last point is critical because the fact that Santee Cooper had challenges meeting
5 its solar goals in the past does not justify backing off its goals and slowing down
6 solar procurement targets—especially where its own modeling shows that
7 additional solar is the most economic option. Instead, it is a reason for Santee
8 Cooper to focus on improving its request for proposal (“RFP”) process, perform a
9 comprehensive interconnection queue analysis, and overall be more aggressive
10 with its resource procurement strategy.⁴ The Commission should push Santee
11 Cooper to prove it is being proactive and aggressive in solar procurement and taking
12 efforts to improve the effectiveness of its processes. The Commission should
13 reward Santee Cooper for being proactive and hold it accountable when it falls short
14 of its clean energy goals. The Commission should not send Santee Cooper the
15 message that if it falls short of its goal of installing economic clean energy
16 resources, it won’t be asked to improve and try again. Santee Cooper should not be
17 allowed off the hook and allowed to pursue a more expensive and carbon intensive
18 option at the expense of ratepayers.

³ *Id.* at 30–31.

⁴ *Id.* at 31.

1 **Q What did PA Consulting say about Santee Cooper’s limited consideration of**
2 **battery storage technologies?**

3 A PA Consulting is generally aligned with Sierra Club’s testimony on storage
4 deployment and counters Santee Cooper’s claims that storage is a nascent
5 technology, citing widespread adoption of the technology. PA Consulting asserts
6 that accelerated storage procurement will be in Santee Cooper’s best interest.⁵ PA
7 Consulting further states that accelerated deployment of storage in tandem with
8 solar deployment could reduce the size of the proposed gas Shared Resource that
9 Santee Cooper plans to build to replace Winyah.⁶ The key point the Commission
10 should take away from the findings of both PA Consulting and Sierra Club is that
11 Santee Cooper should not view its choice as either build solar or build a
12 replacement resource for Winyah. Santee Cooper should focus on deploying as
13 much solar and storage as possible, and then after that, evaluate what system-level
14 resources it still needs to retire and replace Winyah.

15 **Q What did PA Consulting say about Santee Cooper’s plan to continue relying**
16 **on coal resources?**

17 A PA Consulting outlined the risks to Santee Cooper ratepayers of continued reliance
18 on coal resources, citing more stringent environmental regulations, labor and

⁵ *Id.*

⁶ *Id.*

1 workforce challenges in the mining industry, and declining demand for coal.⁷ These
2 factors together are driving instability in the coal industry at large which is resulting
3 in price volatility for Santee Cooper’s ratepayers.⁸ I agree with PA Consulting’s
4 concluding recommendation that it is in Santee Cooper’s best interest to mitigate
5 its dependency on coal and ramp up its procurement of solar and battery storage
6 resources. As I discussed in my direct testimony, continued reliance on coal to meet
7 a substantial portion of Santee Cooper’s energy and capacity needs exposes
8 ratepayers to unnecessary risks. The Commission should heed PA Consulting and
9 Sierra Club’s warnings that these risks can be mitigated and avoided. To do so, the
10 Commission should require Santee Cooper to focus its planning exercises on
11 understanding how to reduce and eliminate reliance on coal resources and transition
12 to clean energy resources.

13 **Q What is PA Consulting’s recommendation regarding Santee Cooper’s**
14 **proposed Shared Resource?**

15 **A** PA Consulting expresses concern over the sufficiency of Santee Cooper’s
16 evaluation of alternatives to the proposed Shared Resource, and specifically the
17 Company’s “implicit assumption that the 1020 MW gas facility is an irrefutable
18 choice in resource procurement.”⁹ The Consultant expressed skepticism with

⁷ *Id.* at 28, 37.

⁸ *Id.*

⁹ *Id.* at 39.

1 Santee Cooper's analysis, asserting that Santee Cooper hadn't proven that a hybrid
2 model or smaller-scale facility couldn't meet the Company's reliability and
3 capacity needs.¹⁰

4 I agree with the Consultant's assessment that Santee Cooper did not adequately
5 evaluate alternatives and did not support its need for a gas plant of that proposed
6 size. Santee Cooper should be pursuing procurement of solar and BESS more
7 aggressively in the near term, and evaluating what is available in the market. Only
8 after it has exhausted the economic solar and BESS available should it seek
9 permission to build additional firm gas capacity resources.

10 **Q What does PA Consulting say about whether Santee Cooper's modeling fairly**
11 **considered renewables and retirement decisions?**

12 **A** PA Consulting is aligned with Sierra Club and other intervenors in the assessment
13 that Santee Cooper's assumptions around renewable cost and availability limited
14 its modeled deployment of clean energy resources, and that in turn impacted the
15 model's retirement decisions.¹¹ Modeling a unit with unjustifiably rosy projections
16 of economic performance and with no consideration of likely risks will not make
17 that unit perform more economically or somehow mitigate the ignored risks.
18 Instead, it will saddle ratepayers with the actual uneconomic costs incurred and the

¹⁰ *Id.*

¹¹ *Id.* at 35.

1 impact of the actual risks, and then make it harder to retire and replace the unit than
2 if the unit's retirement had been planned out with proper lead time and foresight.¹²

**3. PA CONSULTING SHOULD HAVE GIVEN THE COMMISSION CLEARER
GUIDANCE ON MODELING OF PROPOSED ENVIRONMENTAL
REGULATIONS, AND SEVERAL OTHER KEY ISSUES**

3 **Q Are there are issues where you disagree with the position offered by PA
4 Consulting?**

5 **A** Yes, there were two key issues: first Santee Cooper's failure to consider the U.S.
6 Environmental Protection Agency's proposed 111 regulations, and second the
7 failure of Santee Cooper's IRP to satisfy all of the Commission's requirements. PA
8 Consulting was also silent on several key issues around 8-hour BESS, solar
9 integration costs, and Santee Cooper's modeling of regional market integration.

10 **Q Explain your concerns with PA Consulting's assessment of Santee Cooper's
11 decision not to model or consider the proposed 111 regulations.**

12 **A** Throughout the report, PA Consulting discusses the risks of environmental
13 regulations.¹³ The Consultant even explicitly talks about the proposed regulations¹⁴
14 but then recommends that Santee Cooper not plan its resource procurement around

¹² *Id.* at 37.

¹³ *See, e.g.*, PA Consulting Report, at 24–25, 27, 37, 39, 40.

¹⁴ PA Consulting Report, at 24–25.

1 political speculation, stating that even if Section 111 regulations go final, a new gas
2 plant won't necessarily become a stranded asset.¹⁵ This is concerning for several
3 reasons.

4 First, modeling a proposed federal regulation to understand its impact on a resource
5 plan is not political speculation, it is prudent resource planning. Modeling the
6 proposed regulation can reveal no-regrets options that are robust under a variety of
7 regulatory environments and potential futures. This can and should inform future
8 resource planning, even if it does not drive near-term decisions.

9 Second, as I discussed in my direct testimony, the most likely compliance option
10 for Santee Cooper and the proposed Shared Resource, if Section 111 regulations
11 are finalized as currently proposed, would be to limit operations to a 50 percent
12 capacity factor; it would not be to retire the Shared Resource and make it a stranded
13 asset. These alternative compliance options, including Carbon Capture and
14 Sequestration or use of hydrogen, remain speculative and uncertain and are much
15 less likely to be viable compliance options than reduced utilization. Santee Cooper
16 should understand how that compliance option would change both the operational
17 assumptions for the Shared Resource, and future resource needs for Santee Cooper
18 more broadly.

¹⁵ *Id.* at 37, 40.

1 Third, despite acknowledging the risk to retirement that Section 111 poses to coal
2 plants and other thermal assets,¹⁶ the Consultant makes no tangible
3 recommendations on modeling any proposed or likely future regulation that
4 captures the increased risks or reliance on fossil resources. As discussed above, the
5 Consultant balks at the recommendation to model the proposed Section 111 rules.
6 It is concerning that PA Consulting offers the Commission no clear guidance on
7 how Santee Cooper should incorporate and plan around this, or really any other,
8 proposed regulations.

9 Fourth, PA Consulting discusses throughout its report another uncertain trend—
10 industrial growth in the Southeast United States—and recommends that Santee
11 Cooper model it. The level of uncertainty about industrial load growth is
12 comparable to the uncertainty of a proposed regulation. It is reasonable to
13 recommend that Santee Cooper run alternative load scenarios. It is also reasonable
14 to recommend that Santee Cooper model a proposed federal regulation— as PA
15 itself finally admitted in discovery when it indicated that proposed regulations
16 could be considered in sensitivities.¹⁷ Santee Cooper should be prepared for likely
17 outcomes that deviate from business as usual. Instead, the 111 rule will likely go
18 final later this year, and Santee Cooper is not prepared for it.

¹⁶ *Id.* at 37.

¹⁷ PA Consulting Response to Sierra Club Request 1-9, attached as Exhibit 1.

1 **Q Explain your concerns with PA Consulting’s assessment that Santee Cooper’s**
2 **IRP complies with Section 40 Requirements.**

3 A PA Consulting asserts that Santee Cooper’s IRP complies with all Section 40
4 requirements.¹⁸ But it is not clear how Santee Cooper’s IRP complies with several
5 requirements outlined in the Table 4 on pages 26–27 of the PA Consultant Report
6 given that Santee Cooper did not conduct optimized modeling, test alternative
7 retirement dates for the coal plants, or test reasonable alternatives to the Shared
8 Resource.¹⁹ Specifically, PA provides no evidence on how Santee Cooper complied
9 with the following:

- 10 1. *(A)(4)(a) Include an analysis of long-term power supply alternatives and*
11 *list the cost of various resource portfolios over various study periods,*
12 *identify the most cost-effective and least ratepayer risk resource portfolio.*
- 13 2. *(A)(4)(b)(ii) Include an analysis of any potential cost savings that might*
14 *accrue to ratepayers from the retirement of remaining coal generation*
15 *assets.*
- 16 3. *(A)(4)(c) Evaluate at least one resource portfolio, which will reflect the*
17 *closure of the Winyah Generating Station by 2028, designed to provide*
18 *safe and reliable electric service by 2050.*

19 **Q Are there any critical issues that you think PA Consulting should have**
20 **discussed but omitted?**

21 A Yes. There are three main issues that PA Consulting did not discuss. Given the
22 limited time PA had to perform the study, it is reasonable that the Consultant could

¹⁸ PA Consulting Report, at 26-27.

¹⁹ *Id.*

1 not cover everything. Nonetheless, these are important issues that PA Consulting
2 should have addressed to give the Commission a comprehensive assessment of
3 where Santee Cooper can and should improve its modeling.

4 **1. Effective load carrying capability (ELCC) for 8-hour BESS:** As

5 I discussed in my direct testimony,²⁰ Santee Cooper relies on
6 ELCC's for 8-hour BESS that are much lower than those modeled
7 by regional utilities and not supported by the Astrapé Consulting
8 ELCC study.

9 **2. Santee Cooper's modeling of zero market interaction:** Energy

10 purchases are part of Santee Coper's daily energy provision strategy,
11 yet not part of the Company's resource planning strategy.²¹ This
12 results in an overly built system.

13 **3. Renewable integration study:** Santee Cooper claimed its solar

14 integration study found that the system could only handle limited
15 solar additions prior to 2031. But this study was performed based on
16 the assumption that Winyah retired in 2031; therefore, its results are
17 not useful in understanding how much solar PV can be integrated

²⁰ Direct Testimony of Devi Glick, at 36.

²¹ *Id.* at 60.

1 into the system assuming a retirement date for Winyah prior to
2 2031.²²

3 **Q Does this conclude your supplemental testimony?**

4 **A Yes.**

²² Surrebuttal Testimony of Devi Glick, at 21.

Exhibit 1:
PA Consulting Response to Sierra Club
Request 1-9



January 22, 2024

Request No. 1-9. Please refer to pages 29-40 of PA Consulting Report, regarding PA Consulting Group's recommendation that Santee Cooper should not plan its system around political speculation.

- a) Please explain how PA Consulting Group believes that Santee Cooper specifically, and resource planners more broadly, should plan around proposed environmental regulations.
- b) Please provide PA Consulting Group's view on how utilities should plan for future carbon regulations.

RESPONSE 1-9. a/b.) PA Consulting believes these should be considerations in sensitivities but should align with the process of retiring and planning for the replacement of aging generation.

Request No. 1-10. Please refer to pages 44-45 of PA Consulting Report, regarding PA Consulting Group's NPV analysis of two resource build strategies: one that aligns with Santee Cooper's Preferred Portfolio and one that replaces the NGCC with solar and BESS.

- a) Please provide PA Consulting Group's described analysis that shows a 32% cost increase in the second portfolio.
- b) Please provide all analysis that PA Consulting Group prepared that supports the statement that scaling down the CC emerges as a potentially more valid option.

RESPONSE 1-10. Please find the accompanying excel file, "Santee Cooper IRP Review - Portfolio Economics Analyses.xlsx" as well as the response to item 1-8.

Request No. 1-11. PA Consulting Group does not make any clear recommendation or assessment on Santee Cooper's modeling assumptions on economic market purchases. Please provide PA Consulting Group's opinion on Santee Cooper's decision not to model any economic market purchases as part of its IRP.

RESPONSE 1-11 PA Consulting concurs with Santee Cooper's assessment that short-term economic market purchases hold limited significance in this instance, given their transient nature and the impending availability of alternative resources once project execution commences in the near future.

Request No. 1-12. Please refer to page 8 of PA Consulting Report, where PA Consulting Group recommends that the Commission require that Santee Cooper procure more solar than described in their Preferred Portfolio, at a minimum pace of at least 550 MW of solar resources per year beginning in 2026.

Please explain the basis for PA Consulting Group's recommendation to begin the solar procurement increase in 2026 instead of in Santee Cooper's current 2023 IRP.

RESPONSE 1-12 PA Consulting recommends that the Commission consider requiring Santee Cooper's IRP be revised to include the increased procurement as described in our report.

BEFORE
THE PUBLIC SERVICE COMMISSION OF
SOUTH CAROLINA
DOCKET NO. 2023-154-E

In re:
South Carolina Public Service
Authority's (Santee Cooper) 2023
Integrated Resource Plan (IRP)

CERTIFICATE OF SERVICE

I hereby certify that I have served the persons listed on the official service list for Docket No. 2023-154-E, listed below, a copy of the Supplemental Testimony of Devi Glick on behalf of Sierra Club via electronic mail on this day, January 29, 2024.

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Respectfully submitted this 29th day of January 2024.



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