BEFORE THE STATE OF GEORGIA

PUBLIC SERVICE COMMISSION

In Re:	)	
Georgia Power Company's	)	Docket No. 55378
2023 Integrated Resource Plan Update	)	

POST-HEARING BRIEF OF THE SIERRA CLUB

INTRODUCTION

The testimony and evidence presented to the Georgia Public Service Commission ("Commission") over the course of these proceedings demonstrate that Georgia Power Company's 2023 Integrated Resource Plan ("IRP") Update should not be approved as filed. The Commission should also not adopt the stipulation that Georgia Power Company and the Public Interest Advocacy (PIA) Staff submitted on March 27, 2024 (the "Stipulation"). Instead, the Commission should:

[1] Deny approval of the power purchase agreements ("PPAs") with Mississippi Power Company ("MPC") and Santa Rosa Energy Center ("Santa Rosa") before the winter of 2025/2026. If the Commission decides to approve the PPAs, it should disallow inclusion in retail rates of all PPA costs in the months prior to when Georgia Power Company needs the capacity to serve customers.

[2] Deny Georgia Power Company's proposal to build three combustion turbines ("CTs") at the Yates site. If the Commission decides to approve the CTs, it should implement sufficient guardrails to prevent fuel costs from being entirely passed on to ratepayers.

[3] Direct Georgia Power Company to stay committed to retiring Plant Bowen Units 1-2 and Scherer Unit 3 because it saves ratepayer money.

[4] Deny Georgia Power Company's proposed FlexCapacity framework or, alternatively, allow it only to deploy battery energy storage systems ("BESS"), which are an economic available option according to Georgia Power's own Resource Mix Study.

ARGUMENT

I. Legal Standard

The Rules of the Commission require that an IRP be "in the public interest," and, if it is not, that the Commission reject the utility's resource plan or provide an alternate plan. *See* Commission Rule 515-3-4-.01(2); 515-3-4-.06. An IRP that fails to be in the public interest should therefore not be approved by the Commission.

II. Georgia Power's proposed PPAs start before there is an actual need in the system and should not be approved by the Commission

It is undisputed that Georgia Power Company ("GPC") is asking this Commission for the immediate approval of two PPAs that it does not yet need.[1] Both the MPC and the Santa Rosa PPAs start well before there is an actual need in Georgia Power's system[2], and if the Commission

[1] GPC claimed in discovery that it took the excess capacity for the first two years of the PPA with MPC because "[h]ad Georgia Power not executed the PPA for the full five years, the proposed resource very likely would not have been available for the last three years when the Company has a capacity need." GPC Response to PD STF-JKA-2-20 (a). However, Sierra Club witnesses Glick and Metz found that evidence provided in discovery does not support this claim. *See* the TS version of Sierra Club Direct Testimony of Glick and Metz at 18.

[2] "Georgia Power and Mississippi Power executed a PPA for the sale of 750 MW of capacity and energy from Mississippi Power to Georgia Power for the term of January 1, 2024, through December 31, 2028 (...) Southern Wholesale Energy ("SWE"), on behalf of Georgia Power, will attempt to remarket this capacity for years prior to the winter of 2025/2026". GPC Direct Testimony of Grubb et al. at 32-33. *See also* GPC Rebuttal Testimony of Grubb et al. at 36: "The Mississippi Public Service Commission directed MPC to retire 950 MW of capacity resources no longer needed to serve retail load in Mississippi. As previously explained, the MPC PPA was necessary to secure the available capacity for Georgia Power customers, and ensure that such capacity remained in the pool".

approves them and the Company cannot remarket the PPA capacity, ratepayers will be on the hook for their full cost. GPC has not justified procuring the PPA capacity so far in advance of need and passing unnecessary costs on to ratepayers. Further, both PPAs bring distinct risks to Georgia ratepayers: the PPA with MPC goes against an existing Mississippi Public Service Commission order, and the PPA with Santa Rosa Energy lacks firm transmission capacity after the winter of 2024/2025.

1. *The PPA with MPC goes against an existing Mississippi Public Service Commission order.*

In addition to burdening ratepayers with having to pay for capacity that is not yet needed, the proposed PPA with MPC goes against the Mississippi Public Service Commission's order in Docket No. 2018-AD-145. In that docket, the Mississippi Commission examined a Reserve Margin Plan for MPC and made a number of findings based on the record:

> • "MPC's current reserve margin is projected to be higher than targeted reserves";
> • This excess could "persist[] over ten years" if "MPC's generation units [were] left to operate through their remaining projected useful lives";
> • "[A]ccelerating the retirement of some combination of [MPC's older fossil fuel units] represents the most attractive option for reducing MPC's excess reserve margin";
> • "[S]ome measure of capacity reduction would likely be in the best long-term interest of customers";
> • "[T]he economic evidence available to the Commission to date makes a compelling case for early retirement of some portion of MPC's aging fossil steam generating fleet."

Docket No. 2018-AD-145 Order at 3-6.

Based on these findings, the Mississippi Commission decided that MPC's 2021 "IRP filing should include the schedule of early or anticipated retirement of approximately 950 megawatts of generating capacity by year-end 2027 or show cause with detailed evidence why

the continued operation of some or all of MPC's existing fossil steam generation is in the best interest of customers and MPC." *Id.* at 5-6. On April 15, 2021, MPC filed its IRP following the Mississippi Commission's order and acknowledged that "[f]or the last two to three years of analysis, MPC's fossil steam fleet has demonstrated only marginal economic value for customers" and, given the Commission's directive to reduce "approximately 950 megawatts of generating capacity by year-end 2027", MPC adopted planned retirements for the majority of its fossil steam fleet consistent with the following table:

Table 1: MPC's Planned Fossil Unit Retirements[3]

Generating Unit	Net Capability	Planned Retirement
Watson 4	268 MW	Dec. 2023
Greene County 1	103 MW	Dec. 2025
Greene County 2	103 MW	Dec. 2026
MPC Daniel Coal[3]	502 MW	Dec. 2027
Total	**976 MW**	

Although GPC acknowledges the existence of the Mississippi Commission's order ("[p]er the order issued in Docket No. 2018-AD-145 before the Mississippi Public Service Commission, Mississippi Power must retire approximately 950 MW of capacity by the end of 2027." GPC Direct Testimony at 33), it assumes that MPC will *not* have to retire resources from its system at all ("[b]y purchasing 750 MW from Mississippi Power through this PPA, Georgia Power ensures that this capacity will remain within the Southern Company pool". *Id.* at 33). However, during cross examination, Georgia Power admitted it does not know whether the Mississippi Commission will even approve the PPA, and has not put in place a contingency plan in case the

[3] Mississippi Power Company's 2021 Integrated Resource Plan at 4. Available at: https://www.psc.state.ms.us/InSiteConnect/InSiteView.aspx?model=INSITE_CONNECT&queue=CTS_ARCHIVEQ&docid=658803

Mississippi Commission keeps its original order in place and MPC does move forward with its original resource retirement plans:

> Q In that order, the Mississippi Public Service Commission instructed Mississippi Power to retire their Daniel coal plant by the end of 2027, unless the company provided detailed evidence explaining why the continued operation is in the best interest of its customers; correct?
> A (Witness Grubb) That is -- yes, that is correct.
> Q Are you aware whether Mississippi Power has, in fact, demonstrated to the Mississippi Public Service Commission that continued operation of Plant Daniel is in the best interest of its customers?
> A (Witness Grubb) I -- I don't know the specifics on Mississippi's communications with their commission.

Tr. 0521:14-0522:2. Although the Mississippi Commission has not yet scheduled a hearing, it may well require MPC to show cause with detailed evidence demonstrating why continuing operation of the relevant fossil units is in the best interest of MPC customers, and there is no guarantee that the Mississippi Commission will change its original order to allow the PPA with Georgia Power to proceed. GPC does not have a plan in place to make up for the PPA capacity it is counting on should the Mississippi Commission enforce its order regarding plant retirements, which leaves Georgia ratepayers at risk and the Georgia Commission in the dark:

> Q [If] the Mississippi Public Service Commission ultimately orders Mississippi Power to retire Plant Daniel early, will -- will you need to line up other alternatives[?]
> A (Witness Grubb) It depends on how Mississippi treats the PPA.

Tr. 0524:16-23. Although this kind of contingency could have been avoided by naming the resources that would have provided capacity to GPC, the PPA is silent about *where* the 750 MW will come from, and GPC admitted it did not consider including such provision in the PPA:

> Q Did you consider purchasing power from Mississippi that was separate from the Daniel coal plant? Did you consider telling them: Please give me power from these resources, but not this one?
> A (Witness Grubb) No, we did not.

Tr. 0523:7-11. Sierra Club witnesses Glick and Metz describe this risk in the following terms:

> [W]hile MPC and its parent company Southern Company may want to remarket the capacity, the Mississippi Commission may not view the PPA as a sufficient justification for keeping additional capacity online past the end of 2027. There is no obvious benefit to Mississippi ratepayers, whose utility maintains liability for excess capacity not needed to serve its native load. The Mississippi Commission (...)[c]ould find the PPA imprudent at a later date. This could put the availability of the PPA at risk towards the end of the contract period, just when GPC's capacity need will be greatest.

Sierra Club Direct Testimony of Glick and Metz at 17. Given Georgia Power's rushed decision to sign the PPA with MPC, ratepayers will be taking on significant risks and the Georgia PSC would be acting against the order of another Public Service Commission. The Georgia PSC should not approve the PPA with MPC, and if it does, it should disallow inclusion in retail rates of all PPA costs in the months prior to when Georgia Power Company needs the capacity to serve customers.

2. *The PPA with Santa Rosa Energy lacks firm transmission capacity for* ***exactly*** *the timeframe GPC claims it is needed for their system*

Like the MPC PPA, the Santa Rosa PPA *also* starts well before there is a need in Georgia Power's system. In addition, the Santa Rosa PPA lacks firm transmission capacity after the winter of 2024/2025. In response to discovery, Georgia Power revealed that it does *not* have firm transmission capacity for the PPA from 2024 to May 2026. Later, in its rebuttal testimony, Georgia Power indicated that it was able to "secure firm transmission on the Southern Transmission System for transfer across the FPL/Southern Company interface through the Winter of 2024/2025" and added that it will "continue to seek firm transmission service for the remainder of term of the agreement," but has not secured it. GPC Rebuttal Testimony of Grubb et al. at 37. Accordingly, there is still a significant gap that might harm GPC customers.

As Sierra Club's witnesses Glick and Metz explained in their testimony, "there is no reason why the costs and risk of that should be borne by GPC ratepayers. At best, the arrangement [with Santa Rosa] will be net neutral for ratepayers. At worst, it will cost them [REDACTED] over the next two years in exchange for zero value." Sierra Club Direct Testimony of Glick and Metz at 25. Further, Georgia Power's rebuttal testimony regarding transmission does not solve the two fundamental issues with the Santa Rosa PPA: first, ratepayers are still on the hook for the months that the PPA is not needed and, second, firm transmission for 2024/2025 does not help GPC customers when they will be receiving the power starting in 2025/2026. As Sierra Club witnesses Glick and Metz analyzed, "the PPA doesn't actually provide firm capacity for the first half of 2026 when GPC needs it. It also renders the capacity less valuable on re-sale and will impact the price that GPC could get for the power if it attempts to re-market it". Sierra Club Direct Testimony of Glick and Metz at 25. Therefore, the Commission should not approve the PPA until the firm transmission capacity issue is resolved. If nevertheless the Commission decides to approve it, it should disallow inclusion in retail rates of all PPA costs in the months prior to when Georgia Power Company needs the capacity to serve customers.

III. The proposed CTs are expensive, polluting, and not in the best interest of customers

Contrary to the IRP Update request and the proposed Stipulation, the Commission should follow PIA Staff's original recommendation and deny approval of the buildout of three CTs at the Plant Yates site ("Staff recommends that the Commission deny the Company's request for certification of the Yates [CTs]. The Yates capacity is not required until 2029 and should be bid into the 2029 – 2031 capacity RFP to determine whether this capacity is least-cost and the most

reliable compared to other options." PIA Staff Direct Testimony of Newsome, Hayet and Wellborn at 8). As explained below and demonstrated over the course of these proceedings, the proposed Yates CTs are not the most economic option for ratepayers, do not have firm gas supply available, and are therefore not in the best interest of Georgia Power customers.

1. *It is more economic for GPC to fill its firm capacity need with BESS than with three CTs*

Instead of building three CTs, it is more economic for GPC to fill its firm capacity needs with BESS, both paired with solar PV and standalone. As Sierra Club witnesses Glick and Metz explained in their direct testimony, the Commission should not approve the Yates CTs because "it would be more economic to replace the firm capacity of one or more of the CTs with 4-hour BESS, which could be charged at low cost with energy from solar PV as well as the grid". Sierra Club Direct Testimony of Glick and Metz at 26. Comparing just fixed and capital costs (including financing, taxes, insurance, and tax credits), witnesses Glick and Metz found that BESS costs less than the CTs. *See id.* at 33. Therefore, instead of approving Georgia Power's proposal, the Commission should "direct GPC to test the market and procure as much battery storage (paired with solar PV and standalone) as it can." *Id*. at 7.

The advantages of BESS over the proposed CTs are numerous. For instance, "BESS would provide the same dispatchable firm capacity value as a gas CT, and 4-hour BESS are readily available and cost-competitive today". *Id*. at 29. Additionally, "GPC's system has ample capability to add 4-hour storage before its capacity contribution will begin to decline (based on GPC's own effective load carrying capability (ELCC) assumptions)." *Id*. at 30. In fact, GPC's plans to build three CTs does not follow its own modeling, which shows that "it would be economic to procure" 3.4 GW of BESS by 2030—over three times more BESS than GPC's 1 GW proposal—"in the moderate fuel price scenario[,] and between 3.1 and 4.4 GW in the other

scenarios". *Id.* at 38. Similarly, the "moderate fuel scenario in the Resource Mix Study shows that it would be economic for GPC to procure 1.5 GW of new solar by 2030, which is over seven times the capacity in the 2023 IRP Update". *Id.* at 39.

As GPC acknowledged in direct testimony, "[t]he time to construct BESS is shorter than other types of generation and, therefore, can be more quickly deployed to help meet the earlier capacity needs identified". GPC Direct Testimony of Grubb et al. at 37. GPC again recognized that it is capable of procuring BESS faster than building the CTs in its January supplemental filing. ("GPC itself thinks that it can procure battery storage in time for the winter of 2026/2027, and therefore should be more ambitious about constructing storage and solar instead of building all three gas CTs." Sierra Club Direct Testimony of Glick and Metz at 33). Building BESS instead of CTs brings benefits to Georgia Power's system and ratepayers and, during cross examination, Company witnesses recognized that reducing the number of CTs is a possibility:

> Q I've heard you say that if load doesn't materialize you could choose to not build as many battery megawatts or you could choose to resell capacity attached to the PPAs. But I haven't heard you say that you could choose not to build three, but two CTs, for example. Isn't it true that that is a possibility, as well?
> A (Witness Grubb) It is.

Tr. 0516:25-0517:7. In addition to higher construction costs and the risk of delays, the CTs are also subject to the fluctuation and volatility of fuel costs. As witnesses Glick and Metz explained in their testimony, "GPC's long-term reliance on gas resources will expose customers to fuel price volatility and the associated risks, which the Company did not account for in its IRP" and for which "ratepayers cannot plan". Sierra Club Direct Testimony of Glick and Metz at 6 and 45. Additionally, GPC should incorporate load growth uncertainty into its planning "by acquiring more flexible capacity resources (such as BESS) that will not saddle existing ratepayers with

extra costs if load growth turns out to be smaller than GPC currently anticipates". *Id*. at 10. Therefore, GPC should look into accelerating "deployment of renewables[, which] will reduce the Company's reliance on volatile fuel prices and the associated risks to customers." *Id*. at 6. During cross examination, witness Glick emphasized the risks associated with the CTs, which are not properly accounted for in GPC's modeling:

> Q [D]o you also agree with staff when staff said that they are agnostic as to the resource -- the generation resource? They just care about safety, reliability, and cost?
> A (Witness Glick) I would say we're agnostic insofar as all the costs and risks are properly reflected. And we don't believe at this point that the full costs and risks of relying upon the CTs have been properly reflected, given that there's already been delays with the CT schedule[, t]hat the CTs don't have a firm gas supply, that there are transmission constraints. There are a lot of risks that I've seen with these CTs that I don't think are fully reflected in consideration of a CT as an alternative.

Tr. 1429:14-1430:3. Additionally, given that the CTs will be transmission-constrained until May 2028 and will provide only 600 MW of firm capacity until transmission upgrades are complete,[4] there are enough economic reasons to pursue BESS before considering building the CTs. *See* Sierra Club Direct Testimony of Glick and Metz at 32. Therefore, the Commission should not approve the construction of the three Yates CTs, and should instead direct GPC to test the market and procure as much battery storage as it can. GPC should only consider CTs to fill the gap that it cannot economically meet with clean energy resources based on on-the-ground market results. *See id.* at 7. Alternatively, if the Commission decides to approve the CTs, it should implement sufficient guardrails to protect customers from fuel price volatility, which the Company did not account for in the IRP.

2. *The proposed Yates CTs will run on oil during peak times, which is polluting and an economic risk for ratepayers*

[4] GPC Response to PD STF-JKA-1-4 (e).

In response to discovery, GPC explained that the Yates CTs "will primarily run on fuel oil during peak winter and summer periods when the pipeline is constrained. No [firm transportation] or additional gas capacity is being proposed to support these units since these units can burn oil year around".[5] Similarly, during cross examination, Company witnesses admitted that during winter months—when the CTs would run on oil— is when capacity would be most needed:

> Q You've stated in discovery that you'll run the CTs on oil during peak winter periods; correct?
> A (Witness Grubb) That's right. We -- we expect to on peak periods, like today. But it has the ability to burn natural gas in many other hours.
> Q Are winter peak periods when you plan to run these units the most?
> A (Witness Grubb) So they're -- they're not expected to have super high capacity factors because of the natures of CTs. That is when they will most be needed.

Tr. 0510:2-12. Although GPC modeled the CTs using oil during winter months and gas in other months,[6] the Company elsewhere stated that CTs might also rely on oil during summer peak periods.[7] In any case, it is undisputed that the Yates CTs would rely on oil—a costly and polluting fuel—during the winter peak months. "Oil is much more expensive per unit energy than gas[, (...) and w]hile the [CTs] are technically capable of providing firm capacity during winter months when GPC has the greatest capacity need, it will be extremely expensive to run them during these times based on high fuel costs". Sierra Club Direct Testimony of Glick and Metz at 27-28. Not only is oil more expensive, but oil costs will be entirely passed on to ratepayers, absent action by the Commission. *See id.* at 5. During cross examination, witness Glick reiterated that oil is "more expensive, more polluting and not as efficient or economic". Witness Glick further explained there is a reason why oil is not the primary fuel for the CTs:

[5] GPC Response to PD STF-JKA-2-22 (d).
[6] GPC Response to STF-JKA-3-10.
[7] GPC Response to PD STF-JKA-2-22 (d).

> Q [Y]ou say that on page 26, line 9, when you call oil and expensive and highly polluting fuel. Do you see that?
> A (Witness Glick) Yeah. There's a reason why it's being used as kind of a second resort, instead of a primary fuel being used. It's not the preferred source.

Tr. 1431:6-11. Additionally, as shown in Table 2 below, "[e]missions rates for both toxic air pollutants and greenhouse gases are higher for a CT when operating on oil than when operating on gas," and NOx emissions "will be more than twice as high when the Yates CTs operate on oil compared to gas". Sierra Club Direct Testimony of Glick and Metz at 29.

Table 2: Emissions rates for Yates combustion turbines operating on gas and oil[8]

Pollutant	Unit	Gas	Oil	Percent difference
NO_x	lb/MMBtu	0.0099	0.022	122%
Particulates and air toxics	lb/MMBtu	0.0034	0.015	341%
CO_2	lb/MMBtu	119	162	36%

Regarding these emissions, witness Glick testified during cross examination that "with oil, we're not just talking about greenhouse gas emissions. There are other pollutants that are really concerning with oil that you don't have as severe with natural gas. So it's more than just the carbon that we're concerned about here". As witness Glick made clear, BESS would be a better, less polluting alternative:

> [Q (Mr. Hewitson)] Would you agree that if Plant Yates on oil dispatches ahead of older, less-efficient units on oil during those times when natural gas is not available, that the overall emissions associated with electricity generation could be less?
> A (Witness Glick) There's many factors to consider because it's not just about whether a unit is efficient. It's about the operating level of a unit can also impact the emissions level like heat rates. So you can't make a generalized statement about that not knowing what the dispatched stack looks like (...)

[8] Source: PD Georgia Power Company Application for Certification of Plant Yates Units 8-10, page 17.

> Q [(Mr. Fabish)] Do you recall just now when Mr. Hewitson was asking you whether or not a more-efficient unit, if it displaced a less-efficient unit, would be --lower pollution; is that correct?
> A (Witness Glick) Yes.
> Q Would a non-emitting resource be even less polluting than that resource?
> A (Witness Glick) Yes.

Tr. 1432:5-15; Tr. 1435:8-15. Because the proposed Yates CTs are not the most economic option, will be a high source of pollution in Georgia, and are not in the best interest of customers, the Commission should follow Staff's original recommendation and not approve them in this IRP Update.

IV. Georgia Power should commit to retiring its remaining coal now, not in the next IRP

GPC and its customers would benefit from planning coal retirements ahead of the 2025 IRP proceeding. At a minimum, as witnesses Glick and Metz recommended, the Commission should require GPC to present "any resource additions and retirement decisions that GPC is now considering that deviate from its last IRP". Sierra Club Direct Testimony of Glick and Metz at 7. As part of this 2023 IRP Update, GPC stated that it plans to submit unit retirement studies in the 2025 IRP and "will make a formal recommendation at that time regarding the retirement or continued operation of the units". GPC 2023 IRP Update Main Document at 27. In the 2022 IRP final order, the Commission approved the retirement and decertification of Plant Scherer Unit 3 and Plant Gaston Units 1-4 and Unit A by December 31, 2028. Now, GPC suggests that it will "likely evaluate extending the operation of certain units, particularly Plant Scherer Unit 3, beyond 2028. This evaluation will include updated unit retirement studies for these units in the 2025 IRP and may recommend extending their operation." *Id.* at 28. During cross examination, Company witnesses further described the status and plans for their coal retirements:

> Q So it's your testimony that proposing coal retirements in the 2025 IRP will still give you enough time to procure replacement resources you'll need?
> A (Witness Grubb) So those -- the Scherer and Gaston have been approved to be decertified in the '28. If we need to change that, then that will be brought forward to the Commission in the 2025 IRP. So we haven't planned for those coal -- they don't show extensions in our needs. And so it's going to depend on what comes out of the 2025 IRP what we would need to do there.

Tr. 0516:8-19. Instead of pushing coal retirement decisions down the road, the Company should act according to its 2022 IRP proposal and the PSC's final order in that docket. Indeed, as GPC stated during the 2022 IRP proceeding, its own "economic analysis demonstrates that the continued operation of Plant Bowen Units 1-2 is not economic or in the best interest of customers." 2022 IRP Rebuttal Testimony of Grubb et al. at 2:26-28. Keeping these uneconomic units around will incur needless costs to consumers. *See* Rebuttal Testimony of Grubb et al. at 16:26-27 ("[I]f the units continue operations beyond 2027, the Company would need to increase capital spend for these units").

The results of the Company's analysis in the 2022 IRP indicated that the long-term operation of its coal units is "no longer in the best economic interest of customers. The Company's coal resources lack sufficient economic and flexibility attributes to remain competitive within an electric system with large renewable penetration and in a future with continued environmental cost pressures". *Id*. at 14. The environmental cost pressures that GPC identified in 2022 are even more pressing today.

In its 2023 Resource Mix Study, the Company shows plans to maintain its coal fleet, which will expose ratepayers to potentially expensive new regulations. At least two federal rules are set to impact coal plant operations across the country, and Georgia Power's coal fleet will

likely become even less economic. These two regulations —the Effluent Limitation Guidelines ("ELG") rule and the Section 111 rules— are examined below.

1. The ELG rule will further impact the economics of Georgia Power's coal fleet

The proposed 2023 ELG Rule strengthens the discharge standards for three types of wastewater produced by coal-fired units: flue gas desulfurization wastewater, bottom ash transport water, and combustion residual leachate.[9] When the ELG rule is finalized, GPC will have to incur costs at Bowen for two flue gas desulfurization measures (a membrane-based wastewater treatment system and a zero-liquid discharge system) and a wastewater treatment system for combustion residual leachate.[10] Similarly, Scherer could require retrofits to improve its treatment of combustion residual leachate.[11] In response to discovery, GPC estimated that a membrane-based flue gas desulfurization system at Bowen would cost approximately $580 million but stated that it does not yet have estimates for the costs of the other retrofits,[12] but during cross examination, the Company stated that they have not quantified how much it would cost Georgia Power to install additional controls associated to ELG compliance:

> Q Are you aware that on March 2023, EPA published a revision to the ELG rule that would require enhanced wastewater treatment beyond what you're currently planning to install at your coal plants?
> A (Witness Grubb) Yes. Relatively familiar with it, yes.
> Q Okay. Have you quantified how much it will cost Georgia Power to install those additional controls?
> A (Witness Grubb) We have not.

[9] 88 Fed. Reg. 18824 (Mar. 29, 2023).
[10] GPC Response to STF-PIA-10-6.
[11] *Id*. "the Company anticipates incurring additional capital costs for retrofits if physical-chemical wastewater treatment systems are required for combustion residual leachate at coal combustion residual landfills."
[12] See STF-PIA-10-6(a): "approximately $580M for membrane-based FGD wastewater treatment at Plant Bowen. This does not include costs for a ZLD system, which would likely include additional storage tanks, pumps, and piping to reuse the permeate/distillate as make-up water to the boiler or FGD."

Tr. 0525:11-21. Although the cost estimates of ELG compliance might still be in flux, those costs are entirely avoidable and GPC should opt to retire these coal units instead of investing more heavily in them.

2. *The Company and ratepayers would benefit from including Section 111 Rules in GPC's modeling*

As with the ELG rule, the greenhouse gas regulations proposed under Section 111 of the Clean Air Act ("Section 111 Rules") will increase costs to continue operating the Company's coal plants beyond 2031: these costs "could be substantially higher, and the plants' operation limited, relative to what GPC projected in its 2023 Resource Mix Study." Sierra Club Direct Testimony of Glick and Metz at 6. Section 111 Rules will apply to many of Georgia Power's new and existing resources. Compliance pathways differ based on (1) whether the unit is coal or gas; (2) whether the unit is existing or new; (3) how much the unit runs; and (4) when the unit is scheduled to retire. Section 111 Rules would reduce operations of new gas and existing coal plants and/or require major investments in or carbon capture and sequestration ("CCS") conversion and hydrogen co-firing capability.

Because Bowen and Scherer 1 and 2 coal plants are currently scheduled to retire in 2035,[13] these units "will need to be retrofitted to co-fire with natural gas starting in 2030". Sierra Club Direct Testimony of Glick and Metz at 52. But, as witnesses Glick and Metz explain, "if the retirement dates were shifted earlier, to 2032, they do not need to do anything to comply with the proposed Section 111 Rules. This would allow them to avoid costly investments for conversion to co-fire on gas." *Id*. Further, Scherer Unit 3 and Gaston Units 1-4 "will not be required to take any compliance actions unless GPC extends their retirement dates to 2032 or beyond." *Id.*

[13] GPC 2023 IRP Update at 27; Supplemental GPC Response to STF-JKA-2-2, Supplemental Attachment B.

In rebuttal testimony, GPC claimed "the implications of a final 111 Rule are captured within the range of carbon pressure scenarios included in the 2023 IRP Update". GPC Rebuttal Testimony of Grubb et al. at 40.. However, these carbon pressure scenarios

> provide minimal insight into the potential impact of the Section 111 Rules (...) The Company only included very limited potential compliance pathways in its modeling, it also did not account for the risk associated with nascent CCS technologies, and it has not analyzed the impacts of the Section 111 Rules on existing units such as Bowen and Scherer.

Sierra Club Direct Testimony of Glick and Metz at 53-54. Because Georgia Power did not model compliance with any of the Section 111 pathways, it is not clear which option would pose the greatest costs to customers. During cross examination, the Company admitted it has not decided how to comply with Section 111 Rules when they go final this spring:

> Q How do you plan to comply with Section 111 at each of your remaining coal units?
> A (Witness Grubb) So, Commissioners, because that rule has not been finalized, a state plan has not been developed and we don't know what kind of legal challenges would result and what the final rule will be. We haven't put together plans on how to comply with 111. In the '25 IRP update, based on whatever that final rule is this summer, we would -- we would address it in the '25 IRP.
> Q Okay. Are you aware that for coal units that you'll plan to retire before 2035, you'll need to operate them at a 20 percent or less capacity factor and not exceed current emissions? (...)
> A (Witness Grubb) Subject to check, but I remember something along those lines, yes.

Tr. 0514:12-0515:5. During Sierra Club's witnesses Glick and Metz's cross examination, Commissioner Pridemore inquired about the relevance of the Section 111 Rules in this proceeding:

> COMMISSIONER PRIDEMORE: [I]s it safe to assume, though, that if the EPA is so willing to roll back (...) conditions that they've already put forward in the proposed rule just yesterday, that they wouldn't roll back more of the proposed rule or adopt none of it? I mean, that's safe to assume, as well; right?

> MS. GLICK: It's certainly possible. I think it's quite likely based on what we've seen that the EPA will issue some manner of control for existing coal plants and the new gas plants. And we're just asking the company to model. So it doesn't take that much time or resources to do a modeling exercise. And the benefit of knowing the results is the company will know. There might be resource options that look good regardless of whether the EPA rule is finalized or not. Then the company knows: We can go ahead with those because it doesn't matter. And it can identify which resource options could be at risk. It's information. It's additional information to make better planning decisions.

Tr. 1423:6-1425:6. Even if some details of the Section 111 Rules are still uncertain, "the Company needs to start understanding the likely impacts [] now so that it can begin positioning itself for future compliance, rather than investing in assets that will require either expensive retrofits or capacity factor limits within a few years". Sierra Club Direct Testimony of Glick and Metz at 53. While evaluating the impact of the Section 111 Rules does not lock Georgia Power into making any specific resource decisions, it does make the utility better informed and shows which resource options are no-regrets options. GPC could have incorporated analysis of the proposed Section 111 rules in its modeling, as part of responses to discovery, or for rebuttal testimony, but it chose not to despite intervenor concerns.

To be better prepared and give this Commission a full picture of the true costs of running its fossil plants, GPC should add a scenario to its Resource Mix Study that fully accounts for Section 111 Rules, "including realistic cost estimates for [CCS] on existing and new proposed fossil resources, and the potential for capacity factor limits and hydrogen co-firing." Sierra Club Direct Testimony of Glick and Metz at 7.

V. The PSC should not approve the proposed FlexCapacity framework or, if the PSC approves it, it should only be used to procure BESS.

Sierra Club agrees with paragraph 18 of the proposed Stipulation between PIA Staff and the Company, which states that "[t]he Flex Capacity framework filed in the 2023 IRP Update is not approved". Stipulation at 4. However, if the Commission decides to approve the Flex Capacity framework, it should only be used to procure BESS. This is in alignment both with Sierra Club's witnesses recommendations ("The Commission should only allow GPC to use the Flex Capacity framework to deploy BESS given that the Company's resource plan that it was economic to deploy substantially more BESS than the Company current plans to bring online," Sierra Club Direct Testimony of Glick and Metz at 6-7), and with what the Company is already planning to use the Flex Capacity framework for:

> Q What types of assets are you thinking about acquiring to fill this emergent need under the flex capacity framework; like a PPA, for example?
> A (Witness Grubb) It would most likely be energy storage systems because we [] could build those a little quicker.

Tr. 0518:11-0519:12. Additionally, as witnesses Glick and Metz noted in their testimony, it is "would be reasonable for GPC to use this framework to have its build-plans most closely match with the results of its resource planning analysis." Sierra Club Direct Testimony of Glick and Metz at 37. Therefore, should the Commission approve the Flex Capacity framework, it should direct Georgia Power to implement it only to deploy BESS, an economically available option according to the Company's Resource Mix Study.

CONCLUSION

For the reasons stated above, to satisfy the public interest, the Commission should [1] deny approval of the PPAs with MPC and Santa Rosa before the winter of 2025/2026 when

capacity is really needed; [2] deny Georgia Power's proposal to build three CTs at the Yates site and direct GPC to procure BESS instead; [3] direct Georgia Power to stay committed to retiring Plant Bowen Units 1-2 and Scherer Unit 3 because it saves ratepayer money, and [4] deny Georgia Power's proposed FlexCapacity framework, or allow it only to deploy BESS.

Respectfully submitted this 4th day of April 2024.

/s/ Isabella Ariza
Isabella Ariza
Zachary M. Fabish
Sierra Club
50 F Street, NW - 8th Floor
Washington, DC 20001
isabella.ariza@sierraclub.org
zachary.fabish@sierraclub.org
Curt Thompson
Thompson & Associates Law Firm, PC
3775 Venture Drive, D100
Duluth, GA 30096
(404) 643-2649
curtbthompson@bellsouth.net

Counsel for Sierra Club

BEFORE THE STATE OF GEORGIA

PUBLIC SERVICE COMMISSION

In Re:	)	
Georgia Power Company's	)	Docket No. 55378
2023 Integrated Resource Plan Update	)	

CERTIFICATE OF SERVICE

I hereby certify that I have this 4th day of April 2024, served the following parties via email with the foregoing **POST-HEARING BRIEF OF THE SIERRA CLUB,** filed in the above-styled matter:

Sallie Tanner
Executive Secretary
Georgia Public Service Comm.
244 Washington Street, SW
Atlanta, GA 30334
stanner@psc.state.ga.us

Jamie Barber
Preston Thomas
Robert Trokey
Georgia Public Service Commission
244 Washington Street, SW
Atlanta, Georgia 30334
jamieb@psc.ga.gov
pthomas@psc.ga.gov
rtrokey@psc.ga.gov

Steven Hewitson
Brandon Marzo
Allison Pryor
Troutman Pepper
Nations Bank Plaza
600 Peachtree Street, NE, Suite 3000
Atlanta, Georgia 30308
steven.hewitson@troutman.com
brandon.marzo@troutman.com
allison.pryor@troutman.com

Mark Vinson
Georgia Power Company
241 Ralph McGill Boulevard, NE
Atlanta, Georgia 30308
mvinson@southernco.com

Charles B. Jones, III
Lloyd Avram
Georgia Association of Manufacturers
The Hurt Building
50 Hurt Plaza, Suite 1620
Atlanta, Georgia 30303
(404) 688-0555
cjones@gamfg.org
lavram@gamfg.org

Jeffry C. Pollock
J. Pollock Incorporated
14323 South Outer 40 Road, Suite 206N
Town and Country, Missouri 63017-5734
(314) 878-5814
(314) 878-7339 (fax)
jcp@jpollockinc.com

Scott F. Dunbar
Partner, Keyes & Fox LLP
1580 Lincoln St., Suite 1105
Denver, Colorado 80203

(949) 525-6016
sdunbar@keyesfox.com

Alicia Zaloga
Assistant, Keyes & Fox LLP
1155 Kildaire Farm Road, Ste. 202-203
Cary, North Carolina 27511
(919) 825-1739
azaloga@keyesfox.com

Kimberly ("Kasey") A. Sturm
Weissman PC
One Alliance Center, Fourth Floor
3500 Lenox Road
Atlanta, Georgia 30326
(404) 926-4630
kaseys@weissman.law

Peter J. Andrews
Metropolitan Atlanta Rapid Transit Authority
2424 Piedmont Road, NE
Atlanta, Georgia 30324
pandrews@itsmarta.com

Bryan Jacob
Southern Alliance for Clean Energy
1455 Hampton Hill Drive
Alpharetta, Georgia 30022
(770) 891-5927
bryan@cleanenergy.org

William Bradley Carver Sr. Esq.
Hall Booth Smith, P.C.
191 Peachtree Street, NE
Suite 2900
Atlanta, Georgia 30303
Tel: 404-954-5000
Fax: 404-954-5020
bcarver@hallboothsmith.com

Simon Mahan
Southern Renewable Energy Association
11610 Pleasant Ridge Rd.
Suite 103 #176
Little Rock, Arkansas 72223
337-303-3723
simon@southernwind.org

Whit Cox
Southern Renewable Energy Association
337 Druid Oaks Northeast
Atlanta, Georgia 30329
501-701-0874
whit@southernrenewable.org

Liz Coyle
Georgia Watch
55 Marietta Street
Suite 903
Atlanta, Georgia 30303
404-525-1085 ext. 402
lcoyle@georgiawatch.org

Stephanie U. Eaton
Carrie H. Grundmann
Spilman Thomas & Battle, PLLC
110 Oakwood Drive
Suite 500
Winston-Salem, North Carolina
Tel: (336) 631-1062
Fax: (336) 725-4476
seaton@spilmanlaw.com
cgrundmann@spilmanlaw.com

Steven W. Lee
Spilman Thomas & Battle, PLLC
1100 Bent Creek Blvd., Suite 101
Mechanicsburg, Pennsylvania 17050
Phone: (717) 791-2012
Fax: (717) 795-2743
slee@spilmanlaw.com

Peter Hubbard
Georgia Center for Energy Solutions
55 Leslie St. SE
Atlanta, Georgia 30317
(404) 226-4448
peter@georgia-ces.org

John Joseph McNutt
Regulatory Law Counsel

U.S. Army Legal Services Agency
Office of the Judge Advocate General
Environmental Law Division
9275 Gunston Road
Suite 4300
Fort Belvoir, Virginia 22060-5546
(619) 302-9642
john.j.mcnutt.civ@army.mil

Chandra Farley
John R. Seydel
City of Atlanta, Mayor's Office of Sustainability & Resilience
55 Trinity Avenue
Atlanta, Georgia 30303
470-316-1936
470-421-6160
cfarley@atlantaga.gov
Jrseydel@atlantaga.gov

Alicia Brown
City of Savannah, Office of Sustainability
801 E. Gwinnett Street
Savannah, Georgia 31401
912-651-6838
alicia.brown@savannahga.gov

David Nifong
City of Decatur, City Manager's Office
2635 Talley Street
Decatur, Georgia 30030
404-295-2764
david.nifong@decaturga.com

Mike Wharton
Athens-Clarke County Unified Government,
Sustainability Office
110 Bray Street
Athens, Georgia 30601
706-613-3838
Mike.Wharton@accgov.com

H. Gordon Kenna
DeKalb County Government,
Department of Public Works
1300 Commerce Drive
Decatur, Georgia 30030
404-371-2000
hgkenna@dekalbcountyga.gov

Kathy Reed
DeKalb County Government,
Department of Planning and Sustainability
178 Sams Street
Decatur, Georgia 30030
404-859-9145
kdreed@dekalbcountyga.gov

Donald Moreland
Georgia Solar Energy Association
1199 Euclid Avenue
Atlanta, GA 30307
P: (770) 548-2714
F: (404) 521-9909
don@solarcrowdsource.com

Jim Clarkson
Resource Supply Management
135 Emerald Lake Road
Columbia, South Carolina 29209
803-312-3500
jclarkson@rsmenergy.com

Robert B. Baker
Robert B. Baker, P.C.
2480 Briarcliff Road, NE
Suite 6
Atlanta, Georgia 30329
706-207-5002
bobby@robertbbaker.com

Kimberly Scott
Georgia WAND Education Fund Inc
250 Georgia Ave SE Ste. 202
Atlanta, Georgia 30312
kim@georgiawand.org
info@georgiawand.org

Mr. Newton M. Galloway

Ms. Terri M. Lyndall
Galloway & Lyndall, LLP
The Lewis Mills House
406 North Hill Street
Griffin, Georgia 30223
ngalloway@gallyn-law.com
tlyndall@gallyn-law.com

Kimberly B. Frank
K&L Gates LLP
1601 K Street NW
Washington, DC 20006
202-778-9064
kimberly.frank@klgates.com

Tyler Mauldin
Microsoft Corporation
200 17th Street NW
Atlanta, Georgia 30363
tylermauldin@microsoft.com

Jennifer Whitfield
Bob Sherrier
Southern Environmental Law Center
Ten 10th Street NW, Suite 1050
Atlanta, Georgia 30309
P: (404) 521-9900
F: (404) 521-9909
jwhitfield@selcga.org
bsherrier@selcga.org