



RATEPAYER ROBBERY – THE TRUE COST OF PLANT VOGTLE

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INTRODUCTION

Ratepayer Robbery – The True Cost of Plant Vogtle is a research and communication effort designed to promote public understanding and civic accountability. What is meant by accountability? That means holding the Georgia Legislature, the Georgia Public Service Commission (PSC), and Georgia Power/Southern Nuclear accountable for decision-making that reflects malfeasance, corporate greed, and commission incompetence and has imposed scandalous and continuous rate increases on Georgia customers. Although the Public Service Commission's role is in part to protect consumers from monopoly power, they have been woefully remiss in their duties to the people of Georgia. This report will explain how, and why.

This report focuses on the two still-under-construction, new electric generating units at Plant Vogtle, the most expensive power plant ever built on earth.¹ As of late 2021 the cost for the two new nuclear reactor units now exceeds \$32 billion, a stunning number for the relatively small 2200 megawatts (MW) of electricity they will produce annually. This price tag is 6 to 9 times higher than the cost of other energy choices that could produce the same amount of power. Yet, the decision to continue with the most expensive choice possible was made again and again by the Commissioners at the Georgia Public Service Commission. More affordable energy choices could have been made in 2009 when this project was first approved; the contrast was even more true in 2017 when a critical, mid-project decision point arose and approval was granted to continue the project.

There is a reason why Georgia is the only state in the nation building new nuclear generation and it's not that the Georgia Public Service Commission has a better understanding or clearer vision than 49 other states. It is because no other regulatory agency would choose the most expensive generation solution possible for new sources of energy, and especially not in 2017 when both natural gas and renewable energy solutions had spectacular, sustained decreases in cost between 2009 and 2017. Analysis showed then that it would be more affordable for consumers to simply start over with other generation solutions, assuming that the 2200 Megawatts of energy was actually required, which it was not ([Do We Need Plant Vogtle](#)).

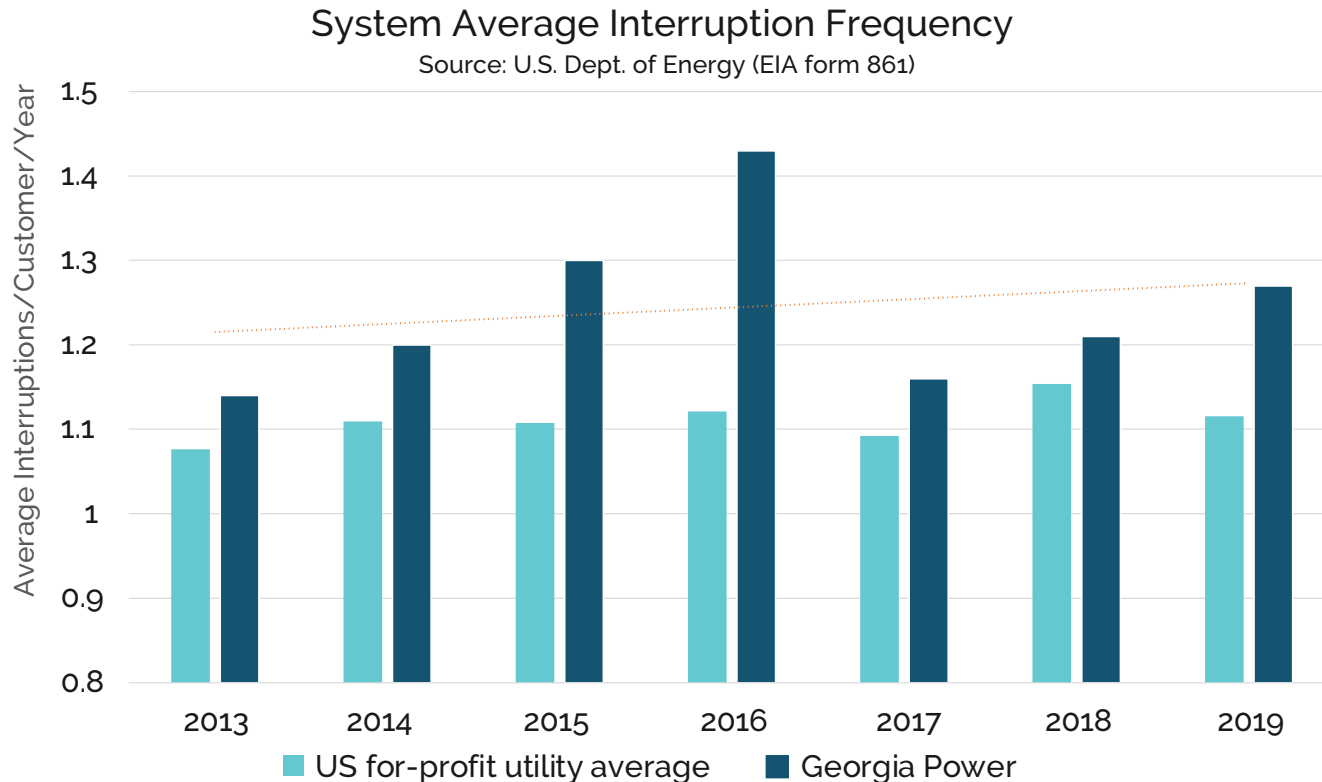
Why did the Georgia PSC allow it? Because the Georgia PSC is "captured" by the utility they regulate, which Georgia Power likes to term as "constructive regulation" but which really means giving Georgia Power whatever they ask for: a blank check, a dream boat of profits, and the highest return on equity (ROE) and debt to equity capital structures of any utility in the United States.

Commissioner Tim Echols says this unusually high return on equity (ROE) is deserved because of Georgia Power's "superior service".² However, by any metric, including its duration and frequency of outages, Georgia Power ranks near the bottom.

1 Davey, Ed. "What is the most expensive object on Earth?" *BBC News*, April 29, 2016 <https://www.bbc.com/news/magazine-36160368>. Note that the UK's Hinkley Point in Somerset, England, owned by EDF, is projected to cost \$22 billion pounds in January 2021 according to EDF which converts to \$30 billion U.S. dollars. Plant Vogtle costs are projected at \$32.3 billion.

2 Szilagyi, Jessica. "Georgia Power Customers to See Increase in Rates in 2020." *All On Georgia*, December 19, 2019. <https://allongeorgia.com/georgia-state-politics/georgia-power-customers-to-see-increase-in-rates-in-2020/>

Figure 1: Georgia Power system outages consistently exceeds U.S. averages



In fact, the real reason the Georgia Commission is authorizing high ROE and favorable capital structure is that Wall Street ratings agencies incorporate financial risks related to the Plant Vogtle project into their analyses. The hope was that credit downgrade risks resulting from the extreme costs and schedule delays for Plant Vogtle would be mitigated by favorable financial treatment by the commission. However, despite the record-setting ROE and capital structure authorized in December of 2019, Georgia Power's credit rating was still downgraded as problems with Plant Vogtle's delayed timeline and soaring costs continued to occur through 2020 and into 2021.³

This project involves the state's only investor-owned electric utility (Georgia Power), 34 of Georgia's 41 electric membership cooperatives and 42 of Georgia's 53 municipal electric utilities. In all, these 77 utilities serve 3.8 million Georgia households and more than 507,000 Georgia businesses. These 77 utilities account for more than 93% of all electricity sold to retail customers in the state.⁴

Make no mistake about it, this project affects nearly everyone living in Georgia.

³ Fitch Affirms Georgia Power's IDR at 'BBB+'; Outlook Negative, *Fitch Ratings*, August 2, 2021. <https://www.fitchratings.com/research/corporate-finance/fitch-affirms-georgia-power-idr-at-bbb-outlook-negative-02-08-2021>

⁴ See US Energy Information Administration's Electric power sales, revenue, and energy efficiency Form EIA-861 detailed data files - Sales_Ult_Cust_2019.xlsx (Nov. 15, 2019), available at <https://www.eia.gov/electricity/data/eia861/>.

WHAT IS PLANT VOGTLE?

The Alvin W. Vogtle Electric Generating Plant, also known as Plant Vogtle, is a two-unit nuclear power plant located in Burke County, near Waynesboro, Georgia, approximately 175 miles southeast of Atlanta. It is named after former Southern Company board chairman Alvin Vogtle. Units 1 and 2 were completed in 1987 and 1989, and generates 1,215 MW each, or combined 2,430 MWs.

What are Vogtle Units 3 and 4?

Vogtle units 3 and 4 are two under-construction AP1000 pressurized water nuclear reactors with a nameplate capacity of 1,100 MW each. They are being built on the grounds of the existing Vogtle nuclear power plant in Burke County, Georgia, alongside units 1 and 2.

Vogtle Ownership

Vogtle units 3 and 4 are jointly owned by four entities.⁵

The ownership breakdown is:

- Georgia Power Company: 45.7%
- Oglethorpe Power Company: 30%
- Municipal Electric Authority of Georgia (MEAG): 22.7%
- Dalton Utilities: 1.6%

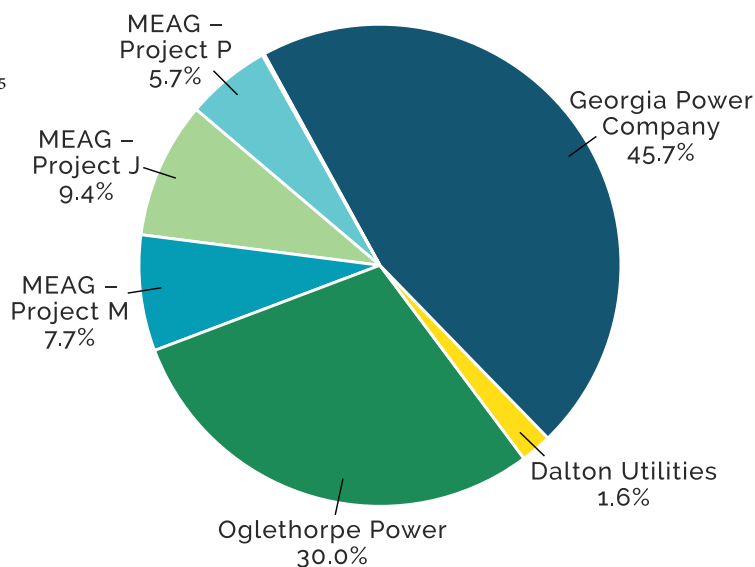
Technically, the ownership of Vogtle units 3 and 4 is divided among six entities. To address financing requirements, MEAG transferred its ownership share to three subsidiary limited liability companies:

MEAG Power SPVM, LLC (Project M Entity); MEAG Power SPVJ, LLC (Project J Entity); and MEAG Power SPVP, LLC (Project P Entity).⁶ Individual “project” amounts below roll up to MEAG’s total ownership of 22.7% percent:

Project M: 7.69%

Project J: 9.35%

Project P: 5.66%



Vogtle Construction Schedule

Construction of Vogtle units 3 and 4 began in August 2013,⁷ in the midst of the so-called “nuclear renaissance.” The units were initially projected to come online in April 2016 (unit 3) and April 2017 (unit 4).⁸ These projected in-service dates have proven to be completely unreliable.

⁵ Larson, Aaron. “Fate of Nuclear Expansion Hinges on Minority Owners.” *Power Magazine*, Aug. 22, 2018. <https://www.powermag.com/fate-of-vogtle-nuclear-expansion-hinges-on-minority-owners/>.

⁶ United States Security & Exchange Commission, 8-K (September 26, 2018). <https://www.sec.gov/Archives/edgar/data/41091/000009212218000059/so-ga8xkcoxownervote9x18.htm>

⁷ U.S. Nuclear Regulatory Commission Site Permit and Limited Work Authorization <https://www.nrc.gov/reactors/new-reactors/esp/vogtle.html>

⁸ Southern Company Plant Vogtle Media Guide[®] (PDF) (Press release). Southern Company. June 2011. See page 44. https://web.archive.org/web/20111227121317/http://southerncompany.com/nuclearenergy/SNCmedia/Vogtle_Media_Guide.pdf.

In the 24th semi-annual Vogtle Construction Monitoring report, filed in February of 2021, Georgia Power reported that the target in-service date remains November 2021 for Unit 3, but “significant risk remains.”⁹ On March 19, 2021, an *Atlanta Journal-Constitution* article quoted Georgia Power’s parent company, Atlanta-based Southern Company, as acknowledging that the company is likely to miss the 2021 deadline for completing the first of two new nuclear reactors at Plant Vogtle, among other reasons, due to quality concerns related to “electrical commodity installations.”¹⁰

In a June 7, 2021 filing, independent Plant Vogtle monitor Donald Grace outlined the numerous reasons why the company’s schedule estimates are unreliable, and concluded that the units would likely not be in service in 2021 at all.¹¹ In fact, on July 29, 2021, Georgia Power issued a press release that due to “productivity challenges and additional time for testing and quality assurance,” they were projecting a Unit 3 in-service date of Q2 2022 and a Unit 4 in-service date of Q1 2023, a three-to-four-month delay for each unit. The project capital also increased \$460 million.¹² It is difficult to know when Units 3 and 4 will be in-service because two additional delays were announced just since July, confirming Mr. Grace’s June 2021 testimony that company estimates are unreliable. Current projections are now at February of 2024 for project completion but it is difficult to take company estimates seriously.

Indeed, even sitting commissioners knew the schedule was unreliable and unlikely to be met as promised, despite their decisions on key votes indicating otherwise. In an interview he gave to WABE radio in February 2018, outgoing PSC Chairman Stan Wise was asked if he was confident there won’t be any more delays related to Vogtle units 3 & 4. Commissioner Wise quipped, “I wouldn’t bet my house on a 2021 date.”¹³

Georgia's Twin in South Carolina: Plant V.C. Summer

On March 27, 2008, South Carolina Electric & Gas applied to the Nuclear Regulatory Commission (NRC) for a Combined Construction and Operating License (COL) to build two 1,100 MW AP1000 pressurized water reactors at the existing one-reactor site. One day later on March 28, 2008, Southern Nuclear Operating Company submitted its application for combined licenses for the same technology, two AP1000 advanced passive pressurized-water reactors for Vogtle Electric Generating Plant (VEGP) Units 3 and 4. As in South Carolina, the Georgia reactors were to be built by Westinghouse using a “simplified” design that was supposed to accelerate construction.¹⁴

The NRC issued licenses for Plant Vogtle on February 10, 2012 and one month later for Plant Summer. Both 2-reactor plants were originally estimated to cost about \$9 billion and scheduled for completion in 2016. But new reactor construction immediately fell behind schedule and billions of dollars over budget, culminating with a catastrophic bankruptcy filing by Westinghouse on March 17, 2017. This triggered decisions on whether the projects should proceed for both Georgia and South Carolina, ultimately reaching dramatically different conclusions.

The first decision was quickly made in July, 2017, when the co-owners of V.C. Summer, (South Carolina Electric & Gas, and Santee Cooper), announced that the project was terminated, leaving \$9 billion in costs for their customers to pay, but saving many more billions in cost overruns that they knew their customers could not afford.

9 See Georgia Power’s “Twenty-fourth Vogtle Construction Monitoring Report”, Dkt. 29849, (Feb. 18, 2021) available at <https://psc.ga.gov/search/facts-document/?documentId=184446>.

10 Kempner, Matt “Georgia Power now says Vogtle nuclear ‘likely’ to bust deadline”, *Atlanta Journal-Constitution*, March 19, 2021, available at <https://www.ajc.com/ajcjobs/georgia-power-now-says-vogtle-nuclear-likely-to-bust-deadline/SHLBRV4SVFDSPPFUZPF7QII5NA/>.

11 See Testimony of Donald Grace, Document Filing 185988, Dkt. 29849 (June 7, 2021) <https://psc.ga.gov/search/facts-document/?documentId=185988> p. 5

12 Georgia Power Press release, Jul 29 2021 <https://www.georgiapower.com/company/news-center/press-releases.html>

13 See *WABE interview* “Outgoing PSC Chairman: ‘I Wouldn’t Bet My House’ On Plant Vogtle Schedule”, 2/21/2018, at minutes 7:10 and 8:04, available at <https://www.wabe.org/outgoing-psc-chairman-wouldnt-bet-house-plant-vogtle-schedule/>.

14 Temple, James “Meltdown of Toshiba’s Nuclear Business Dooms New Construction in the U.S.” *MIT Technology Review*, February 17, 2017. <https://www.technologyreview.com/2017/02/17/153956/meltdown-of-toshibas-nuclear-business-dooms-new-construction-in-the-us/>

The decision triggered investigations from many directions as questions arose about how this expensive project was ever considered appropriate for a small state like South Carolina. In February of 2020, the U.S. Securities and Exchange Commission charged SCANA Corp., parent of South Carolina Electric & Gas, and two of its former senior executives for repeatedly making false and misleading statements to investors, regulators and consumers between 2015 and 2017 about the status of the project. On July 3rd, 2020 Steve Byrne, the former vice president of SCANA Corp., pleaded guilty in federal court to defrauding electric customers and lying about construction progress.¹⁵ On December 3rd, 2020 SCANA Corp. and its subsidiary agreed to a \$137.5 million settlement to resolve civil-fraud charges.¹⁶

What is unclear is why similar statements made by executives for Georgia Power, Southern Nuclear, and Southern Company are uninvestigated. Plant Vogtle cost and schedule estimates from the company made through state filings are equally misleading and unreliable.¹⁷ Georgia Power's website mentions nothing about Plant Vogtle being many years late in schedule delays and billions over budget in unexpected costs.¹⁸ Similarly, in Southern Company's 2020 Annual Report and Proxy Statement, President and CEO Tom Fanning's letter to shareholders celebrates the largess of the Georgia Public Service Commission while not mentioning the years of schedule delays and billions of dollars in unexpected costs for Georgia consumers and eventual harm to shareholders.¹⁹

Excerpt from Letter from our Chairman and Chief Executive Officer

Dear Fellow Stockholders:

By all accounts, 2019 was an outstanding year for Southern Company and our subsidiaries, as we performed well across a broad range of metrics. We reached all of our major construction milestones for 2019 in the construction of new nuclear Units 3 and 4 at Plant Vogtle. Operational performance at our state-regulated utilities was superb, with record generation and transmission performance. We concluded several key regulatory proceedings, including constructive base rate cases for Georgia Power, Nicor Gas and Atlanta Gas Light.

These and other accomplishments were acknowledged by the markets, as our share price increased 45% in 2019, with an increase in market capitalization of over \$20 billion.

Thomas A. Fanning

Chairman, President and Chief Executive Officer

APRIL 13, 2020

¹⁵ Brown, Andrew and Avery Wilks, "Former SCANA executive pleads guilty to fraud charges tied to failed SC nuclear project" *The Post and Courier*. July 23, 2020. https://www.postandcourier.com/business/former-scana-executive-pleads-guilty-to-fraud-charges-tied-to-failed-sc-nuclear-project/article_26e23ca8-c50b-11ea-8377-e7b39854212b.html

¹⁶ Hagel, Jack "South Carolina Utility Agrees to \$137.5 Million Settlement to Resolve Fraud Charges", *Wall Street Journal*, Dec. 3, 2020 <https://www.wsj.com/articles/south-carolina-utility-agrees-to-137-5-million-settlement-to-resolve-fraud-charges-11607037368>

¹⁷ See Testimony of Donald Grace, Document Filing 185988, Dkt. 29849 (June 7, 2021) <https://psc.ga.gov/search/facts-document/?documentId=185988> p. 6.

¹⁸ See Plant Vogtle Unit 3 and 4 Project Update, Productivity and Progress at <https://www.georgiapower.com/company/plant-vogtle.html>

¹⁹ See Southern Company 2020 Notice of Annual Meeting of Stockholders and Proxy Statement Wednesday, May 27, 2020 Letter to Shareholders Page 3. https://s2.q4cdn.com/471677839/files/doc_financials/2019/annual/2020-Southern-Company-Proxy.pdf

In 2019 the Georgia PSC settled a rate increase proceeding in very favorable terms for Georgia Power. The desire to prop up Southern Company’s stock price and provide cover for the Vogtle project’s failures provided motivation for the Georgia Public Service Commission to grant Georgia Power an exceptionally high ROE of 10.5%, as part of that proceeding, a full percentage point above what other regulated utilities are awarded in this era of low credit costs. An incredibly generous earnings band of 150 basis points allows the utility to earn up to 12% ROE and provides Georgia Power a profit stream that few utilities enjoy. Another technique the commission used to shore up Plant Vogtle’s failures was to change Georgia Power’s capital structure from an industry average of 50% in equity to debt, to an unusually high 56% equity which increases costs to customers even more. While these decisions coming out of the \$2 billion rate case proceeding before the commission in 2019 might seem unrelated to Plant Vogtle, they are anything but.²⁰

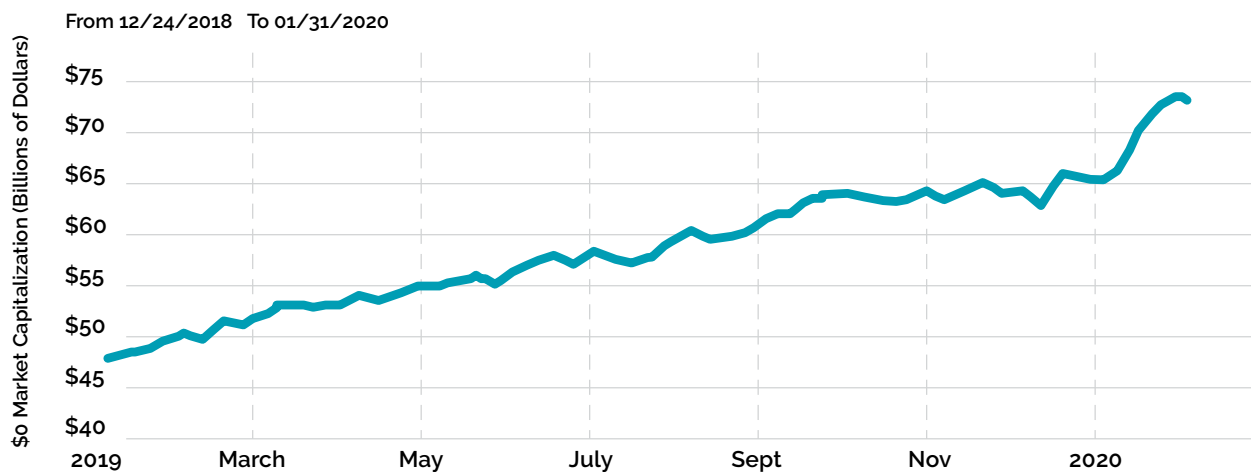
WHO ARE THE GEORGIA PUBLIC SERVICE COMMISSIONERS?

The Georgia Public Service Commission is a state agency that is run by five commissioners who are elected statewide and serve staggered six-year terms. Since 2009, when the Plant Vogtle expansion first came to life, the commission has been controlled entirely by Republicans.

“ In addition, none of the commissioners are Georgia Power customers — they live in parts of Georgia served by Electric Membership Corporations. Thus, commissioners make decisions for 2.5 million Georgia Power Customers that do not affect them, their families or their neighbors. ”

The agency claims to “safeguard your interests” and makes claims on their website like, “The Commission protects consumers’ interests while abiding by legal standards in setting rates.” Perhaps most surprising is this one: In regulating rates, the Commission does not guarantee profits to service providers. It is the company’s responsibility to make prudent, sound business decisions to produce earnings.²¹ That is hardly the case when examining the commission’s behavior with Plant Vogtle.

Georgia Power's parent Southern Company stock growth



20 See PSC filing Order Adopting Settlement Agreement as Modified (Feb. 6 2020) <https://psc.ga.gov/search/facts-document/?documentId=179856> Pages 4- 5 Paragraph Section II Commission Action

21 The PSC: An Introduction to Your Georgia Public Service Commission, https://psc.ga.gov/about-the-psc/#past_commissioners

SUMMARY OF KEY STATE-LEVEL VOGTLE EVENTS AND DECISIONS

August 2008	Georgia Power filed Application for Certification for Vogtle units 3 & 4 (Docket 27800)
February 2009	Georgia Nuclear Energy Financing Act (a.k.a. SB 31) passed in Senate and House
March 2009	PSC approved Vogtle expansion, certified cost of \$6.4 billion for Georgia Power's share
April 2009	Georgia Nuclear Energy Financing Act signed into law
May 2009	PSC recertified Vogtle construction and finance costs at \$6.1 billion for Ga Power's share
August 2009	GPC filed its first semiannual Vogtle Construction Monitoring (VCM) report (Docket 29849)
October 2009	PSC Staff first raises possibility of delays and cost overruns
September 2010	GPC filed for approval of NCCR-1 (Docket 32539)
February 2013	GPC files 8th VCM showing delays and cost overruns
October 2013	PSC adopts order in 8th VCM delaying prudency review until Unit 3 online
December 2016	PSC approves Stipulation between GPC and Staff allowing GPC to recover an additional \$2.2 billion from ratepayers and delay operational dates to December 2020
March 2017	Westinghouse declares bankruptcy ²² , Bechtel brought in to oversee remaining work.
August 2017	Georgia Power files 17th VCM, requesting new budget and schedule be deemed reasonable.
December 2017	PSC adopts order in 17th VCM, approving new cost and schedule as reasonable. ²³
February 2021	Georgia Power files 24th VCM with a projected share of \$8.7 billion, an increase of \$1.4 billion over the Commission-approved \$7.3 billion estimated for this filing, and estimated completion dates remaining the same as the 17th VCM, February 2021 for Unit 3 and November 2022 for Unit 4. ²⁴
August 2021	Georgia Power files 25th VCM with a projected share of \$9.2 billion, an increase of \$1.9 billion or 26% in just four years. Estimated completion dates in this filing have already moved twice and are now November 2022 for Unit 3 and November 2023 for Unit 4. ²⁵

22 Hals, Tom and Emily Flitter, "How two cutting edge U.S. nuclear projects bankrupted Westinghouse", *Reuters* (May 2, 2017) <https://www.reuters.com/article/us-toshiba-accounting-westinghouse-nucle/how-two-cutting-edge-u-s-nuclear-projects-bankrupted-westinghouse-idUSKBN17Y0CQ>

23 See Georgia Power's "Seventeenth Vogtle Construction Monitoring Report", Document filing 169459 (Aug. 31, 2017) available at <https://psc.ga.gov/search/facts-document/?documentId=169459> See PD Executive Summary doc.

24 See Georgia Power's "Twenty-fourth Vogtle Construction Monitoring Report", Dkt. 29849, (Feb. 18, 2021) available at <https://psc.ga.gov/search/facts-document/?documentId=184446>


25 See Georgia Power's "Twenty-fifth Vogtle Construction Monitoring Report", Dkt. 29849, (Aug. 31, 2021) available at <https://psc.ga.gov/search/facts-document/?documentId=186935>

FOOL ME TWICE, SHAME ON ME

Given the legendary cost overruns associated with the building of the original Vogtle units (1 and 2), the moral of the story of Vogtle units 3 and 4 might be “fool me once, shame on you; fool me twice, shame on me.” Built in 1987 and 1989, the construction of Vogtle units 1 and 2 remains a cautionary tale today. Originally budgeted at \$660 million for four units, the two completed units ended up costing \$8.9 billion, a stunning *13 times* more expensive than predicted.²⁶

In 2009 what factors led state officials to disregard this horrible nuclear construction track record, when the Georgia Public Service Commission signed off on building Vogtle units 3 and 4, and the Georgia General Assembly required ratepayers pay for the financing costs for the units ahead of time? Is it that Georgia Power and the nuclear industry promised a new day — no more nuclear boondoggles? Promoting streamlined changes in the licensing of nuclear plants, new unit designs, the advent of modular construction and an adequate supply of craft labor, Georgia Power said they would deliver Vogtle units 3 and 4 on-budget and on-time. Additionally, the federal Energy Policy Act of 2005 offered tempting federal incentives for those utilities early out of the gate. The trendiness of nuclear energy was strong, and in Georgia’s case, irresistible. Indeed, even today with scandals and boondoggles apparent in [South Carolina’s failed Plant V.C. Summer expansion](#)²⁷ and Plant Vogtle’s budgeting and timeline failures, there remains strong nuclear energy boosterism.²⁸ What is especially unfortunate is that nuclear energy proponents often do not recognize that other carbon-free solutions are available and much less expensive.²⁹

WHY DID GEORGIA STATE OFFICIALS OPT TO ALLOW IT AGAIN?



Perhaps they thought the delays and cost overruns for Vogtle 1 and 2 were just a fluke. But, what about Tennessee’s Watts Bar Nuclear Plant, “under construction” for 42 years? What about Long Island’s Shoreham nuclear power plant, which cost 80 times the original estimate and was never put into commercial operation? What about the Marble Hill nuclear plant in Indiana that was abandoned after seven years at the cost of \$2.5 billion? The list of nuclear plant failures goes on and on and on.

26 See “Vogtle Electric Generating Plant, Burke County, Georgia” *Power Technology* (Undated), available at <https://www.power-technology.com/projects/vogtle-electric-generating-plant-georgia/>.

27 Lacy, Akela. “South Carolina Spent \$9 Billion To Dig A Hole In The Ground And Then Fill It Back In,” *The Intercept* (Feb. 6, 2019) <https://theintercept.com/2019/02/06/south-carolina-green-new-deal-south-carolina-nuclear-energy/>

28 See Clean Air Task Force, “Advanced Nuclear Energy,” <https://www.catf.us/work/advanced-nuclear-energy/>

29 Engel, Alex and Charles Teplin, Mark Dyson, “Cutting Carbon While Keeping the Lights On,” *Rocky Mountain Institute*, 2021. <https://rmi.org/insight/cutting-carbon-while-keeping-the-lights-on>

While enough for some, promises made by Georgia Power of a new day for nuclear power plant construction did not win over others. Many stakeholders remained clear-eyed including expert witnesses for the Georgia PSC staff who underscored the risks at the very outset.

- In 2008, Dr. William Jacobs testified that, "...the project holds significant risk of schedule delays and cost increases. No AP1000 has been constructed and placed in operation. The licensing process is untested. Most of the major components will be manufactured overseas and transported to the Vogtle site. The modular construction approach has never been used on a nuclear power plant." Dr. Jacobs concluded that the risks are reasonable, but significant.³⁰
- Georgia PSC Public Interest Advocacy Staff expert witness Mr. Tom Newsome outlined similar concerns. "Nuclear plant construction is a complex, lengthy and expensive process under the best of circumstances. The Company proposes to build the first, or one of the first, new nuclear plants in the United States in twenty-five years with a new safety system design. The Units will be fabricated with techniques that have not been used in nuclear construction in the United States. The supply chain and labor issues, as well as the untested regulatory process at the NRC, also present obstacles. These issues by themselves may not represent a significant source of cost overruns but collectively inject a great deal of uncertainty in the project."³¹ He acknowledged Georgia's own past experience as cause for concern: "... the Company's prior experience with nuclear construction for Hatch and Vogtle is an example of the risk of nuclear projects and the need for the Commission to proceed cautiously."³²
- Additionally, Dr. Jacobs took issue with Georgia Power's lack of contingency planning, stating, "...I do have a concern that the Company has not included any contingency in its cost estimate except for a relatively small amount for the owner's scope of work. It is highly improbable that this very large and complicated project will be constructed with no additional cost to the Company beyond the EPC [Engineering, Procurement and Construction] contract cost."³³

But the voice of optimism, some might call it the voice of hubris, drowned out the voices of caution and Georgia state officials authorized the construction of two more nuclear reactors at Plant Vogtle. One solution to undertaking a high-risk project is to shift the risk to someone else. When asked which party has the greatest financial exposure in building Vogtle units 3 and 4, expert witness Newsome spelled it out clearly. "The ratepayer by far. The Consortium's [construction contractors Westinghouse and Stone & Webster] maximum liability is capped... The Company has zero financial exposure except for imprudently incurred costs." He concludes, "The parties with the most knowledge have the least exposure."³⁴

The moral of the story is this — if you make a promise you likely cannot keep, ensure someone else picks up the tab if you fail, known in economics as moral hazard.³⁵ In this case, Georgia Power residential rate-payers have nearly the entirety of the risk. Indeed, some market watchers have even gone so far as to recommend that investors view Southern Company stock as a bond, since the Georgia PSC does not hold management or operational failures to account for rate increases and ROE approvals.³⁶ It is common knowledge in the regulatory community that the Georgia PSC holds the financial needs of Georgia Power in much higher regard than it does the protection of ordinary Georgia residential rate payers.³⁷

30 See Direct Testimony of William R. Jacobs, PhD, Dkt. 27800, at 21 (Dec. 19, 2008), available at <https://psc.ga.gov/search/facts-document/?documentId=116666>

31 See Direct Testimony of Tom Newsome, Dkt. 27800, at 10-11 (Dec. 19, 2008), available at <https://psc.ga.gov/search/facts-document/?documentId=116668>.

32 See Direct Testimony of Tom Newsome, Dkt. 27800, at 14 (Dec. 19, 2008), available at <https://psc.ga.gov/search/facts-document/?documentId=116668>.

33 See Direct Testimony of William R. Jacobs, PhD, Dkt. 27800, at 22 (Dec. 19, 2008), available at <https://psc.ga.gov/search/facts-document/?documentId=116666>.

34 See Direct Testimony of Tom Newsome, Dkt. 27800, at 24 (Dec. 19, 2008), available at <https://psc.ga.gov/search/facts-document/?documentId=116668>.

35 Corporate Finance Institute <https://corporatefinanceinstitute.com/resources/knowledge/other/moral-hazard/>

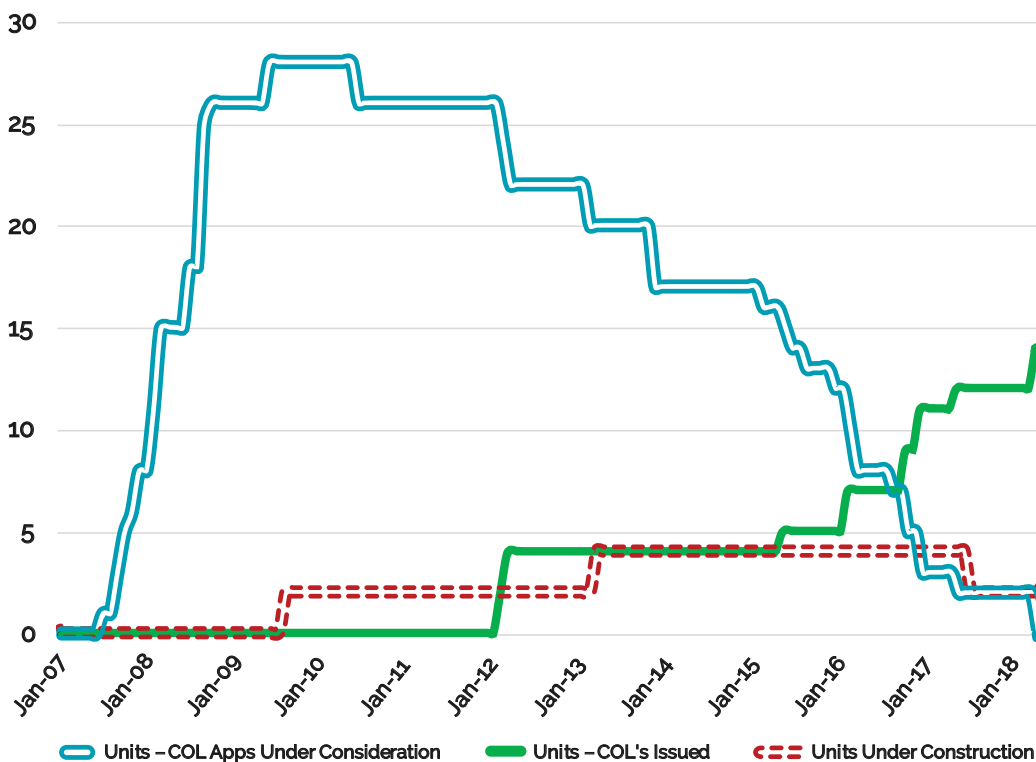
36 Wald, Michael. "Treat Southern Company Like a Government Insured Bond", *Seeking Alpha* https://seekingalpha.com/article/4313082-treat-southern-company-like-government-insured-bond?dr=1&utm_medium=email&utm_source=seeking_alpha

37 See "Top 5 Most Unjust Actions Taken by Your Public Service Commissioners", *Georgia Conservation Voters*, <https://gcvoters.org/5-actions-taken-by-your-public-service-commissioners-to-benefit-georgia-power-and-not-you/>

GEORGIA'S HUBRIS

In the 2007 to 2010 timeframe, the rush to build new nuclear reactors in the United States was fierce. The Vogtle units 3 and 4 started the race in the middle of a crowded pack, but today the project runs alone along an empty racecourse. Most utility competitors withdrew years ago, understanding that the price was not worth the effort. Where had the enthusiasm and optimism gone? What did others see that Georgia's regulators did not?

Figure 1. Combined Operating License Applications Under Consideration and Issued; Units Under Construction



To tell this story, it helps to know where nuclear energy stands today and how we got there. As of May 1, 2021, the United States had ninety-three operating nuclear reactors.³⁸ The bulk of these nuclear units were built between 1970 and 1990, with a group of them completed before the Three Mile Island nuclear accident in 1979 and a group after. The ones built after Three Mile Island were largely carried to completion by the momentum of being already under development with significant sunk costs. Public support for new nuclear power plants, along with Wall Street's, hit a low after the Three Mile Island accident. Sixty-seven planned projects didn't survive the change in public mood and were canceled in the decade after 1979.³⁹

Starting around 2001, some industry experts declared a “nuclear renaissance” in the United States. New designs and a new, streamlined approach to plant licensing promised a new day for nuclear energy. In 2005, President George Bush signed into law the Energy Policy Act of 2005, which provided significant federal incentives for new nuclear power generation. The “nuclear renaissance” hit its stride. In the two years from July 2007 to June 2009, the Nuclear Regulatory Commission (NRC) received 18 applications for combined operating licenses (COL) for 28 new nuclear reactors (See Figure 1).⁴⁰

38 See US Energy Information Administration's “Frequently Asked Questions”, available at <https://www.eia.gov/tools/faqs/faq.php?id=207&t=21>

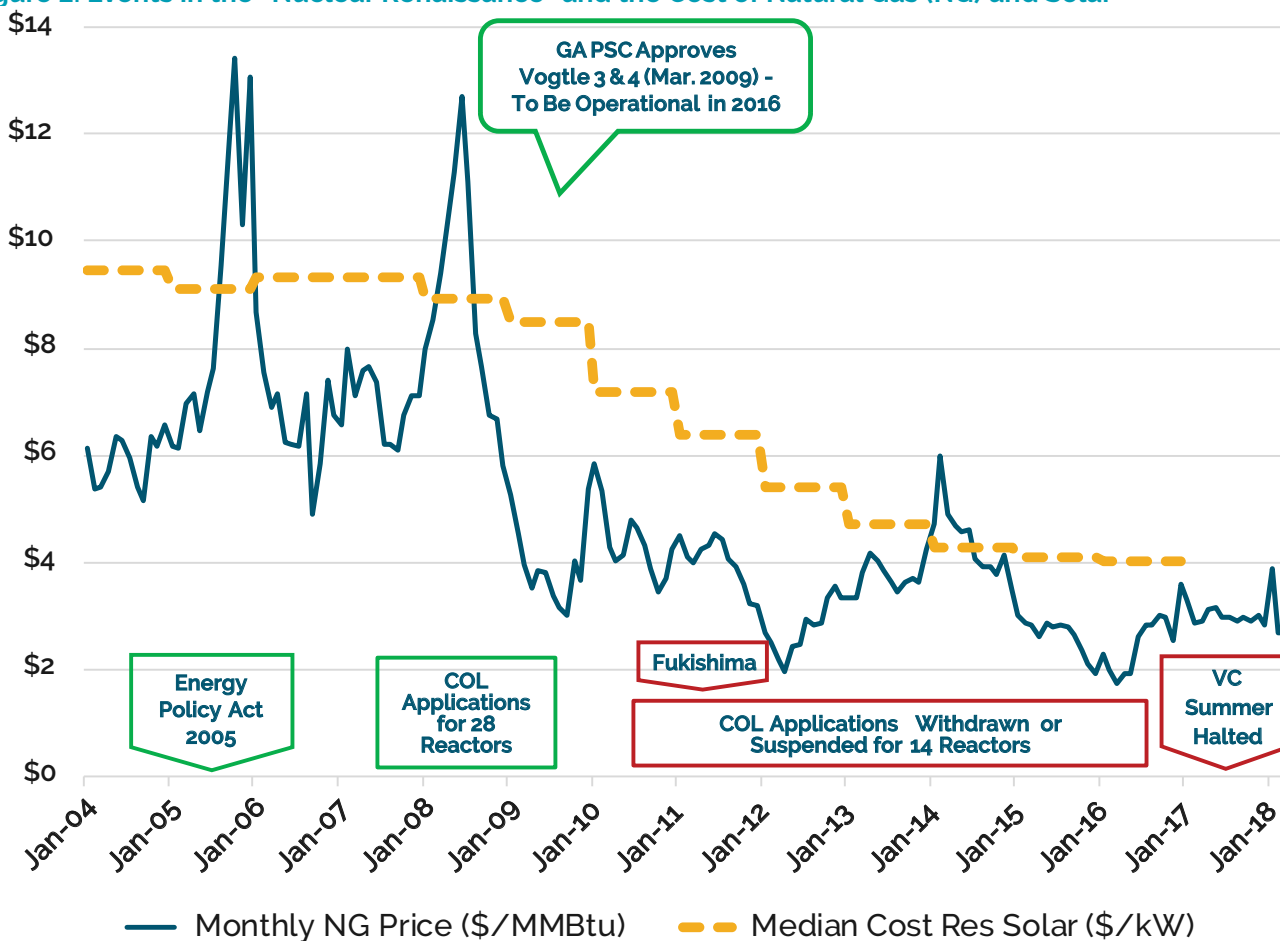
39 See US Energy Information Administration's “Most U.S. nuclear power plants were built between 1970 and 1990”, available at <https://www.eia.gov/todayinenergy/detail.php?id=30972>.

40 See United States Nuclear Regulatory Commission's “Combined License Applications for New Reactors”, available at <https://www.nrc.gov/reactors/new-reactors/col.html>.

The fervor didn't last very long. In 2009 and 2010, natural gas prices dropped, and experts predicted prices would stay low, weakening the economic argument for new nuclear plants. In March 2011, the devastating Fukushima nuclear accident in Japan riveted the world's attention. Utilities began withdrawing or suspending their permit applications. Between June 2010 and December 2016, the NRC issued COLs for 14 new nuclear units, while utilities withdrew or suspended applications for 14 units.

Only two U.S. projects moved forward with construction—Vogtle units 3 & 4 and VC Summer 2 & 3, both in the Southeast, where regulator deference to utility decision-making over consumer protections is strong. Predictably, headwinds against these two nuclear projects only grew stronger as energy resources such as natural gas, energy efficiency and renewable energy dropped in costs.⁴¹ (See Figure 2). As previously reviewed, in July 2017 South Carolina's VC Summer project was canceled.⁴² That cancellation cost billions of dollars but ultimately saved the people of South Carolina many more billions of dollars, possibly \$20 billion dollars if the project had continued along Plant Vogtle's path in Georgia.

Figure 2. Events in the "Nuclear Renaissance" and the Cost of Natural Gas (NG) and Solar⁴³



41 See EIA Declining energy prices lower the cost of living, <https://www.eia.gov/todayinenergy/detail.php?id=26072> (May 3, 2016)

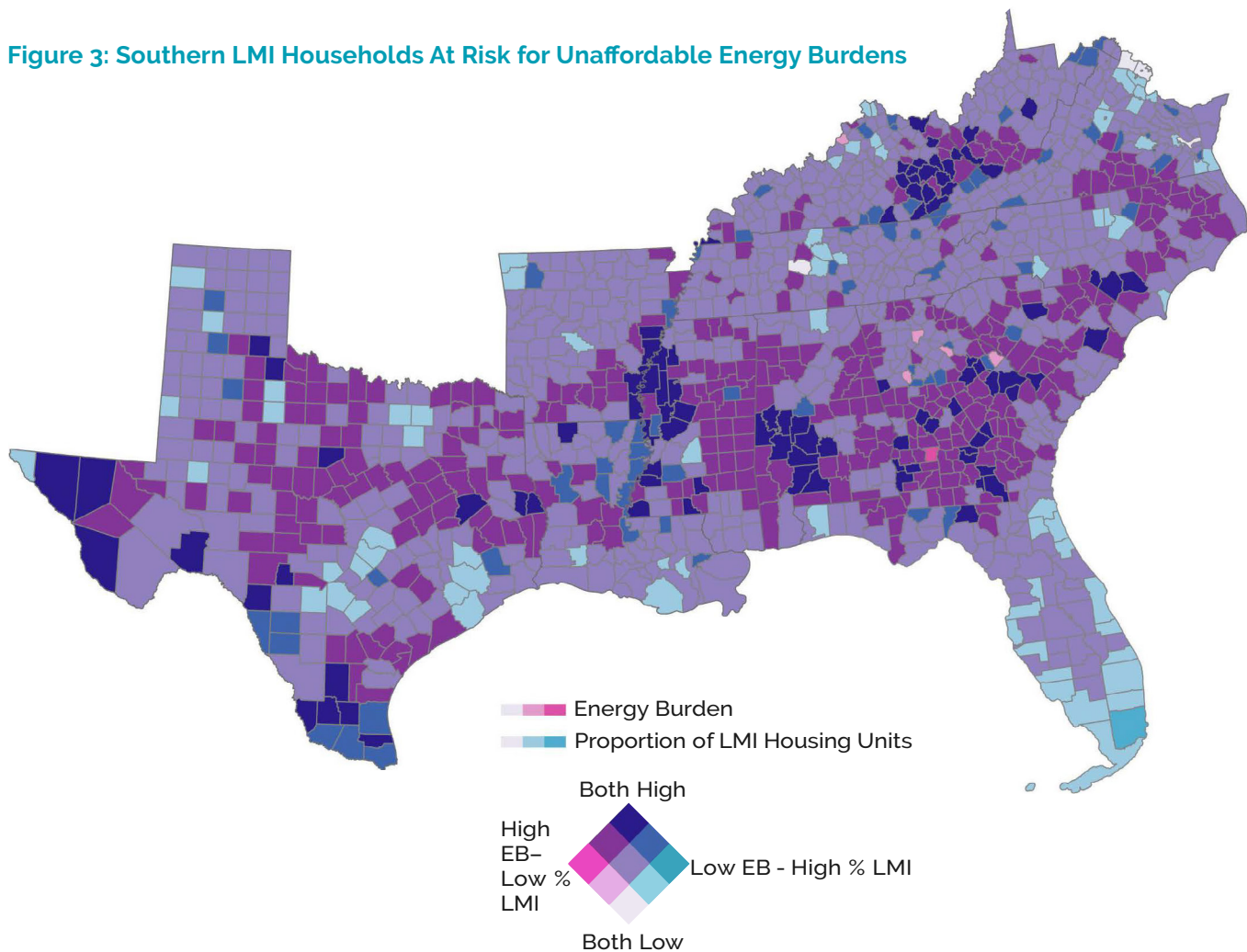
42 See *Charlotte Business Journal's* S.C. utilities stop building \$16B V.C. Summer nuclear expansion (Jul. 31, 2017), available at <https://www.bizjournals.com/charlotte/news/2017/07/31/s-c-utility-votes-to-stop-building-16b-v-c-summer.html>.

43 See Berkeley Lab's "Tracking the Sun 10: The Installed Price of Residential and Non-Residential Photovoltaic Systems in the United States (2017)", available at <https://emp.lbl.gov/publications/tracking-sun-10-installed-price/>. Also see United States Nuclear Regulatory Commission's Combined License Applications for New Reactors (Apr. 25, 2018), available at <https://www.nrc.gov/reactors/new-reactors/col.html>. U.S. Chamber of Commerce: "How Rich is Each State" <https://www.chamberofcommerce.org/how-rich-is-each-us-state/>

So Georgia continued on alone, racking up shocking costs for new nuclear energy for the 10th poorest state in the nation.⁴⁴ During the same time period as the Westinghouse bankruptcy, residential solar costs experienced steep declines that were ignored by the Georgia Public Service Commission. In December 2017, the Georgia PSC approved a revised schedule that pushed the Vogtle date of operation from mid-2016 to the end of 2022, with a newly approved budget at 170% of the original.⁴⁵ Meanwhile, Southern Co. stock has doubled in value since 2011.⁴⁶

The continuation of this expensive and risky project on the backs of Georgians as they struggle to pay their electric bills is shameful. 15.4 million households in the South (35% of all households) report experiencing energy insecurity, the most of any region in the United States. Atlanta is one of ten U.S. cities experiencing the highest energy burden for low-income residents, where the median energy burden for low- and moderate-income households is 10.2%. HUD considers 6% the maximum for an energy bill to be affordable. Only 88 counties in the South have an average energy burden that is deemed affordable for low-income households, while 1,229 have energy burdens that exceed the widely-used 6% affordability threshold. One out of three people in the South struggles to pay their power bill every single month.⁴⁷ (See Figure 3).

Figure 3: Southern LMI Households At Risk for Unaffordable Energy Burdens



44 U.S. Chamber of Commerce: “How Rich is Each State” <https://www.chamberofcommerce.org/how-rich-is-each-us-state/>

45 See Ga PSC Order on the Seventeenth Semi-Annual Construction Monitoring Report for the Period January 1, 2017 through June 30, 2017 available at <https://psc.ga.gov/facts-advanced-search/document/?documentId=170765>

46 Southern Company stock value NYSE – Yahoo Finance <https://finance.yahoo.com/quote/SOhistory?period1=1250294400&period2=1628985600&interval=1m&filter=history&frequency=1m&includeAdjustedClose=true>

47 Southeast Energy Efficiency Alliance, Initiatives, Energy Insecurity in the South (Dec. 11, 2020) <https://storymaps.arcgis.com/stories/4377299f586a493984222bfc6ee84e60>

HOW MUCH WILL VOGTLE COST?

The cost of Vogtle units 3 and 4 is now at \$32.3 billion (see Table 1). This is only a partial accounting because supporters of this project attempt to hide some of these costs by eliminating items paid by “somebody else,” such as the bankruptcy of Westinghouse, for example, or costs that Georgia Power does not intend to recover from ratepayers. However, these are real costs attributable to this project and should not be excluded. It is also difficult to put a value on zero-cost federal loan guarantees of \$12 billion received by this project, although this cost to U.S. taxpayers is significant. In 2009 these risks were studied and published in a report, “Nuclear Loan Guarantees Another Taxpayer Bailout Ahead?,” in which the risk exposure to the federal government and taxpayers from guaranteeing nuclear loans is listed as ranging from \$360 billion to \$1.6 trillion.⁴⁸

What can be accounted clearly is represented in sections of incremental costs as follows:

- **Rows 1–5** represent estimated in-service costs not inclusive of anticipated cost overruns discovered in the June 7th, 2021 filing of VCM independent monitor Mr. Donald Grace.
- **Rows 6–11** represent estimates of new cost overruns from the June 7th, 2021 filing of VCM independent monitor Mr. Donald Grace.
- **Rows 12–14** represent costs often excluded, but actually paid, from the Parental Guarantee from the Westinghouse bankruptcy (see What is the Parental Guarantee), and costs Georgia Power does not intend to recover from ratepayers and will thus be paid by shareholders.

Table 1. Total Cost for Vogtle Units 3 and 4 (millions of \$)⁴⁹

Line Ref	Co-Owner	Share	Information Source	Current Estimated In-Service Cost
1	Georgia Power (GPC)	45.7%	Newsome Panel VCM 25 Testimony, pg 2	\$12,000,000,000
2	MEAG	22.7%	MEAG Annual Info Statement, pg 2	\$7,100,000,000
3	Oglethorpe Power (OPC)	30.0%	OPC 10-Q ending 30 Sept 2021, pg 23	\$8,250,000,000
4	Dalton	1.6%	Dalton 2020 CAFR, pg 99	\$302,800,000
5	Estimated In-Service Cost			\$27,652,800,000

Line Ref	Co-Owner	Information Source	Revised Estimate of In-Service Cost
6	Georgia Power (GPC)	Newsome Panel VCM 25 Testimony, pg 2	\$12,000,000,000
7	MEAG	MEAG Annual Info Statement, pg 2	\$7,100,000,000
8	Oglethorpe Power (OPC)	OPC 10-Q ending 30 Sept 2021, pg 23	\$8,250,000,000
9	Dalton	Dalton 2020 CAFR, pg 99	\$302,800,000
10	Recent estimate of anticipated new cost overrun (<i>note - does not include any estimate of additional financing costs</i>)		Don Grace VCM25 Testimony, pg 5
11	Revised Estimate of In-Service Cost		\$30,652,800,000

Line Ref	Costs Excluded from Estimated In-Service Cost	Information Source	Revised Estimated Cost - Regardless of Who Pays
12	This cost does not include \$3.68 billion paid by Toshiba as a	MEAG Annual Info Statement, pg 56	\$3,680,000,000
13	This cost does not include \$694 million that Georgia Power has spent but does not intend to recover from rate payers	GPC VCM24 Report, Table 1.1, pg 12	\$694,000,000
14	Revised Estimated Cost - Regardless of Who Pays		\$35,026,800,000

48 Schlissel, David and Michael Mullett, Robert Alvarez, “Nuclear Loan Guarantees Another Taxpayer Bailout Ahead?,” 2009, Union of Concerned Scientists.

49 Calculated from these sources:

1. City of Dalton “Comprehensive Annual Financial Report for the Year Ended December 31, 2020,” available at https://www.daltonga.gov/sites/default/files/fileattachments/finance/page/2741/city_of_dalton_2020_cafr.pdf
2. Georgia Power. “Twenty-fifth Semi-annual Vogtle Construction Monitoring Report”, available at <https://psc.ga.gov/search/facts-document/?documentId=186935>
3. Grace, Don. VCM25 testimony of Don Grace, available at <https://psc.ga.gov/search/facts-document/?documentId=187823>
4. Oglethorpe Power Corporation. “Form 10-Q for the quarterly period ended Sept 30, 2021”, page 23, available at <https://opc.com/wp-content/uploads/2021/11/Q321-Form-10Q.pdf>
5. Municipal Electric Authority of Georgia (MEAG). “Annual Information Statement for the Fiscal Year Ended December 31, 2020,” page 2, available at <https://www.meagpower.org/wp-content/uploads/2021/05/MEAG-2020-Annual-Information-Statement.pdf>
6. Newsome, Tom, et al. Panel Testimony Tom Newsome, Philip Hayet, and Lane Kollen, available at <https://psc.ga.gov/search/facts-document/?documentId=187820>

Note that \$32,347,000,000, incredible as it is, is still a conservative number. It does not include the benefits of \$12 billion in taxpayer-backed federal loan guarantees which allowed for extremely low to zero-interest rates on all major loans for this project.⁵⁰ It does not include additional carrying costs as noted in Mr. Grace's June 7, 2021 report. It does not include additional costs resulting from a [June 2021 U.S. Nuclear Regulatory Commission investigation](#) underway to identify what led to remediation work and safety failures for Unit 3 at Plant Vogtle. And it does not include the fact that these units are not yet in service and construction continues. Project management failures identified in Mr. Grace's June 7th, 2021 filing make clear that completing this project will continue to be expensive and difficult.

It is important to know the real costs of building a nuclear plant. It is clear that these costs far exceed the \$32.3 billion documented in *Table 1* above.

HOW MUCH MONEY IS \$32 BILLION ANYWAY?

It is difficult to understand a price tag of \$32 billion dollars and counting. People have a difficult time grasping how much money that is.⁵¹ However, we do know these costs will make electricity produced by Plant Vogtle the most expensive electricity in the history of the world, paid for by one state in the poorest region of the United States — the Southeast. The purpose of a regulatory agency is to allow the flow of benefits while restraining the abuse from a powerful monopoly. This project makes it clear that the Georgia Public Service Commission does not protect the public interest or provide regulatory oversight of Georgia's powerful utility monopoly.

This price tag could have purchased four solar power plants with a week's worth of energy storage⁵², or conversely, the same amount of electricity these two units will produce, 2200 MWs, could have been purchased for only \$8 billion, had any other generation choice been made.

WHAT IS THE PARENTAL GUARANTEE?

Westinghouse was the primary contractor for the construction of Vogtle units 3 and 4 until it filed for bankruptcy in March 2017. Three months later the parent company of Westinghouse, Toshiba, reached a settlement agreement with the project owners that compensates them for damages they claimed stemmed from Westinghouse's failure to perform its obligations under the engineering, procurement and construction (EPC) agreement between Westinghouse and the owners. That EPC agreement included a guaranty by Toshiba of certain Westinghouse obligations. The June 2017 settlement agreement specified that Toshiba's guaranty was now due and the agreed upon amount of the parental guarantee was \$3.68 billion.

The initial settlement agreement outlined a payment schedule that included 40 monthly payments starting in October 2017 and ending in January 2021. Toshiba made the first payment on schedule. The Vogtle co-owners and Toshiba negotiated a new agreement under which Toshiba paid all remaining obligations in December 2017. The parental guarantee obligation has now been paid in full, releasing Toshiba of any liability.⁵³ Toshiba's payment obligations were costs that accrued to the project as shown in *Table 1* above, regardless of who paid.

50 Dooley, Debbi and Sara Barczak. "Rewarding failure: Taxpayers on hook for \$12 billion nuclear boondoggle." *The Hill* April 2, 2019. <https://thehill.com/opinion/energy-environment/436876-rewarding-failure-taxpayers-on-hook-for-12-billion-nuclear>

51 McGinty, Jo Craven, "Grasping Giant Numbers Is Far From Second Nature", *Wall Street Journal*, March 31, 2017. <https://www.wsj.com/articles/grasping-giant-numbers-is-far-from-second-nature-1490952621>

52 EIA July 30, 2019, Construction cost data for electric generators installed in 2017 <https://www.eia.gov/electricity/generatorcosts/archive/2017/> (calculated).

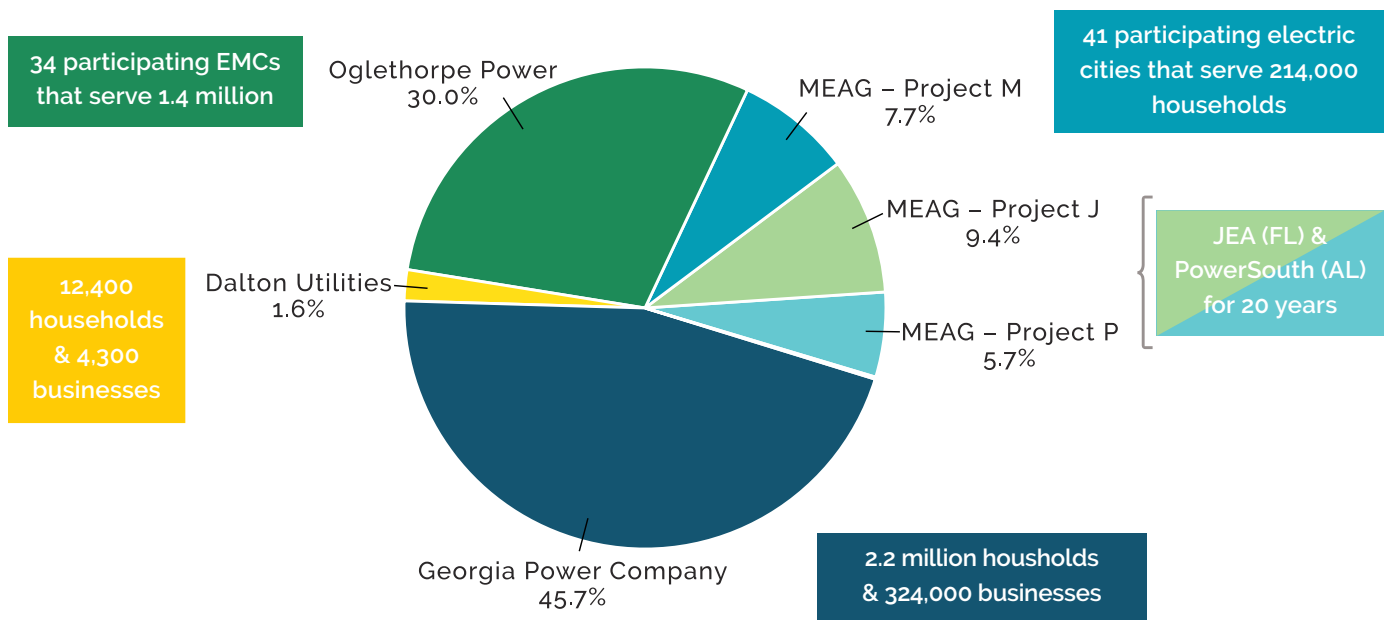
53 Ondieki, Anastacia "Toshiba pays Georgia Power \$3.2 billion for Plant Vogtle", *Atlanta-Journal Constitution* (Dec. 17 2017) <https://www.ajc.com/news/toshiba-pays-georgia-power-billion-for-plant-vogtle/k5141QLRyL19RUoZlrcCLK/>

ARE YOU PAYING FOR VOGTLE? IF YOU LIVE IN GEORGIA, MOST LIKELY YES

Although there are a few exceptions, nearly every utility in the state has agreed to take some of the electricity from this power plant through contracts obligating them and sharing the cost. Since Georgia Power has the largest share of the ownership and responsibility for the expansion, Georgians have the impression that the cost overruns and construction delays only matter to Georgia Power customers. This is incorrect.

Here are the facts: the Vogtle expansion project also involves 34 of Georgia’s 41 electric membership cooperatives and 42 of Georgia’s 53 municipal electric utilities. In all, these 77 utilities account for more than 93% of all electricity sold to retail customers in the state.

It even has interstate implications. Jacksonville Electric Authority in Florida signed a 20-year purchase power agreement for the “Project J” portion of MEAG’s share, while PowerSouth in Alabama entered a 20-year agreement for the power from the “Project P” portion of MEAG’s share.⁵⁴ JEA in particular, has come to regret their involvement once the cost overruns became scandalous and tried to exit their partnership. Lawsuits were filed and counter filed, and in the end JEA lost their case in court and was required to remain a partner against their will.⁵⁵ JEA is a small municipal utility in Jacksonville, Florida, and expected their share of the costs to be \$1.4 billion of the anticipated \$9.5 billion price tag under the fixed-cost agreement. JEA’s share of Plant Vogtle costs now stand at more than \$2.9 billion, “an uncapped and rising amount.”⁵⁶



54 See MEAG’s “Annual Information Statement for Fiscal Year Ended December 3, 2016” at 10 (Jun. 30, 2017), available at <https://www.meagpower.org/NewsPublications/AnnualInformationStatement.aspx>.

55 “Federal Judge Rules Against JEA” (6/17/20), contributed by Garrett Pelican (WJXT) available at <https://www.documentcloud.org/documents/6951637-Order-1.html>

56 JEA.com, “Plant Vogtle”, available at https://www.jea.com/about/electric_systems/plant_vogtle/#:~:text=Total%20project%20costs%20estimated%20at%20%2414.3%20billion.

PAYING IN ADVANCE FOR PLANT VOGTLE. HOW DOES THAT WORK AND WHO PAYS?

As the Georgia Public Service Commission was considering the approval of building Plant Vogtle units 3 and 4 in 2009, the Georgia State Legislature gave Georgia Power something the Company wanted very much — passing controversial, anti-consumer legislation to put Construction Work in Progress (CWIP) into rate base ([visit this page for background on CWIP](#)). This means that Georgia Power customers pay in advance for the financing costs associated with the Vogtle units prior to their delivery of any electricity. In order to get these costs on Georgia Power customers' bills, the Nuclear Construction Cost Recovery (NCCR) rider was created.

Normally, U.S. businesses finance large capital construction projects with a variety of corporate financing mechanisms, and charge customers as that product or service is purchased. Businesses choose the lowest possible cost of capital in order to remain competitive and the risks of capital projects are undertaken by the corporation. This is standard free-market capitalism.

Since Georgia Power is a monopoly and operates outside of a competitive business market, it has the ability to shift risks and costs onto customers if regulator or legislative bodies allow it. In 2009 the Georgia State legislature passed the Georgia Nuclear Financing Act (SB31) to authorize the Georgia Public Service Commission to put construction costs (CWIP costs) into the rate base, thus immediately raising residential and business rates, but carving out an exception for industrial rates and eliminating powerful opposition.

This legislation was purported to save consumers money, but in fact cost residential consumers a tremendous amount of money while handing Georgia Power billions of dollars in profits prior to even generating and selling the first kilowatt of energy from the new Vogtle nuclear reactors. It is normally illegal for a company to charge people for something they did not buy and do not have unless the state decides otherwise. Then, apparently, it's fine.

The Georgia legislature came to regret passing SB31, and less than ten years later they would sunset it at the behest of lobbying from consumer watchdogs who persuaded state legislators that this act was harmful to consumers and should not apply to future projects. Evidence for these claims was clear from the fact that the Vogtle expansion project was vastly over budget in 2018 at the time the Georgia Nuclear Financing Act (SB31) was repealed for future projects.⁵⁷

In the meantime the Georgia Nuclear Financing Act saved Georgia industrial customers billions of dollars of advance construction collections that everyone else using electricity in Georgia had to pay.⁵⁸ As of December 2020, NCCR cash collections from industrials was only \$400 million or 11%; commercial customers paid \$1.39 billion or 40%; and residential customers paid \$1.66 billion, a whopping 47%.⁵⁹ The ability of large industrial customers to exempt themselves from most of these advance collections has cost-shifted billions of dollars onto the electricity bills of everyday Georgians, and eliminated powerful opposition to Plant Vogtle that industrial customers may have been able to stop.

This legislation ... handed Georgia Power billions of dollars in profits

57 Tatum, Gloria. "Georgia Legislature Sunsets Prepayment Of Future Nuclear Plants" *Atlanta Progressive News* (April 16, 2018) <https://georgiawatch.org/georgia-legislature-sunsets-prepayment-of-future-nuclear-plants/>

58 Wilson, John D. "Are industrial power customers favored too much?" *Southern Alliance for Clean Energy* Dec. 4, 2017 <https://cleanenergy.org/blog/georgia-power-vogtle-industrial-rate/>.

59 See PSC filing April 9, 2021 "NCCR Cash Collections by Customer Class", <https://psc.ga.gov/search/facts-document/?documentId=185123 file 25-b>.

What is the Nuclear Construction Cost Recovery (NCCR) Tariff?

The NCCR rider is the billing mechanism that Georgia Power uses to pre-collect financing costs for Vogtle units 3 & 4. Utility riders permit the collection of revenues from customers for costs that are accounted for separately from the overall rate base. Riders are often used for recovery of a cost that is temporary, is a “pass through” cost (e.g., fuel) and/or outside of the normal operations of the utility.

- The first NCCR became effective January 1, 2011 at 5.9% of the base bill of all affected customers. The NCCR has remained in effect continuously since that date, and over most of the 10 years it was in effect it has collected substantially higher increments than 5.9% with an average of 8.34%. Table 2 provides overview of each NCCR tariff to date.
- From January 1, 2011 through December 31, 2020 Georgia Power has collected \$3.5 billion under the NCCR tariff.
- The NCCR applies as follows:
 - The NCCR is calculated on each customer’s “base bill,” which excludes Real Time Pricing (RTP) incremental usage revenue, a special exception for Georgia’s industrial rate class customers.
 - The NCCR applies to 65% of the base bill calculation for customers on the Fixed Pricing Alternative and the Electric Arc Furnace rates.
 - In Vogtle Construction Monitoring report 17 (VCM-17), Dr. Matt Cox, of the Greenlink Group, testified to the value of these exemptions. Dr. Cox showed the exemptions for industrial customers saved them \$126-336 million with a central estimate of \$207 million. This results in a higher cost burden to residential customers.⁶⁰ That number is much higher in the subsequent three years since Dr. Cox gave this testimony.

Table 2. Iterations of NCCR Rider Tariff ⁶¹

VERSION	EFFECTIVE DATE	% OF BASE BILL
NCCR-1	1/1/2011	5.8619%
NCCR-2	1/1/2012	6.4362%
NCCR-3	1/1/2013	7.5821%
NCCR-4 TEMP	1/1/2014	8.8743%
NCCR-4	3/1/2014	9.3141%
NCCR-5	1/1/2015	9.4638%
NCCR-6	1/1/2016	9.7357%
NCCR-7	1/1/2018	8.409%
NCCR-8	1/1/2019	10.7662%
NCCR-9	1/1/2020	9.4596%
NCCR-10	1/1/2021	5.8456%

Where do NCCR Revenues Go?

The purpose of the NCCR is to allow Georgia Power to collect Vogtle project financing costs during the construction period. The Georgia Nuclear Financing Act (SB31) and the NCCR-1 order provide this detail: “The financing costs shall be based on the utility’s actual cost of debt, as reflected in its annual surveillance report, and on the authorized cost of equity capital and capital structure.”⁶²

⁶⁰ See Direct Testimony of William M. Cox, PhD. at 25, Dkt. 29849 (12/1/2017), available at <http://www.psc.state.ga.us/factsv2/Document.aspx?documentNumber=170388>.

⁶¹ See PSC Dkt. 32539 for various versions of the NCCR tariff, available at <https://psc.ga.gov/search?q=32539+>

⁶² See PSC Dkt. 32539 for various versions of the NCCR tariff, available at <https://psc.ga.gov/search?q=32539+>

PROFITING FROM DELAY

The construction of Vogtle units 3 & 4 began in August 2009. According to the original certification schedule, the units would start operating by April 2016 and April 2017, respectively.⁶³ After years of substantial schedule delays, in December 2017, the Georgia PSC approved a dramatically altered schedule on behalf of Georgia Power, allowing Unit 3 to come online in November 2021 and Unit 4 to come online in November 2022.⁶⁴ As shown in Table 3, that means the initial construction schedule of 7.7 years has nearly doubled to 13.3 years.

Table 3. Original and Revised Completion Dates and Respective Time Lapses

UNIT	START DATE	ORIGINAL COMPLETION DATE (years since start)	REVISED COMPLETION DATES (years since start)
Unit 3	Aug. 2009	April 2016 (6.7 years)	November 2021 (12.3 years)
Unit 4	Aug. 2009	April 2017 (7.7 years)	November 2022 (13.3 years)

In the normal world, a project owner typically loses money when project schedules go so awry. But, “cost of service” regulation at the Georgia PSC is not the normal world, and the Georgia Public Service Commission does not hold Georgia Power accountable for poor management. In the 17th Vogtle Construction Monitoring proceeding, the Georgia PSC’s staff and consulting experts testified that Georgia Power “...will collect considerably more in profit over the entire lifecycle of the Units (construction period and operating period) from ratepayers than it would have had the Project been completed under the original schedule. The profit the Company will collect will increase from approximately \$7.4 billion to approximately \$12.6 billion over Unit’s entire lifecycle.”⁶⁵

How does construction delay translate into extra profit? Each year that Georgia Power has money invested in Plant Vogtle (during construction and over the operational life of the project), the company is allowed to earn a profit on the equity portion of its investment. Delays mean the cost has risen to \$7.3 billion over 13 years of construction time. During those extra years of construction, Georgia Power earns massive profits each year as there is no sunset for NCCR collections before the units go in-service.

Figure 4. Residential bill collecting a monthly NCCR tariff years behind the expected in-service date

Service Period	Meter #	Reading Type	Current	Previous	x	Constant	= Usage
Aug 3 - Sep 1	[REDACTED]	Tot kWh	48947	47637	1		1,310
Billing Period							
Aug 3, 2020 - Sept 1, 2020							
Current Service							\$ 142.01
Environmental Compliance Cost							22.32
Nuclear Construction Cost Recovery							10.34
Municipal Franchise Fee							5.33
Sales Tax							16.02
Total Current Electric Service							\$ 196.02

63 See “Southern Company Plant Vogtle Media Guide” June 2011. See page 44.

https://web.archive.org/web/20111227121317/http://southerncompany.com/nuclearenergy/SNCmedia/Vogtle_Media_Guide.pdf

64 See Georgia Power’s “Seventeenth Vogtle Construction Monitoring Report”, Document filing 169459 (Aug. 31, 2017)

65 See Direct Testimony and Exhibits of Tom Newsome, PE, CFA, Philip Hayet, and Lane Kollen at 27, Dkt. 29849 (Dec. 1, 2017), available at <https://psc.ga.gov/facts-advanced-search/document/?documentId=170391>.

THE FULL IMPACT OF THE GEORGIA PSC'S 2017 VOGTLE DECISION

In the wake of the Westinghouse bankruptcy, the Georgia PSC staged a “go/no go” review as part of its regularly scheduled 17th Vogtle Construction Monitoring proceeding in 2017. Despite significant amounts of expert testimony calling into question the cost effectiveness of the project and the ability of the Company to complete the project even with a new, higher budget and extended schedule, the Georgia PSC voted to move forward.

Contrary to common sense, the Commission found the budget and schedule “reasonable.” Looking back across the intervening years, littered with additional budget increases and schedule extensions, it is easy to conclude the Commission simply got it wrong. But, after nearly a decade of project mismanagement from 2009 to 2017, the Commission should have known better at the time and taken real action to protect the ratepayers of Georgia. But the Commissioners did not.

All of the experts who represented the financial and environmental interests of Georgians, with all of their analyses and documentation that costs far outweighed the benefit and continuation was detrimental to the people of Georgia, could not persuade the five elected Georgia Public Service Commissioners to cancel the project. The Commission’s own staff testimony along with expert testimony from many others, could not persuade the Commissioners to cancel the project or place the financial burden solely on Georgia Power.

One commissioner in particular stood out for his disregard for the content of the hearings: Commissioner Tim Echols made his pro-nuclear position clear in an opinion piece he wrote for the Wall Street Journal in August of 2017.⁶⁶ Neither detrimental information about out-of-control costs nor public opinion, which he admitted was against continuation of the project, was persuasive. During the testimony of one of the few pro-Vogtle witnesses, Mary G. Korsnick, CEO and president of the Nuclear Energy Institute, Commissioner Echols asked her how to sway the anti-Vogtle contingent. “*So what do I say to my constituents regarding the patriotic duty that we have?*” Echols asked. “*What do I say to my constituents in terms of our patriotic opportunity?*”⁶⁷ Clearly Commissioner Echols was interested in persuading constituents rather than listening to them and their valid concerns.

On December 21, 2017, the Georgia Public Service Commissioners voted that construction of Vogtle Units 3 & 4 continue.⁶⁸ The two most objectively ridiculous findings were:

- 1. ... that the Commission approves and finds reasonable the Company's revised schedule and cost forecast.**
- 2. ... that no directives or findings in any part of this Order suggest that there is a cost cap or that the Commission has approved or disapproved the recovery of any costs from customers.**

Given that the project was 50% over budget and years behind schedule at that point, and that numerous experts within the nuclear industry and within its own PSC staff had provided proof that the Company’s schedule and cost forecasts were not reliable, this statement of fact that “the commission ... finds reasonable the Company’s revised schedule and cost forecast” is astonishing.

66 Tim Echols, *Why Georgia Sticks With Nuclear Power*, Wall Street Journal, Aug. 17, 2017, <https://www.wsj.com/articles/why-georgia-sticks-with-nuclear-power-1503011785>

67 Mary Landers, *Plant Vogtle decision nears as calls to cancel grow*, Savannah Now, Dec. 15, 2017 <https://www.savannahnow.com/news/2017-12-15/plant-vogtle-decision-nears-calls-cancel-grow>

68 See Ga PSC Order on the Seventeenth Semi-Annual Construction Monitoring Report for the Period January 1, 2017 through June 30, 2017 available at <https://psc.ga.gov/facts-advanced-search/document/?documentId=170765>

This ruling for continuation of the Vogtle expansion and these findings bear proof that the commission was not acting in the best interests of Georgians, but rather had other motives in their findings, including a desire to appear “patriotic,” a desire to keep the U.S. nuclear industry going to the detriment of Georgia rate payers, a desire to keep 5,000 people (mostly temporary construction workers) working at Plant Vogtle, and a desire to please the utility they are supposed to regulate.

COSTLY MANAGEMENT FAILURES

Delays and cost overruns have been reported for this project from the very beginning and have continued for the life of the project. Why? What is going on that causes these delays and costly overruns? One person we can look to for answers is the project’s independent monitor, Mr. Donald Grace, vice president of engineering for the Vogtle Monitoring Group (VMG).

In April 2018 the Georgia Public Service Commission’s Public Interest Advocacy Staff appointed Donald Grace to independently evaluate Southern Nuclear Company’s (SNC) ability to successfully manage completion of the Vogtle units 3 & 4 Nuclear Project. As defined in his most recent filing,⁶⁹ “successful management” includes the ability to safely complete the project in a quality manner while meeting the Georgia Public Service Commission’s Regulatory Approved Commercial Operation Dates (CODs) of November 2021 for Unit 3 and November 2022 for Unit 4, while also staying within or below SNC’s Total Project Cost (TPC) forecasts. Additionally, it involves constructing a nuclear plant with high quality allowing full operations with minimal maintenance and repairs moving forward.

How is that going? All of those metrics are in various stages of failure. In Mr. Grace’s June 7th, 2021 report, he outlines specific management failures occurring with this project:

“ VMG continues to be of the opinion that a primary root cause of poor productivity and production is due to SNC’s strategy of having accelerated testing on Unit 3 prior to completion of most of the civil construction work and installation of the bulk construction commodities. This has then led to inefficient and costly execution of construction, piece by piece testing and retesting of partial systems and complete systems (sometimes first on temporary power, and then again with permanent power), as well as the more recent discovery of electrical and other Construction Quality issues which have led to late emergent remediation work...

Finally, we are still of the opinion that SNC’s decision to accelerate testing was likely due to the realization that an optimal construction schedule based on standard industry practice, together with the required durations of testing activities, would not allow SNC to meet published intermediate milestones and the final Regulatory Approved CODs. Therefore, in an effort to continue to show progress, the emphasis shifted in trying to meet these intermediate milestones at any cost, and in some cases altering their definitions (e.g., with emphasis on “the start” of a milestone rather than the finish). To the contrary, SNC erroneously attempted to provide hope that deviation from normal industry practice would both (a) shorten the schedule while at the same time (b) allow for completion of the Project within the estimated TPC.

69 See Testimony of Donald Grace, Document Filing 185988, Dkt. 29849 (June 7, 2021) <https://psc.ga.gov/search/facts-document/?documentId=185988>

THROUGH THE LOOKING GLASS

In Lewis Carroll's *Through the Looking Glass*, Alice in Wonderland enters a fantastical world by climbing through a mirror where she finds that everything is reversed, including logic (for example, running helps one remain stationary, walking away from something brings one towards it, chessmen are alive, nursery rhyme characters exist, and so on.) The Georgia Public Service Commission lives in a fantastical world in which everything is reversed, too, and they are asking the public to join in. One of the clearest examples is the commission's pretense of holding Georgia Power "accountable". The single point of accountability the commission adopted in their Order on the Seventeenth VCM Report as follows:

“As an added inducement to have the Company bring the Units on line, the Commission finds that the Company's return on equity ("ROE") used to determine the NCCR beginning January 1, 2020 will be reduced from 10% to 8.3%. This lower ROE will first be used when adjusting the NCCR rate effective January 1, 2020. The Company's ROE used to determine the NCCR beginning January 1, 2021 will be reduced further from 8.3% to 5.3% or the Company's average cost of long term debt, whichever is higher.”

“If Vogtle Unit 3 is not Commercially Operational by June 1, 2021, the Company's ROE used to determine the NCCR related to Unit 3 capital costs will be further reduced 10 basis points each month, but not lower than the long-term cost of debt, until Unit 3 reaches Commercial Operation.”⁷⁰

Each of these financial reductions amounts to no more than a pinprick in Georgia Power's annual earnings on this project. Each year the project was delayed it earned about one billion dollars. These ROE reductions amount to about \$100 million, only one-tenth of profits, and only until the units come online. Then profits resume as before.

In this world everything is the opposite of what it seems:

- Where a company that is over budget and behind schedule is rewarded with higher profits.
- Where an expensive, risky technology which the rest of the world is moving away from is embraced.
- Where commissioners who are supposed to oversee the public interest are prioritizing the interests of the entities they regulate; and
- Where a "penalty" for a giant corporation is a small fraction in its annual earnings.
- Where the consequences of proceeding with a risky project are transferred from investors to captive customers.

The idea that the Georgia Public Service Commissioners could approve construction of the most expensive power plant ever built on earth, provide no consumer protections or cost caps, approve this project a second time in 2017 despite billions in cost overruns, sit through several days of hearings with experts providing credible evidence that cancellation of the project would be less expensive than continuing, and then claim that a slight reduction for Georgia Power's profits when delays continue beyond stated delivery dates in 2021 constitutes some sort of accountability or "sends a painful and embarrassing message to Georgia Power," as stated by Commissioner Echols,⁷¹ is the opposite of what has taken place. In fact, Commissioner Echols was not even present on December 12, 2017, Day 2 of VCM-17 hearings to hear important testimony and receive information that should have helped inform his decision about whether to continue this project. Instead, he was in New York City meeting with Bank of America bond analysts, which he preferred to take advice from rather than attend commission hearings in Atlanta.

70 See Ga PSC "Order on the Seventeenth Semi-Annual Construction Monitoring Report for the Period January 1, 2017 through June 30, 2017" available at <https://psc.ga.gov/facts-advanced-search/document/?documentId=170765>

71 Kempner, Matt. "Nuclear cost overrun could mean billions in extra Georgia Power profit", Atlanta Journal-Constitution, July 9, 2021 <https://www.ajc.com/news/business/nuclear-cost-overrun-could-mean-billions-in-extra-georgia-power-profit/YIA3T3YHZRH15A7GCZHREIXCPE/>

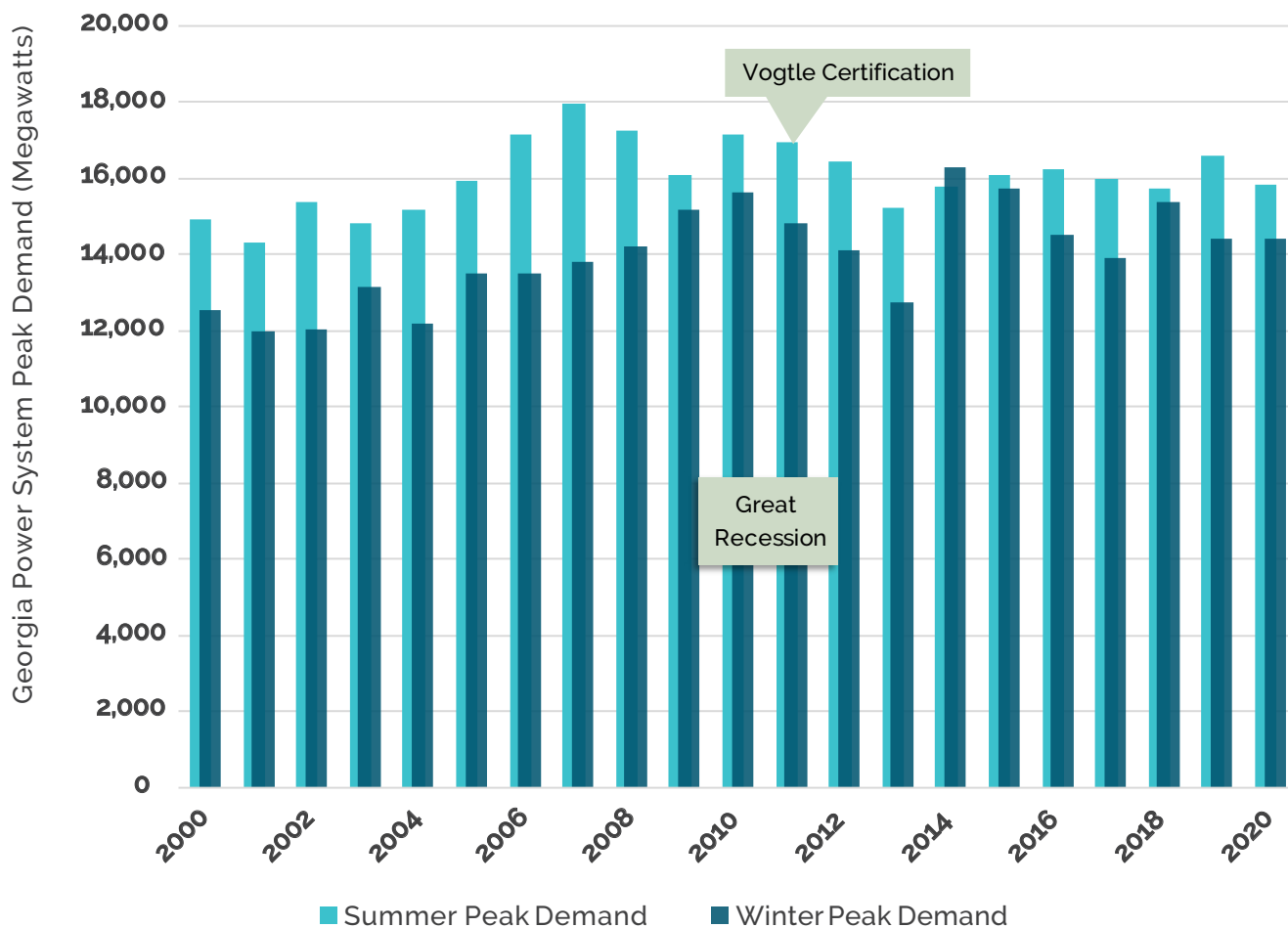
DO WE NEED PLANT VOGTLE?

Georgia Power customers don't need Plant Vogtle units 3 and 4 and never did: not in 2009 when the commission approved this project, nor in 2017 when the commission recommitted to the project. How do we know?

Plant Vogtle units 3 and 4 comprise 2,200 megawatts (MW) of generating capacity. 1,000 MWs belong to Georgia Power (see [Vogtle Ownership](#)). One thousand MWs of generating capacity is roughly six percent of Georgia Power's peak demand using a ten-year average of Georgia Power's peak demand (2011-2020).

Why is this important? Electric utility resource planning is driven by a utility's forecast of future coincident peak demand—the single hour in a year during which there is the highest demand for electricity in the utility's service territory. The forecasted peak demand, plus a reserve margin, is used to evaluate whether the amount of available generation capacity that a utility has at its disposal is adequate to ensure reliable electric service to its customers. Rising peak demand is used to justify building new power plants and charging customers for those costs. Although there was one year of rising peak demand (2009), that was the only year. As shown in *Figure 3*, there was no trend.

Figure 3. Summer and Winter Peak Demand for Georgia Power



In addition, peak demand in 2009 was not justification to build new generation because Georgia Power had a huge amount of unused generation, called reserve margin. The North American Electric Reliability Corporation (NERC) is an agency with regulatory authority responsible for reliability of the electric grid. NERC recommends a 15% reserve margin, or the difference between available capacity and peak demand. In 2009 Georgia Power had a reserve capacity of 31.5%, or twice NERC's 15% recommendation, and Georgia Power also had a stunning prospective reserve capacity of 53.6% in 2009.⁷² This level of reserve margin is expensive for Georgia Power customers and very unusual in the energy industry. Despite these facts, the expansion of Plant Vogtle was approved.

Then in 2017 the Georgia Public Service Commission again had the opportunity to cancel the Plant Vogtle expansion project as a result of the bankruptcy of Westinghouse. At this point a track record was established: it was apparent how unreliable, and exceedingly inaccurate Georgia Power's load forecasts from 2009 to 2017 were. In his testimony during the Seventeenth Vogtle Construction Monitoring docket,⁷³ Dr. Matt Cox highlighted key reasons that Plant Vogtle's expansion was unnecessary:

- **Georgia Power's 2009 Demand Forecast Demand Proved Dramatically Inaccurate:**

Dr. Cox: "The 2016 peak demand that Georgia Power projected in 2007 and reported to the Federal Energy Regulatory Commission was almost 5,000 MW higher than the actual peak demand in 2016 (roughly a 30 percent error in the projection). In fact, the 2016 peak demand was lower than the peak demand in 2006 by nearly 1,000 MW."

- **Georgia Power's 2017 Demand Forecast is Unreliable:**

Georgia Power filed an updated load forecast during the Seventeenth VCM docket. Dr. Cox underscored that this forecast projected more rapid growth in the next twenty years than recent history justifies. "Most critically, the needs assessment is largely justified on capacity needs materializing in the 2025-2035 period. Georgia Power is presenting load growth rates over this time period that are more than two times faster than the 2016-2025 period, and which approach the growth rates that Georgia Power projected in 2007 to originally justify the project — demand growth that never materialized."

“ Georgia Power also had a stunning prospective reserve capacity of 53.6% in 2009, a level of capacity unheard of in the rest of the country, unnecessarily costing customers billions of dollars. ”

72 See "NERC 2009 Summer Reliability Assessment." <https://www.nerc.com/files/USsummer2009assessment.pdf> p. 25.

73 See Direct Testimony of William M. Cox, PhD. at 7 - 11, Dkt. 29849 (12/1/2017), available at <http://www.psc.state.ga.us/factsv2/Document.aspx?documentNumber=170388>.

BETTER CHOICES – VOGTLE COMPARED TO ENERGY EFFICIENCY AND RENEWABLE ENERGY

In August 2017, Georgia Power was tasked with taking an in-depth look at whether it made economic sense to continue building Vogtle units 3 and 4, including whether there were more cost-effective ways to meet its customers' future electricity needs. In its analysis, Georgia Power dismissed renewables, energy storage and energy efficiency, saying these options "... would be significantly less economical for customers than the options that Georgia Power and the Owners included in their in-depth analysis."⁷⁴

Similar to Georgia Power's other failures on accurately estimating project timelines and cost estimates, these claims about other electricity generation options were untrue. Dr. Matt Cox, an expert witness during the 2017 review proceeding, carefully analyzed the clean energy options dismissed by Georgia Power and came to the opposite conclusion. In his testimony, Dr. Cox presented the results of an analysis of the levelized cost of electricity from the new Vogtle units and several alternatives. Following standard practices used by the United States Department of Energy, Dr. Cox found that several the alternatives were more cost-effective on a levelized cost basis.⁷⁵

Table 4. Results of Alternatives Analysis

RESOURCE	LEVELIZED COST OF ELECTRICITY (\$/MWH)
Energy Efficiency ⁷⁶	\$16
Utility-Scale Photovoltaics ⁷⁷	\$45-\$65
Natural Gas Combined Cycle ⁷⁸	\$49-\$67
Vogtle Units 3 & 4 Incremental, Low	\$61
Vogtle Units 3 & 4 Incremental, High	\$67
Vogtle Units 3 & 4 Total, Low	\$105
Vogtle Units 3 & 4 Total, High	\$112

It is clear that neither the incremental nor total cost of completing Units 3 and 4 represented the most cost-effective option for supplying electricity for Georgia Power customers. Georgia Power's assertion that Vogtle units 3 & 4 are the most economical means to meet the electricity needs of Georgia Power customers is not supported by recent evidence about the costs of other resources that were qualitatively dismissed by the Company and the Georgia Public Service Commissioners.

74 See Georgia Power's "Seventeenth Semi-Annual Construction Monitoring Report for Plant Vogtle Units 3 and 4" at 59, Dkt. 29849 (Aug. 31, 2017), available at <https://psc.ga.gov/search/facts-document/?documentId=169459>.

75 In his analysis, Dr. Cox used the same values for discounting future cash flows and costs, etc. as Georgia Power used and relied on the most recent region-specific information available from the Department of Energy. He based his ranges on the P20 and P90 values presented in Exhibit 7 to the Seventeenth VCM Report.

76 Calculations used data from the US Energy Information Administration's "2016 Annual Electric Power Industry Report," Form 861.

77 Calculations from US Energy Information Administration. 2017. "Cost and Performance Characteristics of New Generating Technologies, Annual Energy Outlook 2017." And Fu et al., 2017. "US Solar Photovoltaic Cost Benchmark Q1 2017." National Renewable Energy Laboratory.

78 Plant costs taken from: US Energy Information Administration. 2017. "Cost and Performance Characteristics of New Generating Technologies, Annual Energy Outlook 2017"

THE U.S. NUCLEAR REGULATORY COMMISSION COMES TO GEORGIA

On June 21st, 2021, the U.S. Nuclear Regulatory Commission (NRC) launched an investigation into the construction of Vogtle Unit 3. According to their announcement, “During the inspection, the NRC will review Southern Nuclear’s actions following the discovery that led to construction remediation work, including a review of their root cause investigation, corrective actions, construction quality assurance process, and any potential implications for Unit 4.”⁷⁹ All of this lines up with construction and testing problems reported in Mr. Grace’s June 7th, 2021 filing which documented questionable and rushed safety testing, overall management failures, and unreliable estimates.

The U.S. Nuclear Regulatory Commission is an independent federal agency created by Congress in 1974 to “ensure the safe use of radioactive materials for the benefit of civilians.” The NRC is responsible for licensing, certifications and approvals of commercial nuclear power plants, as well as nuclear medicine and other civilian uses of nuclear energy. For nuclear power plants, NRC’s responsibilities, among many others, includes overseeing “hot functional testing,” comprehensive tests to ensure that coolant circuits and safety systems are operating as they should before the loading of nuclear fuel. It is this area now causing project delays, safety issues, and increased attention from NRC.

According to the Atlanta Journal-Constitution, NRC spokesman Scott Burnell said in an email, “We conduct a special inspection when something out of the ordinary and significant occurs where the agency wants to ensure there’s a full understanding of the issue.”⁸⁰ Those items out of the ordinary and significant likely include this finding in Mr. Grace’s report in which it answers a question about why the project is experiencing “partial turnovers” (e.g. turning over parts of systems in order to track progress rather than full systems as expected by the project schedule):

“The third major contributor, which is a serious concern, is with the overly biased focus on meeting schedules. This resulted in some Construction Quality issues not being identified as they occurred. This then tended to mask problems which were not identified until the final stages of turning over the partial system to ITP. This has led to the late identification of needed remediation work and further delay of the turnovers.”⁸¹

The NRC inspection team will document its findings and conclusions in a public report to be issued within 45 days of the end of the review. It is certain that this investigation will cause additional delays and costs to the project, and thus, to the people of Georgia.

79 U.S. Nuclear Regulatory Commission Press Release, June 21, 2021. <https://www.nrc.gov/reading-rm/doc-collections/news/2021/21-020-ii.pdf>

80 Kempner, Matt. “U.S. nuclear regulators scrutinize Vogtle problems in Georgia”, Atlanta Journal-Constitution June 22, 2021. <https://www.ajc.com/ajcjobs/us-nuclear-regulators-scrutinize-vogtle-problems-in-georgia/5TMEFO5LOBHNBHNS7ZBSZZWUKA/>

81 Kempner, Matt. “U.S. nuclear regulators scrutinize Vogtle problems in Georgia”, Atlanta Journal-Constitution June 22, 2021. <https://www.ajc.com/ajcjobs/us-nuclear-regulators-scrutinize-vogtle-problems-in-georgia/5TMEFO5LOBHNBHNS7ZBSZZWUKA/>

THE NUCLEAR POWER INDUSTRY SHOULD BE BANNED

Mr. Gregory Jaczko served on the U.S. Nuclear Regulatory Commission from 2005 to 2012 and was its chairman from 2009 to 2012. He was a proponent of nuclear energy as an important solution for climate change and approved the federal licensing of Georgia's Plant Vogtle reactors while serving as the NRC's chair. But with experience he began to see that the costs and risks of nuclear energy were too high. In May of 2019 the Washington Post published an essay from Mr. Jaczko titled "I oversaw the U.S. nuclear power industry. Now I think it should be banned." In that essay he clarifies that nuclear power plants have no way to prevent the release of any harmful radiation outside the plant itself and no way to contain costs:

“History shows that the expense involved in nuclear power will never change. Past construction in the United States exhibited similar cost increases throughout the design, engineering and construction process. The technology and the safety needs are just too complex and demanding to translate into a facility that is simple to design and build. No matter your views on nuclear power in principle, no one can afford to pay this much for two electricity plants. New nuclear is simply off the table in the United States.”⁸²

Georgians will be paying the price of nuclear energy industry hubris, pursuit of utility profits, and poor regulatory decision-making for decades to come — possibly as many as six or eight decades. And that is the least of possible bad outcomes: Georgia's imperiled Savannah River is the water source where 160 million of gallons of water are or will be removed daily to cool the nuclear units, and most of that water is evaporated into the atmosphere and not returned to the river for downstream uses.⁸³

Another possible bad outcome is an accident involving radioactive release from an accident or defect caused by shortcuts taken by Georgia Power now that delays are actually reducing profits.

Finally, although there is monitoring for radioactive pollution in the nearby air and water, the results of the monitoring are not publicly available, leading one to believe there are problems that the Georgia Environmental Protection Division (EPD) does not wish the general public to know about. There is no information on EPD's website about what is tested, where, and how often, to provide the public with a sense of certainty that the water and air are safe for people who live near this project. EPD's lack of publicly available air and water monitoring and testing results erodes trust in Georgia's state agency responsible for protecting Georgia's environment and healthy communities. This is especially concerning given the known risks of nuclear energy.

82 Jaczko, Gregory. "I oversaw the U.S. nuclear power industry. Now I think it should be banned", *Washington Post*, May 17, 2019 https://www.washingtonpost.com/outlook/i-oversaw-the-us-nuclear-power-industry-now-i-think-it-should-be-banned/2019/05/16/a3b8be52-71db-11e9-9eb4-0828f5389013_story.html

83 Bianchi-Fossati, Lisa and Kurt Ebersbach. "The Water-Energy Nexus in Georgia: A Detailed Examination of Consumptive Water Use in the Power Sector", Southface and Southern Environmental Law Center, April 2018 <https://4553qr1wvuj43kndml31ma60-wpengine.netdna-ssl.com/wp-content/uploads/2019/08/The-Water-Energy-Nexus-in-Georgia-Study.pdf>

WHAT'S NEXT?

Plant Vogtle Units 3 and 4 have now cost a stunning \$32.3 billion. When all is said and done, Georgians are likely to be paying the highest electric bills in the country. Georgians are already in 4th place for the highest energy bills nationwide.⁸⁴

What can be done now? Why write this report about something that is out of most people's control? There are several things that need to happen. The project essentially cannot be stopped unless Georgia Power and the other owners decide to end it or federal regulators decide the project is unsafe. But one important step that can and should be taken is a change in who pays for the cost overruns. Before we get to how "Who pays?" is determined, let's review: Throughout this project the Georgia Public Service Commission has given Georgia Power a dreamboat of immediate and future profits, previously discussed and summarized here:

1. A blank check on construction costs. There is no limit to how expensive this project can become.
2. Risk for the project costs rests squarely on Georgia Power customers and not on Southern Company shareholders.
3. Authorization to put Construction Work in Progress (CWIP) into rates.
4. A financial structure that allows Georgia Power to profit handsomely from project delays. Thus far Georgia Power has earned over \$6 billion just from the delays of their own project.
5. An unusually rich set of profit streams through a very high ROE, a favorable capital structure, and an earnings band for profits that can go up to 12%.

What can be done? Here are four important steps that should be taken:

- 1. The Georgia Public Service Commission should disallow Georgia Power from placing all of these nuclear construction costs onto our bills and share rate increases more fully between customer classes.**

When (and if) the first new Vogtle nuclear reactor comes online, possibly in 2022, construction costs will be placed into rates, though not shared equally among customer classes. The majority of costs will go to residential rates, driving them even further up beyond what the pre-collected financing costs have already caused. The industrial customers should be required to carry more of their fair share of the costs.

Furthermore, the Georgia PSC has the choice of putting 100% of these costs into rates, none of the costs into rates, or a portion of the costs into rates. Given that the project is 100% over budget, cost estimates were unreliable from the start and the project was poorly managed throughout, most of these costs should be paid for by the company itself out of their profits and not by the people of Georgia.

To help PSC Commissioners decide what to do, experts should be brought in to analyze what is reasonable and make recommendations. Over the past 12 years, every expert that does not support Georgia Power's request for massive profits and no limits on spending has been ignored by the Commission. Occasional, small reductions in ROE does not equate to actually holding the Georgia Power accountable for project failures. Georgia PSC's own staff recommendations and evidence is routinely ignored in favor of utility experts and recommendations. This must stop. Real, transparent accountability needs to take place.

⁸⁴ McCann, Adam. "Most & Least Energy-Expensive States." *Wallet Hub*, July 7, 2021 <https://wallethub.com/edu/energy-costs-by-state/4833>

2. Voters should hold Commissioners accountable by ejecting them from their seats and electing pro-consumer candidates that commit to transparency.

Every Georgia election includes at least one, and sometimes two PSC commission seats on the ballot. Incumbent commissioners often face challengers making promises to reduce your power bills. Listen to them — challengers must be elected who commit to transparency with their decisions and commit to preventing Vogtle's cost overruns from being shouldered mostly by residential customers.

3. The Georgia State legislature should fully fund an independent Consumer Utility Counsel (CUC).

Most states, including Georgia in the past, have a separate, independent office mandated to protect and lobby for consumer interests. For decades, the CUC, a division of the Governor's Office of Consumer Protection, represented Georgians in cases before Georgia's Public Service Commission (PSC). However, the CUC was defunded in 2008 during The Great Recession. Was it coincidence that it was defunded just before the Vogtle expansion was brought to the Georgia PSC and the Georgia state legislature? Despite only costing \$400,000 annually, and despite numerous years since 2008 that Georgia has recorded tax surpluses, including \$3.2 billion recently⁸⁵, the CUC remains unfunded. It is clear that the Public Service Commission does not represent consumer interests. If they did, residential consumers would not be facing the huge rate increases for decades due to Plant Vogtle's mismanaged expansion.

4. The Georgia State legislature should create an independent study commission to document lessons learned.

The best way to understand what steps led to the building of the most expensive power plant on earth in Georgia would be for the Georgia General Assembly to create an independent commission to study and document what the Georgia Public Service Commission did not do to protect consumers during this project and decide what should be done in terms of accountability and prevention so something like this never happens again in Georgia.

Commissioners like to say that their decisions have kept Georgia competitive and made Georgia a business-friendly state. In 2020 USA Today business-friendly state ranking puts Georgia at #22, almost in the bottom half. This mediocre ranking was due to Georgia's low GDP growth rate, average earnings per job, and low quality of life including a low concentration of arts and recreation, and having the third worst rate of health insurance coverage in the country.⁸⁶ Much, maybe all of that has nothing to do with how energy is regulated. What the commission is actually referring to when it claims their work has made Georgia a business-friendly state is that, since the elimination of the Consumer Utility Council, business interests have achieved favorable decisions such as the NCCR tariff reduction for industrials and a 10% reduction in industrial rates since 2009. In that same time period residential rates increased 25% and consumer protections have declined.⁸⁷ These harmful outcomes for average Georgians were predicted by consumer advocates at the time the CUC was defunded.⁸⁸

85 Salzer, James. "Despite pandemic, Georgia ends fiscal year with a record \$3.2 billion jump in revenue." *Atlanta Journal- Constitution*, July 12, 2021. <https://www.ajc.com/politics/despite-pandemic-georgia-ends-fiscal-year-with-a-record-32-billion-jump-in-revenue/2PGHE5NYOVGYHK5B2LHMB2J62Q/>

86 Stebbins, Samuel and Michael B. Sauter, "Most of the best business-friendly states are found west of the Mississippi", *USA Today*. Feb. 18, 2020. <https://www.usatoday.com/story/money/2020/02/18/best-and-worst-states-for-business/111318640/>

87 Electric Sales, Revenue, and Average Price, EIA Data Tables T6, T8 calculated. https://www.eia.gov/electricity/sales_revenue_price/

88 Markiewicz, David. "Consumers lack voice at PSC as big utility cases loom, advocates say" *Atlanta Journal-Constitution*, Feb. 20, 2021 <https://www.ajc.com/news/local/consumers-lack-voice-psc-big-utility-cases-loom-advocates-say/oHklW6eQXk4r8BtwGMwPJ/>; also Robinson, Cas. "Georgia consumers lose voice." *Savannah Morning News*, Sept. 18, 2010. <https://www.savannahnow.com/opinion/2008-09-18/robinson-georgia-consumers-lose-voice>

IN CONCLUSION

The regulated utility is now experiencing an unprecedented era of rapid transformation. Solar energy costs have fallen 82% since 2010 and are expected to continue to decline another 60% in the next decade, and even now solar is less expensive than any other type of energy generation. Because of these cost declines utilities are being asked to adopt distributed energy resources like rooftop and community solar, battery storage, and communicating devices such as smart thermostats and water heaters that transmits energy between homes and local generating sources that save customers money and create a cleaner and more flexible, resilient grid.

Other 21st century innovations include advanced energy efficiency and lighting, demand response programs that pay people for shifting when and how they consume electricity, and beneficial electrification to replace fossil fuels in the home and in vehicles.

Consumers want to be participants in their energy procurement and not passive recipients of someone else's decisions. All of these programs and new technologies save money and reduces carbon emissions and allows consumers to be engaged and more fully meet their values around energy.

As many, perhaps most, state commissions and utilities engage in this exciting and innovative era and transition away from fossil fuels towards a clean low-cost energy future, Georgians will be saddled with expensive new nuclear energy and high energy bills until the year 2075 or 2080. What has happened here is ratepayer robbery: the expensive 20th century practice of building large power plants continues here. The Georgia Public Service Commission's failure to pursue 21st century innovation has harmed Georgians and will soon result in the highest energy bills in the United States to pay for the most expensive power plant ever built on Earth.

