

SPECIAL  
REPORT



ENERGY



---

# SANTEE COOPER'S UNCERTAIN FUTURE

A Historical, Policy and Financial Analysis of the South Carolina Public  
Service Authority

---

**KATIE SOBCZYK PLAYER, PHD**

**MICHAEL T. MALONEY, PHD**  
CLEMSON ECONOMICS ASSOCIATES

**ORAN P. SMITH, PHD**  
SENIOR FELLOW  
PALMETTO PROMISE INSTITUTE

MARCH 20, 2018



**PALMETTO  
PROMISE**  
INSTITUTE

Additional resources: [palmettopromise.org](http://palmettopromise.org)  
P.O. Box 12676 Columbia, SC 29211 | 803-708-0673

## EXECUTIVE SUMMARY

The instability of Santee Cooper and its looming \$4.5 Billion in debt for nuclear assets that will generate no electricity is harmful to real people and to economic development.

\*\*\*

“[To complete VC Summer]...our models showed we would have to **raise rates 41%**.”

Santee Cooper CEO Lonnie Carter

“The current situation at Santee Cooper is **not acceptable**. We are paying more for less. Economic development will be difficult given rates that must be paid. There is a lack of confidence, a need for **transformation**.”

Electric Cooperatives of South Carolina President and CEO Mike Couick  
Through Central Cooperative, Santee Cooper’s largest customer

\*\*\*

As the sheer magnitude of the V.C. Summer Units 2 and 3 nuclear abandonment, the largest financial disaster in South Carolina history, comes more into focus, we know Santee Cooper has borrowed \$4.5 Billion to date, its customers have already paid \$540 million in four rate increases for the two defunct reactors, and the interest owed grows daily. Additionally, Santee Cooper has another \$4 Billion in non-nuclear debt that must be addressed. In total, Santee Cooper’s debt with interest is more than the entire state General Funds Budget for FY 2017-2018.

Because it is a state agency, Santee Cooper only makes “pseudo” profits. The average pseudo profit margin is 6.6%, which means Santee Cooper has only 6.6 cents on the dollar to put towards debt associated with V.C. Summer 2 & 3. This is not sustainable.

With Santee Cooper’s total outstanding debt looming at \$7,494,568,000 as of publication time, action must be taken now.

### Key Historical and Current Realities:

- From a historical perspective, Santee Cooper is unique. Facing the future, that uniqueness has both benefits and baggage.
- Santee Cooper has a symbiotic relationship with the Electric Cooperatives, especially after “The Agreement,” their most recent power contract of 2013.
- Santee Cooper has endangered economic development by antagonizing an industry it has been charged with serving.
- Santee Cooper doesn’t have a unique economic development motivation or ability among utilities.
- Santee Cooper’s rates are not an advantage for ratepayers after all.
- Residential rates for Santee Cooper customers are going to rise, not only because of VC Summer but because of the utility’s ongoing struggles to match its load capacity with customer demand as well as its operating debt of \$4 Billion.
- The public is supportive of the sale of Santee Cooper.
- An outright sale would have the benefit of getting the government out of the electric utility business.

## Not the Lowest Rates

Historically, Santee Cooper has offered its customers competitive rates. That has changed in the past five years. According to the South Carolina State Energy Office, here are stated rates for utilities operating in South Carolina:

- SCE&G – **14.56** cents per kWh
- SCE&G (without nuclear surcharge) – **11.93** cents per kWh
- Santee Cooper – **11.62** cents per kWh
- Santee Cooper (without nuclear surcharge) – **11.10** cents per kWh
- Duke Energy – **11.01** cents per kWh
- Duke Energy's former Progress Energy territory – **10.01** cents per kWh

## Santee Cooper Required Rate Increase Scenarios

Our economic research shows that future annual Santee Cooper utility bills will increase, anywhere from \$166.99 per customer to upwards of \$751.03, depending on demand elasticity for Santee Cooper electricity, the total debt and interest associated with the abandoned project, and Santee Cooper's relationship with its largest customer, Central Cooperative.

Electricity rates would need to increase between 10-52%. Our analysis suggests a likely additional 13.62% rate increase, which would mean the average annual electricity bill increases by \$194.49. This increase would be in place for the next 38 years, until the debt is paid in 2056.

In total, each average Santee Cooper residential customer would pay an additional \$7,390.62 to pay their portion of the nuclear debt. Industrial customers could likely have their bills increased by as much as \$80,000 a month.

Rates have already increased 15.2% since 2012.

## Recommendation

In the opinion of the authors of this paper, having ratepayers pay the debt would be nearly criminal. The ratepayers of Santee Cooper, many of them already challenged economically, do not deserve to be saddled with additional costs due to the failure of Santee Cooper.

Santee Cooper must be sold. The State of South Carolina, through its General Assembly who has final authority, can and should find a buyer willing to somehow assume the agency's debt.

Our recommendation is that the South Carolina General Assembly pass legislation this session to create a *Commission on the Sale of the South Carolina Public Service Authority*. It is important that the legislation establish the panel as a Commission and not another legislative study committee or feasibility committee. The goal of the Commission should not be to assess feasibility, but to seek independent valuation of Santee Cooper assets and vet potential offers.

## ON UTILITY RATES AND SANTEE COOPER

Our current utility system “shifts the burden to the consumer whether he is willing or not.

---*Dr. Douglas Houston, University of Kansas. 1995*<sup>1</sup>

This decision [on whether to sell Santee Cooper] needs to be made based on the numbers. Most important: the difference between rates if customers have to cover Santee Cooper’s nuclear debt — and their rates if they have to buy electricity from a private company that has to cover the debt and make a profit. And not just the difference for five or 10 years; the difference over decades. This is an extremely valuable state asset that must be sold only if it is absolutely clear that it is in the long-term interests of our state, and of Santee Cooper customers, to sell it.

---*Cindi Ross Scoppe, The State newspaper*<sup>2</sup>

From a timeline standpoint...the rates are relatively stable until 2020. The concern is beyond that time as the co-ops begin paying for the nuclear unit that the rates--which are going to go up, the question is how much are they going to go up. As a general concern for the cooperatives we worry about the competitiveness of our rates.

-----*Central Electric Cooperative Chief Legal Counsel John H. Tiencken*<sup>3</sup>

“[To complete VC Summer]...our models showed we would have to raise rates 41%.”

-----*Santee Cooper CEO Lonnie Carter*<sup>4</sup>

This debt will have to be paid. But it won’t be paid from the sale of power from these two unfinished nuclear reactors. Santee Cooper will have no choice but to raise rates on customers. Their largest customer, the electric cooperatives, will be required to pay roughly 70% of it for the next 30 years. The only feasible solution suggested so far is the sale of Santee Cooper.

-----*Governor Henry McMaster*<sup>5</sup>

If you get really good answers back, about lots of things---about ratepayers, about personnel going to be OK, that existing employees are going to be OK, at the same time rates are going to go down, it may be hard for the General Assembly to say no at that point. Why would you say no for something that works across the board?

----*Mike Couick, President & CEO, The Electric Cooperatives of South Carolina*<sup>6</sup>

---

<sup>1</sup> “Privatizing Santee Cooper,” by Douglas Houston, *Reclaiming the Legacy: A Public Policy Agenda for South Carolinians*, South Carolina Policy Council Education Foundation, 1995.

<sup>2</sup> *The State*, January 23, 2018.

<sup>3</sup> SC House Ratepayer Protection Committee, February 4, 2018.

<sup>4</sup> SC House Ratepayer Protection Committee, October 3, 2017.

<sup>5</sup> The State of the State, Governor Henry McMaster, January 24, 2018.

<sup>6</sup> Mike Couick, President & CEO, Electric Cooperatives of South Carolina, Ratepayer Protection Committee, SC House of Representatives, February 4, 2018.



# SANTEE COOPER BY THE NUMBERS

**\$4.574 BILLION<sup>1</sup>**

Amount borrowed  
by Santee Cooper

**\$898.7 MILLION<sup>2</sup>**

Amount Santee Cooper  
received from  
Westinghouse

**\$540 MILLION<sup>3</sup>**

Amount Santee Cooper  
customers have paid in  
rate increases for two  
reactors

4

Rate hikes, so far, that Santee Cooper has  
passed on to its customers for new reactors<sup>4</sup>

4.5%

Portion of Santee Cooper bills that pay for  
the reactors<sup>5</sup>

**\$19 MILLION<sup>6</sup>**

Amount Santee Cooper  
expects to have to spend  
per year to preserve  
nuclear site

**6.6%<sup>7</sup> | \$7,494,568,000<sup>8</sup>**  
PROFIT MARGIN | OUTSTANDING COST OF VC SUMMER UNITS 2 & 3

## SANTEE COOPER REQUIRED RATE INCREASE SCENARIOS

(UTILITY BILL  
PER YEAR)

### RATE SCENARIOS WITH REDUCED CUSTOMER DEMAND

1. **↑ \$166.99** 2. **↑ \$194.49** 3. **↑ \$238.37** 4. **↑ \$339.42**

### RATE SCENARIOS WITH REDUCED CENTRAL DEMAND ALSO

5. **↑ \$446.76** 6. **↑ \$580.27** 7. **↑ \$751.03**

**FOOTNOTES** 1 \$4.2 billion for construction plus \$374 million in capitalized interest in 2016 added to principal.  
2 Fitch ratings report, FY ending 12/31/16.  
3 The State newspaper.  
4 We count 4 rather than 5, as the first rate increase was not necessarily for VC Summer project.  
5 The State newspaper.  
6 \$19 million each year for 2017-2018 and \$5 million per year thereafter.  
7 This electricity profit margin is equal to net income before transfers to the state divided by total revenue from electricity sales.  
8 Assumes Toshiba note is applied to principal.

## PART I

Santee Cooper: A Historical & Policy Perspective

by Oran P. Smith, PhD

### Perspective

*A word about perspective. The following is a realistic but respectful analysis of the South Carolina Public Service Authority, "Santee Cooper." We must acknowledge that Santee Cooper literally brought light into darkness for hundreds of thousands of South Carolinians. Its name includes Service and that is no accident. Santee Cooper in its earliest form was sponsored by heroes of the American War for Independence and that idea developed much later through the efforts of men and women who saw the project as an act of patriotism, even love. The theme of this monograph should be considered that of an intervention, of a loyal friend approaching another who needs to embrace change or face a dark future, the presentation of facts that cannot be ignored to one who has served well.*

### An Old Policy Idea is New Again

As the quotations on page 1 indicate, the discussion about the future of Santee Cooper, the South Carolina Public Service Authority, has come a long way since 1995. In the same volume as the statement by Professor Houston of the University of Kansas, I wrote this:

*Pressure for the sale of the publicly owned utility has been growing steadily in recent years, particularly in the wake of the revelation that Santee-Cooper has expended almost \$2 million in rate-payer funds in support of charities and activist groups and has regularly awarded contracts without bids.<sup>7</sup>*

We shall dig more deeply into the latter part of that quotation later.

Taking the first clause first, I can say that in my mind at the time, "pressure" had been "growing steadily." The new Republican majority in the South Carolina House was ready for a conservative agenda, a Contract with South Carolina so to speak, and selling a New Deal-inspired government-run utility was an idea worth discussing. But then reality hit. Santee Cooper itself, The Electric Cooperatives of South Carolina, the Central Electric Cooperative, and the 20-individual electric "Co-ops" would have none of it. They pushed back hard. We should have expected no less. The idea of selling Santee Cooper was stood up and pushed back by a wave of wide and deep opposition.

There were two strong arguments for not selling Santee Cooper back then that resonated with the people of South Carolina and its General Assembly, one based on fact and the other based frankly on feeling. Factually, there was somewhat of a "if it ain't broke, don't fix it" mindset during that period. Santee Cooper had hit some rough patches in its first decade, then again in the 1950s and 1970s (see Timeline on pages 18-19), but the management of the utility had begun to look more like a corporation than a state agency and the Authority looked sound fiscally. Bill Mescher, a sharecropper's son who went on to earn an MBA from Northwestern,

---

<sup>7</sup> Oran P. Smith, PhD in *Reclaiming the Legacy: A Public Policy Agenda for South Carolinians*, South Carolina Policy Council Education Foundation, 1995.

had changed the culture significantly as CEO. Mescher was in the SC Senate when the selling of the agency was proposed and provided a firewall against the discussion.<sup>8</sup>

Then there was the argument that I shall call the patriotic argument. Opponents of a sale couched putting a pearl like Santee Cooper on the block as downright treasonous, the national equivalent of selling the Smithsonian Institution or The Statue of Liberty. In the minds of many, Santee Cooper was not as much a state agency or a power company as it was a part of the Palmetto State's history, a place to hunt and fish and boat that meant family and friends---the best parts of living in South Carolina. "Santee Cooper Country" and the South Carolina Public Service Authority became intertwined in a way that made a balanced policy discussion impossible.

Since that time, a series of events and decisions relating to Santee Cooper has changed the discussion, causing policymakers and political leaders to take a second look at a possible sale. The most salient of these of course being the VC Summer nuclear partnership with SCANA Corporation. With VC Summer Units 2 and 3 over budget and behind schedule, project managers Toshiba/Westinghouse in bankruptcy, and the new units standing at only 37% complete and a new completion date of January 1, 2021 at the earliest, SCANA and Santee Cooper pulled the plug.<sup>9</sup>

Now is the time to take a fresh look at the status of Santee Cooper, the South Carolina Public Service Authority.

## **From a historical perspective, Santee Cooper is unique. Facing the future, that uniqueness has both benefits and baggage.**

*From my study of the Santee Cooper Project, I am convinced that its construction, which can be speedily put under way, will not alone serve to overcome the distress caused by unemployment in the section, but will also permanently contribute to the economic development of the Southeast. ---President Roosevelt to US Senator James Byrnes (D-SC)<sup>10</sup>*

It is a truism that an enterprise that began over 80 years ago has a history. The meaning here is that it is a mixed history. There is no ignoring the fact that the South Carolina Public Service Authority was enabled by act of the South Carolina General Assembly, but the state had a lot of assistance with launching the project it authorized and ultimately owned. Here's how it happened.

When Democrat Franklin Delano Roosevelt was campaigning for President in 1932 against incumbent Republican Herbert Hoover, one of his top political priorities was to keep the "Solid South" solidly Democratic. Hoover was the first Republican to peel off a few states in the "Peripheral South"<sup>11</sup> in 1928, and FDR couldn't let that happen. Roosevelt was also committed to expanding Hoover's public works program. So, the campaign sent out the word that the candidate was shopping for projects, particularly in the area of the country whose theme was

---

<sup>8</sup> <http://www.scstatehouse.gov/member.php?code=1324999841&chamber=S>

<sup>9</sup> "SCANA, Santee Cooper Pull Plug on VC Summer," Michael Smith, *The Aiken Standard*, July 31, 2017.

<sup>10</sup> Cited in Walter B. Edgar, *History of Santee Cooper, 1934-1984*, Columbia, SC: RL Bryan, 1984, p.7.

<sup>11</sup> Political scientists refer to two Souths, the *Deep South* and the *Peripheral South*. Hoover carried Tennessee, Virginia, North Carolina, Florida, Oklahoma and Texas—all in the Peripheral or "Rim" South. The Deep South, the area from South Carolina to Louisiana and Arkansas, stayed with the Democratic Party.

“somebody told us Wall Street fell, but we were so poor that we couldn’t tell. Cotton was short and the weeks were tall, but Mr. Roosevelt’s gonna save us all.”<sup>12</sup>

A delegation from South Carolina met with FDR<sup>13</sup> and suggested that the federal government take over a private but floundering navigation-dam-powerplant project, the navigation part of which had been in the works since the days of Revolutionary War heroes Francis Marion and Thomas Sumter. The fledgling Santee Cooper project was a good match for The New Deal: it would provide jobs for the unemployed, a strong federal financing presence, aggressive manipulation of natural resources to prevent swamps and diseases like malaria, and electricity for poor rural farmers. There was also some thought given to it serving as a canal that would provide navigation between Charleston and Columbia. That part was never realized.

Roosevelt kept the South in the Democratic column, was elected, and made good on his South Carolina promises. But before federal funding and loans could be secured, it was felt that a state entity needed to be created. Though the SC House rejected it at first, the bill passed and Governor Blackwood signed it in 1934. The charter stated that the South Carolina Public Service Authority was created by the state “for the benefit of all the people of South Carolina and for the improvements of their health, welfare, and material prosperity.”<sup>14</sup>

Specifically, that meant the SC Public Service Authority would have authority to:

*...develop the Santee, Cooper, and Congaree Rivers for navigation, to produce and distribute electricity, reforest watersheds of state rivers, and drain swamp lands. Most importantly, the act allowed Santee Cooper to build canals, dams, and power plants and to divert the Santee river. This new entity also had the authority to set rates for the electricity it produced, borrow money, and issue bonds.*<sup>15</sup>

The project was expensive. South Carolina’s entire budget at the time was \$6 million. The cost of the Santee Cooper project was \$48 million. Of that total, the federal government lent \$26.5 million and provided grants of \$21.7 million. But unlike other similar projects, like the Tennessee Valley Authority (TVA), Santee Cooper would be owned by the state, not the federal government.<sup>16</sup>

## Santee Cooper has a symbiotic relationship with the Electric Cooperatives, especially after “The Agreement.”

The Electric Cooperatives of South Carolina (formed 1941) is composed of 20 member “cooperatives,” or “Co-ops.” Co-ops are not-for-profit businesses that form a network of community-based companies. The ratepayers or consumers are members. Members elect the board of the Co-op. Each cooperative is an independent business that provides legal services, governmental relations services, safety programs and training, and professional development.

---

<sup>12</sup> “Song of the South,” lyrics by Bob McDill.

<sup>13</sup> Edgar, p.5; “The idea of the federal government taking over the Santee Cooper project from the private sector was pitched and well-received.”

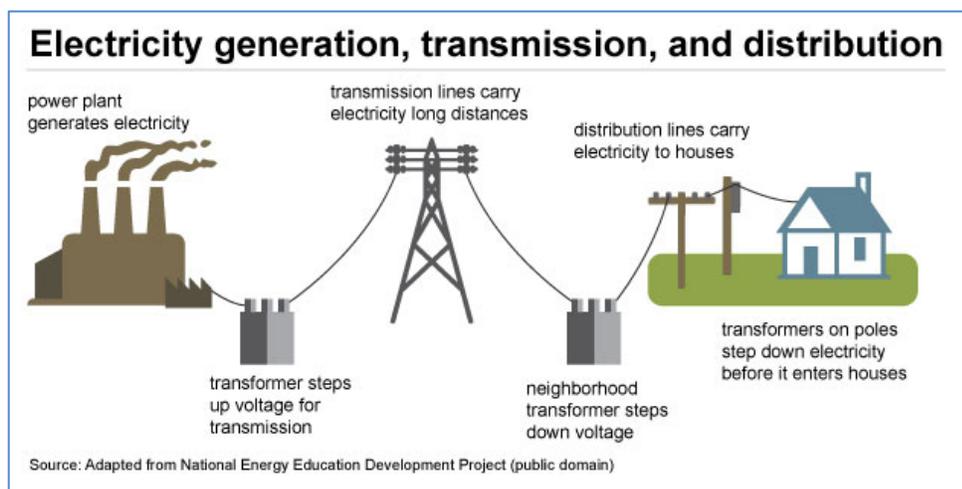
<sup>14</sup> *Pushing Back the Darkness: The Story of the Santee Cooper* (1988), p. 11.

<sup>15</sup> Edgar, pp. 6-7.

<sup>16</sup> The Electric Cooperatives of South Carolina, Frequently Asked Questions, Page 1.

The Co-ops were formed because of the disparity of the availability of electricity in 1930s and 1940s. A Co-op has about half as many consumers per mile of line as investor-owned utilities.

The Central Electric Power Cooperative (formed 1948) provides purchasing power to the Co-ops. Central is a Generation and Transmission or "G&T" Cooperative. It owns transmission systems, negotiates purchase power agreements with generators and arranges for the transmission of the power to local cooperatives. Member cooperatives agreed to have Central serve as a wholesale power aggregator, a sort of "Super Customer." Central purchases power from Santee Cooper, Duke Energy and the Southeast Power Authority. Central delivers to distribution cooperatives. Cooperatives then deliver power to members. Central manages power supply contracts, provides transmission planning and construction, engages in load management, works to expand solar and other renewables, promotes energy efficiency, handles industrial billing, and serves as an industrial recruiter through its South Carolina Power Team.<sup>17</sup>



Central has served a key role in Santee Cooper since its inception. It was Central that borrowed over \$7.5 million from the federal Rural Electrification Administration to build transmission lines to connect to Santee Cooper. Santee Cooper made the loan

payments and now owns these lines. To this day, Santee Cooper has the *most* transmission and the *fewest* distribution lines of any utility operating within the state.

Since at least 1950, Central and Santee Cooper have had understandings and Cooperative Agreements, a power contract that was amended in 1980, 1988, and 2013. Central pays about 70% of Santee Cooper's capital costs and about 61% of other costs. Central was in essence responsible for paying \$2.8 billion of the costs of the failed VC Summer project. The Central contract with Santee Cooper (which doesn't end until 2058) is worth \$50 billion (\$20 billion net current value) and is Santee Cooper's single largest asset. In 2016, Central paid \$1.02 billion of Santee Cooper's total electric revenue of \$1.73 billion.<sup>18</sup> Understood another way, Santee Cooper's "sources of income" are 57% Co-ops (wholesale), 21% residential and retail and 20% military and large industrial.<sup>19</sup>

The most recent Agreement signing was nearly a decade in the making. It was described in glowing terms in the Santee Cooper magazine:

<sup>17</sup> Testimony of CEPC President & CEO Rob Hochstetler before SC House Ratepayer Protection Committee, February 4, 2018.

<sup>18</sup> MCEC President B. Robert Paulling letter to Rep. Micah Caskey, December 19, 2017.

<sup>19</sup> The delivery is to: 65% wholesale, 19% military/large industrial, 16% retail. "Santee Cooper Power: Where it Goes 2016 Energy Sales," *Santee Cooper Fingertip Facts* 2016, p. 10-11.

*May 20, [2013] dawned dark and stormy, but even the swirling clouds couldn't dampen the spirits of 100 or so electric cooperative and utility leaders gathered expectantly under a tent by Lake Moultrie. Indeed, the partnership strengthened by that morning's contract signing ceremony proved more powerful than the storm, which kept a respectful distance as Santee Cooper President and CEO Lonnie Carter and Central Electric Cooperative President and CEO Ronald J. Calcaterra took pens in hand.<sup>20</sup>*

That happy occasion seems light years away now as the Cooperatives told the Ratepayer Protection Committee of the South Carolina House:

"The current situation at Santee Cooper is not acceptable. We are paying more for less. Economic development will be difficult given rates that must be paid. There is a lack of confidence, a need for *transformation* [emphasis ours]. Co-ops believe that 70% of the funds from the \$630 million Toshiba settlement should go to our members."

This powerful statement by Electric Cooperatives of South Carolina CEO Mike Couick was backed up by resolutions passed by Electric Cooperative Boards of Directors earlier this year: "...the continuation of the status quo at Santee Cooper is unacceptable...the funds received by Santee Cooper from the Toshiba settlement...is cooperative members' money. Our members should not receive anything less than the full benefit of that amount."<sup>21</sup>

Now the Co-ops, through Central, have indicated their intention to sue Santee Cooper to prevent further charges from Santee Cooper to cover the VC Summer debt. Without Central, Santee Cooper will have nowhere to go but to its direct residential, retail and industrial customers, which is about 35% of its overall customer base.<sup>22</sup>

## **Santee Cooper has a governance heritage that plagues state agencies.**

Since its founding, Santee Cooper suffered from the maladies of state government agencies in South Carolina under the Tillman (1895) state constitution. Legislative entanglement was rampant. It were as if politicians persuaded Washington to make Santee Cooper happen, then couldn't let go. State Senators, then virtual county bosses, often chaired the board, and a Senator and former governor was named CEO (then known as General Manager) in the 1940s not for his executive experience but because of his strong support for the agency. The Santee Cooper office was in Columbia for much of its first decade.

At one point during the 1950s, Governor Byrnes and the General Assembly became so concerned about Santee Cooper management that a nine-member committee was appointed to examine operations. Few recommendations were offered.

---

<sup>20</sup> "Powerful Partnership Works for South Carolina," Mollie Gore, *South Carolina Works*, 2013.

<sup>21</sup> Resolution passed by Mid-Carolina Electric Cooperative in special called meeting of the board of directors, January 30, 2018.

<sup>22</sup> "Santee Cooper's Largest Customer Will Sue to Stop Charges for Failed Nuclear Project," Avery G. Wilks and Maayan Schechter, *The State*, February 23, 2018; Santee Cooper *Fingertip Facts 2016*, p.11.

Concerns over Employee Benefits, Contributions, and Procurement were raised in the 1990s, prompting a request for a Legislative Audit Council (LAC) audit. The 1995 audit<sup>23</sup> found that in *Employee Benefits*, Santee Cooper executives were receiving “additional retirement payments varying from 10% to 30% of their final salaries, additional disability insurance and life insurance.”<sup>24</sup> In *Contributions*, the LAC found that in 1993 the utility/agency had made 229 contributions of ratepayer funds to organizations totaling \$721,250, suggesting some of the contributions “might not be legal” because of connections between the organizations and Santee Cooper board members.<sup>25</sup> In *Procurement*, the LAC noted factually that unlike other state agencies, Santee Cooper was not required to procure private attorneys with the approval of the Attorney General.

Why do we dredge up an audit that is over 20 years old? Because just last month, several members of the legislature expressed their frustration at Santee Cooper’s executive compensation and “extra” retirement packages. As reported by *The State*, “[Santee Cooper Chief Executive Lonnie] Carter participated in the state retirement plan and the two extra plans, which he was added to by Santee Cooper’s board. After stepping down amid controversy last August, he receives a retirement package worth at least \$800,000 per year.”<sup>26</sup> (Extrapolated, that is \$16 million over the next 20 years.) The State also reported the Santee Cooper executives received extra compensation as a “reward” for their work on the failed nuclear project of \$70,650.<sup>27</sup> These perquisites, or “extra” though legal benefits sound similar to some of the findings of the 1995 audit.

## **Santee Cooper has exhibited a pattern of struggling to match its load to its transmission needs.**

One of the chief concerns about Santee Cooper, a concern that extends back in time beyond VC Summer, is the agency’s apparent inability to “rightsize” its load.

In August 2009, just over one year after announcing it would join SCANA to expand the VC Summer site, Santee Cooper was forced to cancel a \$2 billion Pee Dee Energy Campus, what was to be a coal-fired plant in Florence County. The agency board had approved the project in 2006. According to a class action lawsuit filed by Conway attorney and former SC House Member George Hearn, Santee Cooper issued bonds in 2007 for about \$342 million to pay for the Pee Dee plant. It then used the proceeds of the bonds to finance about \$249 million for a coal plant “kit” from China to be delivered to the Pee Dee area site.<sup>28</sup>

Santee Cooper issued more bonds in 2008 and 2009 to pay for building the Chinese-fitted campus. The suit holds that the total was \$406 million in 2008 and \$164 million in 2009. (Santee Cooper spends around “\$13 million per year for maintenance and security, and about

---

<sup>23</sup> “A Limited Scope Review of Santee Cooper,” Report to the General Assembly, South Carolina Legislative Audit Council, LAC/94-3, February, 1995.

<sup>24</sup> LAC Audit (1995) Executive Summary.

<sup>25</sup> Ibid.

<sup>26</sup> “Santee Cooper to Drop ‘Ridiculous’ Perk for Executives After Nuclear Fiasco,” Avery G. Wilks, *The State*, February 1, 2018.

<sup>27</sup> “Ibid.; ‘Santee Cooper Leaders Were Paid Bonuses for Failed Nuclear Project,’” Avery G. Wilks, *The State*, August 31, 2017.

<sup>28</sup> “Class action lawsuit claims Santee Cooper raised rates for unused Pee Dee power plant,” August 21st 2017, Ian Cross, WMBF.

\$3.5 million annually to keep the Pee Dee Energy Campus equipment in working condition,” according to WMBF/Raycom News.)<sup>29</sup>

Ultimately, the Pee Dee plant was mothballed because of what became known as “The Duke Deal.” The Duke Deal was a contract whereby several upstate Cooperatives who were a part of the Central Electric Cooperative voted to begin receiving their load from nearby Duke Energy rather than through Central’s agreement with Santee Cooper. This raises the question: Did Santee Cooper do all it could to keep the five departing Co-ops on board?

The investment existing at that time in the Pee Dee plant makes Santee Cooper’s acquiescence to SCANA’s desire for a nearly equal partnership in the expansion of the VC Summer plant all the more curious. The willingness to partner at such a large stake must have been based on the mistaken calculation by Santee Cooper that they would need *even more* load than the Pee Dee plant was to provide when it came online.<sup>30</sup>

To be charitable, there was a recession that reduced power demand, and the massive drop in the cost of natural gas and the host of problems at VC Summer may have been difficult to foresee. And, the cost of building the second of two new units is only about a third more than the first in cost. But, why did Santee Cooper opt for a massive 45% stake in Units 2 and 3 when the utility owns only 33% of the capacity of Unit 1? Energy experts have pointed out: For Santee Cooper that’s close to owning an entire reactor on its own.<sup>31</sup>

Others were concerned at the new ratio as well. If the recent legislative testimony of the Electric Cooperatives and their partners at Central is accurate, their largest customer had a very different view of the stake Santee should have had, suggesting a portion as low as 10%<sup>32</sup>. The Co-ops and Central also pushed for the involvement of additional utilities like Duke Energy at VC Summer so that the risk and costs could be spread over more partners and be more diversified.<sup>33</sup> Santee Cooper told investors in 2013 it had a target VC Summer 2&3 share of 20%.<sup>34</sup>

As the abandonment of the Pee Dee Energy Campus has ongoing costs for Santee Cooper, so does the annual cost of abandoning VC Summer. According to *The State*, “[Santee Cooper] expects to pay about \$16 million a year to make sure the unfinished twin nuclear reactors and their components — worth hundreds of millions of dollars — don’t go to ruin after Santee Cooper and investor-owned SCE&G abandoned a 10-year construction effort last July. Santee Cooper also could spend another \$3 million a year to continue leasing and insuring two

---

<sup>29</sup> Ibid., “South Carolina’s Santee Cooper Shelves \$2 Billion Coal Plant Project,” August 26, 2009, *POWERnews*.

<sup>30</sup> Reports to DOE, integrative resource plans and 20-year forecasts, seem to indicate falling load requirements though the agency emphasized to investors its 10.9% growth from 2002-2012.

<sup>31</sup> Unlike coal-fired plants, the cost of nuclear plants is mostly capital costs. But these costs are fixed, meaning that the reactors must run at capacity to generate the load to sell to cover the outsized capital costs. This was the level of commitment Santee Cooper made to its partner SCANA Corporation.

<sup>32</sup> The Co-ops lost the argument for less load from VC Summer 2 and 3. The upstate Co-ops pulled out soon afterward.

<sup>33</sup> Testimony of Central and Electric Cooperatives to SC House Ratepayer Protection Committee, February 4, 2018.

<sup>34</sup> Santee Cooper presentation to JP Morgan Public Finance Transportation & Utility Conference, April 16, 2013. That same presentation described the nuclear construction positively due to “experienced construction & engineering partners” and that project was “on time and under budget.”

massive warehouses full of unused nuclear equipment, according to a letter its acting board chairman sent Wednesday to Gov. Henry McMaster.”<sup>35</sup>

The casual reader may wonder why the South Carolina Public Service Commission, regulator (actually *adjudicator*) of utilities in South Carolina, did not weigh in on Santee Cooper’s large share of the new phase of VC Summer. The reason is, as stated earlier, Santee Cooper is not regulated or overseen by the PSC or the Office of Regulatory Staff (ORS) in the same manner as other utilities.

The board of The South Carolina Public Service Authority (Santee Cooper) is composed of twelve (12) members, who are appointed by the Governor and screened by the Public Utilities Review Committee (a group appointed by the General Assembly) and confirmed by the SC Senate for seven-year terms. They can be removed for severe offenses only. The five (5) rate increases during the time of the nuclear project and the Pee Dee Campus were approved by the board of Santee Cooper. No one else. There is an Advisory Board composed of top state elected officials, but that board’s purpose is nearly honorary. The lack of PSC or ORS oversight may have been a benefit to Santee Cooper, however, as investors in the utility could find the agency attractive due to its possessing essentially rate-making autonomy. But, in this case, another word for *autonomy* is lack of real *oversight* of a government agency.

The Central Electric Power Cooperative seemed to be voicing its concerns about the management of Santee Cooper when it wrote into its extension<sup>36</sup> of the Coordination Agreement in 2013 a joint Santee Cooper-Central staff advisory committee and the right of Central to refuse to pay any capital costs for future power plants if Central did not approve of them. In the future, and in the face of recent false starts, Central seemed to be saying they wanted their voices and expertise to be heard to prevent future miscalculations by Santee Cooper. A true *partnership*.

Note: A related issue is Santee Cooper’s historical commitment to coal. One analyst described it in gambling terms: “doubling down.” At the time of the passage of the Energy Policy Act of 2005, a measure designed to encourage investment in nuclear energy generation facilities, Santee Cooper was using coal to generate 70%-80% of its electricity. Perhaps going in too far on VC Summer was an overreaction to that doubling down and the incentives embedded in the 2005 Act. But there were other options, like natural gas. With an investment in natural gas, the dependence on rail lines for supplying coal would have been significantly reduced.

## **Santee Cooper has endangered economic development by antagonizing an industry it has been charged with serving.**

If Santee Cooper publications are an indicator, one of the points of pride for the utility in the last generation or so was the large investment of Alumax of South Carolina in an aluminum smelting plant in the Mount Holly area of Berkeley County in 1979-1980. Now a part of Century Aluminum, the plant produces a high-grade aluminum billet.

---

<sup>35</sup> “Santee Cooper will pay millions to preserve VC Summer nuclear site,” Avery G. Wilks, *The State*, February 21, 2018.

<sup>36</sup> Amendment to Power Systems Coordination and Integration Agreement, Memoranda of Understanding and Letter Agreements Between Central Electric Power Cooperative, Inc. and South Carolina Public Service Authority, May 20, 2013, Article IV Future Resources.

But, the manufacturing process is extremely electricity dependent, requiring 200-400 megawatts of electricity per year. That level of use (400 megawatts would power 200,000 homes for one year) means that electricity is about 40% of the cost of operating the plant, its single highest expense. Use of that level also makes the relationship between the industry and the utility of paramount importance. Century was forced to lay off half of its 600-person workforce in 2015 due to high electricity costs.<sup>37</sup>

But electricity is not (and should not) be limited to the local service provider. That is why Century negotiated a deal where it could purchase 75% of its power from a third party. The cheaper, natural gas-produced power bought on the open market is “wheeled in” using Santee Cooper lines. Century purchases the remainder of its power from Santee Cooper at a higher price.

Concerned about its viability, Century Aluminum has asked for a new contract (the current contract expires this year) that would increase the transmission fees it pays to Santee Cooper. The new agreement would also allow Century access to more of that less expensive electricity (some estimates peg the gas-fired electricity at *half* the cost of Santee Cooper’s power generated utilizing coal). Century CEO Mike Bless says that energy choice and the lower price it affords would allow them to begin hiring again “the next day.”<sup>38</sup>

Santee Cooper has rejected this idea, arguing that wheeling in the additional 25% to the plant would overtax its network and reduce its ability to serve its other customers. Century strongly disputes this claim. At loggerheads, Century has sued Santee Cooper for failing to meet its economic duty, and has sought assistance from the General Assembly in the form of legislation. The bill is awaiting a hearing, and the case is pending at the Fourth Circuit US Court of Appeals (Richmond).<sup>39</sup> According to Century, Santee Cooper’s unwillingness to work with them is a flat violation of state law.<sup>40</sup>

## Santee Cooper doesn’t have a unique economic development motivation or ability among utilities.

Perhaps because of its status as a state agency, and the fact the Department of Commerce is also a state agency, there is a myth that a private Santee Cooper would no longer be interested in working on its own and with state agencies to spur economic development in its service area. This concern is curious.

Investor-owned utilities aggressively recruit businesses and work hand in hand with state development boards, local economic development entities, and departments of commerce all over the United States. They aggressively compete to be the best, and like colleges, covet a high *US News and World Report* ranking. Utility economic development divisions compete to be

---

<sup>37</sup> “Owner of Mount Holly smelter in Goose Creek to appeal electricity rate lawsuit.” David Wren, *Charleston Post & Courier*, October 10, 2017; “No resolution to Charleston-area smelter’s electricity dispute as contract enters final year,” by David Wren, *Charleston Post & Courier*, February 14, 2018; “Century Aluminum seeks legislative remedy for its power woes,” David Wren, *Charleston Post & Courier*, February 25, 2018.

<sup>38</sup> Ibid.

<sup>39</sup> Ibid.

<sup>40</sup> Part of the problem is the lack of competition for electricity in South Carolina, and the Southeast in general. The is no real energy free market. One analysis described it as being “stuck in the 1950s.”

ranked among the “top utility economic development teams.” Utilities in neighboring states regularly make the list of “leaders in the field.”<sup>41</sup>

Simply put, should Santee Cooper be sold, the odds are strongly in favor of the same or better level of economic development activity as one enterprise-based business reaches out to others. A private entity with fresh capital would also be more likely to accomplish what Santee Cooper has been unable to do: afford to invest significant funds in economic development activities and capacity.

## Santee Cooper’s rates are not an advantage for ratepayers after all.

Historically, because it is a state agency and makes only “pseudo” profits (see page 25), Santee Cooper has been able to offer its customers competitive rates. That’s not the case anymore. According to the South Carolina State Energy Office, here are the rates stated per kilowatt hour for utilities operating in South Carolina:

1. SCE&G:	14.56
2. SCE&G (without nuclear surcharge)	11.93
3. Santee Cooper	11.62
4. Santee Cooper (without nuclear surcharge)	11.10
5. Duke Energy	11.01
6. Duke Energy’s former Progress Energy territory	10.01

According to *The State* newspaper, the 11.10 per kilowatt hour Santee Cooper rate without the surcharge is still high. “That’s still more than Duke or Progress,” opines *The State*, “which raises questions about how valuable a state-owned utility actually is.”<sup>42</sup>

Indeed.

In its communications, Santee Cooper has seemed to adjust its facts to reality, abandoning the “lowest rates” claim for “among the lowest rates.” According to the official history, in the late 1990s “Santee Cooper remained the lowest-cost producer and distributor of any major generating utility in South Carolina.”<sup>43</sup> That is no longer the case, calling to memory the words of the former state senator who said during his time in that body that Santee Cooper should be “yardstick” for the lowest rates in the state. “If their rates aren’t the lowest, why do they exist?,” he said.

---

<sup>41</sup> “This Year’s Top Utilities Back Rich Data with Even Richer Levels of Service and Assistance,” Adam Burns, *Site Selection*, September 2017.

<sup>42</sup> “Three Numbers You Need to Know About SCE&G, Dominion and Our Energy Future,” Cindi Ross Scoppe, *The State*, February 24, 2018.

<sup>43</sup> *Powering Generations: The History of Santee Cooper 1934-2009*, p. 225.

## Residential rates for Santee Cooper customers are going to rise, not only because of VC Summer but because of the utility's ongoing struggles to match its load capacity with customer demand.

Dr. Katie Player and Dr. Mike Maloney have calculated the residential rates that would need to be charged to Santee Cooper (and Central) ratepayers to pay for its portion of the failed VC Summer nuclear project that have not yet been fully passed along to customers. Those calculations begin on page 28.

As for industrial rates, a back of the envelope calculation could show an increase of up to \$80,000 per month for the some 28 major industrial customers of Santee Cooper. That is hard to fathom.

## There are five options to pay off its debt and lock or reduce rates. Only two make sense.

Clearly the most pressing question about Santee Cooper is what is to be done with the VC Summer debt, and any other corporate debt. Five options seem to present themselves.

First, Santee Cooper can in essence *fix* itself so radically that streamlined operations and cost savings prevent any need for raising rates. If "fixing" meant covering the sunken costs of its mothballed coal-fired Pee Dee Energy Campus, that might be conceivable. But even the Pee Dee plant has costs associated with the fact the Santee Cooper still owns the idle equipment there. Add to that VC Summer, where the level of debt accumulated without the ability to generate electricity to sell, makes a "fix" just too high a mountain to climb. Debt cannot disappear under new management. Any solution must face the debt.

Second, there is the option of passing along the debt to *taxpayers*. This is discussed later in this paper, but for now we can set this option aside. Santee Cooper is not backed by the full faith and credit of the state, and state legislative Finance and Ways & Means leaders are unlikely to allow consideration of legislation that would shift the burden to all or some taxpayers.

A third option is to pass along the debt to the *customers*. It is the opinion of all the authors of this paper, both this Section 1 and the latter Section 2, that this option would be nearly criminal. The ratepayers of Santee Cooper, many of them already challenged economically, do not deserve to be saddled with costs due to the failure of Santee Cooper to rightsize its operation and instead assume an outsized role in VC Summer #2 and #3.

A fourth option, explained more fully later in this paper (see page 41) would be for the holders of Santee Cooper debt to take a "haircut," most likely as an outcome of a bankruptcy. It is a fact of finance that the holders of Santee Cooper debt knew what they were getting into.

The last option is for the State of South Carolina, through its General Assembly who has final authority, to find a buyer willing to somehow assume the agency's debt.

## Santee Cooper must be sold. Here's how that could happen.

The instability of Santee Cooper and the looming debt for assets that generate no electricity to sell is harmful to real people and to economic development. Some of the most vulnerable residents of the state of South Carolina are in the path of the looming storm of increased rates. The horror stories told before Ratepayer Protection Committee of poor South Carolinians using baby wipes for baths to save on hot water show the desperation due to *existing* rate increases. Then there is economic development. What industry will be lured to an area where the rates are unstable? Business does not coexist with instability.

The General Assembly, which statutorily must approve the sale, cannot afford to dawdle. While some are simply calling for the board of Santee Cooper to be replaced, or for merely forcing the agency into bankruptcy by creating default, there are additional solutions to consider.

Here's how the sale of Santee Cooper could be accomplished.

First, it is a safe assumption that the state would rather not sell the lakes and water system. These assets could be transferred to the South Carolina Department of Parks, Recreation & Tourism. Parks are a legitimate function of government and would keep "Santee Cooper Country" for future generations to enjoy.

The second question would be whether to split *transmission* and/or *distribution* of power from *generation* of power for sale purposes, then sell in pieces. This is certainly a possibility worth considering, but the feasibility of splitting the assets is only determinable through a deliberate valuation conducted by industry experts and an open and transparent process that encourages competitive offers. However, splitting generation from transmission and distribution as a fait accompli or a prerequisite could damage marketability or deter potential buyers.

Our recommendation is that the South Carolina General Assembly pass legislation this session to create a *Commission on the Sale of the South Carolina Public Service Authority*. It is important that the legislation establish the panel as a Commission and not another legislative study committee or feasibility committee. The goal of the Commission should not be to assess feasibility, but to seek independent valuation of Santee Cooper assets and vet potential offers.

As a Commission, it would be crucial for the panel to reach beyond the usual suspects of the legislators and The Iron Triangle---legislative staff, agency staff, and interest groups and their lobbyists---to be empaneled and staffed. A Commission, with nationwide expertise as members and staff, should establish parameters, receive impartial legal and financial advice, develop requests for proposal, and receive bids for the assets of Santee Cooper. The Commission should be composed in such a manner as to avoid the inward focus and unavoidable conflicts of interest that have plagued the state-owned utility industry where the same individuals seem to have a history with SCANA, Santee Cooper, the Electric Cooperatives of South Carolina and the Central Electric Cooperative. <sup>44</sup>

In the deliberations of the Commission, the Central-Santee Cooper Agreement should be on the table early. The Agreement, if it stands up in court, allows Central to opt-out of it if Santee

---

<sup>44</sup> During legislative review of Central, Santee Cooper and the Electric Cooperatives relationship, there was concern that little outside expertise was sought in the decision to join SCANA in the VC Summer nuclear plant, the operations of Santee Cooper, or in the relationship of Central with Santee Cooper.

Cooper is ever sold. This is presumably because Central funded much of Santee Cooper's transmission grid. If ownership changes, Central would have to consent for the Agreement to be assigned to the new owner or could be released from the Agreement.

However, Central and the Electric Coops of South Carolina should not use the Agreement as leverage to block what is best for the state as a whole and the future of Santee Cooper. Stripping the assets of the utility based on their own infrastructure needs and asserting ownership based on long past transactions would reduce the marketability of Santee Cooper. There is no reason to believe a Co-op/Central alliance would operate in that fashion, but such a posture could be harmful to the valuation of a state asset.<sup>45</sup>

### **An outright sale would have the benefit of getting the government out of the utility business. This is an important principle, not an ideological obsession.**

The people of South Carolina believe that state government should not oversee running utilities. This confirms what public policy researchers, advocates of more efficient government, and blue-ribbon commissions of management executives both in and out of South Carolina have been recommending for years. The Moreland Commission, set up by New York Governor Mario Cuomo to study the response to Hurricane Sandy, made a similar recommendation about the future of the Long Island Power Authority (LIPA) in 2013.<sup>46</sup> In these leaner economic times, government needs to focus on what it does best.

Looking back to The New Deal, there are those who would have supported the establishment of the South Carolina Public Service Authority then but would oppose it now. Give The New Deal its due on this point: entities were not competing in 1934 to put up \$48 million (over \$875 million in today's dollars) to build a hydroelectric project to provide power and recreational facilities to a diaspora of residents in the poorest region of our state. If Uncle Sam and Uncle Palmetto had not joined hands to flood the land for power generation, no one else would have done it. Not in 1934.

But those days are gone. Santee Cooper bears little resemblance to what it was the day the floodgates were closed and the reservoirs started filling in 1941. Today, several private entities have already expressed their interest in the total assets of Santee Cooper. These entities could free Santee Cooper of the bonds and limitations of government ownership and politics—and inject more free enterprise into the utility business in South Carolina. For a *statewide* government to own a utility is as counterintuitive in 2018 as for a state government to own a telephone service provider. Our state espouses the virtues of free enterprise and entrepreneurship. The founders of South Carolina came here to build businesses, not government agencies. Santee Cooper can be of even greater service to its ratepayers (both near home and through Central) with what only the free market can provide: more aggressive investment in infrastructure, rightsizing, and a management team to rival any in America in its expertise.

---

<sup>45</sup> MCEC President & CEO B. Robert Paulling letter to SC House Ratepayer Protection Committee members, December 19, 2017.

<sup>46</sup> "New York Commission Recommends Privatizing Long Island Power Authority," Scott DiSavino, *Reuters*, January 7, 2013.

## What will be the impact of a Santee Cooper sale on state revenue and on South Carolina taxpayers?

Again, the actual outcome of the work of a Commission is open to speculation because of our inability to predict the actual offers the state may receive from potential buyers. But clearly part of the work of a Commission would be to recommend to the legislature where the funds from a sale should go.

- A special fund like tobacco settlement funds?
- To Central, its partner Co-ops, and Santee Cooper customers to reimburse them for lost investment in VC Summer?
- Fully retiring the \$8 billion of Santee Cooper debt, relieving that burden from all Santee Cooper customers, including the Co-ops as well as any potential burden to South Carolina taxpayers?

A properly composed Commission could also determine the difference between the fee paid by Santee Cooper as a state agency and the taxes and fees that would be paid by a private entity. One parameter should be established at the outset: the state government (i.e., taxpayers, *any* taxpayers) should not be forced to pay for costs associated with Santee Cooper's borrowing and expenditures for the project in Jenkinsville.

## SUMMARY AND CONCLUSIONS

In the beginning of this work, we pledged a fair, loyal, even patriotic analysis of a wholly state government—owned entity that has been a source of pride for South Carolinians for generations. This has been an intervention, a purely factual conversation about a painful matter that can only be conducted by those who have demonstrated their loyalty to the focus of the conversation. In this historical and policy analysis section, we have examined fourteen (14) points that reach the conclusion that action must be taken now on Santee Cooper. In the next even more analytical section, two well-published economists will predict the result of doing nothing.

### What is Santee Cooper?

According to its enabling legislation, the South Carolina Public Service Authority has authority to develop the Santee, Cooper, and Congaree Rivers for navigation, to produce and distribute electricity, reforest watersheds of state rivers, and drain swamp lands. Most importantly, the act allowed Santee Cooper to build canals, dams, and power plants and to divert the Santee river. This new entity also had the authority to set rates for the electricity it produced, borrow money, and issue bonds.<sup>47</sup>

### Santee Cooper Early Years By the Numbers

900 families resettled due to flooded land to create reservoirs

In 30 months, dikes, dams, canals, and a hydro station were constructed; 177,000 acres of swamp and timberland cleared; 42 million cubic yards of earth moved; 3.1 million cubic yards of concrete were poured.<sup>48</sup>

In the next ten years, rural access to electric power grew from 3% to 91%.<sup>49</sup>

---

<sup>47</sup> Walter A. Edgar, *History of the Santee Cooper*, p. 6-7.

---

<sup>48</sup> *Pushing Back the Darkness: The Story of the Santee Cooper* (1988), p. 18.

<sup>49</sup> *Ibid.*

## Santee Cooper Early Years Timeline

1785: Investors petition General Assembly for a canal connecting the Santee and Cooper Rivers to improve the flow of commerce between areas near Charleston and points north.

1793-1800: 22-mile long canal constructed. The specific route was questioned by engineers.

1900-1850: The canal was in operation, but soon gave way to railroads as a more predictable commerce method.

Early Twentieth Century: Canal, dam and powerplant idea gathers and loses momentum.

1934: Enabling act passed by the SC General Assembly to create the South Carolina Public Service Authority. Private utility companies oppose the project and take legal action.

1935: FDR approves Santee Cooper as a WPA project. Largest New Deal program in South Carolina.<sup>50</sup>

1937: Courts rule in favor of the state on constitutional challenge, geological & ecological concerns and assertion that project would cost twice that projected.<sup>51</sup>

1939: Construction begins on Santee Cooper project. Actual costs projected to be five times the 1934 estimates.

1941: Man-made reservoir levels start to rise.

1941: Santee Cooper purchase South Carolina Utilities Company in the Conway-Myrtle Beach area.

1942: Power generation begins.

1942: Santee Cooper attempts to purchase SCE&G. Blocked by SC Supreme Court.

1942: Santee Cooper wins right to pay a fee in lieu of taxes (FILOT).

1948: Fourteen electric cooperatives with Central Electric Power Cooperative construct transmission lines.

1948: Santee Cooper makes payment to state treasury.

1949: Central attempts to purchase Santee Cooper. Blocked by courts.

1949: Santee Cooper buys Waccamaw Power Company (Georgetown).

1951: Santee Cooper started buying some power from Southeastern Power Administration.

---

<sup>50</sup> "Santee Cooper," *South Carolina Encyclopedia*.

<sup>51</sup> Edgar, p.7.

1953: Electric Cooperatives of South Carolina are at this point buying 25% of Santee Cooper's electricity generation.

1954: Santee Cooper builds its first fossil fuel power generating station.

1955-1959: Santee Cooper makes no payments to the state treasury.

1959: Santee Cooper begins buying power from SCE&G.

1966: New coal-fired energy plant opened near Conway and new station at Pinopolis.

1966: Santee Cooper buying a third of the electricity it is selling.

1972: Opening of Winyah Station, coal-fired plant in Georgetown.

1972-1973: South Carolina State Constitution amended to allow Santee Cooper to enter into agreement with SCE&G to build nuclear plant near Jenkinsville (VC Summer).

1975: Energy crisis hits United States. Santee Cooper forced to borrow operating funds.

1977: Alumax (later Alcoa Mount Holly and Century Aluminum) announces it will build a plant in Berkeley County.

1975-1981: Various plants built and expanded in Winyah.

1981: Cross coal-fired facility.

1977, 1983: Original and final date of opening of VC Summer Nuclear Station. Santee Cooper now at excess generating capacity.<sup>52</sup>

1955 vs. 1984: Hydro generation falls from 100% to 8%.

1984: General Assembly passes statute reserving Santee Cooper's right to sell power to industrial customers in the areas served by the Central Electric Cooperative.

## Santee Cooper VC Summer Timeline<sup>53</sup>

May 25, 2005: SC General Assembly overrides governor's veto of S.573, making it nearly impossible for governors to remove members of the Santee Cooper governing board.

2005: Natural Gas prices spike. Congress passes Energy Policy Act of 2005 to encourage nuclear plant construction.

---

<sup>52</sup> Walter Edgar, *History of Santee Cooper*, p.25.

<sup>53</sup> This timeline and data relies heavily on the timeline developed by Cindi Scoppe for *The State* newspaper.

2006: SC General Assembly passes resolution calling for new nuclear plants in South Carolina.

April 19, 2007: SC General Assembly passes S.431, the Base Load Review Act, which makes it easier for utilities to raise rates to pay for nuclear reactors while they are under construction and easier to charge ratepayers for their investments in plants they do not complete. The bill becomes law on May 3 without Gov. Mark Sanford's signature. (The Act was key in the ability of SCANA to undertake VC Summer expansion but did not apply to Santee Cooper.)

May 27, 2008: SCE&G and Santee Cooper announce plans for \$9.8 billion nuclear expansion project at the VC Summer plant in Fairfield County. SCE&G would pay \$5.4 billion for construction, Santee Cooper \$4.4 billion.

May 30, 2008: SCE&G asks the Public Service Commission to approve the first of multiple rate increases to help fund the nuclear project. (Because Santee Cooper is a state agency, the PSC does not have to approve its plans.)

Oct. 27, 2008: The Office of Regulatory Staff recommends approval of the nuclear project, saying SCE&G showed a need for extra capacity, the AP 1000 reactor design was a good one and more nuclear would allow for stable fuel costs.

October 2008: The Public Service Commission gives permission for SCE&G to begin site work.

February 2009: PSC approves SCE&G's nuclear expansion plan, which calls for construction to begin in 2012, fuel to be loaded into the first reactor in 2015, the first reactor to begin operation in 2016 and the second reactor to begin operation in 2019.

August 2009: Santee Cooper begins process of abandoning unfinished Pee Dee Energy Campus.

Dec. 31, 2011: SCE&G reports that progress has been delayed because of the need to redesign nuclear modules, as well as "production issues" and "manpower issues."

March 30, 2012: US Nuclear Regulatory Commission issues construction and operating licenses for the two reactors.

June 6, 2013: SCE&G warns of delays of up to a year because of problems with parts being built in Louisiana; says first reactor completion could be delayed until late 2017 or early 2018.

May 2014: Santee Cooper asks SCE&G to hire an outside company to oversee project management.

Oct. 2, 2014: Contractors say it will cost \$1.2 billion more than expected to complete the reactors.

October 2015: SCE&G replaces original consortium of contractors with Westinghouse Electric, which agrees to cap at \$7.7 billion the remaining cost customers would have to pay for construction. Any remaining costs would be Westinghouse's responsibility.

October 2015: SCE&G and Santee Cooper revise completion dates to 2019 and 2020.

Feb. 5, 2016: Bechtel Report, commissioned by SCANA and Santee Cooper, details failures by prime contractor Toshiba/Westinghouse as well as the utilities' insufficient oversight of the project.

June 14, 2016: SCE&G asks the PSC to approve an \$852 million increase in construction costs. SCE&G says that fixes the reactors' cost in place. A later settlement agreement with contesting parties reduces the increase to \$831 million.

Nov. 9, 2016: Public Service Commission approves settlement agreement among SCE&G, Office of Regulatory Staff and other parties, while approving a fixed price on the project and the later completion dates. Agreement says SCE&G's total cost would be fixed at \$7.7 billion.

March 29, 2017: Westinghouse files for bankruptcy. SCE&G, Santee Cooper and Westinghouse reach agreement that allows construction to continue while the power companies assess the project's future.

April 2017: Westinghouse parent Toshiba says it is in financial trouble as a result of its nuclear business. SCE&G says in legal filing that "there is no assurance that Toshiba will fulfill its payment guaranty obligations."

July 31, 2017: Santee Cooper and SCE&G announce they are abandoning work on the nuclear project; the following day, SCE&G files an abandonment petition, which asks the PSC to let it charge ratepayers for up to \$4.9 billion it has spent on the project.

Aug. 9, 2017: Office of Regulatory Staff files a motion to dismiss SCE&G's abandonment petition.

Aug. 11, 2017: Santee Cooper board votes to scrap already-approved rate increases for 2018 and 2019.

Aug. 15, 2017: SCE&G withdraws its abandonment petition but makes clear this is only to give legislators and regulators longer to study the situation, and that it will refile the petition later.

Aug. 22, 2017: Special SC Senate committee holds its first hearing on the failure of the nuclear project.

Aug. 23, 2017: Special SC House committee holds its first hearing on the failure of the nuclear project. House Speaker Jay Lucas calls on Regulatory Staff Director Dukes Scott to resign; Gov. Henry McMaster says he will not accept a resignation from Mr. Scott.

Aug. 25, 2017: Santee Cooper CEO Lonnie Carter announces his retirement.

Sept. 4, 2017: Santee Cooper gives Governor Henry McMaster a copy of the secret 2016 Bechtel report, commissioned by the two utilities, that details their insufficient oversight of the project.

Sept. 21, 2017: SCANA announces that it has received subpoenas from the US Attorney's Office for documents related to the project; Santee Cooper confirms that it has also received subpoenas.

Sept. 26, 2017: SLED confirms it has opened an investigation.

Sept. 26, 2017: SC Attorney General's opinion calls Base Load Review Act "constitutionally suspect" and says the General Assembly could modify the act retroactively to reduce money SCANA can recover from ratepayers and possibly even force refunds.

Oct 25, 2017: Senators learn that SCANA has left much of the unfinished V.C. Summer project to crumble, as part of its strategy to show the Internal Revenue Service it has abandoned the plant and deserves a \$2 billion tax write-off.

Dec 8, 2017: Governor McMaster gives Santee Cooper Board Chairman Leighton Lord until Dec. 18 to resign or be removed.

Dec 15, 2017: Dukes Scott announces he is retiring effective January 15 as director of the Office of Regulatory Staff.

Dec 29, 2017: Leighton Lord resigns as Santee Cooper board chairman.

Feb 23, 2018: Santee Cooper agrees to spend \$19 million annually to preserve the abandoned nuclear reactors, parts and equipment.

## VC Summer By the Numbers

\$11 billion: Original projected cost of the two reactors

\$20 billion: Minimum projected cost, due to delays and cost overruns, when SCE&G and Santee Cooper abandoned the project

\$9 billion: What SCE&G and Santee Cooper spent on the project before abandoning it

Santee Cooper and VC Summer By the Numbers

\$4 billion: Amount borrowed by Santee Cooper, which will have to be repaid by someone

\$831 million: Amount Santee Cooper received through contract with Westinghouse parent Toshiba to offset \$4 billion investment

\$540 million: Amount Santee Cooper customers have paid in rate increases to bankroll the two new reactors

5: Rate hikes, so far, that Santee Cooper has passed on to its customers to pay for the now-abandoned reactors\*

4.5 percent: Portion of Santee Cooper bills that pay for the nuclear project (down from 8 percent in 2017)

\$800,000 a year: Amount Santee Cooper CEO Lonnie Carter will receive in pension and retirement pay, in addition to an additional six months' salary and the \$858,577 he has in another Santee Cooper retirement account similar to a 401(k)-style plan

\$70,650: Total amount of bonuses that six Santee Cooper executives were paid since 2011 for their work on the nuclear project

\$19 million: Amount Santee Cooper expects to spend per year to preserve nuclear site and equipment

---

\*Four were explicitly for the VC Summer Project

## **SC ENERGY PROVIDERS BY THE NUMBERS**

Santee Cooper serves about 1 million customers, which it says translates into about 2 million people. It has 174,000 retail customers, 26 military and large industrial customers and four wholesale customers, which in turn provide power to more than 764,000 individual and business customers

Duke Energy has 733,000 customers

SCE&G has 698,000 customers

SC energy rates by the numbers

SCE&G: 14.56 cents per kilowatt hour (this would be 11.93 cents without the nuclear surcharge)

Santee Cooper: 11.62 cents per kilowatt hour (this would be 11.10 cents without the nuclear surcharge)

Duke Energy: 11.01 cents per kilowatt hour

Duke Progress: 10.01 cents per kilowatt hour

(Virginia Electric and Power, owned by Dominion Energy: 11.19 cents per kilowatt hour)

\* Rates are from 2016, the most recent year for which comparisons are available.

## **PART II**

### **The Economic Impact of the Failed V.C. Summer Nuclear Project**

By Katie Player & M.T. Maloney

Santee Cooper has spent at least \$4.2 billion on a project that was expected to generate power and sales revenue when it was initially approved. The project was entirely debt-financed with the promise of repayment coming from future power generation. Unfortunately, now that the project is defunct, those expected future cash flows from the project are zero. The debt for the \$4.2 billion (plus capitalized interest now) is still on Santee Cooper's balance sheet and South Carolinians should wonder, "how has this impacted Santee Cooper's financial viability?" Does Santee Cooper have the cash to pay off the debt immediately, the cash flow to pay it over time, or the balance sheet to keep issuing additional debt? Can Santee Cooper pay off the debt without increasing rates any more (rates have increased 15.2% since 2013)? Are there scenarios where Santee Cooper can't even pay off the debt with rate increases? These are the questions we have attempted to answer in this analysis. With this forward-looking analysis, we have structured the model in a straight-forward manner with as few assumptions as possible. Our goal was not to overcomplicate, but to be as conservative as possible while providing reasonable estimates. Given that electricity rates must increase, we have presented several scenarios which we believe are worth exploring: any one of the individual scenarios may not give a perfect picture of exactly how much rates will go up, but when combined with the others, we hope to give readers a picture of the important moving pieces in this puzzle and provide a lower-bound for the absolute minimum amount rates could possibly increase.

#### **Can Santee Cooper fund V.C. Summer 2 & 3 debt with existing operations?**

In 2016, Santee Cooper had \$1.8 billion in cash and investments—even if all of this was "unrestricted cash", which it isn't, it would not be enough to pay off the V.C. Summer debt outright. In terms of extra cash-flow to potentially put towards the debt, Santee Cooper has had an average pseudo-profitability ratio of 6.6%. This is the amount the company retains per dollar of revenues when all expenses are taken out except "payments to State in lieu of taxes." This is found on the income statement as "Income before transfers."

## INCOME BEFORE TRANSFERS MARGIN

	2016	2015	2014	2013	2012	2011	
Total Revenues	1,745,657	1,879,553	1,997,347	1,816,576	1,887,797	1,914,689	
Income before transfers	107,738	54,515	148,995	85,938	104,477	150,923	
Pseudo-profit margin:	0.0617	0.0290	0.0746	0.0473	0.0553	0.0788	
	2010	2009	2008	2007	2006	2005	2004
Total Revenues	1,894,902	1,702,001	1,586,303	1,464,825	1,413,343	1,350,080	1,151,009
Income before transfers	115,015	89,453	97,159	101,145	102,767	147,813	102,874
Pseudo-profit margin:	0.0607	0.0526	0.0612	0.0690	0.0727	0.1095	0.0894
Average Pseudo-profit margin:	0.0663						

Income before transfers and this pseudo-profitability ratio are important to look at because the numbers are net of all the costs of running Santee Cooper: operating costs, debt servicing costs, financing costs of short-term and long-term operations, and investments in capital improvements. When looking at this profitability ratio over time, we can see that whether revenues are \$1.4 billion (2006), \$1.9 billion (2010), or \$1.7 billion (2016), this profitability ratio is between 6-7%. This is a scalable measure of what it costs to operate and maintain the business (1-6.6% = 93.4%). For every dollar of revenue received, Santee Cooper spends 93.4 cents to cover all expenses and keep the business functional. This leaves Santee Cooper with only 6.6 cents on the dollar to put towards anything additional, including the debt associated with V.C. Summer 2 & 3.

Put bluntly, if Santee Cooper is going to remain an on-going enterprise, it must spend 93.4% of its revenue on the costs associated with serving its customers. The most it could possibly put towards the failed V.C. Summer project is 6.6 cents per dollar. This would be around \$115 million per year (2016) that Santee Cooper could contribute to V.C. Summer 2 & 3 debt without taking away from other existing operations. However, we must remember that Santee Cooper is not a public company with an equity account that can absorb losses in down years; the only cushions Santee Cooper have are its "other balance sheet items"; namely, cash on hand, and its ability to issue low-cost debt<sup>55</sup>. Any use of 2016 net income, or the 6.6% pseudo-profit margin, would deteriorate Santee Cooper's ability to absorb and weather market shocks.

Santee Cooper undertook the V.C. Summer 2 & 3 project as a capital investment to ensure it would have enough power and infrastructure to service demand in the coming years.

<sup>55</sup> Relative to a privately held company, Santee Cooper has experienced a lower cost of capital largely due to its tax-exempt bond offerings.

Essentially, Santee Cooper expected to need to invest over \$4.2 billion to ensure operations and customer demand would be serviced. This investment is now a sunk cost, meaning the \$4.2 billion cannot be recovered and no revenues will come from the investment. Furthermore, Santee Cooper must now invest in other areas to ensure it can continue to serve existing customers and customer demand. Given Santee Cooper believed the \$4.2 billion project was the best use of funds at the time when undertaking V.C. Summer 2 & 3, we can assume that the next best project would have been equally expensive for the same expected revenue generation and maintenance—meaning Santee Cooper will most likely need to spend, or borrow, another \$4.2 billion to ensure equipment and operations are able to serve existing customer demand. If Santee Cooper cannot, or does not, invest in its existing infrastructure, its ability to serve its customers will dwindle more and more each quarter, decaying its asset base, until it simply shuts down.

### FINANCIAL RATIO ANALYSIS, 2004-2016

	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
Number of Days Inventory	219.05	219.91	151.54	199.91	178.47	181.72	162.22	146.12	83.66	111.61	83.49	53.75	51.64
Current Ratio	3.03	2.43	2.75	3.15	1.59	1.91	1.45	1.29	1.41	1.10	1.16	0.98	1.07
Quick Ratio	2.25	1.82	2.17	2.34	0.96	1.15	0.85	0.78	0.99	0.68	0.80	0.78	0.87
Total Asset Turnover	0.14	0.16	0.18	0.17	0.20	0.23	0.24	0.23	0.24	0.24	0.26	0.27	0.25
Debt Ratio	0.84	0.84	0.80	0.80	0.79	0.77	0.78	0.78	0.76	0.75	0.74	0.73	0.74
Long-term Debt Ratio	0.66	0.61	0.60	0.61	0.56	0.62	0.60	0.59	0.60	0.56	0.56	0.51	0.55
Times-interest-earned	-1.39	-1.16	-1.44	-1.36	-1.43	-1.65	-1.44	-1.33	-1.41	-1.44	-1.41	-1.81	-1.56
Return on Assets	0.01	0.00	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.02	0.03	0.02
Regulatory Assets/Revenues	0.61	0.62	0.54	0.68	0.63	0.50	0.39	0.41	0.26	0.30	0.33	0.33	0.31
Regulatory Assets/Total Assets	0.09	0.10	0.10	0.12	0.12	0.11	0.09	0.09	0.06	0.07	0.08	0.09	0.08

Financial ratios can provide insight into how a company is performing and how its position has changed over time. Looking at the above ratio analysis, Santee Cooper has increased all inventories since 2004 with the largest increases being in general materials and fossil fuels. Despite this quadrupling of inventories, net revenues have not increased and the total return on all assets (including inventories) is down to 0.01 from 0.02 in 2004. The times-interest-earned (TIE) ratio shows how able a company is to pay its interest expenses<sup>56</sup>. Looking at the TIE ratio over time since 2004, we see that Santee Cooper is slightly less able to cover its interest expenses (1.39 in 2016 vs. 1.56 in 2004) but Santee Cooper has not begun paying down principal, nor servicing any debt associated with the V.C. Summer 2 & 3 project (which is partially evidenced by adding the additional \$374 million capitalized interest)<sup>57</sup>. Total Asset Turnover shows how effectively a firm uses its assets to generate sales revenue; this ratio has been steadily declining since 2005 and is now at 0.14 (2016) instead of 0.27 in 2005. The increase in total inventories contributes to this as the inventories are not generating sales at the rates it was in 2004.

The two main liquidity ratios, the current ratio and quick ratio, measure a firm's ability to cover its short-term liabilities. Because the quick ratio excludes inventories, it is more relevant in situations where inventories have increased significantly. The debt ratio and long-term debt ratio show how much leverage a firm is using; the increase in Santee Cooper's use of leverage comes largely from increases in long-term debt, specifically, the \$4.2 billion plus \$374 million of capitalized interest associated with V.C. Summer 2 & 3.

Regulatory assets are unique to regulated utilities. We created our own ratios using Santee Cooper's regulatory assets and total revenues and total assets to gain some insight into this area of the balance sheet. Regulatory assets generally show how much the entity is expecting to recover from future electricity sales—this could come through GWh sold, but will most likely come through rate increases. Regulatory assets are costs that regulated utilities can defer (delegate to the balance sheet instead of expensing them on the income statement) when it is deemed that the costs will be paid by future utility rates (because the rates will be higher in the future). Looking at these two ratios, regulatory assets to total assets has not changed much since 2004; however, regulatory assets are now a much larger share of total revenues. Another way of saying this is that the regulatory assets on Santee Cooper's books reflect the entity's reliance on future rate increases to cover past costs and this reliance has increased since 2004. Per FASB, for expenses to be recorded as regulatory assets, the costs must be able to be reasonably repaid in the future. If the costs are found to be unable to generate income, the assets could be immediately charged to income.<sup>58</sup>

To summarize Santee Cooper's financial ratios, the entity does not have the cash-on-hand, nor the cash flow, to pay off existing debts and the regulatory assets on its balance sheet are growing, suggesting future rate increases are expected and needed.

---

<sup>56</sup> Because interest expenses are an expense, TIE ratios typically have a negative sign(-).

<sup>57</sup> Capitalizing interest effectively adds the interest amount to the principal balance. Meaning, the principal outstanding was \$4.2 billion but is now \$4.2 billion plus \$374 million, or \$4.574 billion. Interest obligations will now be paid on the new, higher, principal amount of \$4.574 billion.

<sup>58</sup> The Regulatory Asset category in the ratio analysis includes: Costs to be recovered from future revenues (CBRT), asset retirement obligation and other regulatory assets.

## What will it take in rate hikes to pay off V.C. Summer?

We present several scenarios to estimate how much Santee Cooper must increase rates to pay off all debt and interest expenses related to the failed V.C. Summer 2 & 3 project.

The main factors impacting how much rates will need to be increased include: demand elasticity for Santee Cooper electricity, the total debt and interest associated with the abandoned project, and Santee Cooper's relationship with its largest customer—Central Electric Power Cooperative. In the following scenarios, we examine the rate increases needed for various responses in consumer behavior when faced with higher electricity rates. All rate increase estimates are for all customers across the board: wholesale, retail, industrial and can be thought of as the average increase needed to fund the debt.

### Scenario 1: No Demand Response

If consumers do not change their behavior when faced with higher prices, it is relatively easy to calculate the rates needed to pay off V.C. Summer 2 & 3. There is no change in the quantity of electricity sold and so any additional revenues would be extra profits to Santee Cooper and could be used to pay down principal and interest. When consumers do not respond to changes in price, demand elasticity is said to be "zero." Demand elasticity of zero is not a realistic estimate because consumers *do* change their consumption when faced with higher prices, but it does allow us to provide a **lower-bound** for our estimate because it shows how much rates must increase even if consumers will buy the same amount of electricity at higher prices.

In this case, rates would have to increase 10.32% implying that the average residential customer would be paying a rate of 12.82 cents/kWh (instead of 11.62 cents) and would pay \$147 more a year for electricity. This estimate is provided as a lower-bound only; and is unrealistic given consumers do adjust demand to price changes.

### Scenario 2: Demand Elasticity of 0.20

At a demand elasticity greater than zero, consumers are responsive to price changes. This means when prices go up, consumers buy less kWh. In the case of a demand elasticity of 0.20, for a 10% increase in electricity rates, the quantity consumed declines by 2%. In this scenario, some customers turn their heat and air conditioning down, they turn off the lights, or they use their fireplaces more. Not all consumers can or will conserve; for instance, renters (as opposed to homeowners) are much less likely and able to invest in electrical conservation measures like adding additional insulation, wood burning stoves, or solar panels. With a demand elasticity of 0.20, rates would need to increase 11.69% to 12.98 cents/kWh which would mean the average annual electricity bill increases by \$167 for a total annual residential bill of \$1590 instead of \$1423 before rate increases for households that cannot change their electrical consumption.

### Scenario 3: Demand Elasticity of 0.40

In the case of a demand elasticity of 0.40, for a 10% increase in electricity rates, the quantity consumed declines by 4%. Rates would need to increase to 13.20 cents/kWh (a 13.62% increase) which would mean the average annual electricity bill increases by \$194.49 for a total annual residential bill of \$1617 instead of \$1423 before rate increases for households that do not change their electrical consumption.

#### Scenario 4: Demand Elasticity of 0.60

In the case of a demand elasticity of 0.60, for a 10% increase in electricity rates, the quantity consumed declines by 6%. Rates would need to increase to 13.56 cents/kWh (a 16.71% increase) which would mean the average annual electricity bill increases by \$238 for a total annual residential bill of \$1661 instead of \$1423 before rate increases for households that do not change their electrical consumption.

#### Scenario 5: Demand Elasticity of 0.80

In the case of a demand elasticity of 0.80, for a 10% increase in electricity rates, the quantity consumed declines by 8%. Rates would need to increase to 14.39 cents/kWh (a 23.8% increase) which would mean the average annual electricity bill increases by \$339 for a total annual residential bill of \$1762 instead of \$1423 before rate increases for households that do not change their electrical consumption.

#### Summary of Elasticities and Sensitivity Analysis

The chart below summarizes the findings. The average annual residential electricity bill was \$1423 in 2016. Our best estimate for demand elasticity is 0.40 for residential customers. We estimate that rates will need to be increased 13.62% as soon as possible to pay off V.C. Summer 2 & 3 total costs.

Sensitivity Analysis with Demand Elasticities	No Change in Central				
	Demand Elasticity:				
	0.00	0.20	0.40	0.60	0.80
Original Base Rate (2016 per cents/ KWh)	0.1162	0.1162	0.1162	0.1162	0.1162
Rate Increase Needed	10.32%	11.69%	13.62%	16.71%	23.80%
New Rate (cents/KWh)	0.1282	0.1298	0.1320	0.1356	0.1439
Extra Dollars spent per month (retail):	\$12.29	\$13.92	\$16.21	\$19.86	\$28.28
<b>Avg. Monthly Retail Bill without Demand adjustment</b>	<b>\$130.89</b>	<b>\$132.52</b>	<b>\$134.81</b>	<b>\$138.47</b>	<b>\$146.89</b>
<b>Increase in average annual electricity bill:</b>	<b>\$147.45</b>	<b>\$166.99</b>	<b>\$194.49</b>	<b>\$238.37</b>	<b>\$339.42</b>

\*The average annual residential electricity bill was \$1423 in 2016.

### Scenario 5: Central withdraws 50% of purchases

In February 2018, Central Electric Cooperative brought a lawsuit against Santee Cooper for breach of contract in response to the failed nuclear project. The following chart summarizes the amount that rates will need to increase if Central withdraws 50% of its purchases from Santee Cooper. We assume this happens gradually over 15 years. We account for cost-savings in Santee Cooper's production as it will no longer be producing at the levels it was in 2016 and before (i.e. Santee Cooper will not need to buy coal or wholesale power to serve GWh's that are no longer being purchased).

In the baseline case, where all other customers do not change their consumption (demand elasticity is zero), rates would need to increase by 26.43% leading to an annual residential electricity bill of \$1800 instead of \$1423 (in 2016) for an increase of \$377 per residential household, per year.

The more responsive residential customers are, the higher rates must increase to offset consumers reduction in electricity usage. For an average demand of 0.20 rates must increase 31.34%, which equates to a new annual residential electricity bill of \$1870 (an increase of \$447 from 2016).

For a demand elasticity of 0.40, rates must increase 40.72%. This equates to a new annual residential bill of \$2003 which is \$580 more than the average residential bill in 2016.

For a demand elasticity of 0.50, rates must increase 52.71%. This equates to a new annual residential bill of \$2174 which is \$751 more than the average residential bill in 2016.

Sensitivity Analysis with Demand Elasticities	Central withdraws 50% of purchases over 15 years*			
	Demand Elasticity:			
	0.00	0.20	0.40	0.50
Original Base Rate (2016 per cents/ KWh)	0.1162	0.1162	0.1162	0.1162
Rate Increase Needed	26.43%	31.34%	40.72%	52.71%
New Rate (cents/KWh)	0.1469	0.1526	0.1635	0.1775
Extra Dollars spent per month (retail):	\$31.40	\$37.23	\$48.36	\$62.59
<b>Avg. Monthly Retail Bill without Demand adjustment</b>	<b>\$150.01</b>	<b>\$155.83</b>	<b>\$166.96</b>	<b>\$181.19</b>
<b>Increase in average annual electricity bill:</b>	<b>\$376.84</b>	<b>\$446.76</b>	<b>\$580.27</b>	<b>\$751.03</b>

\*Cost-savings from reduced sales is assumed in the model. This is done by finding the original revenues on the reduction in GWh and multiplying that by the cost-saving ratio of 0.53. The ratio 0.53 is the amount of total electric sales revenue in 2016 that went to the following variable costs: production, fuel and purchased and interchanged power.

Note: With Central Electric Cooperative withdrawing 50% of its purchases, if remaining customers have an average demand elasticity of 0.6 or greater, no amount of rate increases will not suffice to repay V.C. Summer 2 & 3 debt.

Note: At a demand elasticity of 0.60 it becomes impossible for Santee Cooper to pay off the costs of V.C. Summer 2 & 3 with rate increases alone. This happens because for every 10% increase in rates, kWh sold are declining by 6% which reduces the total amount available to be used to pay off debt.

What if nothing is done and rate increases are postponed?

## Case 1: Postponed until 2020

What if Santee Cooper were to try to drag out rate increases, or couldn't get approval to raise rates in the next few years? If rate increases are postponed two years, or until 2020, the following chart displays how much rates will need to increase in 2020, depending on demand elasticity, in order to pay off V.C. Summer 2 & 3:

Sensitivity Analysis with Demand Elasticities	Rate increases needed if postponed until 2020				
	Demand Elasticity:				
	0.00	0.20	0.40	0.60	0.80
Original Base Rate (2016 per cents/KWh)	0.1162	0.1162	0.1162	0.1162	0.1162
Rate Increase Needed	10.92%	12.39%	14.48%	17.88%	26.51%
New Rate (cents/KWh)	0.1289	0.1306	0.1330	0.1370	0.1470
Extra Dollars spent per month (retail):	\$13.00	\$14.74	\$17.22	\$21.26	\$31.49
<b>Avg. Monthly Retail Bill without Demand adjustment</b>	<b>\$131.60</b>	<b>\$133.35</b>	<b>\$135.83</b>	<b>\$139.86</b>	<b>\$150.10</b>
<b>Increase in average annual electricity bill:</b>	<b>\$155.97</b>	<b>\$176.93</b>	<b>\$206.67</b>	<b>\$255.07</b>	<b>\$377.91</b>

\*The average annual residential electricity bill was \$1423 in 2016.

As shown above, if rate increases are postponed until 2020, rates will have to be even higher than if increased immediately (in the baseline scenario, rates would need to increase by 10.92% instead of 10.32% if undertaken immediately)—this is because there would be fewer periods to pay off the V.C. Summer 2 & 3 debt (36 years instead of 38). We are not accounting for any refinancing activities which would increase the total cost of the failed project even more and could lead to higher costs of capital for Santee Cooper as an entity. Depending on demand elasticity, average annual residential electricity bills would increase \$156-\$378.

In both postponement scenarios, we are assuming that Santee Cooper has the cash and funds to float at least the interest on all debt obligations during postponed years. This is not unreasonable but it would leave the entity cash-stripped and depleted of liquidity: at the end of 2016, Santee Cooper had over \$90 million in unrestricted cash, and \$726 million in unrestricted investments; additionally, it had over \$880 million in restricted cash and investments which would include its capital improvement fund and sinking fund (debt).

Given that Santee Cooper needs cash and restricted investments to fund, maintain and improve existing operations, any postponement in decision-making could erode Santee Cooper's ability to remain a going-concern.

Case 2: Rate increases postponed until 2022

As shown below, if rate increases are postponed until 2022, rates will have to be even higher than if increased at an earlier date (in the baseline scenario, rates would need to increase by 11.59% instead of 10.32% if undertaken immediately)—this is because there would be fewer periods to pay off the V.C. Summer 2 & 3 debt (34 years instead of 38). We are not accounting for any refinancing activities which would increase the total cost of the failed project even more and could lead to higher costs of capital for Santee Cooper as an entity. Depending on demand elasticity, average annual residential electricity bills would increase \$165-\$434.

Sensitivity Analysis with Demand Elasticities	Rate increases needed if postponed until 2022				
	Demand Elasticity:				
	0.00	0.20	0.40	0.60	0.80
Original Base Rate (2016 per cents/ KWh)	0.1162	0.1162	0.1162	0.1162	0.1162
Rate Increase Needed	11.59%	13.17%	15.44%	19.23%	30.48%
New Rate (cents/KWh)	0.1297	0.1315	0.1341	0.1385	0.1516
Extra Dollars spent per month (retail):	\$13.79	\$15.67	\$18.37	\$22.85	\$36.20
<b>Avg. Monthly Retail Bill without Demand adjustment</b>	<b>\$132.39</b>	<b>\$134.27</b>	<b>\$136.97</b>	<b>\$141.46</b>	<b>\$154.80</b>
<b>Increase in average annual electricity bill:</b>	<b>\$165.48</b>	<b>\$188.04</b>	<b>\$220.40</b>	<b>\$274.25</b>	<b>\$434.42</b>

\*The average annual residential electricity bill was \$1423 in 2016.

## Use of Toshiba Note Funds

Thus far, we have used the simple assumption that Santee Cooper would apply all the \$898 million from the Toshiba note immediately in 2018 to paydown bond principal. Given that Santee Cooper will not be able to legally use these funds in any way until July 1, 2018 there is a possibility that the entity will use the funds in other ways. It is prudent to calculate how much electricity rates will have to increase if Santee Cooper uses the funds to service debt (keeping it as cash on hand) instead of paying down principal. The following two charts summarize the rate increases needed if the Toshiba note is not used towards principal. In this case, the total cost of the project to be paid off is \$9.3 billion including interest on the higher principal balance.

With simple demand elasticities of 0.0, 0.2, 0.4, 0.6 and 0.8 the corresponding rate increases needed to payoff \$9.3 billion are 12.84%, 14.65%, 17.29%, 21.89%, and 39%, respectively. For demand elasticities of 0.8 and higher, it is impossible for Santee Cooper to fund the full cost of the debt with rate increases alone; even with 39% rate increases, Santee Cooper will require an extra \$491 million to pay back all \$9.3 billion in project costs. For relatively high demand elasticities, this happens because as rates increase, consumers reduce purchases more and more. The company is making more money on units sold, but selling fewer units. When demand elasticity is high enough, the reduction in revenue from selling fewer units dominates the increase in revenue from higher prices, resulting in less total revenue collected.

Demand estimates when total project cost is \$9.3 billion.

### BASELINE RATE INCREASE MODEL.

	Demand Elasticity:				
	0.00	0.20	0.40	0.60	0.8 <sup>1</sup>
Original Base Rate (2016 per cents/ KWh)	0.1162	0.1162	0.1162	0.1162	0.1162
Rate Increase Needed	12.84%	14.65%	17.29%	21.89%	39.00%
New Rate (cents/ KWh)	0.1311	0.1332	0.1363	0.1416	0.1615
Extra Dollars spent per month (retail):	\$15.28	\$17.42	\$20.56	\$26.02	\$46.31
Avg. Monthly Retail Bill without Demand adjustment	\$133.88	\$136.03	\$139.16	\$144.62	\$164.92
Increase in average annual electricity bill:	\$183.38	\$209.09	\$246.68	\$312.24	\$555.77
<b>*The average annual residential electricity bill was \$1423 in 2016.</b>					
<b>(1) For elasticity of 0.8 (or higher) Santee Cooper can not generate enough funds even with rate increases to pay off the V.C. Summer project. Even with rate increases of 39%, Santee Cooper will need to source an additional \$491 million from somewhere other than increased electricity rates.</b>					

In the case of Central withdrawing 50% of its electricity purchases over 15 years, the rate increases will need to be a minimum of 29.67%, but more likely between 47.78% and 76% depending on demand elasticity. If demand elasticity is 0.5, rates will increase 76% and Santee Cooper will still be \$230 million short of paying back the full cost of the project.

**DEMAND ESTIMATES WHEN CENTRAL WITHDRAWS 50% OF PURCHASES & TOTAL PROJECT COST IS \$9.3 BILLION.**

	<b>Central withdraws 50% of purchases over 15 years*</b>			
	<b>Demand Elasticity:</b>			
	0.00	0.20	0.40	0.50
Original Base Rate (2016 per cents/ KWh)	0.1162	0.1162	0.1162	0.1162
Rate Increase Needed	29.67%	35.53%	47.78%	76.00%
New Rate (cents/ KWh)	0.1507	0.1575	0.1717	0.2045
Extra Dollars spent per month (retail):	\$35.24	\$42.20	\$56.73	\$90.21
Avg. Monthly Retail Bill without Demand adjustment	\$153.84	\$160.80	\$175.33	\$208.82
Increase in average annual electricity bill:	\$422.87	\$506.37	\$680.77	\$1,082.55
*Cost-savings from reduced sales is assumed in the model. This is done by finding the original revenues on the reduction in GWh and multiplying that by the cost-saving ratio of 0.53. The ratio 0.53 is the amount of total electric sales revenue in 2016 that went to the following variable costs: production, fuel and purchased and interchanged power.				

Note: With Central Electric Cooperative withdrawing 50% of its purchases, if remaining customers have an average demand elasticity of 0.5 (or greater), no amount of rate increases will suffice to repay V.C. Summer 2 & 3 debt. In the case of an elasticity of 0.50, rates will increase 76% and Santee Cooper will still be short of paying off the project by \$230 million.

## Methodology

In determining how much Santee Cooper will need to increase rates to pay off V.C. Summer 2 & 3, we need three pieces of information:

1. The amount of debt Santee Cooper issued that was associated with V.C. Summer 2 & 3 and the projected interest costs associated with that respective debt.
2. Projected sales revenue numbers through the life of the existing debt (2056) as well as operating expenses when needed.
3. The demand elasticity of Santee Cooper electrical customers.
  - a. Cost-savings to Santee Cooper when selling fewer units at higher prices.
  - b. Central's behavior during rate increases.

With these three pieces of information, we compute the rate increase needed to generate \$7.5 billion over 38 years. Finally, a sensitivity analysis is performed to see how sensitive the rate change needed is to factors like: demand elasticity, Central Electric Power Cooperatives' behavior, and the use of the Toshiba funds.

### 1. Total Debt and Interest due to V.C. Summer 2 & 3

The total interest cost associated with V.C. Summer 2 & 3 debt outstanding can be estimated using the entity's debt structure on page 54 of the 2016 annual report. We can see the principal and interest payments expected to be made in each year from 2018-2056 when Santee Cooper's last outstanding bond matures. The total interest paid on \$3.7 billion in bonds depends on two factors - the length of time outstanding and the interest rate. Both the interest rate and length of time is fixed as each bond's coupon payments and timeline are described in the corresponding bond document.<sup>59</sup>

---

<sup>59</sup> It is possible that Santee Cooper may try to delay principal payments on V.C. Summer 2 & 3 as much as possible. This is a risky strategy given it can only delay so long as the bond market supports the delay, this is unlikely given the failed project will never be producing revenues to pay off construction. Any additional delays would also increase the associated interest cost of the failed project, not just because of a longer time-horizon but because of higher interest rates needed to support the additional risk being undertaken by bondholders of Santee Cooper debt.

**SANTEE COOPER LONG-TERM PRINCIPAL AND INTEREST MATURITIES AND PROJECTED INTEREST PAYMENTS OF LONG-TERM DEBT ARE AS FOLLOWS:**

<b>Year Ending</b>	<b>Revenue</b>	<b>Total</b>	<b>Total:</b>	<b>Revolving Credit</b>
December 31,	Obligations	Interest	Principal + Interest	Agreement*
2018	\$119,736	\$365,887	\$485,623	\$100,000
2019	\$202,640	\$359,202	\$561,842	0
2020	\$182,051	\$350,906	\$532,957	0
2021	\$229,378	\$342,783	\$572,161	0
2022-2026	\$204,077	\$317,207	\$521,285	0
2027-2031	\$151,334	\$282,628	\$433,962	0
2032-2036	\$194,427	\$244,393	\$438,820	0
2037-2041	\$168,234	\$197,574	\$365,808	0
2042-2046	\$239,607	\$148,270	\$387,877	0
2047-2051	\$246,676	\$80,814	\$327,490	0
2052-2056	\$164,652	\$20,418	\$185,070	0
<b>Total</b>	<b>\$7,695,552</b>	<b>\$8,247,971</b>	<b>\$15,943,523</b>	<b>\$100,000</b>

\*Revolving credit agreement is most likely to service working capital needs and so is not included in the total debt number for our analysis.

Source: Santee Cooper Annual Report 2016, page 54.

The total cost of V.C. Summer 2 & 3 is \$7.5 billion. This includes \$4.2 billion in construction and related costs on the project plus \$374 million in capitalized interest less the proceeds from the sale of the Toshiba note of \$898.7 million. The associated interest on this \$3.7 billion debt is approximately \$3.8 billion which is calculated by finding the percentage of all debt outstanding related to V.C. Summer 2 & 3 which is 48.5% and applying that percentage to total expected interest costs as outlined in Santee Cooper's Debt Schedule<sup>60</sup>. It is very possible that Santee Cooper will not be able to use the Toshiba funds to pay down debt principal—Central is

<sup>60</sup> The Debt Obligation schedule used is titled "Summary of Long-term Principal and Interest" in Santee Cooper's 2016 Annual Report, page 54.

already pressuring the entity to refund 60% of the note to them to recover payments from past rate increases. If Santee Cooper does not use the Toshiba note to immediately pay down principal in July 2018, the total cost of V.C. Summer 2 & 3 goes to \$9.3 billion instead of \$7.5 billion (this is due to interest costs on the principal amount that would no longer be paid down).

Note: Santee Cooper has increased rates by 15.2% since 2012. This occurred over four rate increases in 2013, 2014, 2015 and 2016<sup>61</sup>; however, revenues did not increase enough to pay down any of the V.C. Summer 2 & 3 debt, and led to capitalizing \$374 million in associated interest expenses in 2016.

### TOTAL EXPENSES RELATED TO VC SUMMER 2 & 3 (IN THOUSANDS)

Construction, contracting, etc. <sup>1</sup>	\$4,200,000
Capitalized Interest as of 2016 <sup>2</sup>	374,100
Amount Received from sale of Toshiba Note:	(898,700)
Amount already paid from rate increases (2013-2017)	-
Interest associated with pro-rated debt <sup>3</sup>	3,819,168
<b>Cost of Summer Unit 2 &amp; 3 OUTSTANDING:</b>	<b>\$7,494,568</b>

(1) Source: 2016 Annual Report. Note: The 2017 Fitch Rating Reports a number closer to \$4.3 billion but we were not able to find this in the publically available information on Santee Cooper as of February 2018.

(2) Source: 2016 Annual Report page 25.

(3) Assuming Santee Cooper uses the entire proceeds of the Toshiba Note to pay down debt principal immediately.

Note: Costs do not include \$68 million in projected winddown costs in 2018 as projected by Fitch 2017.

<sup>61</sup> Source: Santee Cooper Press Releases on September 12, 2012 and December 7, 2015.

## 2. Projected Sales Revenue

Electricity sales nationwide have grown by 0.00368 per year for the last 20 years<sup>62</sup>. We apply this growth rate to Santee Cooper's 2016 total GWh sales to project total GWh sold in each year from 2018-2056.<sup>63</sup>

## 3. Demand elasticity of Santee Cooper Electrical Customers

Demand elasticity is important because it tells us how sensitive consumers are to price changes. When Santee Cooper increases electricity rates, how much do customers conserve on power: turn down the furnace or the AC, turn off lights and televisions, add more insulation, even buy their own solar panels? Most customers will conserve in some way, and different classes of customers: residential vs. commercial vs. industrial respond in different ways as well.

Our best estimate for how sensitive Santee Cooper's customers are to changes in price is 0.40. This means that for a 10% increase in rates, consumers will reduce their consumption by 4%. The more sensitive customers are, or a group of customers is, results in remaining customers paying an increasingly larger share of the rate increases. For example, a high-income household may be willing to pay \$10,000 to install some solar panels to avoid a 20% increase in electricity rates leaving their average monthly bill unchanged, but a low-income household will only be able to make minor shifts—turning the heat down perhaps. Based on our econometric elasticity estimates, commercial customers are much more likely to adjust consumptive behavior than residential customers. This implies that the burden of rate increases will be paid by residential electricity consumers—particularly by homeowners and renters<sup>64</sup>. This analysis does not address which customers will pay most of the burden; but historically, it is those who cannot afford to buy extra elasticity, especially in the short-term.

The following chart shows the first four years of the basic model employed to calculate rate increases needed to fund the total cost associated with V.C. Summer 2 & 3. In the excel model, all revenue obligations are listed through 2056 when the last bond issuance is repaid (the chart below only shows the years 2018-2022 but shows the rate increase needed to fund the full cost over the next 38 years).

---

<sup>62</sup> Source: [www.eia.gov](http://www.eia.gov)

<sup>63</sup> Santee Cooper does have water operations, but given the revenues and expenses of electrical generations must maintain its existing operations, we focus only on the electrical side of the business to pay off the V.C. Summer 2 & 3 debt. Furthermore, Santee Cooper water revenues are less than 1% of total business revenues. (Source: Combined Statement of Revenues, Expenses and Changes in Net Position 2016.)

<sup>64</sup> Simply put, it is very difficult for electricity customers living in trailers to budget for higher electricity bills; furthermore, rate increases will impact renters who are unable to make capital improvements to their rental units (adding more insulation, wood burning stoves, or solar panels).

**BASELINE RATE INCREASE MODEL.**

<b>Total Electrical Sales 2016 (GWh)</b>	<b>23,700</b>			
<b>Compound Annual Growth Rate:<sup>1</sup></b>	<b>0.368%</b>			
	<b>Fiscal Year</b>			
	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
Growth Rate (annual) <sup>1]</sup>	0.368%	0.368%	0.368%	0.368%
Projected Electrical Sales (GWh)	23,875	23,963	24,051	24,139
Santee Cooper Average 2016 Rate/MWh <sup>2</sup>	\$72.67	\$72.67	\$72.67	\$72.67
Projected Revenue (without Rate Increase)	1,734,978,297	1,741,363,017	1,747,771,233	1,754,203,031
Rate/MWh with Rate Increase	\$80.17	\$80.17	\$80.17	\$80.17
Demand Elasticity:	0.00			
Projected Electrical Sales with Rate Increase (GWh)	23,875	23,963	24,051	24,139
Projected Revenue (with Rate Increase)	1,914,039,212	1,921,082,876	1,928,152,461	1,935,248,062
Cash Available to Service Summer Debt:	179,060,914	179,719,858	180,381,228	181,045,030
Cumulative Funds contributed to Service Summer Debt	179,060,914	358,780,773	539,162,000	720,207,031
Rate per MWh increase:	10.32064%	0%	0%	0%
TOTAL COST of Summer Units 2 & 3 <sup>3</sup>	7,494,567,867			
TOTAL CONTRIBUTED TO SERVICE Summer Debt:	7,494,567,867			
Difference:	\$0			

(1) Growth rate is the average compound annual growth rate for all U.S. electrical sales.

(2) Rate/MWh is average rate across all Santee Cooper sales.

(3) Total Cost of project assumes the Toshiba note was used to pay down debt principal as of Jan. 1, 2018.

Note: Cash available to service Summer Debt is the additional revenue received when rates are increased.

### 3a. Cost-savings

When demand elasticity is zero, Santee Cooper benefits from the increase in rates on the same number of units sold and there are no cost-savings. But when demand elasticity is greater than zero, consumers are purchasing fewer units at higher prices, so Santee Cooper does not have to pay the variable costs of production associated with units that are no longer sold—we call this “cost-savings.” We estimate the cost-savings experienced to be 0.53, or 53% of units of electricity not sold, that would have been sold and serviced, under the original price (i.e. prices before the rate increases). Under the original prices, this 53% of revenue on the reduction in units, would have been an expense, but because the units are not sold, this is a savings that can be added to the total amount Santee Cooper can put towards paying down the debt.

Our estimate for cost-savings of 0.53 comes from Santee Cooper’s most recent year-end numbers (2016) and is the percentage of the variable costs: Production, Fuel, and Wholesale purchases all divided by total electricity sales revenue. The other expense categories like distribution, transmission, maintenance, and SG&A may have a variable component but are largely fixed and so we do not attribute cost-savings to these areas.

### 3b. Central Electric Cooperative

Central is Santee Cooper’s largest customer, accounting for nearly 60% of both revenues and GWh sold. Central has a purchasing agreement with Santee Cooper (“The Coordination Agreement”) which has been agreed to and amended *many* times. As Santee Cooper’s largest customer, it would not be surprising if Central can and does exert some purchasing pressure on Santee Cooper and this may be what we are observing currently with Central suing Santee Cooper for breach of contract due to the V.C. Summer 2 & 3 project and asking for 60% of the Toshiba note to flow directly to Central and their cooperative customers. How Central behaves and its bargaining power will directly affect the burden that the remaining customers of Santee Cooper will have to pay in regard to rate increases: the less Central is willing to pay, the more everyone else will have to shoulder.

## SUMMARY AND CONCLUSIONS

Given Santee Cooper's current balance sheet and operations, in order to pay off the debt and interest charges associated with the failed V.C. Summer 2 & 3 project, electricity rates would need to increase between 10-52%. The major factors determining where in that range rate increases will fall include: customer demand elasticity, Santee Cooper cost-savings, the use of Toshiba Note funds, and the actions of Central Electric Cooperative. Our best econometric estimate for demand elasticity is 0.40, our best estimate for cost-savings due to less electricity sold is 0.53 on revenues from unsold units due to higher prices, and given Central's current litigation against Santee Cooper, we do not expect Central to eagerly pay any rate increases needed to cover the debts associated with the failed nuclear project. If Central were to remain with Santee Cooper and pay its share of rate increases, we estimate rates will need to increase 13.62% to pay off all costs of V.C. Summer 2 & 3. This is in addition to the rate increases already undertaken between 2012-2016 which amounted to rates being 15.2% higher in 2016 than in 2012.<sup>65</sup> If Central were to withdraw even 50% of its purchases over the next 15 years, rates would need to increase a minimum of 40.72%.

### Who Should bear the Cost of the Failed V.C. Summer Nuclear Project?

By M.T. Maloney & Katie Player

Santee Cooper investment in construction of nuclear power at the V.C. Summer facility has been abandoned. The money lost in this venture totals over \$4 billion in debt issued by Santee Cooper. The money is gone. Someone has to pay. There are only three choices: customers of Santee Cooper, taxpayers, or holders of Santee Cooper debt. There are only three possibilities. We advocate, on grounds of free-market principles, that it should be the debtholders who bear the burden.

Currently ratepayers in the Santee Cooper service territory are paying for the failed investment. They should not have to pay this. We have shown that they will have to pay more to satisfy the debt issued to finance the construction that has been abandoned as useless. Without a change in regime like the sale of the agency, these utility customers have virtually no alternative except to bear the burden of this failed investment decision by buying electricity from Santee Cooper at artificially high rates.

One naturally asks, who is at fault? In many ways the answer is, no one. Business ventures fail every day. What seemed like a killer idea at one moment, can turn into laughing stock in the next. Nonetheless, in a market economy there is a well-defined pecking order of who bears the cost of failed investment decisions. It is the investors, first and foremost. Workers bear some as well. But consumers bear very little.

---

<sup>65</sup> Rates increased 3.5% in 2013 and 3.5% in 2014, and 3.7% in 2015 and 3.7% in 2016. Because these are compound rates, the total difference in rates at the end of 2016 compared to 2012 was 15.2%. Source: Santee Cooper Press Releases on September 12, 2012 and December 7, 2015. Based on the 2016 average annual residential electricity bill, the average annual electricity bill before these rate increases would have been \$1207, instead of the \$1423 that it was in 2016.

For instance, when Samsung invested in more powerful batteries that proved to be unstable and a fire hazard, Samsung stockholders lost the most--around 25% of their equity value. The workers involved in the mistake almost certainly were demoted or fired. However, very few consumers lost anything. Consumers just bought a different brand.

Samsung is a privately-owned company and its consumers have freedom of choice. Santee Cooper is a publicly owned company and its consumers have no freedom of choice. Still the private market outcome can and should prevail. Like the stockholders of Samsung, the debtholders of Santee Cooper can and should be held responsible and forced to bear the burden of the failed investment.

The reason is because society works best when risk bearing is properly organized and well defined. Consumers are not in the position to evaluate investment decisions, and hence, they should not bear the risk. Investors are in a position to evaluate risk. They should bear the risk. Investors can diversify so as to reduce the risk of a failed project to almost zero. Consumers, especially utility consumers, have virtually no diversification possibilities.

But it goes beyond diversification. Investors have an arbitrage opportunity by picking relatively good projects in which to put their money, and eschewing relatively bad ones. Some good ones will still fail, but the due-diligence of profit-motivated investors to search out the relatively good projects and leave the bad ones behind is a fail-safe system that society needs. If investors don't bear the burden of bad investments then on whom do we rely for due-diligence? Surely not government bureaucrats.

We argue that the debt holders of Santee Cooper should bear the burden of the failed nuclear power investment and not the rate payers. But what about taxpayers? Because Santee Cooper is a government entity and the state legislature was the ultimate oversight authority, some--the bondholders for sure--will argue that the state should pick up the tab. Again, this argument errs on the same margin as the argument that ratepayers should pay. Bondholders who opted for what appeared to be easy money because they thought the state would back the project and bail them out in the breach should be punished, punished for failing their fundamental fiduciary responsibility to society. They should have warned Santee Cooper and the South Carolina legislature that this was a bad project.

Finally, *Sirens* cry out that there is another way. They, with enchanting voices, say that angel investors will appear and wipe away the tears of wasted money. Private investors will save the day by buying Santee Cooper, lock, stock, and bad debt, and no one will have to pay anything. It sounds like a school play. Surely, if more foolish investors can be found, who could possibly refuse the offer. But it isn't going to happen.

The rocky shoals toward which these Siren calls lead are false promises. The money is gone. It has been wasted. No one except the ratepayers, taxpayers, or bondholders will make it up. Claims to the contrary are lies and financial economic falsehoods. Many of these lies take the form of making short-term, monetary concessions to ratepayers with the disguised proviso that the ratepayers will be saddled with very long-term obligations to pay above market prices for their electric service into the future. This is flim-flam, smoke and mirrors. Ratepayers are paying the bad debt, albeit ratepayers who are not yet born. This (taxing future generations to pay for today's boondoggles) is an unconscionable travesty all too common in today's public finance. Ratepayers should pay the true cost of electric service. Investors should earn a fair return on prudent investments and fully bear the cost of imprudent ones. State taxpayers will, no doubt,

bear some cost of the malfeasance of the legislature for letting Santee Cooper run wild, and this will come in the form of higher borrowing costs for future projects. Even so, this will happen regardless of whether Santee Cooper bonds default and experience has shown this effect to be trivially small (remember investors are diversified).

## Santee Cooper Report Card

Total Debt Associated with V.C. Summer 2 & 3 project (in \$thousands)	\$4,574,100
Total Interest Associated with V.C. Summer 2 & 3 project (in \$thousands)	\$4,753,022
Total Cost of Project (thousands)	\$9,327,122
Number of Residential Customers <sup>1</sup>	147,447
Average Residential Annual Electric Bill (2012) <sup>2</sup>	\$1,235
Average Residential Annual Electric Bill (2016)	\$1,423
Total Amount paid per customer (2013-2017) from increased rates <sup>3</sup>	\$644
Amount rates have increased since 2012 due to project:	15.2%
Additional Rate increases required (range):	11.69-52%

## Amount Still owed per Residential Customer

<b>V.C. Summer Debt Principal</b>	<b>\$31,022</b>
<b>V.C. Summer Interest</b>	<b>\$32,235</b>
<b>Total (in thousands):</b>	<b>\$63,257</b>

(1) Total number of residential customers as of 2016.

(2) Average electrical bill computed using 15.2% total rate increases applied to 2016 average annual bill. This is for customers who did not change their electrical purchases (i.e. assumes demand elasticity of zero).

(3) Computed by multiplying the average annual 2012 electric bill by the corresponding rate increases in each year and finding the summed differences: 3.5% in 2013, 3.5% in 2014, 3.7% in 2015, 3.7% in 2016. Source: Santee Cooper Press Releases on September 12, 2012 and December 7, 2015.

Note: Project costs are not reduced by the amount of the Toshiba Note.



**PALMETTO  
PROMISE**  
INSTITUTE