SPECIAL REPORT

ENERGY

ENERGIZING ENTERPRISE

How Energy Reforms in the Wake of the V.C. Summer Debacle Can Transform South Carolina's Economy

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DEDICATION

DR. PHILIP R. O'CONNOR

1948-2018[1]

This work is dedicated to Dr. Philip R. O'Connor of Chicago, Illinois. Dr. O'Connor was a pioneer in both the scholarship and implementation of energy competition. For over a year, until his untimely death in September 2018 of natural causes at the age of 70, Phil advised the authors of this manuscript and assisted in its research and preparation.

EXECUTIVE SUMMARY

KEY TAKEAWAYS FROM THIS REPORT...

Though fourteen (14) states, including Texas, the Northeast, and parts of the Midwest have seen an expansion of consumer choice in the residential and industrial market since the Public Utility Regulatory Policy Act (1978) and subsequent federal actions, most of the American South, including South Carolina, with the exception of Georgia, still relies on traditional, vertically-integrated utilities with government-awarded geographic monopolies and rates set by state agency rather than in a competitive market. A factor in the expansion of choice in the Northeast was the perpetually high prices in that region. In other parts of the United States, diversity of supply has operated as an impetus for choice.

South Carolina suffers from high electricity prices versus its neighbors (who are rivals in the economic development race) but enjoys a healthy diversity of suppliers. This paper will explore the history of competitive power in the United States, the myths associated with opposition to competition, and explain how South Carolina's unique position makes it a state ripe for allowing free enterprise to flourish in the energy sector by abolishing territorial monopolies in electricity supply. Other free enterprise reforms specific to South Carolina in the wake of the decision to abandon construction of V.C. Summer reactors 2 and 3 are explored as well.

TABLE OF CONTENTS

LIST OF FIGURES

ENERGIZING ENTERPRISE

HOW ENERGY REFORMS IN THE WAKE OF THE V.C. SUMMER DEBACLE CAN TRANSFORM SOUTH CAROLINA'S ECONOMY

INTRODUCTION: UTILITY COMPETITION FROM GREER TO BATESBURG

Growing up in Greer, South Carolina I used to open my bedroom windows in the fall and enjoy the crisp, autumn air. One evening after dark, through that open window, looking up from my homework, I saw the lightning flash. It turned out to be quite a storm. After a minute or two, I could see all the lights in the house next door go dark. In our house, the lights flickered, but the power stayed on. That seemed curious to my childish mind, so I hunted down my dad and asked a kid's favorite question: "*Why*?"

Turns out, the neighbors were on Greer Commission of Public Works (municipal) power while we were on Duke Power (investor-owned utility). One provider's substation or transformer failed (or was struck by lightning), the other's survived. Two homes side by side were served by different electricity providers.

Fast forward twenty years. I had moved to the Midlands of South Carolina and the Town of Batesburg-Leesville. There was a storm story here as well: every time it rained, telecommunications would fail. No matter what I tried, rain meant slow internet and scratchy landline phone service. Frustrated, I was able to do something few in South Carolina could do at the time: I switched to *another phone provider*. Both BellSouth (now AT&T) and PBT (now Comporium) served my home. AT&T had a junction in my back yard right of way and PBT had fiber optic cable running through the front.

What are the chances? My childhood home had electricity choice of sorts and the place I settled had telecom choice.

Palmetto Promise Institute began studying the future of energy in South Carolina more intensely after state government-owned Santee Cooper and investor-owned South Carolina Electric and Gas announced on July 31, 2017 that they were pulling the plug on expanding the V.C. Summer nuclear site in Fairfield County after spending over $9 billion, funds that in Santee Cooper's case would have to be supplied entirely by ratepayers. In the face of this debacle, and the Base Load Review Act (2007), that allowed utilities to begin to charge customers for generation assets as they were being built, the idea of a consumer being able to choose his or her electricity provider was a concept we just couldn't ignore.

Nearly every industry that has been deregulated—airlines, trucking, natural gas—has thrived. Prices have fallen, and service has improved. But even more attractive than *price* and *service* is the surety of *innovation*. For the entire time between when I lived as a child in Greer to the time I settled as an adult in Batesburg-Leesville, the technology behind the cell phone was in existence. It was ready to be implemented. But a phone in your pocket didn't exist while just one company controlled all of telecom.

Imagine the price, service, and innovation that would come from multiple providers competing to generate, distribute and transmit electricity to you.

For families and for business, energy competition would be transformative. But how could electricity choice look here? Should we look to Illinois, Texas, Georgia or Puerto Rico? And what about "Electric

Lite"? Could an old idea from South Carolina's past be new again? And finally, what is the situation at Santee Cooper and Central Electric Power Cooperative? We will explore all these issues in the forthcoming pages and offer suggestions for energizing enterprise in the Palmetto State.

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I. THE HISTORY & ECONOMICS OF ELECTRICITY IN THE UNITED STATES

If a tourist were to take a horse and carriage tour of Charleston, South Carolina today, the guide will no doubt point out the various decorative fire department badges adorning many of the oldest homes and businesses. These medallions indicated to which brigade the owner had paid his dues for fire protection. That's because in the early years of our nation, public services of all types, including fire services, were more likely to be private and competitive.[2]

Well into the 20th Century actual competition for telephone and electric service was common in several jurisdictions in the United States. There were 45 electricity ("electric light") suppliers legally authorized in Chicago in 1907 and telecommunications historian Gerald Brock reveals that there were 3,000 independent phone firms[3] just after the turn of the century. They weren't just in New York either. Many of the states in the Midwest had more than 200 telephone companies *each*.[4]

But with the end of World War I, there came a shift in governmental posture that led to single *vertical monopoly* utilities. Companies would have an exclusive right to a particular service territory, and government (usually at the state level) would set rates based on their assessment of a fair return. In this era also came utilities owned by governments at the federal, state and local level. The new paradigm was the notion was that free enterprise had its limits. There were "natural monopolies" and "essential facilities"—meaning in certain cases one company was better than two or more due to economies of scale and the need to avoid unnecessary duplication of infrastructure.

This "natural monopoly" idea haunts any productive discussion of electricity as a commodity to be bought and sold. It is simply a myth to suggest that in certain classes of commerce, the free market will always fail. The natural monopoly argument is that the fixed costs associated with production are so large relative to demand that once one firm is in place no other will enter because if it were to do so, both would fail. The argument, while theoretically sound, has not been found to be empirically valid. Large up-front costs have never been a deterrent to entry, except where the deterrent was enforced by government sanction. A good example is pharmaceutical research and development. Getting a new drug to market is a billion-dollar endeavor. By the natural monopoly argument, no new statin drug would have been invented after Lipitor went to market. Yet there are three or four statin substitutes that came after Lipitor.

The side effects of the vertical monopoly electric utility—companies that control generation, transmission and distribution of electricity (see Figure 1)—are various externalities and distortions. Industrial users often subsidize residential and commercial ratepayers. Customers pay less than the cost of service during peak load usage. Politically powerful customers fare better than diffuse unorganized ones. Worst of all, inefficient or unwise generation capacity is constructed due to political incentives or lack of concern for actual cost or excessive capacity due to "cost of service/ "rate of return" regulatory principles. If a large customer finds a way to an alternative source of generation, expensive facilities are "stranded" and the rest of the customers have to pay for the asset. Utilities become "too big to fail." There is no incentive or reward for efficiency, and speculation runs wild. Utilities "gold-plate" and over capitalize to insure maximum reliability.[5]

The traditional regulatory process fails to set prices that reflect actual cost, so "the critical role of price as a signaling mechanism has been destroyed."[6] Furthermore, turning to government to set a price and to look over the shoulder of private industry leads to "regulatory capture" (the "capturing" of government regulatory agencies by those being regulated) and "regulatory failure" (the inability of government agencies to keep up with innovation).[7]

This has been the nature of the electricity "market" in most places for over a century.

Some reforms came in 1935, when Congress passed the Federal Power Act, replacing the Federal Power Commission with FERC, the Federal Energy Regulatory Commission. FERC began to regulate some transactions, and the Securities and Exchange Commission (SEC) began to regulate public utility holding companies after the passage of the Public Utilities Holding Company Act that same year. But most utility regulation, including exclusive territory assignment and rate setting, was at the state level through Public Service Commissions.

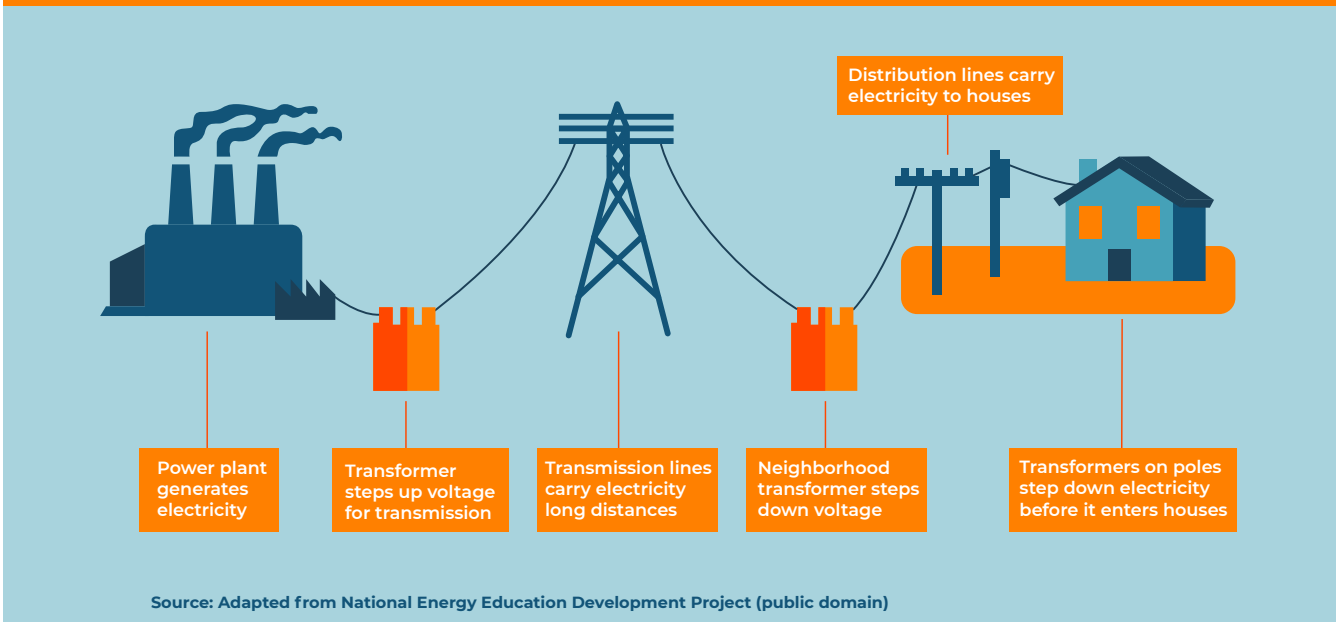
From the Depression until the 1970s, electricity prices mostly fell. Utilities petitioned for rate *decreases*. But when the price of fuel spiked due to actions by the OPEC cartel and pollution controls were enacted, generation of electricity became more expensive and prices rose. In the wake of the energy crisis of the Nixon-Ford-Carter era, Congress passed PURPA, the Public Utility Regulatory Policy Act (1978). This was followed by the Energy Policy Act of 1992 and a landmark order from the Federal Energy Regulatory Commission (FERC) enforcing it. The primary intent of PURPA was energy conservation, but the effect was to favor independent power producers (non-utility generators), smaller generation (no matter how inefficient), and eventually the opening ("wheeling") of transmission networks to competitors. But the momentum for choice only went so far.

Research by Michael T. Maloney, Robert E. McCormick, David W. Riggs, Raymond D. Sauer and others beginning in the 1990s, took an economist's approach to the electricity market, but stopped short of calculating the effects of full competition from the generation level to the distribution level. "Contrary to natural monopoly theory," they wrote, "the market for *generating* electricity has proven to be highly competitive and this component of electricity production would be open to full competition in a restructured market. On the other hand, *transmission* and *distribution* of electricity [again, see Figure 1] will in all likelihood remain regulated, at least for the short run."[8]

The economists predicted that in a competitive market there would be significant gains for ratepayers as they would not only enjoy competition among *generators* for their power business, but they would no longer see a Public Service Commission indemnifying poor generation capital decisions by allowing utilities to pass along higher rates to the consumer. In regulated markets, failed investments are called "stranded costs" and all too often captured consumers are forced to pay for the failure. In free markets, failed investments are just part of doing business and the financial capital suppliers take the hit. These financial capital suppliers are compensated by their returns from investments that do not fail.[9] In a competitive market, efficient power producers would do well, inefficient power generators would fail. Foreseeing the rise of more efficient fuels, that team specifically called for turning to natural gas.

FIGURE 1

ELECTRICITY GENERATION, TRANSMISSION, AND DISTRIBUTION



Source: Adapted from National Energy Education Development Project (public domain)

In that body of research, it was clear that *generation*—generation that is not required to be efficient, generation whose expenses can be passed on to the ratepayer whatever they are—are a drag on the pocketbooks of electricity customers. It is certainly the overwhelmingly largest piece of the average utility's expenses. The Central Electric Power Cooperative ("Central"), the South Carolina generation and transmission ("G&T") co-op of co-ops that serves as the bridge between generation providers such as Duke Energy and Santee Cooper and the distribution of the twenty Electric Cooperatives of South Carolina, provides an apt example of the outsized cost of generation. Central pegged their generation expenses at 89% of its costs, costs that it must pass along to its customers, the co-ops. Bulk transmission (switching stations, tap lines, radial lines, etc.) is approximately 10%. Central's overhead costs are the remaining 1%.[10]

As for transmission, Maloney *et al.*, struggled, fearing that shopping for generation pricing would be moot if consumers had to face high prices from the transmitters (middlemen) of power. Either typical regulators or the free market would have to be unleashed on transmission as well. Or, independent system operators could be set up for each grid region, contracting on behalf of consumers with generators and transmitters of power.

The Maloney team calculated that energy competition, with more efficient allocation of resources that would move beyond the restraints represented by summer versus winter load demands, geography, and the three-tiered Generation-Transmission-Distribution system could potentially save 2.6 percent of GDP. Again, as if it were taken from 2018 headlines, the research argued:

Declines in the price of electricity have been shown to stimulate productivity growth in many industries. We live in an era in which many are concerned with the competitiveness of American industry, and lower prices for electricity enhance American competitiveness. Many proposals to increase international competitiveness involve trade policies which threaten to restrict consumer choice and raise prices. Deregulation of electricity involves no such deleterious effects on consumers and will immediately increase American competitiveness relative to the rest of the world.[11]

II. THE EFFECTS OF COMPETITION ON COMMERCE AND ENERGY

In nearly every network industry in the economy but electricity, from 1976 to 1996, the United States has enjoyed an era of deregulation. This deregulation has included airlines (1978), railroads (1976, 1980), interstate trucking (1980), crude oil and refined petroleum (1981), intercity buses (1982), telephone service (1982,1984), telecommunications (1996), and natural gas (1978, 1985, 1989, 1992). But though electricity pricing is competitive abroad (in Japan[12], the United Kingdom[13], and New Zealand[14] for example), only a few states in the United States have embraced it.

HOW COMPETITION WORKS IN THE NORTHEAST AND MIDWEST

In 1986, writing in *Public Utilities Fortnightly*, three officials associated with the Illinois Commerce Commission---Philip O'Connor, Robert Bussa, and Wayne Olson---called for greater competition in the electric utility industry. Their concern, coming true shortly after its publication, was that the utility industry would become less stable and riskier:

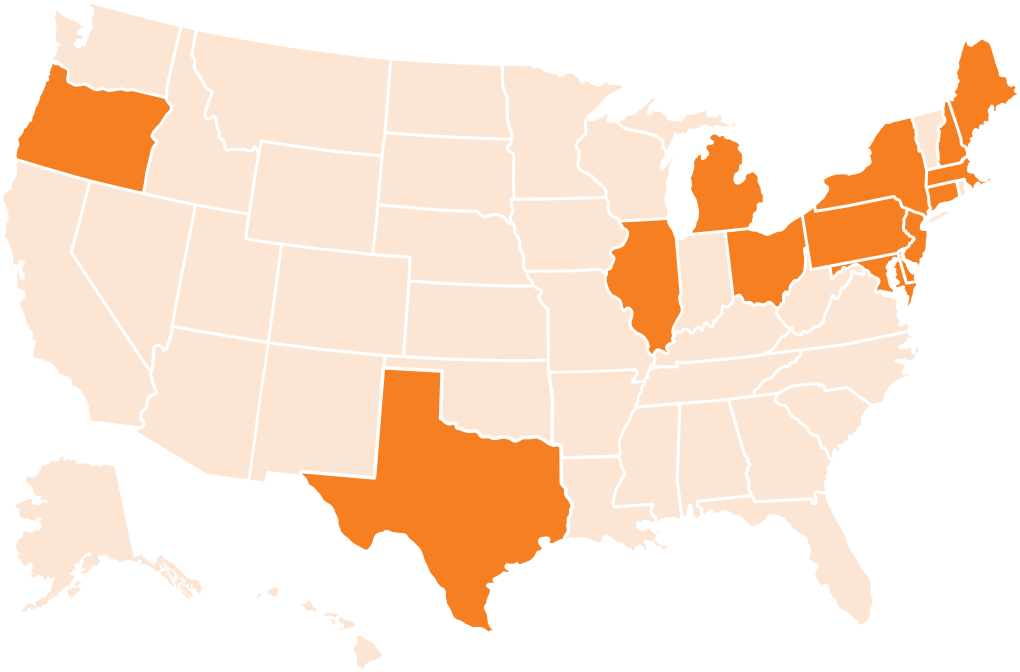
In order to maintain the financial health of the industry, to assure reliability of supply, and to protect the interests of residential and industrial customers, a fundamental re-examination of traditional power delivery institutions is needed. The traditional rate base and rate-of-return regulation of electric generating capacity could be replaced by a framework that recognizes the incipient competitiveness of the electric market and, in fact, encourages competition in the generating sector. A greater reliance on market forces could correct one of the critical deficiencies of traditional regulation—its inherent inability to match end-user prices with the economic cost of production.[15]

The plan presented in the article called for a central dispatch for utilizing a state's generation capacity more efficiently, requiring non-discriminatory wheeling of power between customers and producers, and unbundling and pricing electrical rate elements separately. Generation would be competitive but separated from the rate base. "Wires only" companies would concentrate on being good delivery service companies and be agnostic on generation. The scholars called for "open access to the system grid" that would create "numerous independent sellers competing for buyers" with a "separate industry that coordinates power usage through brokerage and central dispatch of power."[16] Large industries could own generation that could be used by the industry or re-sold.

It was an aggressive and controversial proposal.

In a thirtieth anniversary article, O'Connor, Bussa and Olson followed up (2016) claiming partial victory and offering a five-point plan for the future.[17] As for victory, they celebrated the level of generation being provided by non-utilities, the fact that 14 jurisdictions (states and DC) allow retail choice, and that electricity competition/consumer choice is taking hold internationally.

ELECTRICITY CHOICE JURISDICTIONS



Based on current market conditions, where from 1990-2015 electricity market growth increased just 1.28 percent compounded annually, they decried the fact that with flat consumption in a regulatory environment, prices go up, resulting in a scramble for favorable deals offered to industrial customers because of their price sensitivity. Doubling down, they called for *more choice*---getting past the false impediment of stranded cost recovery, unbundling rates, devolving generation, and using modern digital components for empowering customers with choice---the "'Uberization' of the electricity business."[18]

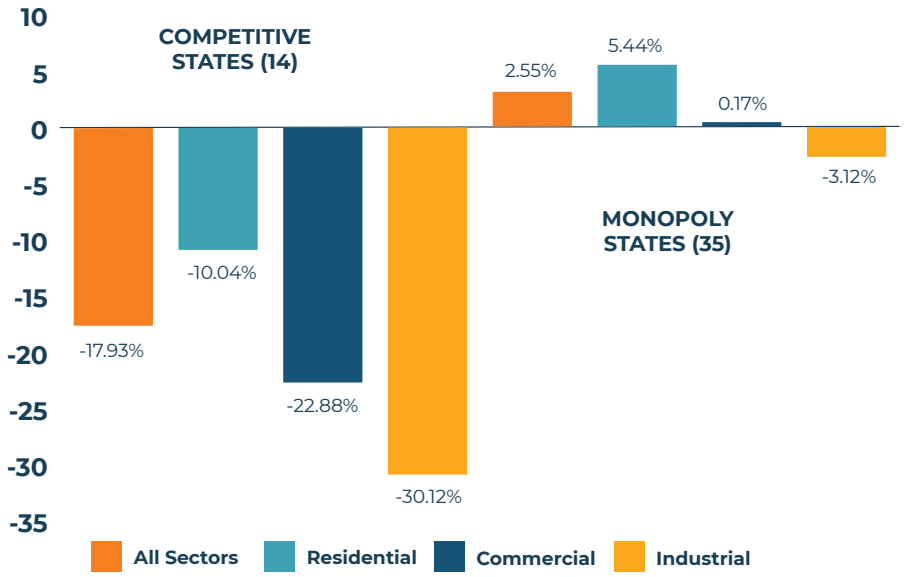
With the enactment of consumer choice in the 1980s, 1990s and 2000s, a model comparing price change in monopoly states versus choice states became possible. In the model, a *Choice* jurisdiction is defined as a jurisdiction (states and DC) where generation is separate and full, unbridled choice is available to all customers. *Monopoly* jurisdictions are the rest. According to "Evolution of the Revolution: The Sustained Success of Retail Electricity Competition," in the 14 competitive choice jurisdictions:

- For 2003-2013, commercial & industrial accounts grew 524% and residential 636%;
- For 2003-2014, load grew 181% for commercial and industrial and 673% for residential;
- Average prices fell against inflation (versus exceeding inflation in monopoly states).

In newer data supplied to us by the author, for 2008-2016 (see Figures 2-6), inflation-adjusted weighted average prices declined in choice states while rising in monopoly states across all sectors, showing a marked divergence. Across all customers, of the fourteen states having an actual price drop, nine were in states with competition. Of the seventeen states seeing Commercial prices drop, twelve were competitive states. Let us be clear, competition is not the sole reason for price drops, but competition is clearly a factor.[19]

FIGURE 2

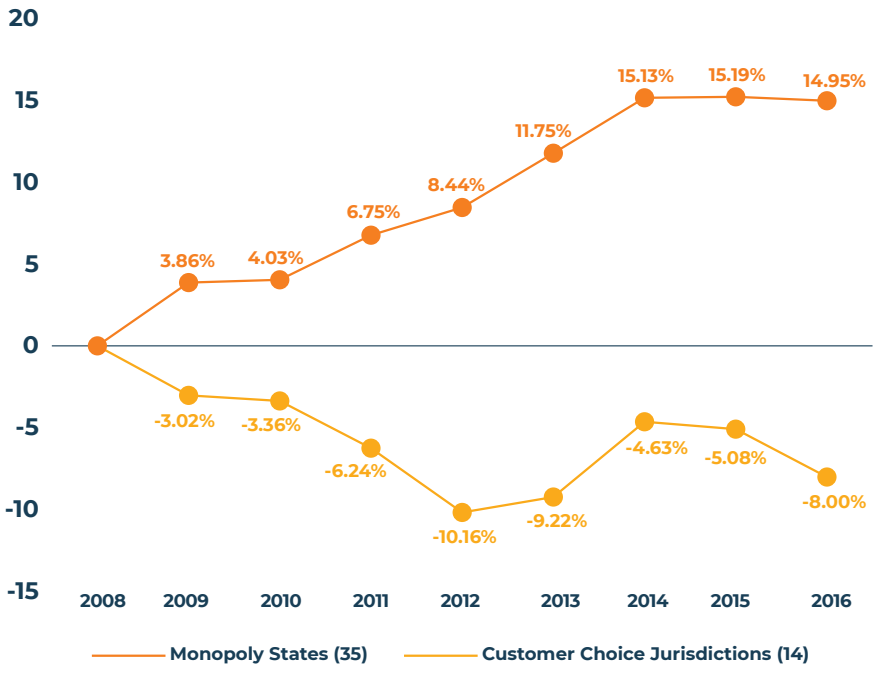
INFLATION-ADJUSTED WEIGHTED AVERAGE PRICES LARGELY DECLINED IN CHOICE STATES WHILE RISING IN TRADITIONAL STATES, 2008-2016



Source: PROactive Strategies, Inc., Philip R. O'Connor, Ph.D.

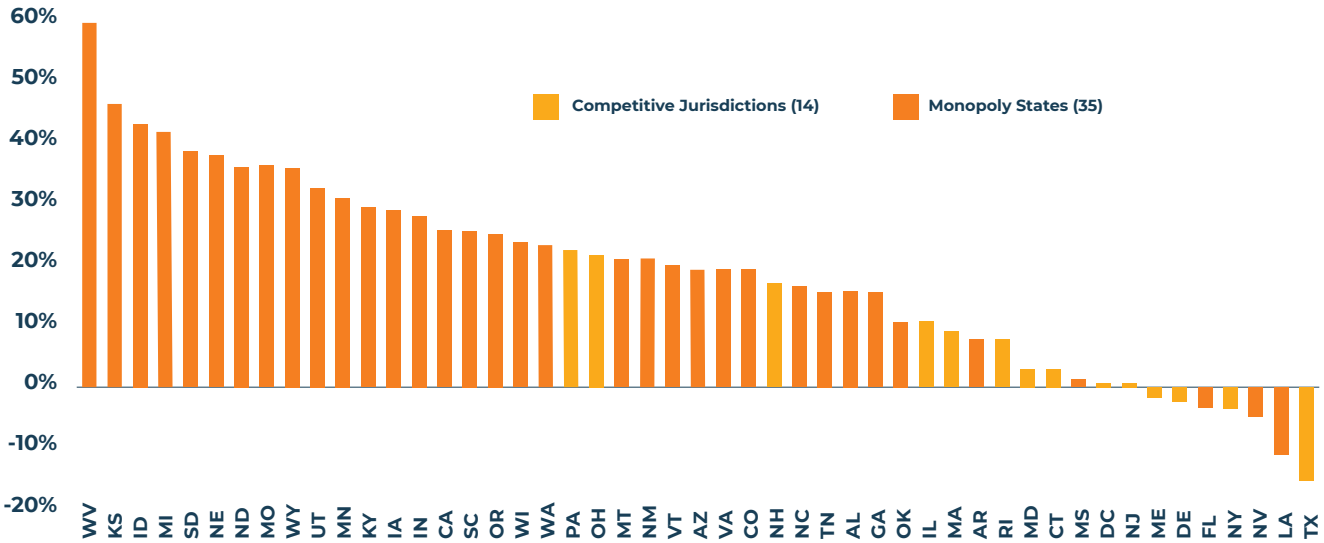
FIGURE 3

ALL-SECTOR WEIGHTED AVERAGE PRICE TRENDS DIVERGE 2008-2016. CHOICE STATES TREND DOWN, MONOPOLY PRICES TREND UP



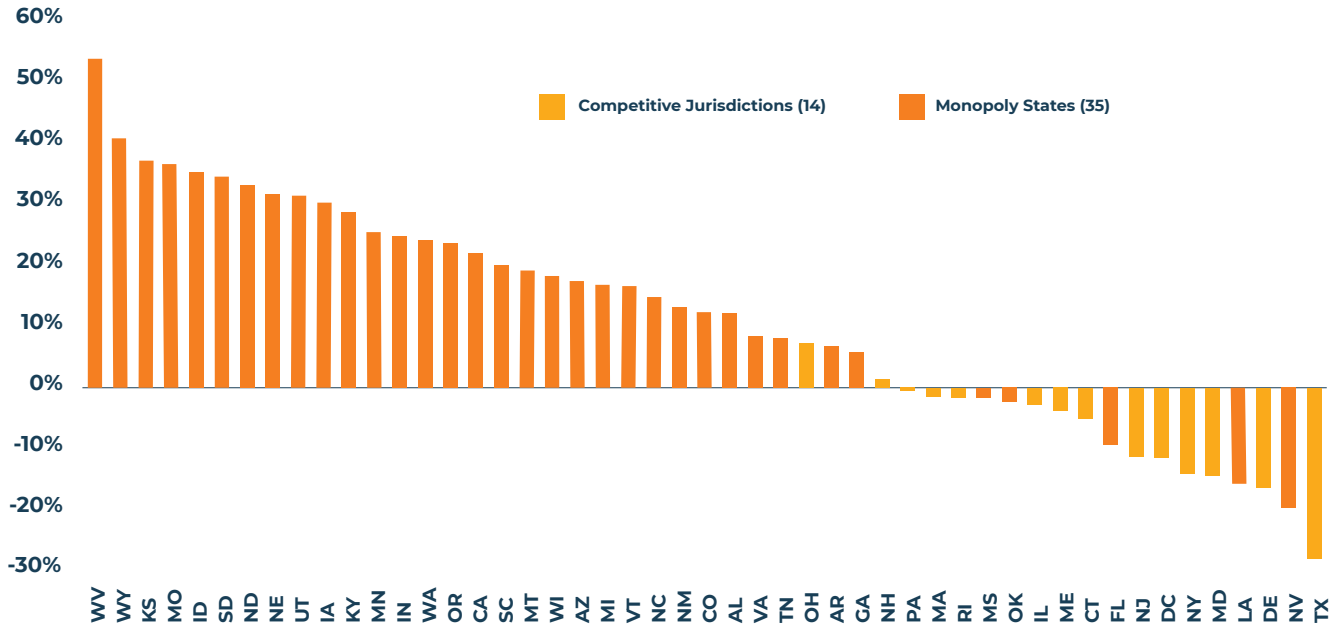
Source: PROactive Strategies, Inc., Philip R. O'Connor, Ph.D.

FIGURE 4
STATE RANKING: RESIDENTIAL PERCENTAGE PRICE CHANGE, 2008-2016



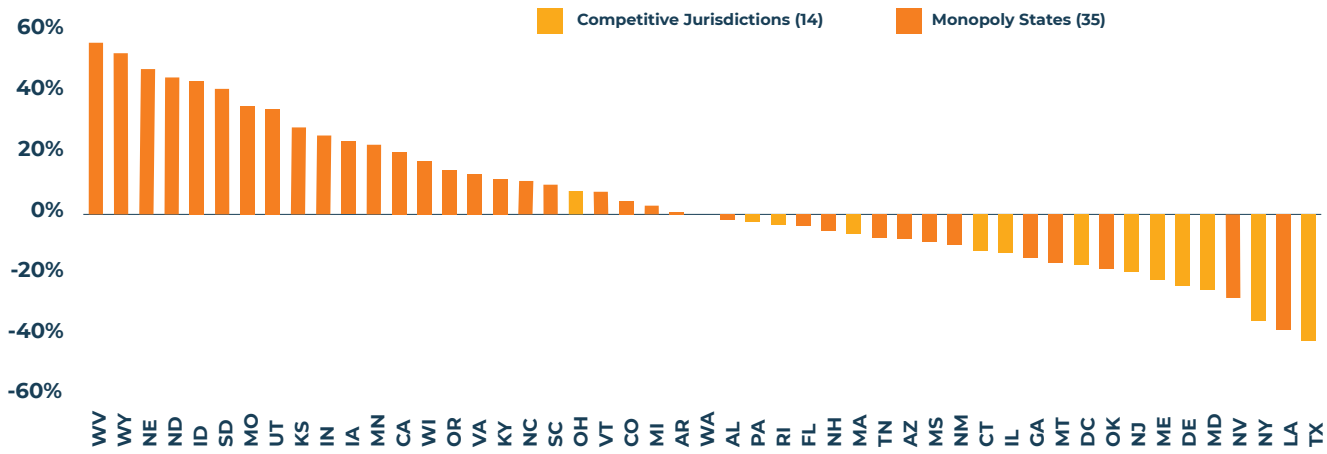
Source: PROactive Strategies, Inc., Philip R. O'Connor, Ph.D.

FIGURE 5
STATE RANKING: COMMERCIAL PERCENTAGE PRICE CHANGE, 2008-2016



Source: PROactive Strategies, Inc., Philip R. O'Connor, Ph.D.

FIGURE 6
STATE RANKING: INDUSTRIAL PERCENTAGE PRICE CHANGE, 2008-2016



Source: PROactive Strategies, Inc., Philip R. O'Connor, Ph.D.

The knock on the O'Connor *et al.* research is that prices in the energy competition states are high. But, prices started high *before competition* and they have remained high. The principle is that prices would have skyrocketed had it not been for competition. Their research is hard to contest.

HOW COMPETITION WORKS IN TEXAS[20]

Texas is always unique, and energy is no different. In January 2002, its energy deregulation legislation (Senate Bill 7) was enacted. That bill allowed competition in about 85% of the area of the state. Like the typical choice model, Texas separates the *generation* of energy from *marketing* of energy. But the size of the market, the wide range of choices in Texas (over 30 retailers and myriad plans) and the numerous entities needed to make the system work make Texas a poster child for energy choice.

The entities charged with overseeing and providing electricity include:

The **Public Utilities Commission of Texas (PUCT)** that regulates and enforces regulations for the Texas energy market.

The **Transmission and Distribution Service Provider (TDSP)** which is similar to the typical utility in the typical state. The TDSP distributes electricity to the home or business and is responsible for connection and servicing.

The **Retail Electricity Provider (REP)** offers a range of electricity plans, sells and markets the plans, bills the customer, processes payments, and provides customer service. The PUCT lists 90 REPs registered to provide service across three service options available.

The **Electric Reliability Council of Texas (ERCOT)**, manages and oversees the power grid in Texas. (There are four "interconnections" in North America and eight "regional reliability councils." Most of the territory of the State of Texas is in the reliability council known as ERCOT and all of ERCOT is in Texas.)

The Texas model represents the most choices for the consumer anywhere in the United States. According to Empower Texans, choice has a wide range of benefits no matter what one's perspective on generation sources:

Texas' light-touch regulatory approach combined with free market competition has led to five-times the amount of wind power California produces, and 29 percent more renewable power (excluding hydroelectric). Electric rates in Texas are also 89 percent lower than in California.

The Texas approach illustrates perfectly how a largely hands-off model produces a more sustainable carbon-reduction solution that makes sense economically.

Even if only part of the rise is renewables in Texas is due to competition, Texas is a model worth considering for South Carolina. But without our own Reliability Council, is it scalable to the Palmetto State?

HOW COMPETITION WILL WORK IN PUERTO RICO[22]

The devastation wrought by Hurricane Maria decimated The Commonwealth of Puerto Rico's power grid. The island was dark for months as the Puerto Rico Electric Power Authority (PREPA)—already beset with mounting debt, rampant mismanagement, and woefully outdated assets—struggled to get the lights back on. But out of this human and economic tragedy, a once in a century opportunity for reform is gaining traction.

First a few facts:

PREPA, the Puerto Rico Electric Power Authority, was founded the year America entered during World War II and is the only electricity provider for the entire island of Puerto Rico. Its rate base is currently about 1.5 million customers.[23]

*In addition to (or perhaps **because of**) a shrinking customer base and rising indebtedness, PREPA had been doing a poor job investing in the modernization of its grid, and even in managing basic operations like customer service and collecting payments due from its ratepayers.[24] As debt rose, so did rates.*

A little over half of PREPA's $8.2 billion debt is backed by the federal government, but the rest is not. So, when the utility finally went bankrupt in the summer of 2017, private bondholders were out 38% of their investment almost immediately. CNBC reported that "bond insurers are now shelling out millions out of their own pockets to pay on the defaulted debt [so] everyone is a little cranky."[25] Drowning in debt was not proving to be a formula for rebuilding PREPA.

Then, on March 6, 2018, Governor Ricardo Rossello filed before both chambers of the Legislature Senate Bill 860 and House Bill 1481. The "Act to Transform the Electrical System of Puerto Rico" provided the legal framework for the sale or transfer of assets, operations, functions and services of the PREPA to interested private parties. PREPA would be authorized to execute contracts to sell or transfer its assets or to transfer or delegate, temporarily or permanently, operations, functions, or services to a specific proponent. Assets would consist of real or personal property (tangible and intangible), facilities (including generation and electricity metering systems), and proprietary interests, among others. Such asset transactions, considered as priority projects, would be made according to the public-private partnership mechanism under Act 29-2009, known as the Public-Private Partnerships Act (P3),

as amended. Also, PREPA would have the authority to initiate competitive bidding for proposals or P3 contracts in accordance with Act 29-2009.

The Governor's plan attracted both support and opposition, but in the end legislative leaders embraced the idea of privatization. Nothing else made sense.[26] Shell LNG, Kindle Energy, and ITC Holdings combined to make a bid for PREPA. As *Debtwire* reported, "The three-company consortium is targeting PREPA's generation business and its transmission and distribution (T&D) system, one of the utility's most affected components following Hurricanes Irma and Maria. On the generation front, the consortium has proposed to invest north of $4 billion of private capital to modernize PREPA's generation and fuel infrastructure over the next decade. ITC, a subsidiary of Canadian utility holding company Fortis Inc., would be taking charge of the T&D side of PREPA, which Governor Ricardo Rossello has proposed giving away in the form of a medium-term concession."[27]

With regards to generation, the consortium would act both as a generator and developer in Puerto Rico, replacing and repowering existing generation with fuel-efficient, cost-effective, reliable, cleaner, and flexible generation assets at strategic locations. This would include the installation of dual-fuel capable generation units suited to manage intermittent renewable energy generation. The proposal called for 20%-25% renewable generation online by 2035, as well the implementation of micro-grid and distributed energy capability. Additionally, the consortium would develop and construct gas infrastructure to complement other energy sources.

On the fuel supply side, the consortium—led by Shell—would support immediate and longer-term fuel needs via a multi-fuel structure that includes liquid natural gas (LNG), ultra-low sulfur diesel, and heavy fuel oil. Shell would supply the necessary fuels until a fuel source is no longer needed, manage liquid storage contracts, assist with import negotiations, and help with the development of regasification terminals, among other tasks. The fuel price structure would be indexed to relevant market indexes, such as Henry Hub and Brent Crude Oil, and based on competitive market rates.[28]

As to T&D, the consortium would analyze the restoration work performed by the Federal Emergency Management Agency and the US Army Corps of Engineers and commit to an aggressive, long-term T&D investment plan to upgrade PREPA's grid and develop facilities able to withstand Category 4 hurricanes. They would redevelop PREPA's 2015 Integrated Resource Plan (IRP) to identify critical facilities for the implementation of micro-grid/distributed generation, utilize energy storage technologies, and increase the use of renewable energy.

The Act to Transform was signed on June 20, 2018, but the work of transforming Puerto Rico's system, a system that was both undercapitalized by its owners and unaffordable for its ratepayers is ongoing.[29]

Puerto Rico's privatization of a state-owned utility, and its separation of generation from T&D is a bold step for the future that could represent the way forward for states like South Carolina.

HOW COMPETITION ALMOST HAPPENED IN SOUTH CAROLINA

The South Carolina General Assembly passed the Territorial Assignment Act[30], effective July 1, 1969. The Act required the Public Service Commission (PSC) to assign "beginning as soon as practicable after January 1, 1970...adequately defined boundaries which may be by reference to boundaries drawn on maps or otherwise..." of electric utility service areas. Soon after, as the authors of this work discovered reading some recent litigation,[31] utilities simply carved up counties according to their joint preference and submitted maps to the PSC for approval.

There was some limited choice[32] written in the statute, allowing a customer located "within three hundred feet of certain lines of an electric supplier and partially within a service area assigned to another electric supplier" to choose its supplier. But in most cases, this provision has not generated any significant competition in South Carolina. Some disputes have arisen, but territories are for the most part fixed, and choice has not flourished.

It appeared that would change in early February 1997, when a corporation with national ambitions but a South Carolina headquarters appeared. Known as Electric Lite, and based in Greenville, the aggressive young company vowed to take on the big utilities with 20% lower rates for *residential* and small business customers through energy competition. (Previous efforts like that of New Hampshire's Freedom Energy had focused on *manufacturers* only.) Electric Lite would serve as an aggregator, buying electricity on the open market in large quantities and reselling it to its customers. Electric Lite foresaw a market much like modern day Texas, where much like General Motors, a wide variety of product/plans would be offered, from a Cadillac to a Chevrolet depending on the desires of the individual customer.

Companion bills known as the "Competitive Power Act" were filed in the South Carolina Senate and House that same month. Legislators had taken a model bill drafted by the American Legislative Exchange Council (ALEC) and had made changes for filing in South Carolina that would exempt customers of Electric Cooperatives and Municipal power agencies. Transmission access and stranded cost coverage would be addressed. The key practical provisions of the bill were laudable:

Section 58-28-60. Pursuant to the timeliness established under Section 58-28-40(B) and by the commission, all customers must be permitted to choose their providers of electric generation services no later than January 1, 1999, through the following means:

(1) Customers may negotiate a bilateral contract with a generator of electricity, under which contract electricity must be transmitted and distributed to the customer, subject to the provisions of Section 58-28-90(C).

(2) Customers may choose to receive generation and other energy services from a market aggregator. Market aggregators may generate electricity directly, buy and sell electricity, or enter into financial contracts for electric generation resources. Market aggregators may be brokers, cooperatives, buying clubs, municipalities, or other entities which buy or arrange for electric generation services through a power pool or through direct contracts. In no event may a government entity acting as a market aggregator deny its citizens direct access to any other market aggregator.

(3) A default provider or providers for a customer, who has not chosen an alternative source of generation, must be established by the commission in accordance with Section 58-28-110(C). The commission shall set standards to ensure the participation of default providers serving all classes of customers.

By the April 1997, Electric Lite had signed up 17,000 customers who had signed a Customer Choice Agreement that would make them official customers upon passage of the Competitive Power Act. The value of the contracts was estimated at $33 million. Legislators protective of the large utilities panicked, launching an investigation of sorts by the Public Service Commission, which sent Electric Lite a list of 25 questions mostly related to its finances and capital. To make doubly sure Electric Lite gained no traction, a State Senator filed a bill to forbid Electric Lite from operating and voiding its contracts. In July of that year, Electric Lite signed a deal with Cinergy and DuPont to supply and manage bulk power.[33]

In the second year of the two-year legislative session, 1998, Electric Lite became more aggressive, arguing that the larger power companies at that time, Duke Power, SCE&G and Carolina Power & Light, had a practice of negotiating rates and sources of power with large industrial customers, a benefit denied to residential and small business ratepayers. Electric Lite said that the reforms they were calling for were actually in place in the larger load customer sector, why not do the same for the little guy?

Based on this assertion, Electric Light called on the PSC to set up a pilot program where 50,000 customers for each of the three largest utilities would be allowed choice, a program that would be followed six months later with open choice for all ratepayers.[34] The PSC rejected Electric Light's petition.[35]

The first week of February, the PSC produced a report called for by the Speaker of the House that outlined how customer choice could be enacted. The report called for a five-year phase in with 20% of customers being eligible each of the first three years and the rest after that. The PSC plan included a number of recommendations:

- Open access for all certified suppliers;
- Market determination of supply prices;
- Consideration of a power exchange/independent system operator (ISO), though not necessary. Regarding an ISO, it should be established on a regional basis when it is feasible;
- A requirement that the distribution or "host" utility serve customers who do not choose a suplier;
- Utilities may recover stranded costs if "permitted by the General Assembly;"
- Implementation of customer service and consumer education plans; and
- A requirement that each participating utility file an electric restructuring process with the PSC.[36]

In April, with the PSC refusing to act and the 1997-1998 legislative session in its final weeks, Electric Lite announced it had retained Raymond James & Associates to assist in the raising of $30 million to market electricity reselling in nine (9) states.[37] This was a boost, but ultimately, Electric Lite's free-enterprise principles, marketing, and strategic planning weren't enough. When the General Assembly adjourned in the spring of 1998 and all legislation therefore not passed dying, the viability of Electric Lite in South Carolina came to an end and the company closed its doors in the fall of 1998.[38]

Although laudable, the Electric Lite model had a damaging flaw: open (forced) access.

THE ISSUE OF OPEN ACCESS, COMMON CARRIAGE AND WHEELING

A series of federal statutes and rulings, including the Public Utility Regulatory Policies Act (1978), the National Energy Policy Act (1992), and Federal Energy Regulatory Commission Order 888 (1996) have had the effect of encouraging independent power production and the opening of transmission lines to competitors.[39] This opening up of "the grid"—the "wheeling" of power across lines not owned by the generator of the electricity —has been known as "open access," and "common carriage." A number of energy choice proposals discussed above assume common carriage. But we must ask whether competition based on forced access to transmission is desirable or necessary for achieving fair, competitive prices for final consumers.

In *What's Yours is Mine: Open Access and the Rise of Infrastructure Socialism*,[41] Adam Thierer and Wayne Crews make a compelling case against forced access to transmission lines. We find their case against "must carry" compelling from a free-market perspective.

"In reality, open-access regulation invites a significant expansion in the role government planning plays in markets,"[42] they write. Forced access, they believe, is artificial competition at most and a form of eminent domain confiscation at worst. Open Access kills the "natural competitive impulse" of the free market when the real goal should be that "regulators would disappear."[43] Nothing about the Thierer and Crews approach would enjoin firms from making purely private arrangements, however, so long as private property and voluntary exchange are protected. The authors call private agreements to carry the load of another "clearly desirable."[44] Indeed, in South Carolina, the state with which this paper is primarily concerned, there has been some experience with *un*forced wheeling of power.

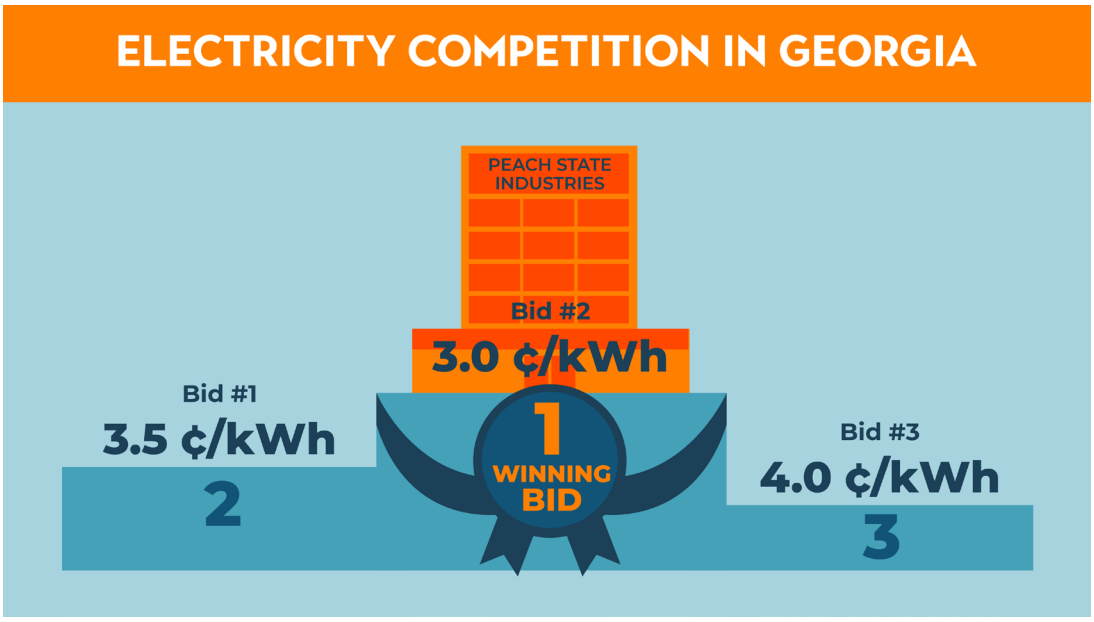
Century Aluminum, formerly Alumax of South Carolina, operates an aluminum smelting plant in the Mount Holly area of Berkeley County that produces a high-grade aluminum billet. But, the manufacturing process is extremely electricity dependent, requiring an average load of 400 megawatts (MW). That load (400 megawatts would power 200,000 homes) means that electricity is about 40% of the cost of operating the plant, its single highest expense. 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 the transmission lines of Santee Cooper. Century pays Santee Cooper for the wheeling. Century purchases the remainder of its power from Santee Cooper at a higher price. (But, Century CEO Mike Bless has said that if he were able to take advantage of 100% energy choice, he could begin to re-hire laid off workers.)[45]

So, *voluntary* access is free market friendly, forced access is not. But, beyond the ideological principle, the *What's Yours is Mine* argument is consistent with Maloney *et al.*, in that it is the innovation inherent in private decisions (and with it a degree of risk) that must be protected. The market, with its constantly changing technological demands, can't thrive in the face of a proto-competition that merely mimics free enterprise. There were few new services and few new markets when The Bell System controlled everyone's telephone service. The market was never "at rest," but AT&T most certainly was.

So, what is the alternative if competition is to be possible? Choice, as it exists in most places in America, focuses on access to more economical generation or different price structures for re-selling the same generation. The only alternative is the elimination of exclusive territories or franchises. That would lead to innovation in transmission[46] and distribution as well as access to alternative (cheaper) generation.

HOW COMPETITION WORKS IN GEORGIA

FIGURE 7



As described above, there are states that require mandatory carriage by electric utilities whereby a customer can choose from a variety of power suppliers who deliver power to the local power distributor. This is not the arrangement in Georgia. There are multiple owner-users of the transmission system who are permitted to compete for certain customers in certain circumstances. These relationships were developed voluntarily by the parties.

In the early 1970s Georgia Power was near bankruptcy due to massive cost overruns in the construction of two nuclear reactors. At that time, only assets that were "used and useful" could gain regulatory approval from the Georgia Public Service Commission for recovery and rate of return. Desperate for funding, Georgia Power sold parts of power plants to consortiums of municipal and cooperative power distributors. These distributors demanded the right to access the transmission system (then mostly owned by Georgia Power) to deliver the electricity to their systems. Also, the parties clarified how they would compete for new customers. The agreement between the parties was ratified in 1973 by the General Assembly becoming the Georgia Territorial Electric Service Act.[47]

In the Territorial Act, the most powerful force for consumer choice is the Large Load Exception.[48] Under the Large Load Exception, a customer with a load of 900 kilowatts or greater may select its electric supplier from those allowed to serve the premises. There are restrictions, especially within cities (municipalities) but within the city limits of newly created municipalities or in areas outside the boundaries of municipalities, any supplier may serve.[49]

There are now 49 cities with power systems that make up the Municipal Electric Authority of Georgia which represents the group in the management of the Integrated Transmission System (ITS). The counterparty for 39 of the Electric Membership Corporations ("EMCs," called Co-ops in South Carolina) is Georgia Transmission System. Other parties are the City of Dalton and Georgia Power.

All these entities may compete for large customers all over the state (see Figure 7). For example, a

small EMC in South Georgia may bid to provide service to a new industrial or commercial facility being built in North Georgia. The rivalry for new customers is intense, with the competing utilities offering potential customers lower rates and other amenities.

The Georgia system could be improved by removing the load size requirement (900 kW or greater) for customer choice. (A 900-kW load would be approximately that needed by a Kroger, Publix, Home Depot, Lowes or Target.) Further, the choice of the serving utility should not be a one-time decision; and the customer should be able to switch to another utility at will within contractual agreements.

The Georgia model "willing buy through" was developed with a minimum of political direction and is mostly a product of voluntary arrangements. While not perfect, the model provides another option for implementing a South Carolina competitive system.

But, why does South Carolina need change?

III. ELECTRIC SHOCK: SOUTH CAROLINA'S UNCOMPETITIVE UTILITY RATES

The authors of this paper taken jointly have written extensively on electricity competition and residential electricity rates for over 25 years.[50] Our most recent policy analyses,[51] have focused on South Carolina, specifically The South Carolina Public Service Authority (Santee Cooper). A series of four reports produced in 2018 show how much residential electric rates at state-owned Santee Cooper must rise in order to compensate for the costs of the failed expansion of the V.C. Summer Nuclear Station in Jenkinsville (Fairfield County), SC, a project launched in partnership with South Carolina Electric & Gas (SCANA Corporation). That project's construction, begun in 2012 and abandoned in 2017, to add two additional reactors to the existing nuclear station ended when projected costs for completion reached $20 billion. Original estimates were $11 billion. $9 billion was spent for two unfinished reactors.

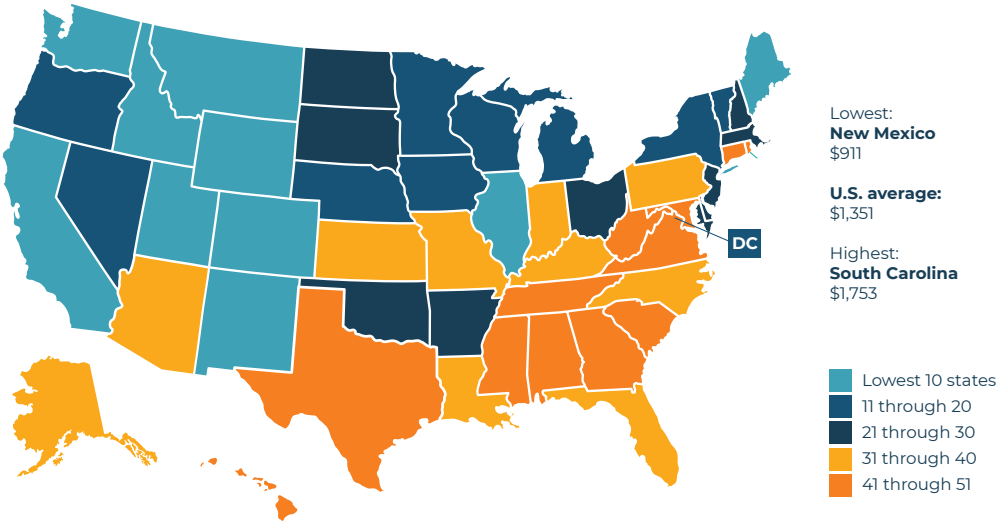
Because of V.C. Summer, residential electricity rates for Santee Cooper and SCANA are each at the top of the "Big Four" electricity providers in the state.[52] SCANA rates are expected to drop below Santee Cooper's rates when the South Carolina Public Service Commission revises rates in late 2018 or early 2019.

More on the V.C. Summer debacle and its impact in due course.

The federal Energy Information Administration (EIA) conducts research on behalf of the federal government on energy issues. One of its publications (online) received a great deal of attention in South Carolina due to its jarring headline[53]: "Electricity prices are highest in Hawaii but expenditures are highest in South Carolina."

FIGURE 8

AVERAGE RESIDENTIAL ELECTRICITY EXPENDITURES PER CUSTOMER, 2016



Source: United States Energy Information Administration

It isn't positive for the South Carolina ratepayer to see that expenditures are highest here. Much of this is because usage is high here. Our summers are hot, humid, and last well into October. And, many of the homes in our rural areas are poorly insulated and/or use electric strip heat.

As for rates, EIA also conducts a monthly analysis of the price of electricity to Industrial, Commercial and Residential users (see Figures 9-15). For that agency's purposes, South Carolina is assigned to the South Atlantic Region along with neighboring states from Georgia to Maryland, much like the original Atlantic Coast Conference athletic association. But those are not our true peers.

As revealed by the tables below, for May 2018, South Carolina was seventh highest out of nine states in the South Atlantic region for Industrial rates and about halfway down the pack for the full Southern region. For Commercial rates, South Carolina was third highest in the South Atlantic and sixth highest for the South (which includes 17 states from Maryland to Texas). On residential rates, South Carolina was fourth highest in the sub-region and region. Looking across all rates, South Carolina was 25th in the nation and third highest in the South. **In every single case, our neighboring states of North Carolina and Georgia, those with whom we compete most closely and intensely for workers and industry, had lower rates---industrial, commercial and residential.**

FIGURE 9

AVERAGE PRICE OF ELECTRICITY TO ULTIMATE CUSTOMERS BY END-USE SECTOR IN SOUTH ATLANTIC REGION (INDUSTRIAL)

		Industrial	
Rank	Census Division and State	May 2017	May 2018
1	Maryland	8.36	8.15
2	District of Columbia	8.3	7.99
3	Florida	7.71	7.6
4	Delaware	7.86	7.08
5	Virginia	6.57	6.85
6	West Virginia	6.72	6.63
7	**South Carolina**	**5.98**	**5.89**
8	**North Carolina**	**5.72**	**5.77**
9	**Georgia**	**5.59**	**5.54**

Source: U.S. Energy Information Administration, Table 5.6A (May 2018 and May 2017).

FIGURE 10

AVERAGE PRICE OF ELECTRICITY TO ULTIMATE CUSTOMERS BY END-USE SECTOR IN SOUTHERN REGION (INDUSTRIAL)

		Industrial	
Rank	Census Division and State	May 2017	May 2018
1	Maryland	8.36	8.15
2	District of Columbia	8.3	7.99
3	Florida	7.71	7.6
4	Delaware	7.86	7.08
5	Virginia	6.57	6.85
6	West Virginia	6.72	6.63
7	Alabama	6.24	6.24
8	Mississippi	5.93	6.02
9	**South Carolina**	**5.98**	**5.89**
10	**North Carolina**	**5.72**	**5.77**
11	Tennessee	5.74	5.63
12	Kentucky	5.53	5.62
13	Texas	5.68	5.57
14	**Georgia**	**5.59**	**5.54**
15	Arkansas	5.85	5.23
16	Louisiana	5.29	5.15
17	Oklahoma	5.34	5.14

Source: U.S. Energy Information Administration, Table 5.6A (May 2018 and May 2017).

FIGURE 11

AVERAGE PRICE OF ELECTRICITY TO ULTIMATE CUSTOMERS BY END-USE SECTOR IN SOUTH ATLANTIC REGION (COMMERCIAL)

		Commercial	
Rank	Census Division and State	May 2017	May 2018
1	District of Columbia	11.57	11.60
2	Maryland	10.98	10.30
3	**South Carolina**	**10.21**	**10.09**
4	**Georgia**	**9.79**	**9.62**
5	Delaware	10.47	9.60
6	West Virginia	9.68	9.59
7	Florida	9.29	9.29
8	Virginia	7.81	8.33
9	**North Carolina**	**8.64**	**8.33**

Source: U.S. Energy Information Administration, Table 5.6A (May 2018 and May 2017).

FIGURE 12

AVERAGE PRICE OF ELECTRICITY TO ULTIMATE CUSTOMERS BY END-USE SECTOR IN SOUTHERN REGION (COMMERCIAL)

		Commercial	
Rank	Census Division and State	May 2017	May 2018
1	District of Columbia	11.57	11.6
2	Alabama	11.50	11.23
3	Mississippi	10.29	10.83
4	Maryland	10.98	10.3
5	Tennessee	10.33	10.22
6	**South Carolina**	**10.21**	**10.09**
7	**Georgia**	**9.79**	**9.62**
8	Delaware	10.47	9.60
9	West Virginia	9.68	9.59
10	Kentucky	9.60	9.49
11	Florida	9.29	9.29
12	Louisiana	8.98	8.65
13	Virginia	7.81	8.33
14	**North Carolina**	**8.64**	**8.33**
15	Texas	8.27	8.23
16	Arkansas	8.56	7.54
17	Oklahoma	7.88	7.52

Source: U.S. Energy Information Administration, Table 5.6A (May 2018 and May 2017).

FIGURE 13

AVERAGE PRICE OF ELECTRICITY TO ULTIMATE CUSTOMERS BY END-USE SECTOR IN SOUTH ATLANTIC REGION (RESIDENTIAL)

		Residential	
Rank	**Census Division and State**	**May 2017**	**May 2018**
1	Delaware	14.77	13.74
2	District of Columbia	13.54	13.73
3	Maryland	14.53	13.33
4	**South Carolina**	**12.99**	**12.85**
5	Virginia	11.88	12.28
6	West Virginia	12.02	11.78
7	**Georgia**	**11.7**	**11.62**
8	Florida	11.38	11.54
9	**North Carolina**	**11.27**	**11.41**

Source: U.S. Energy Information Administration, Table 5.6A (May 2018 and May 2017).

FIGURE 14

AVERAGE PRICE OF ELECTRICITY TO ULTIMATE CUSTOMERS BY END-USE SECTOR IN SOUTHERN REGION (RESIDENTIAL)

		Residential	
Rank	Census Division and State	May 2017	May 2018
1	Delaware	14.77	13.74
2	District of Columbia	13.54	13.73
3	Maryland	14.53	13.33
4	**South Carolina**	**12.99**	**12.85**
5	Alabama	12.73	12.49
6	Virginia	11.88	12.28
7	Mississippi	11.68	12.07
8	West Virginia	12.02	11.78
9	Texas	11.17	11.68
10	**Georgia**	**11.70**	**11.62**
11	Florida	11.38	11.54
12	**North Carolina**	**11.27**	**11.41**
13	Tennessee	10.74	10.87
14	Kentucky	10.66	10.66
15	Oklahoma	10.74	10.09
16	Arkansas	10.49	9.89
17	Louisiana	9.88	9.53

Source: U.S. Energy Information Administration, Table 5.6A (May 2018 and May 2017).

FIGURE 15

AVERAGE PRICE OF ELECTRICITY TO ULTIMATE CUSTOMERS BY END-USE SECTOR IN UNITED STATES, SOUTHERN REGION (ALL STATES)

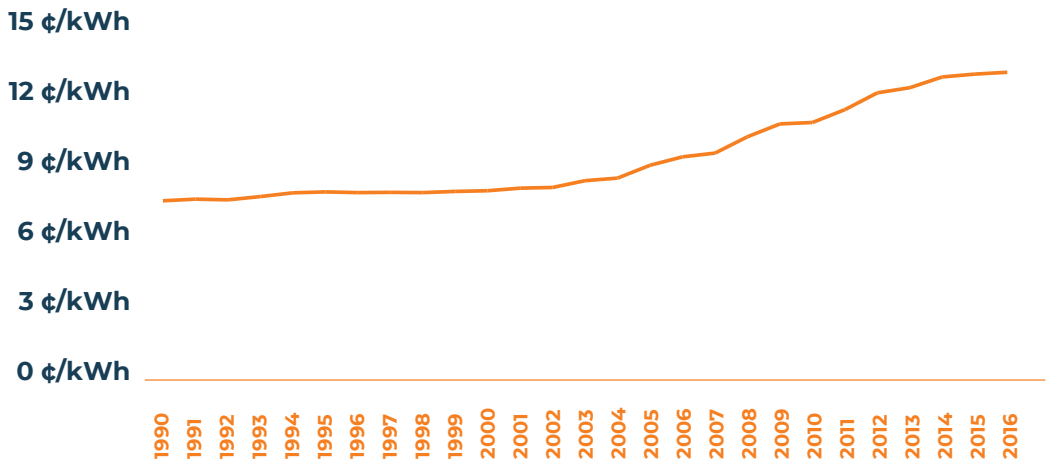
	All Sectors	US	SOUTH
Census Division and State	May 2018	RANK	RANK
Hawaii	28.68	1	
Alaska	19.61	2	
Connecticut	17.85	3	
Massachusetts	17.74	4	
Rhode Island	17.17	5	
New Hampshire	17.05	6	
California	16.08	7	
Vermont	14.98	8	
New York	14.32	9	
New Jersey	13.21	10	
Maine	12.89	11	
District of Columbia	11.87	12	
Michigan	11.46	13	
Arizona	11.40	14	
Maryland	11.33	15	
Wisconsin	11.14	16	
Minnesota	10.70	17	
Missouri	10.65	18	
Delaware	10.61	19	
Kansas	10.53	20	
Florida	10.29	21	1
South Dakota	9.93	22	
Pennsylvania	9.83	23	
Colorado	9.83	24	
Ohio	9.75	25	
Alabama	9.67	26	2
South Carolina	**9.53**	**25**	**3**
Tennessee	9.50	24	4
Mississippi	9.44	23	5
Virginia	9.43	22	6
Indiana	9.41	21	
Illinois	9.40	20	

FIGURE 15 - CONTINUED

	All Sectors	US	SOUTH
Census Division and State	May 2018	RANK	RANK
Georgia	**9.37**	**19**	**7**
North Dakota	9.28	18	
Nebraska	9.08	17	
Oregon	9.02	16	
North Carolina	**8.98**	**15**	**8**
Montana	8.94	14	
New Mexico	8.93	13	
West Virginia	8.86	12	
Texas	8.65	11	
Iowa	8.56	10	
Utah	8.55	9	
Nevada	8.46	8	
Kentucky	8.39	7	
Idaho	8.30	6	
Wyoming	8.29	5	
Oklahoma	7.72	4	
Washington	7.69	3	
Louisiana	7.51	2	
Arkansas	7.38	1	

According to EIA, not so different from other states, our residential electric rates have climbed (1990-2016) along with generation and the customer base (see Figures 16-18).

FIGURE 16
SOUTH CAROLINA RESIDENTIAL PRICES, 1990-2016

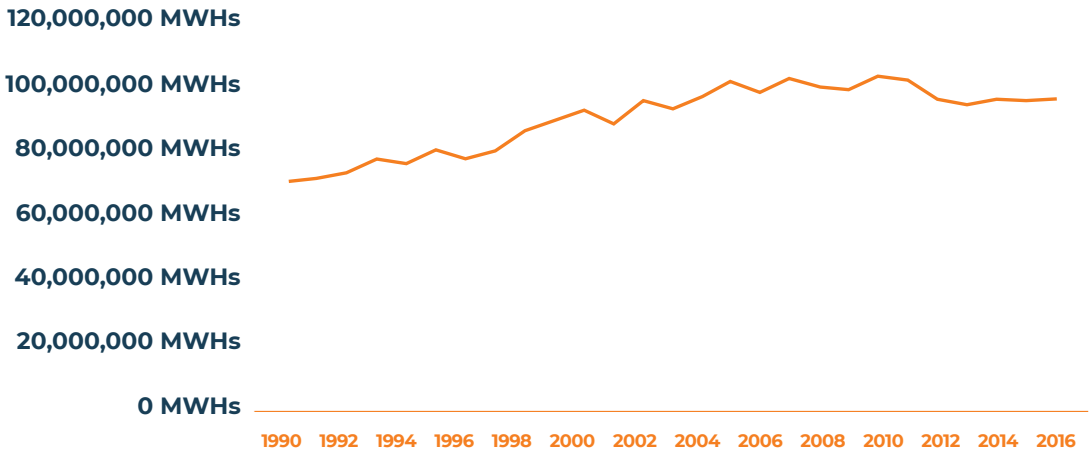


Source: U.S. Energy Information Administration

FIGURE 17

SOUTH CAROLINA NET GENERATION HAS INCREASED

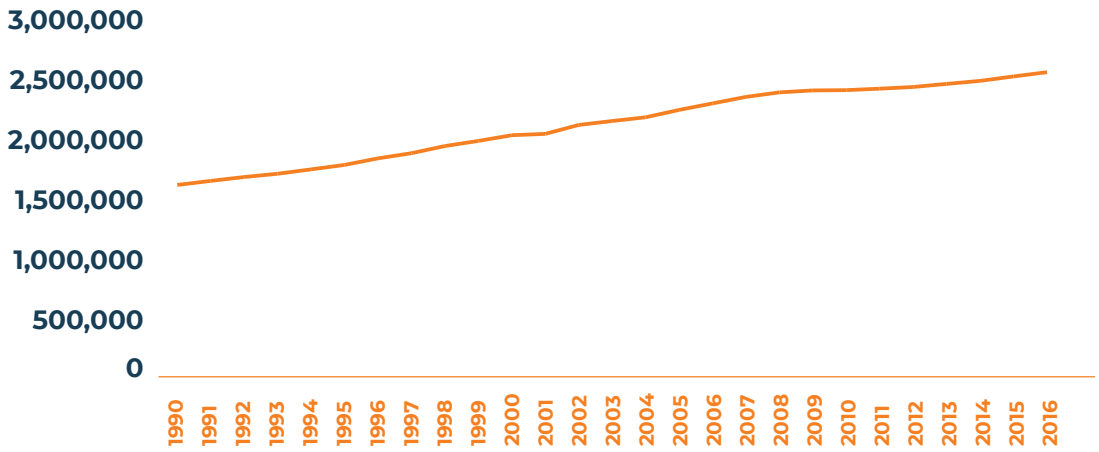
TOTAL ELECTRIC POWER INDUSTRY GENERATION FOR SOUTH CAROLINA, 1990-2016



Source: U.S. Energy Information Administration

FIGURE 18

SOUTH CAROLINA TOTAL CUSTOMERS, 1990-2016



Source: U.S. Energy Information Administration, Table HC11.1, 2015

Any discussion of energy in the American South must also face the problem of what has become known as "Energy Insecurity." Like several factors related to poverty, borrowing from Southern historians, we must add the phrase "it is a nationwide problem, but particularly a Southern problem." According to the EIA,[54] the problem of energy insecurity is indeed most acute in the South. The most recent EIA report on the issue of energy poverty was reported in *The New York Times*. The *Times* said this: "One in five households — an estimated 25 million — went without food, medicine or other necessities to pay their gas or electric bills in 2015, the latest year in which the numbers were available."

Digging into the EIA data by region (Figure 19) shows the South in a most precarious energy situation. A full 35% of residents of the South (South Atlantic, East South Central and West South Central regions) reported "energy insecurity" and 24% said they reduced or forewent food or medicine to pay energy costs.[55] That's an alarming statistic for a nation with the wealth of the United States.

Energy competition could be a way to bring down South Carolina's uncompetitive rates and provide more security for our poorest citizens.

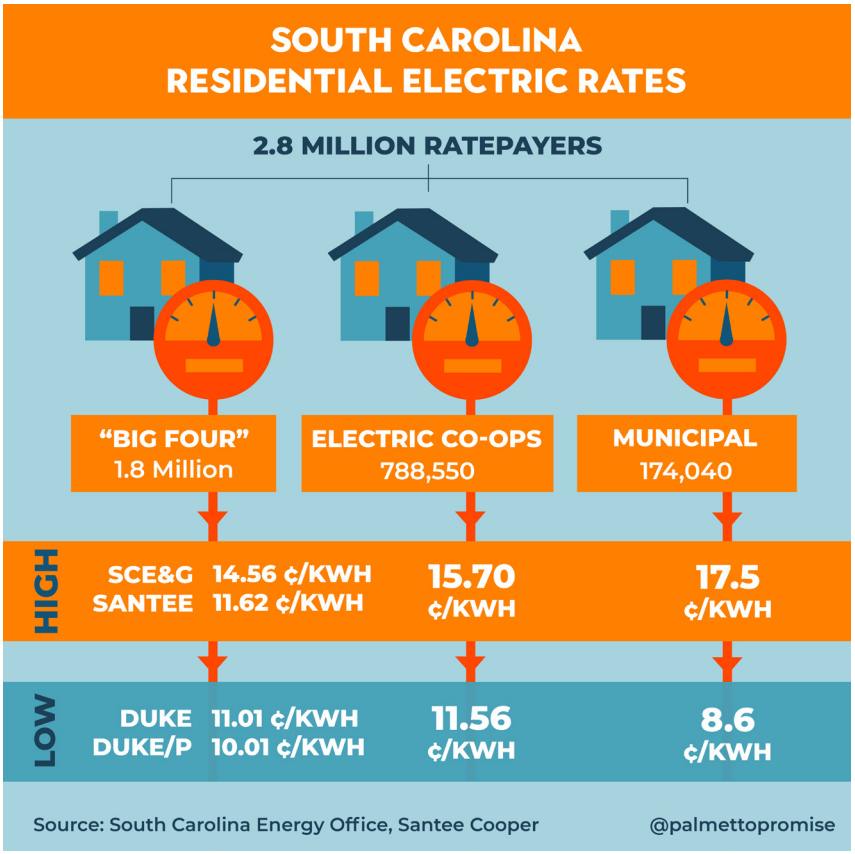
FIGURE 19
ENERGY INSECURITY BY REGION OF THE UNITED STATES, 2015

	Number of housing units (million)				
		Households reporting...			
	Total U.S.	Any household energy insecurity	Percentage Reporting Energy Insecurity	Reducing or forgoing food or medecine to pay energy costs	Percentage Reducing Food or Medicine
All homes	118.2	37.0	31%	25.3	21%
Census region and division					
Northeast	21.0	6.2	30%	4.0	19%
New England	5.6	2.0	36%	1.2	21%
Middle Atlantic	15.4	4.1	27%	2.8	18%
Midwest	26.4	7.4	28%	5.0	19%
East North Central	18.1	5.5	30%	3.7	20%
West North Central	8.3	1.9	23%	1.3	16%
South	44.4	15.4	35%	10.8	24%
South Atlantic	23.5	7.6	32%	5.1	22%
East South Central	**7.2**	**3.0**	**42%**	**2.5**	**35%**
West South Central	13.8	4.8	35%	3.3	24%
West	26.4	8.1	31%	5.5	21%
Mountain	8.5	2.1	25%	1.4	16%
Mountain North	4.2	1.0	24%	0.8	19%
Mountain South	4.3	1.1	26%	0.7	16%
Pacific	17.9	6.0	34%	4.1	23%

Source: U.S. Energy Information Administration.

IV. PALMETTO STATE ELECTRICITY PROVIDERS

FIGURE 20



Shown in Figure 20, electricity providers include several general classifications. First, dominating the state's 2.9 million ratepayers with 1.8 million (**64%**) is what we shall dub The Big Four---Duke Energy of the Carolinas, Duke Energy-Progress (the former Progress Energy), South Carolina Electric & Gas (whose holding company is SCANA Corporation) and The South Carolina Public Service Authority (Santee Cooper). Of the Big Four, three are investor-owned: the two Dukes and SCE&G. Santee Cooper is state-owned. Then there are the Electric Cooperatives of South Carolina that serve 788,550 customers (**28%**). Sometimes referred to as "*rural* electric cooperatives," these are the non-profit utilities that at one time served rural areas almost exclusively. Finally, there are the utilities that are associated with municipal (city) governments. The ratebase of the "munis" is 174,000 or **6%** of ratepayers. There are 21 municipal electric utilities. Ten of them comprise the Piedmont Municipal Power Association, an organization formed by the municipal wholesale customers of Duke in the 1970s in support of the Catawba Nuclear Station Unit 2.[56] Most of the co-ops and many of the municipals are customers of Santee Cooper.[57]

South Carolina is ripe for energy competition due to *rates*, but also due to *management and oversight* errors, those phenomena that in sports lingo might be called "unforced errors" or "own goals." It seems that among electric utilities, no provider is without some controversy. For example, here are recent legal, regulatory and political actions in regard to the six (6) or so general classes of energy providers operating in South Carolina. There are other providers, but 99% of South Carolina ratepayers receive their electricity from one of these six.

ISSUES RELATED TO DUKE ENERGY

Duke Energy is an outlier among South Carolina providers for at least four reasons: Duke is the only utility of the six that operates outside the borders of South Carolina, Duke's total customer base (as opposed to the number of customers in South Carolina) dwarfs the other utilities in size, Duke operates with two distinct rate bases due to its purchase of Progress Energy[58] in 2012, and Duke has avoided the crippling controversies that have plagued most of the rest. The most significant issues related to Duke Energy in recent years that have had an impact on ratepayers and investors would be its own nuclear expansion abandonment and an issue related to its merger with Progress.

In 2017, three weeks after Santee Cooper and SCANA pulled the plug on V.C. Summer 2 & 3, Duke Energy and its partner The Southern Company announced that they too would end their plans to construct two new nuclear reactors.[59] Duke's proposed Lee Nuclear Station in Gaffney, South Carolina, announced in 2005, was only in the planning and pre-construction phases, nevertheless the projected cost to North Carolina customers is $368 million and South Carolina customers $173 million. Projected costs had ballooned from $6 billion to $11 billion. (Lee was to have been next door to another site Duke abandoned that was to become the Cherokee Nuclear Station.)[60]

The second issue with Duke arose shortly after the Federal Energy Regulatory Commission (FERC) approval of the merger with Progress. More than 15 months after the deal had been announced, Duke Energy proposed a plan to encourage competition for wholesale contracts and $110 million worth of grid upgrades designed to support the plan. FERC accepted the proposal in April 2012 and approved the merger in June 2012. But shortly after the FERC decision, an anonymous letter was sent to FERC alleging that the plan Duke Energy submitted "contained 'three pieces' of 'erroneous' data that were 'intended to mislead'" the regulator into approving the merger.

In late May 2018, a settlement was reached between Duke Energy and FERC's Office of Enforcement. The settlement concluded Duke violated federal regulations by "failing to fully and accurately describe to the Commission the condition" of its equipment and "by failing to fully and accurately describe the methodology for calculating" the available capacity for transferring power on Duke Energy's grid. On June 8, 2018, the full commission accepted the settlement and required Duke Energy to pay a $3.5 million fine. The company admitted no wrongdoing in the settlement but acknowledged that some inadvertently incorrect information was filed with the FERC. It contends, and most accept, that the error was not intentional.[61]

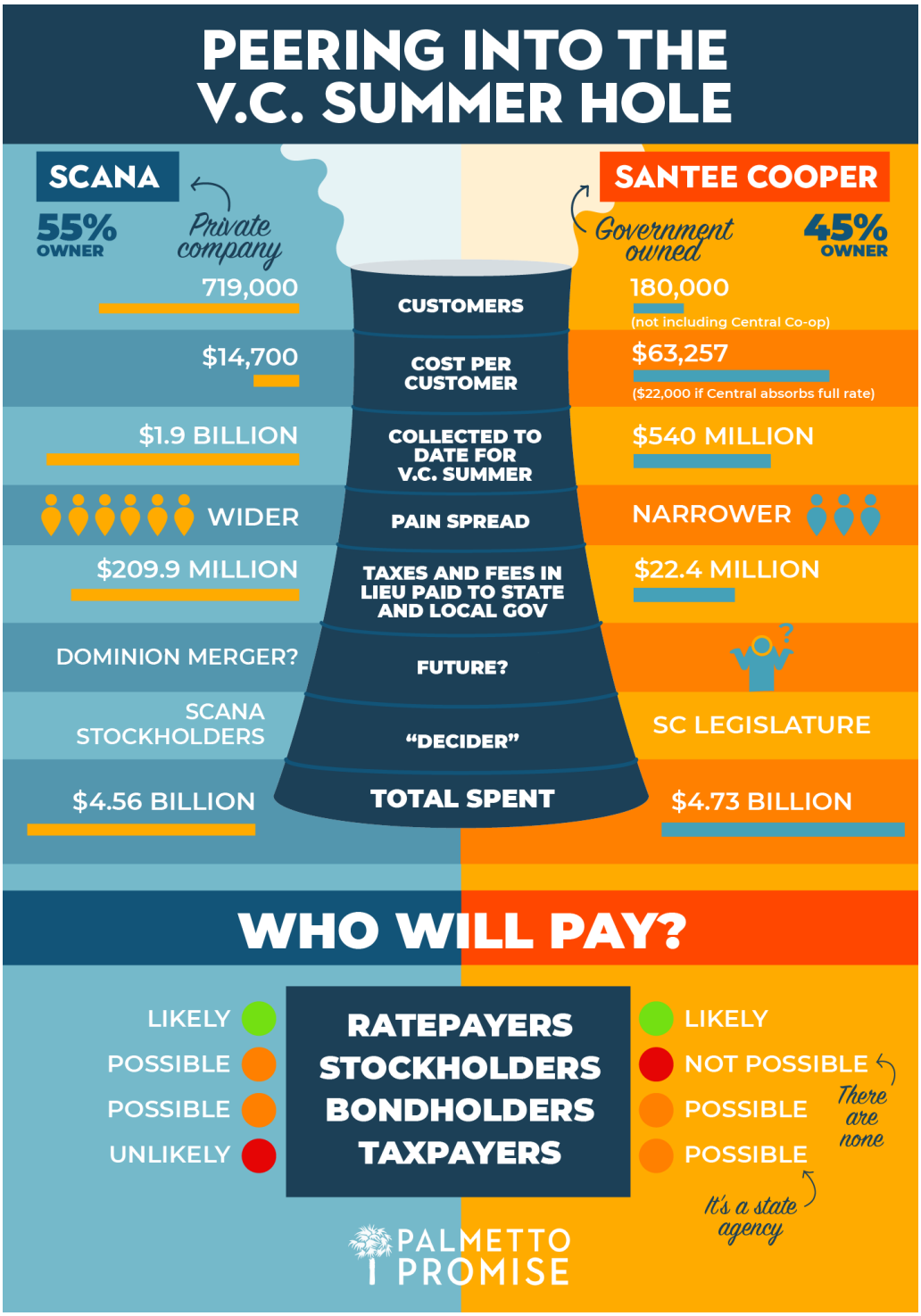
Just after the November 2018 General Election, Duke Energy Carolinas and Duke Energy Progress announced that they had each applied to the South Carolina Public Service Commission for rate increases. Carolinas is seeking 12.1% increase in residential electricity rates and an 8.3% rise in commercial and industrial rates. Progress has asked for 12.5% and 8.8% respectively. According to Duke, the reasoning for this effort to "adjust customer bills," is to "modernize the electric system, generate cleaner power (including nuclear project development costs), responsibly manage and close coal ash basins, and improve reliability and service ..." These are very large increases and are sure to generate strenuous opposition in the ratepayer community.

ISSUES WITH SOUTH CAROLINA ELECTRIC & GAS (SCANA)

Next come South Carolina Electric and Gas (SCANA) and state-owned Santee Cooper. As stated earlier, Duke's abandonment of Lee is expected to cost its North and South Carolina ratepayers **$541 million** over **12** years. The costs for the abandonment of V.C. Summer 2 and 3, depicted in Figure 21, have already reached **$4.73 billion** for investor-owned SCANA and **$4.56 billion** for government-owned Santee Cooper.

The issue of the century with investor-owned South Carolina Electric & Gas (and its holding company SCANA Corporation), is indeed the V.C. Summer disaster. SCANA has been the lead entity on the project. On July 31, 2017, SCANA and Santee Cooper announced they were pulling the plug after nearly six years of construction and over $9 billion spent on an additional two reactors that would join V.C. Summer 1 near Jenkinsville, South Carolina just north of the state capital, Columbia. The two companies had partnered (at 55% SCANA and 45% Santee Cooper) to build the reactors in part facilitated by the passage of the Base Load Review Act (2007), that allowed the utilities to begin to charge customers for the two new units *as they were being built*.

FIGURE 21



But over the past two years, the SCANA portion of the scandal has deepened, and South Carolina citizens are angry. Reporting for the *Post & Courier*, Brian Hicks did the math:

So, it turns out SCE&G didn't really squander $2 billion of customer money on those scuttled nuclear power plants. It was really more like $1.34 billion — they took the rest in profit. Yes, since this nuclear meltdown began nearly a decade ago, SCANA has put more than $660 million into dividends, performance (cough) bonuses and golden parachutes for the executives who will soon bail on this Hindenburg of a utility. The Post and Courier's Andrew Brown and Thad Moore reported last week the company set up a $110 million irrevocable trust to provide severance for 11 current and former SCANA executives should the company be sold to Dominion Energy. Which, coincidentally, some of those same folks have been promoting relentlessly. This news came just after the release of a deposition from the utility's former accountant, who says three of those 11 people — who, combined, stand to clear nearly $14 million — urged her to lie to state regulators about the health of the V.C. Summer project…Do the math. See if this adds up. Most estimates are that SCE&G's 700,000 customers have paid an average of $2,857 toward the unfinished nuclear plants the company abandoned one year ago this week. Of that amount, nearly $950 — one-third — didn't end up in a Fairfield County hole, but in somebody's pocket.[62]

As of this writing, there are many moving parts: some key approvals have been received for SCANA to be purchased by Virginia-based Dominion Energy, SCANA/Dominion has offered a settlement to the V.C. Summer class-action lawsuit brought by ratepayers as a part of that merger, and the PSC is deliberating on new rates for SCANA subsidiary SCE&G. But the lawsuit brought by SCANA investors still looms, and officials from the federal Securities and Exchange Commission, the FBI, and state law enforcement agencies are still investigating.

Then there's the state Circuit Court's potential order finding the Base Load Review Act unconstitutional. Were that order to happen, SCE&G rates could fall further, potentially souring Dominion on acquiring SCANA or causing Dominion to shift to a strategy that would allow the Virginia company to acquire SCANA out of bankruptcy. As for the golden parachute fund mentioned above, part of the settlement with ratepayers has SCANA/Dominion using those funds for expenses related to the lawsuit rather than for executive severance.

ISSUES WITH SANTEE COOPER

The Public Service Authority of South Carolina, known colloquially as Santee Cooper, also depicted in Figure 21, has most of the V.C. Summer problems of SCANA, but without stockholders. There are no investors to turn to for paying off the nearly $14 billion Santee Cooper will be paying for 38 years. There are other issues with the government-owned entity as well:

Santee Cooper pays the state a fee in lieu of taxes, not actual taxes. If Santee Cooper were to become a private company, the state would gain the state income taxes that only investor-owned utilities pay. Private industry taxes would almost certainly exceed Santee Cooper's "fees" as a public agency that merely mimic taxes. The same is the case for local property taxes.

Santee Cooper lost money on its settlement with Toshiba and now won't use all of it to pay down its principal. When Toshiba, the parent company of Westinghouse, the contractor for V.C. Summer, offered a settlement, rather than wait to see when it would be paid, SCANA and Santee Cooper sold out their expected payment to Citibank in order to receive the funds early. The net loss for this desperate "bird in the hand" strategy was $200 million.[63] Then, because Santee Cooper is a political agency, the efforts of its executives to pay off debt have no doubt been hampered by what

Columbia politicians expect them to do with the settlement funds. Therefore, to try to keep rates down for a while, Santee Cooper has not been using all of those Toshiba funds to pay off debt but has kept that cash on their balance sheet. Some analysts estimate this burden of unnecessary debt to be over $40 million per year. This is creating a larger long-term burden for ratepayers, as interest continues to accrue.

Santee Cooper does not have a sound strategic planning process. It is apparent that unlike investor-owned utilities, Santee Cooper does not have a comprehensive strategic plan that anticipates future scenarios. Santee Cooper isn't preparing for the future by properly maintaining their asset base. This means that at first glance, they may look efficient, but in reality, they are setting themselves up for collapse in the future because they are not investing in capital expenditures like an investor-owned utility would. Their assets are older, more depreciated and with less limited useful life left. This make them look acceptable now, but they are going to decline soon if they don't start investing in their infrastructure like their counterparts are doing. Compared to Duke and SCANA, Santee is *under*-investing.

Santee Cooper's fuel and generation choices have been insufficiently diverse. This comes down to the truth about the efficiency of Santee Cooper's current generation, the fuel used to achieve it, the other options available, and fuel decision-making in general. Power stations Cross and Winyah are coal dependent. That is not necessarily damning as some would argue, but gas generation should be expanded. Reliable gas fuel supply is available for gas-fired plants and natural gas as a fuel is expected to be inexpensive for the next decade. SCE&G's Columbia Energy Center is a positive example of a modern, efficient gas-fired plant. The purchase of that existing plant replaced 40% of SCANA's nuclear capacity.

Santee Cooper has backtracked on its initial projections that rates would rise "only" 7%. When Palmetto Promise Institute released analysis in March 2018, saying a 10.32% rate increase would be required, then revised that figure to 12.03% based on new numbers, Santee Cooper reacted by telling *The State* newspaper than only a 7% increase would be required. Basic math dictated that 7% was not accurate based on Santee Cooper's own *Annual Report* (2017) where they reported that they were capitalizing interest rather than paying down debt. However, in a report before a legislative Commission they stated that rates must increase from 7.38 cents per kWh in 2018 to 8.28 cents/kWh in 2024. That is a 12.2% increase.

To date, Santee Cooper has been adding interest due to the amount it borrowed (the principal) for V.C. Summer 2& 3 rather than paying it. That means the principal grows while the other V.C. Summer partner, SCANA, has started paying down its debt already. Time will tell, but even a 12.2% rate increase will likely prove low and will not be enough to pay off the debt in full.

Santee Cooper made several errors regarding VC Summer 2 & 3. There are a number of myths associated with V.C. Summer units 2&3. These include: that there were no other alternatives in 2007 to building a new set of nuclear reactors, that expenses for new transmission associated with V.C. Summer would have been a good investment anyway, and that calling V.C. Summer an asset (admittedly accurate by accounting standards) is given any real meaning due to the inability to sell much more of V.C. Summer for scrap. Then there's the full meaning of V.C. Summer debt being a *liability*. It is not just an accounting term. Someone must pay the debt and Santee Cooper has no investors to chip in, only ratepayers. A stranded asset is an asset that isn't performing. It is inconceivable that the ending of V.C. Summer 2 & 3 left no transmission assets stranded as Santee Cooper seemed to indicate to the legislative Commission.

Santee Cooper has made poor economic development decisions. Santee Cooper entered into a

contract that would sell American Gypsum the byproducts of the aging Winyah coal units. This synthetic gypsum is used to produce wallboard. That the contract was not a prudent decision is not a case of "hindsight is 20/20." The contract was a challenge for Santee Cooper, which is currently not meeting delivery expectations. As for being released from the contract, there is little chance that Santee Cooper will be able to exercise a *force majeure* clause. A private company would likely have taken a pass on such a partnership. American Gypsum has made a significant investment ($150 million) in its plant but the American Gypsum agreement is typical of economic development by a government enterprise like Santee Cooper: well-intentioned but not practical.

Santee Cooper's core malady: it's a politically-managed government agency.

ISSUES WITHIN THE ELECTRIC CO-OPERATIVES IN SOUTH CAROLINA

The twenty (20) Electric Cooperatives in South Carolina, which serve 1.5 million citizens in South Carolina, are not overseen or regulated by the Public Service Commission (PSC). (Most state PSCs do not oversee co-ops.) These self-governing and rate-setting former *rural* electric cooperatives are not for profit organizations that provide electricity to residents in nearly every corner of the state. But, due to their rural and nearly private history compared with Investor Owned Utilities (IOUs) and even Municipals, the co-ops have a degree of independence that has allowed them to fly below the radar. Over time, this freedom from outside oversight, paired with their territorial monopoly status, has created an environment ripe for questionable practices. For example, some board members remain in their seats for decades. (Boards are chosen at annual meetings that are typically poorly attended, and incumbents are seldom defeated or even opposed.)

Recently, in a particularly egregious case, the customers of Tri-County Co-op (which serves 13,600 customers in portions of Calhoun, Orangeburg, Richland, Lexington, Kershaw and Sumter counties) voted to replace the co-op's entire board of directors.[64] The co-op's by-laws require 700 votes for such action, so by an overwhelming vote of 1,452 to 30, that requirement was easily exceeded.

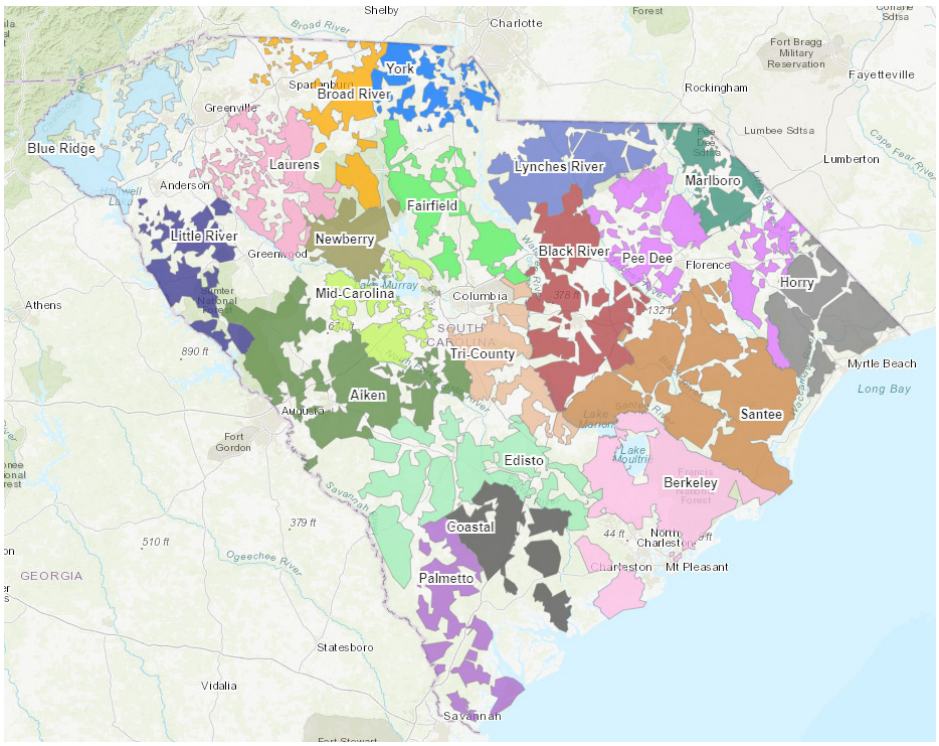
As reported by several South Carolina media outlets, it appears that there have been some limited, but documented instances since 2000 of problems: members of the part-time boards of directors of co-ops paying themselves three times the national average, awarding no-bid contracts, holding superfluous meetings to get extra pay, arranging for co-op funded health and life insurance plans for board members and their families and *former* board members, paying board members retirement benefits, and paying for board member *spouses* to attend expensive national conferences. Board members were also alleged to have demanded free or discounted power and landscaping work for themselves and their friends.[65]

The fallout from these media reports has led to many co-ops making changes and to the creation of a task force to recommend others. The increased scrutiny by elected officials and the news media of the heretofore little-known world of electric cooperatives, as well as the legislative Public Utilities Review Committee that is charged with overseeing issues related to electric utilities, has also prompted the filing of legislation.[66]

In summary, whether Duke, Santee Cooper, SCANA, or the electric cooperatives, The *Post and Courier* stated it correctly when it wrote that: "…no utility is safe from the intensifying wrath of South Carolina's ratepayers and lawmakers."[67] This begs the question: is the answer to protect consumers more top-down regulation of monopolies with assigned territories? Or is the answer a totally new, transparent, free-market based way of doing business?

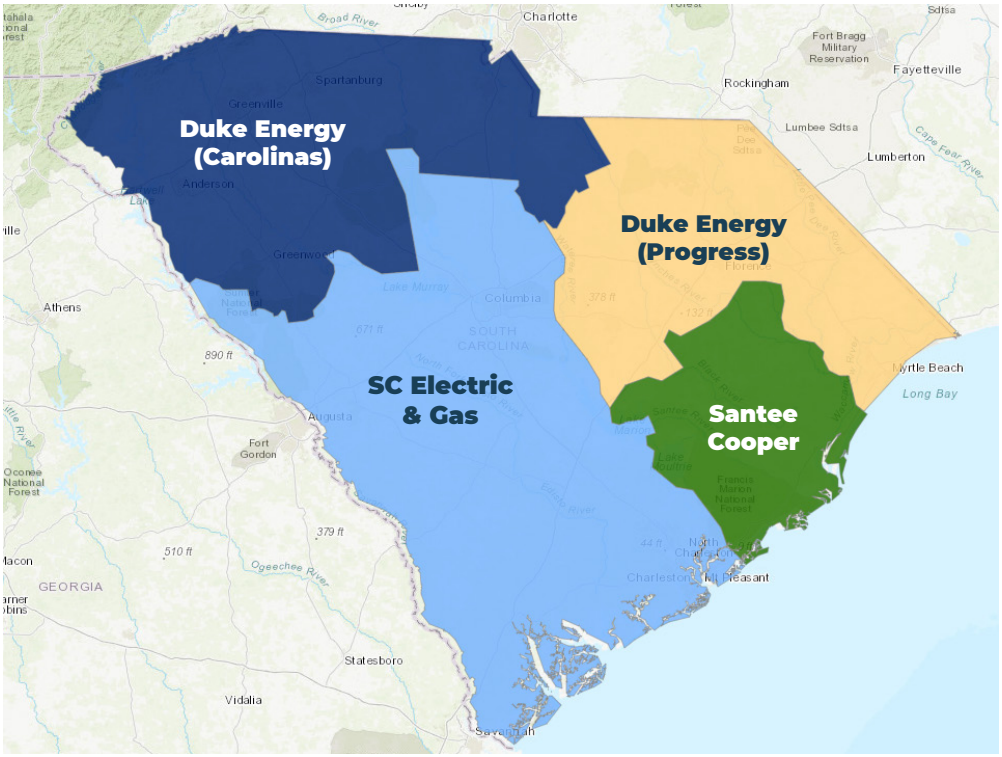
V. ALL OVER THE MAP: THE PLETHORA OF SOUTH CAROLINA UTILITY PROVIDERS

FIGURE 22a
TERRITORIES OF THE ELECTRIC COOPERATIVES IN SOUTH CAROLINA



Source: SCEMD

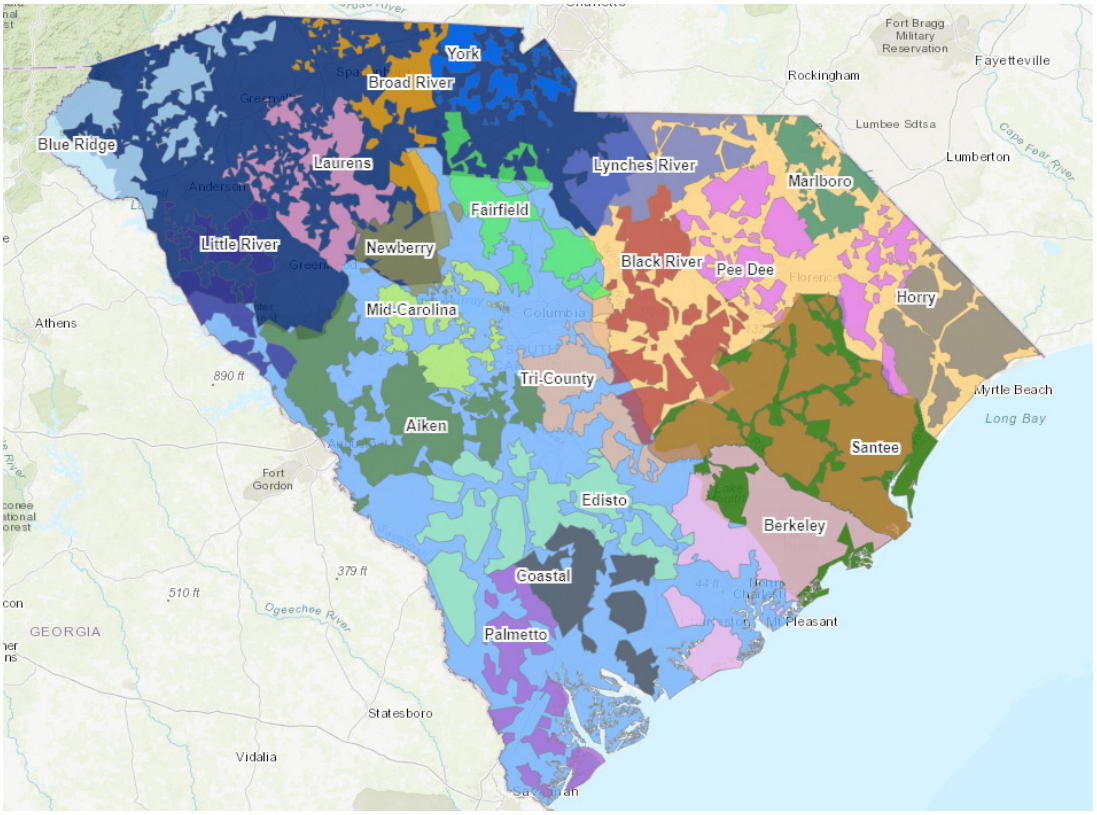
FIGURE 22b
TERRITORIES OF MAJOR ELECTRIC COMPANIES IN SOUTH CAROLINA



Source: SCEMD

FIGURE 22c

TERRITORIES OF ELECTRIC COOPERATIVES WITH MAJOR ELECTRIC COMPANIES IN SOUTH CAROLINA



Source: SCEMD

As Figures 22a 22b and 22c indicate, South Carolina has many electricity suppliers. Viewed in this manner, assigned electrical service **territories** resemble a scatterplot, seeming to possess no logical natural or man-made boundaries. The map features not only odd Gerrymander-looking shapes, but what geographers might call *enclaves* or *exclaves*--**territories** surrounded by land under the control (service **territory**) of another.

Figure 22b depicts the territories of The Big Four—Duke Energy, mostly in the Upstate, SCANA in the Midlands down to Charleston, Duke Energy Progress in Eastern South Carolina and Santee Cooper in its unique region in parts of the Lowcountry, Pee Dee and Waccamaw regions.

Figure 22a shows the Electric Cooperatives. These 20 entities, fed generation by Santee Cooper and Duke depending on the area of the state, and transmitted power by their own Central Electric Power Cooperative (Central), reach into every hollow.

Together, as show in Figure 22c, it is a vast and impressive set of often overlapping but clearly contiguous networks.

FIGURE 23

ELECTRIC TRANSMISSION LINES IN SOUTH CAROLINA

Source: U.S. Energy Information Administration

To deliver electricity, as shown in Figure 23, there is a maze of transmission lines from Central, and from the large utilities.

The three Figures 22 (and in some sense Figure 23 also) provided here are screen shots of online maps. Our Freedom of Information Act (FOIA)-based request to the South Carolina Public Service Commission (PSC) and the South Carolina Office of Regulatory Staff (ORS) indicated that there is not a single modern flat map of service territories and transmission lines available. Flat maps are available by county, but these state agencies simply do not maintain the sophisticated, modern maps of this data as other agencies do for election districts and other area-based statistics.

However, to explore the very general proximity of your home, business or industry to an adjacent utility (and potential competitor for supplying your electricity), please visit this shortened URL of the maps above:
http://bit.ly/2CQc5mD

VI. RECOMMENDATIONS FOR REFORM: GIVE FREE ENTERPRISE A CHANCE

Based on our survey of energy choice in America, and given the multiple issues facing South Carolina utilities, including high rates, Palmetto Promise Institute believes it is time to turn to free enterprise and competition, the concepts on which America and its economy are based.

Here are the free market reforms we recommend, all of which will have the effect of promoting economic development in the commercial and industrial market and prosperity in the consumer and residential market.

Recommended Reform. All exclusive franchise territories should be eliminated. Any provider may enter any corridor/territory to provide service to any willing customer without regard to geography.

To implement this reform, the South Carolina Public Service Commission (PSC) as its powers are currently enumerated in state law, should be abolished and replaced with an organization charged with providing the environment and systems needed for ensuring fair competition between providers.

South Carolina's experience with the proximity of electricity providers is summarized anecdotally in the Foreword to this work. Cities like Greer, South Carolina have in the past and to some extent currently had Duke and Commission of Public Works (city) lines co-existing on the same streets.

Stated simply, the only deregulatory step required for true competition for electricity customers is the elimination of territorial restrictions imposed by state regulators. We call for a policy that would simply allow *any* consumer to buy from *any* supplier who is willing to provide service.

The concept can be called "willing buyer, willing supplier."

If consumers were allowed to purchase electricity from anyone willing to supply it, a fair question is, who would supply it and how? To answer this, let's first think about which final users would be best positioned to immediately embrace a competitive market. The clear answer is, *industrial users*. These users require large loads and own the infrastructure to manage that load privately.[68] We know that it is common for industrial users to negotiate competitive electricity deals with monopoly providers when siting facilities (see Century Aluminum example earlier). Territorial monopoly rights only serve to thwart competition after the facility is constructed. Removing territorial restrictions would simply mean that large users could renegotiate their power supply contracts periodically. Nothing would change except that they would not be captive in the long run to arbitrarily set prices by the monopolist that has an exclusive claim to supply power to the piece of land where they are located.

However, it is not only industrial users who would be ripe for competitive suppliers. Large commercial users would be targets as well. Even in the world of territorial monopolies, we see competition unfold from time to time, and it is instructive to observe this process in order to predict what would happen if territorial monopolies were eliminated.

It is not uncommon for commercial developments to be planned at a site that is in an unserved territory. What this means is that the particular patch of earth where the commercial development is being considered is not currently served by any supplier so no one supplier has a monopoly claim. This also means that there are multiple potential suppliers that could provide electricity to the site. An example would be a large, new-car dealership located near a territory served by a co-op and a municipal electric company (muni). What happens now is that the co-op and the muni compete on price and service to win the electric business of the new dealership. They factor into their price the cost of the infrastructure necessary to provide the service.

But what happens now is that after the dealership chooses either the co-op or the muni, it is locked into that suppler *forever*.

Why should this be?

It is obvious that there is no technical issue with allowing competition, because in the beginning (in many cases) there is competition. By implication, there would be no insurmountable technical issue with allowing competition to extend beyond the initial choice.

But what about infrastructure?

If there were no territorial monopoly imposed after the initial choice, the contract terms would be different. The competing suppliers would likely require a fixed term contract, say, five or ten years, which would allow them to recover the cost of the infrastructure that they installed to provide service, or possibly the commercial user itself would build and maintain that infrastructure. This situation would be very similar to the natural gas acquisition industry where well owners negotiate with competing gas transmission pipelines: sometimes the well owners own the feeder lines to the transmission pipeline and sometimes the transmission pipeline installs and owns the feeder line. Contract terms in a competitive electricity market would be different from today, but there is no technical issue with allowing competition to extend beyond the initial choice of power provider.

As another example, consider a major residential development like a golf-course community. The developer provides much, sometimes all, of the infrastructure including water, sewer, roads, and even amenities like internet service. In a world without territorial monopolies in electricity, the developer would provide the electricity distribution infrastructure as well. After construction, the infrastructure is managed and maintained by the development association. Adding electricity to the already existing mix would be nothing unusual. The developer would receive bids from all the alternative suppliers in its area, which would likely be one or more co-ops, possibly a muni, and the investor-owned utility. These entities would compete among each other to bring power to the development. The developer could be in charge of metering and billing final consumers or, more likely, the power provider would bid this into the project.

The main point is that there would be competition in setting the terms, and this competition would have an infinite horizon unless the developer chose to write a "forever" contract with one power provider, which it would never do unless the deal were unbelievably sweet.

A casual look at the utility map of South Carolina shows that potentially competing power providers exist everywhere. The geography is interlaced with investor-owned utilities, electric co-operatives, municipal electric companies, and, of course, the state-owned generation supplier, Santee-Cooper. Without territorial restrictions, the ability of multiple alternative power providers to reach any dot on the South Carolina map is there. There would be some cost associated with running alternative power lines, but this would not be a high hurdle. Remember, with competing power lines comes more market access, so power providers would spread this cost across current and future consumers. However, alternative power lines are not likely because the mere threat of them means that the power provider with the closest infrastructure is likely to allow open-access across its facilities—for a competitively based fee. Or, in overlapping areas, competing providers are likely to swap customers to the other.

New housing developments are obviously potential targets in a world where retail competition is allowed, but there is no reason to believe that existing sites would be shunned. Existing shopping centers, malls, and industrial parks could and would threaten to buy *en masse* from competing providers. Again, competing suppliers might have to build infrastructure to bring their competing power to the existing stores, but this is unlikely and if necessary, so be it.

This process could even continue to existing residential neighborhoods. Some residential neighborhoods are currently served by municipal electric authorities. The only thing that stops cities that do not have a city-owned electric company from having one is the territorial monopoly that is claimed by the current supplier.[69]

The City of Seneca has its own municipal electric authority. The City of Clemson does not, and has electricity provided by Duke Energy. State law currently stops the City of Clemson from forming its

own electric authority or partnering with the City of Seneca that serve houses only a few miles away to provide service to Clemson residents. A change in state law to allow these alternatives will cause power prices to fall.

Competition will likely mean lower prices, but more importantly competition will mean fairer prices. Currently, except in the isolated cases where there is competition in the beginning, prices are determined by a byzantine system of cost allocation. Economists have studied cost allocation for over 150 years and there is no unique method for accomplishing it. Not unlike the drawing of legislative districts, any method is likely to be **arbitrary** and **political**.

The market must allocate costs, too. This market allocation is arguably arbitrary but at least not political. People in politics like political allocation of costs; people who can manipulate politics like the political allocation of costs. Most people paying the bills find that the market allocation of costs is better and fairer.

When Microsoft develops a new operating system, which applies to a large array of machines, how is the cost of development allocated across computers? It is a cost common to all. Economic theory says there is no unique way. Microsoft, facing various degrees of competition across the various platforms, prices the development cost as best it can to recover these costs, and it may or may not be able to recover those costs. That is the market reality.

The regulated utility way is to allocate common costs, such as development costs, in such a way, to spread those costs across captured consumers based inversely on their political power to squeal. This is especially true when the "development" is a failure. So, a failed nuclear power plant is a "regulatory asset" that can be recovered by raising rates to consumers shackled to a geographic monopolist.

Think about a company that installs and sells high-speed internet service via fiber optic cable to a neighborhood. The cost of running its line from the internet backbone supplier to the neighborhood is negotiated and factored in. But it can spur off of that line to other neighborhoods. Competition will force it to charge a price that accounts for this option value of the investment it makes.

This same kind of market-based recovery of common costs will result if territorial monopolies are eliminated in electricity. Prices will be cost based when costs are directly allocable and competitively determined when they are not.

It is time to end the myth that in the electricity market, there is always a natural monopoly. **Elimination of geographic monopoly assignments is a simple and complete step to achieving fair and lower prices in electricity.** It is simple: a very short legislative bill will do the trick. "To wit: Territorial assignments in electricity are eliminated." It is complete because then the market place will decide how, where, and when competition will unfold.

How would willing buyer, willing seller affect specific locations in South Carolina?

To test our proposal, we invite the reader to return to the URL provided earlier:
http://bit.ly/2CQc5mD

The map is not exact, but what provider do you see adjacent to your current provider? Very few areas of the state have only one provider within just a few miles, or *feet*.

Here are some examples.

FIGURE 24

ENERGY COMPETITION IN 29651. THE CASE OF GREER

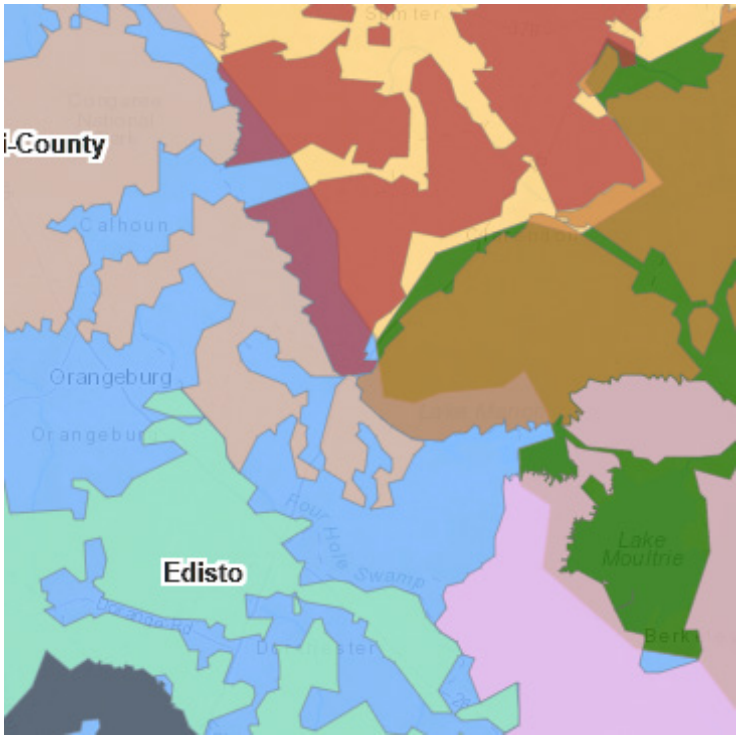
	Residential	Commercial	Industrial	Average	
Utility Name	¢/kWh	¢/kWh	¢/kWh	¢/kWh	
Blue Ridge Electric Coop Inc	14.47	12.82	6.64	13.48	Electric Cooperative
Greer Commission of Public Works	12.35	10.82	-	11.60	Municipal
Duke Energy Carolinas, LLC	11.01	8.60	5.40	8.02	Major Utility

Source: South Carolina Energy Office

We wrote about Greer in the Introduction to this research. As we see from Table 24, Greer has not two, but three adjacent energy providers. Each has different rates. As in Georgia, for large loads, anyone living in the Greer area hugging the Greenville-Spartanburg County line would have the choice of any supplier willing to bring the power to them. Imagine the BMW plant having access not only to its current supplier, but to competitors. What effect would that have on BMW profits and the cost of an X3, X4, X5, X6 or X7?

FIGURE 25

CROSS SECTION OF SOUTH CAROLINA SHOWING MULTIPLE ELECTRICITY PROVIDERS IN CLOSE PROXIMITY



Source: SCEMD

Moving South, a view of a cross-section of the Orangeburg County is particularly striking. Providers are diverse, creating a patchwork quilt, crisscrossing the general area. Residential customers, as well as new or existing industrial facilities would have a wide range of offers for service.

Two sets of poles?

Critics of our proposal would ask "What about the dreaded 'two sets of poles'"? In Walter J. Primeaux's classic 1986 book *Direct Electric Utility Competition: The Natural Monopoly Myth*,[70] he lists 23 cities that due to overlapping or nearly overlapping territories had direct electric utility competition. Primeaux listed Greer, South Carolina as an example. But the case of Lubbock, Texas was perhaps the most famous case. In that city, Lubbock Power and Light and Southwestern Public Service Company (later Xcel Energy) competed against each other for customers. And yes, there were two systems each with their own wires, poles and substations. Rates were set by council rather than by competition unfortunately, and they were the same. Once a customer decided to switch, his or her current provider would have 24 hours to persuade them to stay.[71] [72] Sometimes two sets of infrastructure may be necessary, but in most cases, rights of way are shared with non-electric utilities like telecom, particularly when buried as in modern housing developments, so there is room. In other cases, utilities can sell territory to one other to prevent two sets of wires and poles.

Is such a proposal viable?

We mentioned earlier the limited competition that was embedded in the Act establishing electric territory franchises. As recent as 1984, the statute on the South Carolina Public Service Authority, Santee Cooper was amended to allow some limited choice as well. New electricity customers located within three hundred feet of the line of a **supplier** could choose that **supplier** or the **supplier** to whom the premises is officially assigned by the Public Service Commission. In most cases, that would mean the choice of Santee Cooper or the electric cooperative assigned that **territory**.[73] Also, a reform of this nature was envisioned just this last legislative year (2018), in a bill (H.5253) that would allow small towns some measure of energy choice.

Supplemental Recommendations:

Reform #2. The Committee to Review the South Carolina Public Service Authority should receive proposals for the purchase of Santee Cooper or conversion to a for-profit corporation and the General Assembly should accept a bid to provide for the future of Santee Cooper during the 2019 session of the 123rd South Carolina General Assembly. Palmetto Promise Institute has made this recommendation before, and progress has been made during the Summer and Fall of 2018. But, the Commission investigating the future of Santee Cooper needs the firm with which it has contracted not to serve as a high-level corporate auctioneer, but an advisor that can provide the Commission with the necessary expertise for *how* to sell the state agency as well as a sense of its market value and potential bidders. New management for Santee Cooper is not sufficient.

Reform #3. The South Carolina Public Service Commission (PSC) or its successor should require a delivery cost disclosure to show customers how much of their bill consists of supply and delivery (generation, transmission and distribution) and debt. The typical utility bill in South Carolina shows the Basic Facilities Charge, the charge per kWh, franchise fees to cities and towns, and sometimes other fees such as those related to the cost of renewables. More detail, like that found in certain sectors in Georgia for example, will show the ratepayer where the payment he or she is struggling to make actually goes. Perfect clarity may not be possible, and questions will arise, but the ratepayer deserves to be fully informed. Transparency is key for markets to work.

Reform #4. The State of South Carolina should enact tighter standards for the governance of Electric Cooperatives.
Rep. Russell Ott's legislation (H.5453)[74], introduced in the waning days of the 2017-2018 session contains many of these needed reforms: expanding notice requirements for meetings, making voting by the membership of the cooperative easier, revising the way in which vacancies are filled, require minutes for board meetings to be provided to co-op members, to require actions of the boards of trustees to be taken by vote in open session and to require public disclosure of the compensation and other benefits paid to members of the co-op boards. Other reforms, which could come from co-op boards themselves, would be to put a cap on their pay or per diems and reject healthcare coverage. Make no mistake, the co-ops are not rife with corruption, but a few mistakes in the last two decades call for guardrails to be put in place to protect vulnerable ratepayers.

Reform #5. The State of South Carolina should strengthen ethics laws related to the legislative Public Utilities Review Committee (PURC) to avoid conflicts of interest and challenges to its oversight capabilities. A shadow has been cast over the PURC because of the legal entertainment provided by utilities to the members of the Committee as it provides to all members of the General Assembly consistent with the Ethics Act. However, a higher standard for members of the PURC ensconced in law would show the people and ratepayers of South Carolina that its legislature is sensitive to even the hint of undue influence on the proceedings of the PURC.

CONCLUSIONS

The State of South Carolina is ripe for deep, systemic change. The failure of the nuclear power expansion at the V.C. Summer facility has highlighted the failure of the regulatory model that led to the debacle. The threat of burdening captive consumers with the cost of the failure has created the political steam that can drive the choice engine.

Choice of the sort we propose is so simple and yet so powerful that it is almost a "why didn't I think of that?" moment. End territorial monopolies and let competition naturally unfold. Competitors will enter, or threaten to enter the market, and customers will be served. Regulators are not needed (and only wanted by the regulated).

The myth of natural monopoly has steered public policy away from open competition for over 100 years, but it is a myth. The idea that companies will not invest millions or billions of dollars in infrastructure without assurances that it will be recovered is belied by everything we see in the free market around us: drugs, telecom, rockets into space, and on and on. All ventures have development costs and the market will supply the required capital based on the risk and return. **It is plainly obvious that the market is much better at assessing the potential risk and return than our politicians have been.**

It is time for free competition in electricity. The alternatives for electric generation are so great and so efficient that it is not unreasonable for even individual households to consider "getting off the grid." We are not at the point of clearing the frontier any longer. Competition can thrive and no consumer will be left behind. Competition will find ways to serve everyone, better, more fairly, more reliably, and cheaper. Regulation has failed and it is time to sing the requiem.

VII. NOTES

[1] https://www.dignitymemorial.com/obituaries/chicago-il/philip-oconnor-8005189

[2] As some guides tell it, if the wrong fire brigade were called, buildings that were a part of another protection subscription were allowed to burn to the ground. The more likely result is that the owner would be assessed a hefty fee, or a lien would be placed on the property. The film *Gangs of New York* famously depicts rival volunteer fire department hooligans fighting each other rather than the blaze. Boys were boys and business was business. See Jackson Landers, "In the Early 19th Century, Firefighters Fought Fires...and Each Other: Fighting Fires in Early America was About Community, Property and Rivalry," *Smithsonian*, September 27, 2016. https://www.smithsonianmag.com/smithsonian-institution/early-19-century-firefighters-fought-fires-each-other-180960391/#JGFuJA8ctOBXLMLS.99 Accessed October 24, 2018.

[3] We don't have that many companies today due to mergers around the time of World War I. But, South Carolina has enjoyed a diversity in franchise telephone services. Older South Carolinians will remember calling Southern Bell Directory Assistance for a number in Myrtle Beach only to be transferred to the company serving the Grand Strand, GTE. Actual competition in telephone service has existed as well.

[4] Adam Thierer and Wayne Crews, *What's Yours is Mine: Open Access and the Rise of Infrastructure Socialism* (Washington, DC: Cato Institute, 2003), p. 27, quoting Gerald W. Brock.

[5] Robert J. Michaels, "Deregulating Electricity: What Stands in the Way," *Regulation*, Winter 1993, p. 39.

[6] Philip R. O'Connor, Robert G. Bussa and Wayne P. Olson, "Competition, Financial Innovation, and Diversification in the Electric Industry." *Public Utilities Fortnightly*, February 20, 1986.

[7] Thierer and Crews, p.31-32, citing the theories of Nobel Prize winning economists George J. Stigler and James Buchanan among others.

[8] Michael T. Maloney, Robert E. McCormick, and Raymond D. Sauer. Customer Choice, Consumer Value: An Analysis of Retail Competition in America's Electric Industry. Washington, DC: Citizens for a Sound Economy Foundation (1996), pp. 12-13.

[9] In regulated markets, failed investments are called "stranded costs" and all too often captured consumers are forced to pay for the failure. In free markets, failed investments are just part of doing business and the financial capital suppliers take the hit. These financial capital suppliers are compensated by their returns from investments that do not fail.

[10] Central Electric Power Cooperative, presentation to Public Service Authority Evaluation and Recommendation Committee, September 26, 2018.

[11] Michael T. Maloney, Robert E. McCormick, and Raymond D. Sauer. Customer Choice, Consumer Value: An Analysis of Retail Competition in America's Electric Industry. Washington, DC: Citizens for a Sound Economy Foundation (1996), pp. 12-13.

[12] Tatsuya Shinkawa, "Electricity System and Market in Japan," *Electricity and Gas Surveillance Commission*, January 22, 2018. http://www.emsc.meti.go.jp/english/info/public/pdf/180122.pdf Accessed October 23, 2018.

[13] "The Energy Market Explained," *EnergyUK*. https://www.energy-uk.org.uk/energy-industry/the-energy-market.html Accessed October 23, 2018.

[14] New Zealand Electricity Market explained, *PowerCo*, https://www.powerco.co.nz/about-us/our-business/nz-electricity-market/ Accessed October 23, 2018.

[15] Philip R. O'Connor, Robert G. Bussa and Wayne P. Olson, "Competition, Financial Innovation, and Diversification in the Electric Industry." *Public Utilities Fortnightly*, February 20, 1986.

[16] O'Connor, Bussa and Olson, 1986.

[17] Philip R. O'Connor, Wayne Olson and Robert Bussa. "A Five-Point Plan for the Next Wave of Electricity Restructuring." *Public Utilities Fortnightly*, May 2016, pp.28-33.

[18] O'Connor *et al*, 2016, p.30.

[19] Reinforcing our earlier analysis, South Carolina had the 16th highest price increase in Residential, the 17th highest for Commercial and 19th highest increase in Industrial rates during that period.

[20] Another unique state is California. The Golden State has been changed forever by its experience with electricity choice, particularly Community Choice Aggregators (CCAs). But California has unrelated issues that make it a poor comparison for the way forward for South Carolina. See Michael Hiltzik, "Consumer Choice Has Suddenly Revolutionized the Electricity Business in California. But Utilities are Striking Back," *Los Angeles Times*, June 8, 2018. http://www.latimes.com/business/hiltzik/la-fi-hiltzik-community-power-20180608-story.html Accessed October 24, 2018.

[21] Salvador Alayah, "California Renewable Mandates are Proving Texas Model Right: The Texas Approach Produces a More Sustainable Carbon-Reduction Solution that Makes Sense Economically," that makes sense economically," *EmpowerTexans*, October 18, 2018. https://empowertexans.com/state/california-renewable-mandates-are-proving-texas-model-right/ Accessed October 23, 2018.

[22] Nainish Gupta, "Privatization: A Case Study." Used with permission. Gupta is an Adjunct Professor in the College of Business at Palm Beach State College. He is also a Director of Governance, Risk and Compliance at Econalysis, LLC.

[23] "From the Executive Director Office," PREPA. https://www2.aeepr.com/investors/? Accessed November 1, 2018.

[24] Robert Scribbler, "Sudden Severe Flood Leaves 14 Dead in Athens, Forecasts Show Up to 15+ Additional Inches on the Way for Greece," https://robertscribbler.com/2017/11/15/sudden-severe-flood-leaves-14-dead-in-athens-forecasts-show-up-to-15-additional-inches-on-the-way-for-greece/ Accessed November 1, 2018.

[25] Sherman Barnet, "Bondholders need to face reality in Puerto Rico power authority privatization plan," February 2, 2018. https://www.cnbc.com/2018/02/02/in-puerto-ricos-prepa-privatization-bondholders-need-to-face-reality-commentary.html Accessed October 23, 2018.

[26] Henry Grabar, "Puerto Rico's Best Hope for Keeping the Lights On: The Indebted Island Was Already Eager to Hand its Electric Utility to Private Owners. Hurricane Maria Just Made it Much More Likely," *Slate*, September 22, 2017.

http://www.slate.com/articles/business/metropolis/2017/09/hurricane_maria_could_lead_puerto_rico_s_electric_utility_prepa_to_privatize.html Accessed October 24, 2018 and Vann R. Newkirk, II, "The Peril of Privatizing PREPA," *The Atlantic*, January 24, 2018. https://www.theatlantic.com/politics/archive/2018/01/puerto-rico-will-privatize-prepa/551342/? Accessed November 1, 2018.

[27] "PREPA Privatization in the Crosshairs of a Three-Company Consortium Offering $4 billion Investment," *Debtwire*, April 25, 2018. https://www.debtwire.com/info/prepa-privatization-crosshairs-three-company-consortium-offering-usd-4bn-investment Accessed November 1, 2018.

[28] Javier Balmacdeda, "Puerto Rico's PREPA Privatization: A Sale Too Private," *Debtwire*, April 3, 2018.

[29] Danic Coto, "Puerto Rico Governor Signs Bill to Privatize PREPA Utility Assets," Electric Light & Power, June 21, 2018. https://www.elp.com/articles/2018/06/puerto-rico-gov-signs-bill-to-privatize-prepa-utility-assets.html Accessed October 24, 2018.

[30] South Carolina Code of Laws (1976) § 58-27-610-670

[31] In the South Carolina Supreme Court as *Duke Power Company, n/k/a Duke Power, a division of Duke Energy Corporation, v. The Public Service Commission of South Carolina, and Blue Ridge Electric Co-operative, Inc.*, Opinion No. 25241, Heard October 3, 2000 - Filed January 24, 2001. https://www.sccourts.org/opinions/displayOpinion.cfm?caseNo=25241. Accessed October 22, 2018.

[32] South Carolina Code of Laws (1976) § 58-27-620(1)(d)(iii).

[33] "Electric Lite Refuses to Comply with PSC investigation," *Megawatt Daily*, April 1, 1997, Vol. 2, No. 62; "Electric Lite Raises Questions at South Carolina PSC, Says It Has Signed 17,000 Customers," *Power Markets Week*, April 21, 1997, p. 6; "South Carolina Bill Takes Aim at Electric Lite," *The Energy Report*, April 28, 1997, Volume 25, No. 17; "Diverse Energy Marketers Push to Open Retail Markets and Sign Up Customers," The Energy Report, June 30, 1997, Vol. 25, No. 26; "Electric Lite Inks Deal with Cinergy, Du-Pont to Supply It with Bulk Power," *Southeast Power Report*, July 25, 1997, p. 4.

[34] "S.C. Power Marketer Says Industrial Rate Deals Unfair to Other Customers," *Industrial Energy Bulletin*, January 23, 1998, p. 9.

[35] "S.C. PSC Rejects Electric Lite's Petition on Competition, Wheeling Scheduling," *Southeast Power Report*, February 6, 1998, p. 8.

[36] "S.C. PSC Reluctantly Outlines a Plan to Allow Customer Choice in Five Years," *The Energy Report*, February 9, 1998, Volume 26, No. 6.

[37] "Electric Lite Raising Up to $30 million to Fund Big Expansion in Retail Activity," *Power Markets Week*, April 20, 1998, p. 9.

[38] "Electric Lite turns lights out on S. Carolina," *The Energy Report*, September 28, 1998, Volume 26, No. 38.

[39] Open Secrets, https://www.opensecrets.org/news/issues/electricity/; accessed October 5, 2018.

[40] The need for access to transmission is not due to profitability of transmission, for transmission as a portion of the average cost of service to a home or business is far cheaper than generation.

[41] Thierer and Crews, p.1.

[42] Thierer and Crews, p.1.

[43] Thierer and Crews, p.2.

[44] Thierer and Crews, p.3.

[45] David Wren, "Owner of Mount Holly smelter in Goose Creek to appeal electricity rate lawsuit," *Post & Courier*, October 10, 2017; David Wren, "No resolution to Charleston-area smelter's electricity dispute as contract enters final year," *Post & Courier*, February 14, 2018; David Wren, "Century Aluminum seeks legislative remedy for its power woes," *Post & Courier*, February 25, 2018.

[46] To avoid mandatory wheeling and the "loop flow" or "inadvertent flow" problems or just the need for judgment calls, Douglas A. Houston has called for multiple user ownership of transmission lines or transmission capacity sharing creating capacity shares by voluntary agreement. To be spun off from utilities would most likely require federal legislation.

[47] O.C.G.A. § 46-3-1, et seq.

[48] OCGA 46-3-8

[49] Stated officially on the Georgia Public Service Commission website (http://www.psc.state.ga.us/electric/electric.asp):
Georgia Power Company (GPC), an investor-owned electric utility, is fully regulated by the Commission. Currently GPC serves approximately 2.4 million customers in 155 of Georgia's 159 counties. The Commission has limited regulatory authority over the 41 electric membership corporations (EMCs) and 52 municipally-owned electric systems in the state. Absent federal action, the electric industry in Georgia will remain traditionally regulated in its present form. Some retail competition has been present in Georgia since 1973 with the passage of the Georgia Territorial Electric Service Act. This Act enables customers with manufacturing or commercial loads of 900 kW or greater a one time choice in their electric supplier. It also provides eligible customers the opportunity to transfer from one electric supplier to another provided all parties agree. The Commission resolves territorial disputes and customer complaints involving customer choice and approves requests for transfer of retail electric service.

[50] Michael T. Maloney, Robert E. McCormick, and Raymond D. Sauer. *Customer Choice, Consumer Value: An Analysis of Retail Competition in America's Electric Industry*. Washington, DC: Citizens for a Sound Economy Foundation (1996); Michael T. Maloney, Robert E. McCormick, and Raymond D. Sauer. "On stranded cost recovery in the deregulation of the US electric power industry." *Natural Resources Journal* 37.1 (1997): 59-123; Michael T. Maloney and Raymond D. Sauer. "A Principled Approach to the Stranded Cost Issue." *The Electricity Journal* 11.3 (1998): 58-64.; Michael T. Maloney, "Economies and diseconomies: estimating electricity cost functions." *Review of industrial organization* 19.2 (2001): 165-180; Michael T. Maloney, "Analysis of load factors at nuclear power plants." *Online, http://works. bepress. com/michael_t_maloney/10/*, (2003); David Dismukes and Michael T. Maloney. "Stranded Costs in Non-Utility Generation." *cited in Maloney & Brough, "Promise for the Future, Penalties from the Past.*

[51] Michael T. Maloney, Katie S. Player, and Oran P. Smith. "The Uncertain Future of Santee Cooper," Columbia, SC: Palmetto Promise Institute (2018); Katie S. Player, "Santee Cooper Rate Increase Projections." Columbia, SC: Palmetto Promise Institute (2018); and Katie S. Player, "Santee Cooper versus SCANA: Which Ratepayers are Worse Off?" Columbia, SC: Palmetto Promise Institute (2018).

[52] Duke Energy acquired Progress Energy, formerly Carolina Power and Light, in 2012. Rates for Duke Energy (Progress) are currently set separately from Duke Energy (Carolinas) by the South Carolina Public Service Commission (PSC).

[53] https://www.eia.gov/todayinenergy/detail.php?id=34932

[54] "Residential Energy Consumption Survey" (2015), final release date of May 31, 2018, United States Energy Information Administration, Table HC11.1, Household Energy Insecurity (2015). Calculations by region by author.

[55] "Report: One-Third of Households Struggle to Pay Energy Bills," *The New York Times* from The Associated Press, September 19, 2018. Accessed September 20, 2018.

[56] Those cities, towns and public works commissions are: Abbeville, Clinton, Easley, Gaffney, Greer, Laurens, Newberry, Rock Hill, Union and Westminster.

[57] The ten PMPA cities as well as the Bamberg Board of Public Works and the City of Georgetown.

[58] Progress Energy for most of its existence (1908-2002) was known as Carolina Power and Light (CP&L), which like Duke had operations in both Carolinas.

[59] John Downey, "Duke Energy Abandons Plans to Build Lee Nuclear Station," *Charlotte Business Journal*, August 25, 2017. https://www.bizjournals.com/charlotte/news/2017/08/25/duke-energy-abandons-plans-to-build-the-lee.html Accessed October 24, 2018.

[60] John Downey, "Duke Energy Abandons Plans to Build Lee Nuclear Station," Charlotte Business Journal, August 25, 2017. https://www.bizjournals.com/charlotte/news/2017/08/25/duke-energy-abandons-plans-to-build-the-lee.html. Accessed October 5, 2018.

[61] A portion of the research in these sections on recent controversies involving South Carolina energy providers has been supplied by James Clarkson and Rod Funderburk, *Energy News*.

[62] Brian Hicks, "Hicks Column: It's All Starting to Add Up on SCANA's Nuclear Power Plant Game," *The Post & Courier*, August 5, 2018. https://www.postandcourier.com/columnists/hicks-column-it-s-all-starting-to-add-up-on/article_d1b02df0-96c5-11e8-8dcb-479af076a62a.html. Accessed October 22, 2018.

[63] Thad Moore, "SCANA, Santee Cooper Miss Out on $171 million by Cashing In Nuclear Settlement Early," *The Post & Courier*, December 6, 2017. https://www.postandcourier.com/business/scana-santee-cooper-miss-out-on-million-by-cashing-in/article_64658b92-dab3-11e7-94dc-efa062184ae1.html; Thad Moore, "SCANA, Santee Cooper Accept $171 million Discount to Cash in Now on Toshiba Nuclear Settlement," *The Post & Courier*, September 27, 2017. https://www.postandcourier.com/business/scana-santee-cooper-accept-million-discount-to-cash-in-now/article_09c5198e-a302-11e7-a207-8b4800b88894.html accessed October 16, 2918.

[64] The most revealing article on the world of the co-ops was "High Pay and Expensive Perks: Has 'absolute power' Corrupted SC electric co-ops?" Avery G. Wilks, *The State*, August 9, 2018. Accessed October 20, 2018.

[65] As of this writing, both the 1st Circuit Solicitor (District Attorney) and the U.S. Attorney have been asked to investigate the actions of the recently ousted board members, and barring a court ruling to

block a vote, the co-op's customers will meet on November 17, 2018 to elect a new board of directors.

[66] *The Post and Courier* revealed how many of those Public Utility Review Committee legislators attended utility-funded appreciation dinners. "South Carolina's Electric Utilities Reeling More Than a Year After Nuclear Cancellation," Andrew Brown and Thad Moore, *Post & Courier*, August 21, 2018. Accessed October 20, 2018

[67] Andrew Brown and Thad Moore, *Post & Courier*, August 21, 2018. Accessed October 20, 2018.

[68] Again, we think that even in the absence of PURPA's open access, the threat of self-generation or new transmission infrastructure development would cause the nearest existing transmission provider to offer competitively priced service.

[69] Certainly, this is true if the current supplier is an investor-owned utility. There is some flux where the supplier is a co-op. But still, removing territorial restrictions would mean that the nearby investor-owned utility would come into the competitive mix.

[70] Walter J. Primeaux, *Direct Electric Utility Competition: The Natural Monopoly Myth*, New York: Praeger Publishers, 1986.

[71] Jan Bellamy, "Two Utilities are Better than One," *Reason*, October 1981, p.23-30.

[72] "Mayor Supports Competition for LP&L Electric Customers," *EverythingLubbock.com* Posted January 2, 2018, Updated January 3, 2018, Accessed September 4, 2018.

[73] South Carolina Code of Laws (1976) Section 58-31-440. *Maintenance of existing lines; customer choice in certain circumstances*. Lines of the Public Service Authority in existence on July 1, 1984, which extend into the service areas of Berkeley Electric Cooperative, Santee Electric Cooperative, and Horry Electric Cooperative, and lines of those cooperatives which extend into the service area of the Public Service Authority may continue to be operated and maintained by the owner of the lines, and premises served by the lines on July 1, 1984, must continue to be so served. The owner of a line in another supplier's service area may exclusively serve any new premises located wholly or partially within three hundred feet of the line. Where the premises are located wholly or partially within three hundred feet of a line of both the Public Service Authority and an electric Cooperative, the customer may choose between those suppliers, and the supplier originally chosen shall continue to have the exclusive right to serve such premises.
HISTORY: 1984 Act No. 399, § 4, eff July 1, 1984.

[74] https://www.scstatehouse.gov/sess122_2017-2018/bills/5453.htm