Antonia Hover

From: Doug Wright <dwright@psc.state.fl.us>
Sent: Monday, July 27, 2020 1:32 PM
To: Hong Wang <HWang@PSC.STATE.FL.US>
Cc: Phillip Ellis <PEllis@PSC.STATE.FL.US>
Subject: FW: Vote Solar comments on electric utilities' 2020 10-year site plans

Good afternoon Hong,

Please place these comments in the correspondence side of Docket No. 20200000-OT.

Douglas Wright
Division of Engineering
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399
Office: (850) 413-6682

From: Katie Chiles Ottenweller [katie@votesolar.org]
Sent: Friday, July 24, 2020 6:01 PM
To: Doug Wright
Cc: Phillip Ellis; Mark Futrell; Records Clerk
Subject: Vote Solar comments on electric utilities' 2020 10-year site plans

Dear Mr. Wright:

Please see attached Vote Solar's comments on Florida electric utilities' 2020 10-year site plans.

One of our attachments is a summary document which I am planning to supplement with the full report early next week, if that's alright.

I hope you have a wonderful and safe weekend.

Best,
Katie

VOTE SOLAR

Katie Chiles Ottenweller | Southeast Director

katie@votesolar.org | 706.224.8017

Vote Solar
Atlanta, Georgia
votesolar.org

July 24, 2020

Mr. Doug Wright
Engineering Specialist
Florida Public Service Commission
Capital Circle Office Center
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850
Email: dwright@psc.state.fl.us

Dear Chairman Clark and Commissioners:

Vote Solar respectfully offers these comments concerning Florida utilities' 2020 10-year site plans, in order to support the Commission's oversight role and encourage an electric system that is affordable, reliable, secure and clean.

Since 1974, certain electric utilities under Florida law have been required to submit to the Commission a 10-year site plan estimating their power-generating needs and the location of any proposed power plants. *See* Section 186.801, F.S.[1] The Commission is charged with conducting a preliminary review of each plan, classifying each as suitable or unsuitable, and may suggest alternatives to the plan. *Id*.

Florida law states that the Commission "shall review" the following elements of each plan: the need for electrical power; the effect on fuel diversity within the state; the environmental impact of each power plant site; possible alternatives to the proposed plan; the views of other relevant agencies; the extent to which the plan is consistent with the state comprehensive plan; state data on energy availability and consumption; the amount of renewable energy resources the utility produces or purchases; the amount of renewable energy resources the utility plans to

[1] Utilities are only required to submit TYSPs if (1) their generating capacity is greater than 250 MW or they are planning to construct a 75 MW or greater new generating facility at least 3 years prior. In 2019, 11 out of Florida's 58 utilities submitted TYSPs, which constituted about 98% of total retail sales in the state.

produce or purchase over the 10-year planning horizon and the means by which the production or purchases will be achieved; and how the production and purchase of renewable energy resources impact the utility's present and future capacity and energy needs. Fla. Stat. Ann. § 186.801. Under Florida law, 10-year site plans are "tentative information for planning purposes only and may be amended at any time" by utilities. *Id*. As permitted by statute, the Commission has implemented regulations concerning the 10-year site plans. *See* Fla. Stat. Ann. § 186.801; Rule 25-22.070, F.A.C.

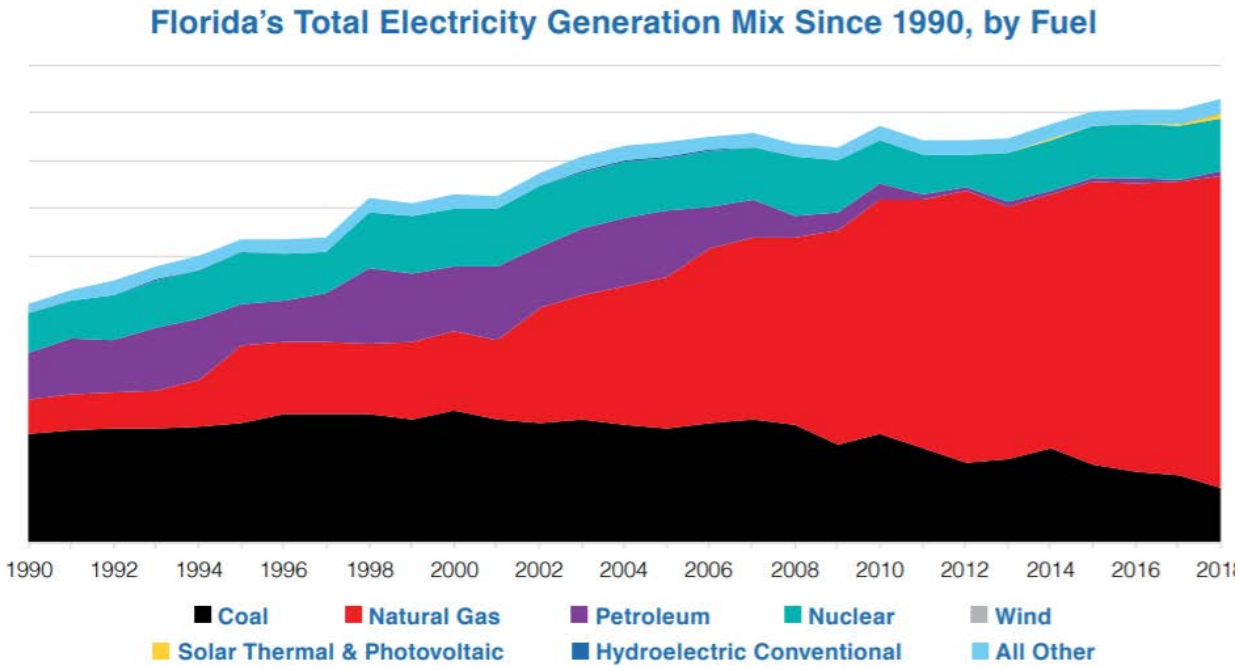
As Vote Solar reviewed utilities' 2020 plans, we saw significant diversity among the plans with respect to their transparency, incorporation of sound planning principles, clean energy commitments and preparedness to adapt to climate risk. For that reason, we have developed report cards for each utility, which are attached for your review. During this analysis, several important cross-cutting themes also emerged among many of the utilities' plans. Below, we present these themes as **"Six Questions the Commission Should Ask"** as it reviews the 2020 plans. We hope that this framework assists the Commission and its staff in its important oversight role.

"Six Questions the Commission Should Ask as it Reviews TYSPs"

1. **How do utilities plan to address gas over-dependence?**

Florida's share of natural gas generation places it among the top four states in the country, and its **70% reliance on gas is double the national average**. The end result is that each year, some $5 billion dollars leave Florida's economy to pay for fuel (accounting for about $1 out of every $4 spent by Floridians on electric bills). Florida's utilities plan to expand their reliance on gas generating plants even more over the next decade, potentially putting Florida consumers on the hook for fuel price shock as well as stranded asset risk as lower-risk alternatives like solar power threaten to make today's gas investments obsolete. Vote Solar recently released a report on these issues entitled *The Costs and Risks of Florida's Dependence on Natural Gas*, which we have attached for your convenience.

The Legislature, in requiring 10-year site plans to be filed, stated that the Commission "shall review" each plan's effect on fuel diversity within the state. *See* Fla. Stat. Ann. § 186.801. Under this authority, we encourage the Commission to question utilities' over-reliance on gas.



Source: Vote Solar analysis of 2019 U.S. Energy Information Administration Data

Since 1990, the vast majority of all installed capacity - over 33 GW - has been in gas plants; and Florida utilities plan to add several gigawatts of gas generation in this decade. Below are just a few troubling elements of utilities' 2020 filings:

- ➔ FPL: Planning 600 MW of combined cycle gas plant upgrades
- ➔ Gulf Power: Planning 938 MW of new combustion turbines
- ➔ Duke Energy: total energy from gas to increase from 64.9% to 77.3% by 2029; also planning to build 492 MW of new combustion turbines
- ➔ Tampa Electric: total energy from gas to increase to 84.6% by 2029
- ➔ FMPA: total energy from gas to increase from 75.6% to 81.2% by 2029

Over this decade, FPL projects the cost of natural gas will almost double, increasing by 75% from $2.42/MMBtu in 2020 to $4.25 in 2029.[2] If gas prices do double, Floridians could see their electric bills increase by $360/year. In contrast, Jim Robo, CEO of NextEra Energy, has described solar as being "very, very competitive" compared to gas-fired generation, and notes "a significant opportunity in almost every part of the country where batteries are now more economic than gas-fired peakers, even at today's natural-gas prices." **We strongly believe that utilities should not have more than 50% of their energy mix coming from gas, consistent with national averages, and should not be continuing to invest in new gas capacity once**

[2] *See* FPL responses to 2020 TYSP discovery requests, FPSC Docket 2020-0000.

they hit that limit. Florida's regulators should carefully weigh both fuel price and stranded asset risks in assessing the prudence of continued investments of ratepayer funds in gas.

2. When and how will proposed new investments be reviewed?

Adding to the riskiness of utilities' planned gas investments is the question of *when* these investments of ratepayer dollars will actually be reviewed by the Commission. Vote Solar found that the majority of Florida utilities' proposed new capacity over the next decade will be constructed prior to any cost-effectiveness review by the Commission.

The unfortunate result is that many investments may fall into a "too early / too late" vortex. At the 10-year site plan stage, utilities can claim that new capacity is tentative and that more robust review of potential alternatives will happen later. However, the reality is that many of these gas plant costs are not subject to the Power Plant Siting Act, and therefore would be allowed to move forward with construction prior to any other review. These unreviewed costs include: coal to gas unit conversions; combined cycle upgrades; and any new combustion turbines. Only at the time of a future rate case would utilities be required to demonstrate the prudency of those investments, at which point ratepayer funds would already have been spent.

FPL: Almost 800 MW of combined cycle upgrades

➔ Estimated capital cost: $781 million.[3]

Gulf Power: 938 MW of new combustion turbines

➔ Estimated capital cost: $450 million[4]

Duke Energy: 492 MW of new combustion turbines

➔ Estimated capital cost: $400 million[5]

In this situation, extra scrutiny is clearly warranted at the 10-year site planning stage for *any* proposed investments that aren't subject to pre-construction review. Utilities should be required to articulate why these investments were selected; how they compare to other alternatives like solar paired with battery storage; what the cost to ratepayers will be; and the capacity and fuel cost assumptions being used.

[3] Based on cost estimates from NREL Annual Technology Baseline 2020.
[4] Based on Gulf reported capital costs.
[5] Based on cost estimates from NREL Annual Technology Baseline 2020.

3. How can Florida modernize its resource planning review?

There are actions that the Commission can take this year within its existing statutory authority to modernize its review process concerning Florida utilities' plans. The Commission can begin by formalizing the 10-year site plan review process and shoring up opportunities for public and stakeholder engagement. *See* Section 186.801(2), F.S. (the commission may adopt rules governing the method of submitting, processing, and studying the 10-year plans). We recommend that the Commission strengthen the 10-year site plan process by making 10-year site plans part of a docketed proceeding, similar to FEECA dockets; providing a clear opportunity and timeline for public comments; requiring utilities to file sworn testimony associated with their plans; allowing for intervention, discovery and the filing of non-utility expert testimony; and subjecting utilities' plans to cross-examination.

We also urge the Commission to require utilities to file both preferred plans and alternatives for the Commission to review, beginning in 2021, with clear price per GWh comparisons for each plan. *See* Section 186.801(2)(d), F.S. (the Commission "shall review... [p]ossible alternatives to the proposed plan"). These improvements will better ensure that the Commission has the information it needs to meaningfully regulate the utilities' resource decisions to meet the public interest.

In terms of the Commission's substantive review, we encourage the Commission to exercise the following legislatively granted authority:

- Making comments and recommendations to utilities concerning their plans (*see* Section 186.801(2), F.S. (states PSC may "suggest alternatives"); Fla. Admin. Code Ann. r. 25-22.071(4) (the Commission "will report its findings, along with any comments or recommendations"). These recommendations can be directed to utilities' current or future plan filings.
- Rejecting unsuitable plans and sending plans back for additional data to be provided (Section 186.801(2), F.S. ("the commission shall make a preliminary study of such plan and classify it as "suitable" or "unsuitable."); Fla. Admin. Code Ann. r. 25-22.071(5) (unsuitable plans can later be deemed suitable with additional data).

Florida should also consider beginning a holistic review of its electric planning process, which does not appear to have undergone substantive review since the 1970s. Some best practices for resource planning may require legislative reforms in order to implement. Such improvements include, but are not limited to: increasing the 10-year time period to 15 or 20 years, in keeping with many other states; making plans binding and subject to both review and amendment by regulators; and requiring utilities to conduct full integrated resource planning with transparency around least cost, least risk plans and alternatives. Without a binding, long

term planning process with thorough vetting, the Commission's ability to regulate the utilities in the public interest will be hamstrung.

Such a holistic review would provide an opportunity to rethink system needs in a future likely dominated by renewable energy, new technology, and engaged consumers.[6] Battery storage, EV charging demand, demand response, rooftop and utility scale solar threaten to rapidly overtake traditional supply, but traditional planning approaches are ill-equipped to evaluate this new reality. Planning needs to be responsive to new reliability and flexibility needs; policy goals; new technology; customer preferences and sustainability goals; electrification; and the proliferation of distributed energy resources. *Id*. For example, electrification may DOUBLE total demand by 2050; planning processes must consider the impact of this new load on electric utilities and their customers. Similarly, instead of assuming that gas is the best option to replace retiring coal plants, modern planning should allow for portfolios of clean energy resources (solar, bulk storage and controllable demand) that, when combined, can offer the same energy, flexibility and capacity needs at less cost than gas. *Id*. The best way to ensure fair access for all resources to compete is to require all-source, competitive procurements for all new capacity investments, thus inviting innovation into utility plans to maximize savings for consumers.

Going forward, we encourage a conversation about how Florida can ensure it is well situated for next generation energy resource planning. We have provided a list of resources in an appendix that we hope will prove helpful to this end.

4. How does Florida stack up on clean energy investments?

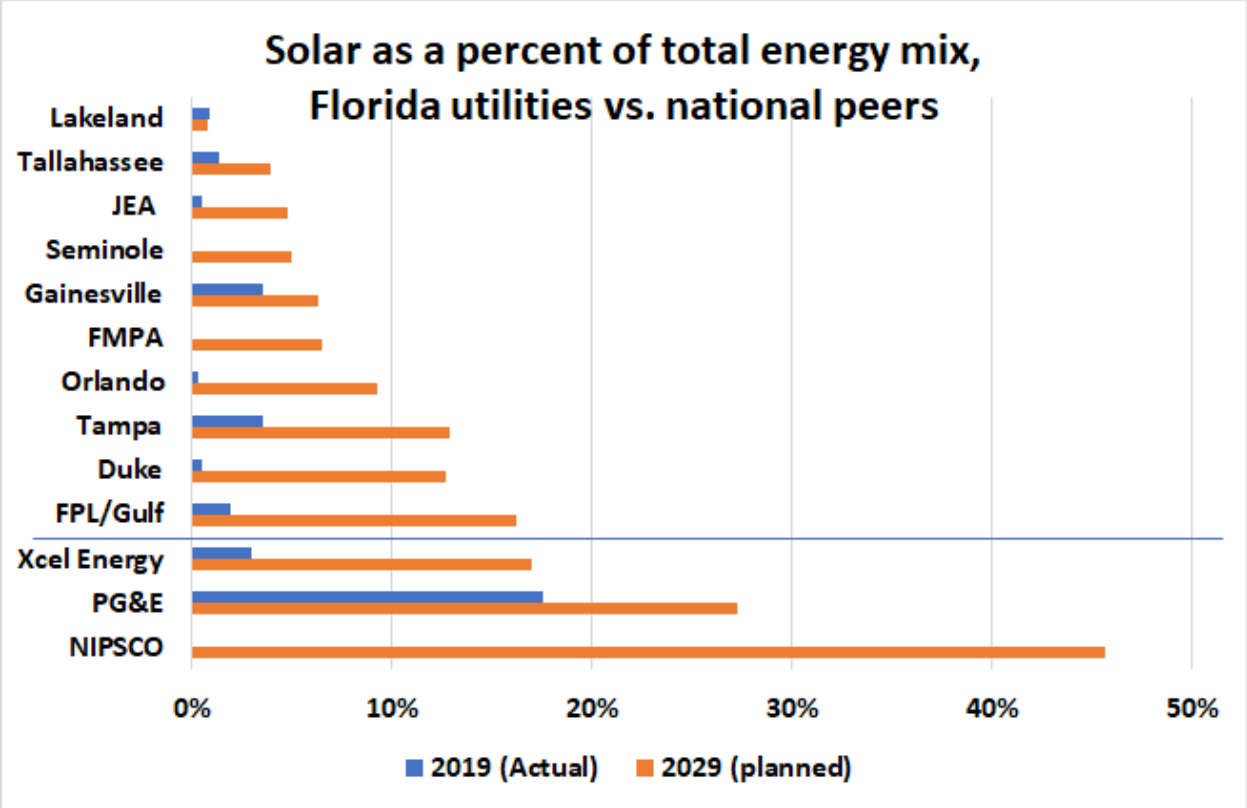
According to the U.S. Energy Information Administration, solar is now the cheapest generating resource available to Florida utilities, but many utilities continue to treat it as a niche energy source. While solar energy is increasing across Florida over the next decade, the state has a lot of catching up to do, and a whole lot of runway to do it.

Today, Florida utilities have less solar (in terms of watts per customer) than peer Southeast utilities Duke Energy Progress, Dominion Energy SC, Duke Energy Carolinas and Georgia Power. FPL and Duke Energy Florida still fall below the Southeast average in terms of solar per customer.[7] For comparison, Duke Energy Progress in the Carolinas has 1,755 solar watts per customer; FPL has 265 and Duke Energy Florida only has 155. As an upside, it means that **utilities like Duke Power have demonstrated an ability to integrate and harness over**

[6] The Brattle Group, *The Next Generation of Energy Resource Planning: Rethinking System Needs in a Future Dominated by Renewables, New Tech, and Engaged Customers* (2019), *available at* https://brattlefiles.blob.core.windows.net/files/16833_the_next_generation_of_energy_resource_planning.pdf.
[7] Southern Alliance for Clean Energy, *Solar in the Southeast Annual Report (2020), available at* https://cleanenergy.org/wp-content/uploads/Solar-in-the-Southeast-Report-2020.pdf.

ten times as much solar energy in the Carolinas as they have in Florida -- creating valuable lessons learned that will allow for smooth integration of renewables in our state.

As a benchmark, we believe that each utility should be aggressively moving towards **at least 30% renewable energy by 2030**. FPL, which plans for the highest percentage of renewable energy among Florida utilities in 2029 (16%), is only at about half of that goal. Peer utilities across the country, from Xcel and NIPSCO in the Midwest to PG&E in California, are voluntarily planning for renewable energy as a reliable and economic energy resource. States such as California, Hawaii, North Carolina and Arizona have navigated the integration of clean energy to date at significantly higher solar penetrations than Florida, and have demonstrated the predictable value that these resources add to the grid. These path-breaking states should give Florida regulators peace of mind that our state can confidently invest in significant amounts of renewable energy over the next decade -- much more than utilities are currently planning for.



Vote Solar also believes that how renewable energy is procured for customers matters, and the Florida legislature agrees. As part of their 10-year site plan filings, the Legislature requires utilities to provide information about how renewable energy is going to be procured (a requirement that it did not specify for traditional generating resources). *See* Section

186.801(2)(i), F.S. (the Commission "shall review…[t]he amount of renewable energy resources the utility plans to produce or purchase over the 10-year planning horizon and ***the means by which*** the production or purchases will be achieved.") (emphasis added).

Markets work -- and Florida utilities should be aggressively relying on market options to procure more affordable power, instead of solely relying on self-built capacity. Third-party developed and owned projects have shown themselves to be the most cost effective option for customers time again in competitive solicitations across the Southeast, including in nearby Georgia.[8] We encourage the Commission to question utilities' plans when they exclude consideration of market alternatives. Utilities' financial incentives should be aligned with customer value to maximize system benefits when renewables are being added to the grid.

5. Are Florida utilities preparing for a carbon-constrained world?

There is broad consensus among market analysts and large, sophisticated utilities that carbon regulation is a matter of when, not if. Building a future carbon price into planning protects customers from this eventuality, helping ensure that utilities are projecting reasonable future costs on carbon-heavy generation. Some Florida utilities (including FPL and Duke) incorporate a future carbon cost into their planning, but most of the municipal utilities do not, which likely biases their planning in favor of carbon-heavy resources. Florida regulators should scrutinize the impact of these flawed assumptions on municipal utilities' plans.

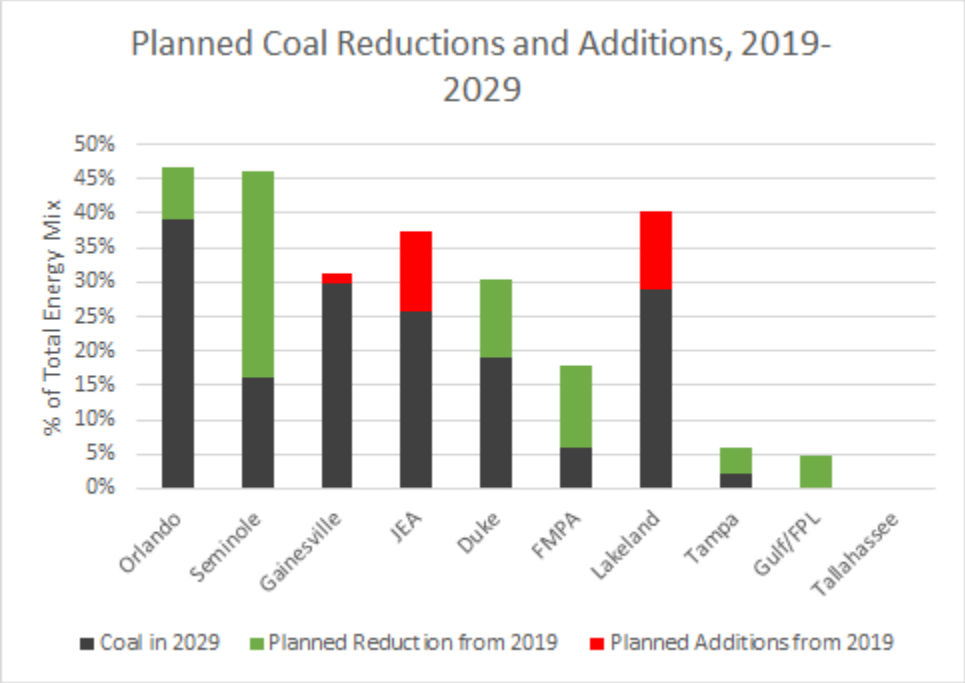
A good utility helps empower its customers so they can meet their clean energy goals and keep energy bills stable. Many Fortune 500 companies have established carbon reduction goals based on market trends and evolving investor expectations, and these corporations are looking to grow in states where clean energy options are readily available. Nearly 200 global corporations have committed to 100% renewable energy, including household names like Google, Ikea, Apple, Bank of America, Coca Cola, ebay, Facebook, GM, Microsoft, Target, and Walmart.[9]

Florida's forward-looking utilities are seriously exploring battery storage and clean energy options for customers, but Florida's smaller utilities are generally overlooking these "next gen" technology opportunities. We specifically commend utilities like FPL, OUC and Duke Energy Florida that are offering both robust rooftop net metering programs, while simultaneously creating solar subscription programs that expand access to solar power for those customers who are unable to go solar on their homes or businesses. These options make Florida a more attractive place to live and do business.

[8] *See, e.g.*, https://dailyenergyinsider.com/news/11265-georgia-power-awards-power-purchase-agreements-three-solar-projects/.
[9] https://www.there100.org/companies.

To date, the cost evaluation of energy storage has generally lacked sophistication (e.g., by not fully considering all sub-hourly capacity and ancillary services benefits) and failed to keep up with rapidly falling energy storage costs.[10] In March of 2019, FPL announced its plan to build the world's largest solar-powered battery in Manatee County, replacing two natural gas units and saving customers more than $100 million dollars.[11] Now that battery storage has been demonstrated to be cost effective in Florida, the Commission should question gas investments that are made by utilities whose planning lacks sophistication when it comes to analyzing storage -- their plans likely ignore cheaper, carbon-neutral capacity options that are now up for the taking.

Shifting in the wrong direction, some Florida utilities are actually *increasing* coal energy over the next decade -- a trend that is sharply at odds with the rest of the country.[12] JEA, GRU and Lakeland all anticipate significant increases in coal energy usage in the 2020s, a decision that they do not justify based on cost in their plans.



Vote Solar believes that utilities should be phasing out coal to less than 5% by 2030, in line with FPL and Tampa Electric's plans. Any increase in coal is extremely concerning given the market dynamics, not to mention the carbon and public health impacts of coal. We believe that a utility's decision to increase coal energy warrants rejection of these utilities' plans, and at

[10] https://energystorage.pnnl.gov/pdf/PNNL-28627.pdf
[11] http://newsroom.fpl.com/2019-03-28-FPL-announces-plan-to-build-the-worlds-largest-solar-powered-battery-and-drive-accelerated-retirement-of-fossil-fuel-generation
[12] https://www.eia.gov/outlooks/steo/report/coal.php.

the very least, we encourage the Florida Commission to question these utilities concerning how these plans can possibly be least cost compared to alternatives.

6. **Are utilities protecting Florida's most vulnerable ratepayers?**

The cheapest kilowatt-hour is the one that never gets used. Quite simply, that makes energy efficiency the cheapest energy source available to Florida's electric utilities. But according to the American Council for an Energy Efficient Economy (ACEEE), many Florida utilities rank far below their peers in terms of energy efficiency investments. The 2020 ACEEE Utility Energy Efficiency Scorecard reviews the efficiency investments of 52 utilities across the country. Of that list, TECO, Duke Energy Florida and FPL all rank in the bottom 8 utilities, with TECO at #46, DEF at #48 and FPL at #51 (ahead of only one utility - Alabama Power).[13] This lack of investment is also tied to Floridians having higher than average electricity bills than the national average.[14]

Energy efficiency investments matter now more than ever, as many Floridians are struggling to pay their electric bills due to the economic fallout from COVID. Consumer protection needs to be top priority right now during the coronavirus pandemic. Energy efficiency should be utilities' first investment before adding additional generation capacity, and utilities should be targeting **a minimum of 1% of annual energy savings**. Vote Solar also believes that utilities should be mobilizing energy saving programs to provide extra bill support and stability to customers who are in arrears on bills, in addition to halting all shut-offs through the end of hurricane season. We strongly support emergency bill relief programs for customers who are in arrears during this time, which should rely on a combination of arrearage management, bill forgiveness incentives for consistent repayment, and targeted efficiency programs.

We appreciate the Commission's attention to these important issues, and hope that these comments aid the Commission in its review of Florida utilities' long-term plans.

Sincerely,

Katie Chiles Ottenweller
Southeast Director
Vote Solar

Odette Mucha

[13] https://www.aceee.org/sites/default/files/pdfs/u2004%20rev_0.pdf
[14] https://www.eia.gov/todayinenergy/detail.php?id=34932

Regulatory Director, Southeast
Vote Solar

Tyler Fitch
Regulatory Manager, Southeast
Vote Solar

Attachments:

A: Utility Best Practice Planning Resource List

B: Vote Solar Report: *The Costs and Risks of Florida's Dependence on Natural Gas*

C: Summary of Vote Solar's 2020 Florida Utility Report Cards *(longer report forthcoming)*

Electric Utility Best Practice Planning Resource List

Brattle Group (2019), The Next Generation of Energy Resource Planning

RAP & Synapse (2013), Best Practices in Integrated Resource Planning

LBNL (2016), The Future of Electricity Resource Planning

NARUC electricity planning task force library of resources here

How Do Florida's Utilities Stack Up?

Report Cards for 10 of Florida's Largest Utility Providers Based on Each Utilities' 2020 10-Year Site Plans

VOTE SOLAR

Each year, Florida's biggest electric utilities file a report to the Florida Public Service Commission (PSC) outlining their plans for the next ten years. The plans, called the "10-Year Site Plans," outline how each utility plans to meet its forecasted energy demand over the next decade.

In most states, similar regulatory filings include a cost analysis of each decision, requiring utilities to justify their investments and follow a "least cost" path. Alternatives to expensive new power generation assets are considered, including energy efficiency and demand side management. And robust stakeholder input is considered. In Florida, utilities do not provide any cost or benefit analysis for new power plants. While the plans provide the public some visibility into their utility forecasts, the process does not consider stakeholder input, nor make it easy for Floridians to understand why utilities are making their decisions or how alternatives would fare. Vote Solar combed through hundreds of pages of 10-Year Site Plans to highlight key takeaways.

What Does the Future Hold?

At 70%, Florida's reliance on gas is among the very highest in the country today and twice the national average. Unfortunately, the plans filed by the state's largest utility providers show that we are poised to continue that reliance into the next decade. This pattern creates risks for the state and a missed opportunity for local economic development. Because Florida does not produce its own natural gas, it is required to purchase it from out-of-state sources. As a result, $1 out of every $4 spent by Floridians for electricity is shipped out of state to pay for gas imports.

Trends in Florida

Key trends across the Florida utilities include an over-reliance on natural gas and investment in solar over only the next few years. They generally show a lack of leadership on energy storage, electric vehicles, and energy efficiency, with some of the worst efficiency performance in the nation. While many of the utilities have wisely turned away from coal, others have not, with some planning to invest in even more coal, despite climate concerns and all market signs pointing to cheaper and less risky alternatives. Utilities that had investments in non-solar renewables, including hydropower, wind, biomass, etc. are turning away from these resources. It's a mixed bag on market competition, with some utilities taking advantage of competitive bidding to find the lowest cost generation options, while others reject competition out right.

Vote Solar combed through hundreds of pages of 10-Year Site Plans to highlight key takeaways. We've given each utility an overall letter grade of A - F, evaluating their plans in the following eight categories:

1. **Commitment to renewable energy and carbon pollution reduction -** Stated carbon reduction goals tar get at least a 30% reduction by 2030 (consistent with the goals of Duke, Southern Company and FPL parent companies), and move aggressively towards at least 30% renewable energy by 2030.

2. **Independence from fossil gas -** No more than 50% of energy mix from gas, for fuel diversity and mitigated fuel cost and supply risks. Over 50% gas, cease capital investments in new gas capacity and instead opt for cleaner, less risky sources.

3. **Freedom from uneconomic coal -** Phase out coal to less than 5% by 2030. Any increase in coal is extremely concerning given the market dynamics and climate and public health impacts.

4. **Consumer protection and affordability -** Energy efficiency is the cheapest resource and should be the first investment before adding new generation capacity, with a minimum of 1%-2% energy savings. Give top priority to consumer protection during the coronavirus pandemic. Halt all shut-offs for non-payment through the end of hurricane season, waive fees, and forgive arrearages.

5. **Cost reduction through market competition -** Markets work. Use market options to procure the most affordable power, instead of relying on self-built capacity.

6. **Customer choice and demand side options -** Empower customers so they can meet their clean energy goals and keep energy bills stable.

7. **Investment in resilient energy storage -** Resilient energy storage is vital to achieving high penetrations of solar on the grid. Gain knowledge around the value energy storage brings to customers and the grid.

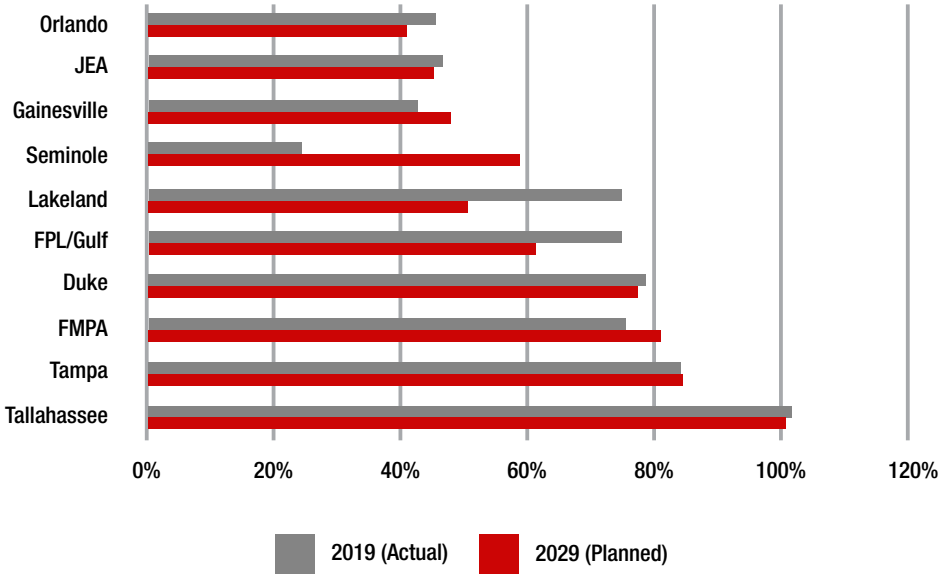
8. **Electric vehicle promotion -** Electric vehicles not only support the decarbonization of the economy but also are a natural area for increased electricity use. Prepare for the proliferation of EVs and support an efficient and competitive build out of charging infrastructure.

The grades are listed below with additional information on each utility in the following pages.

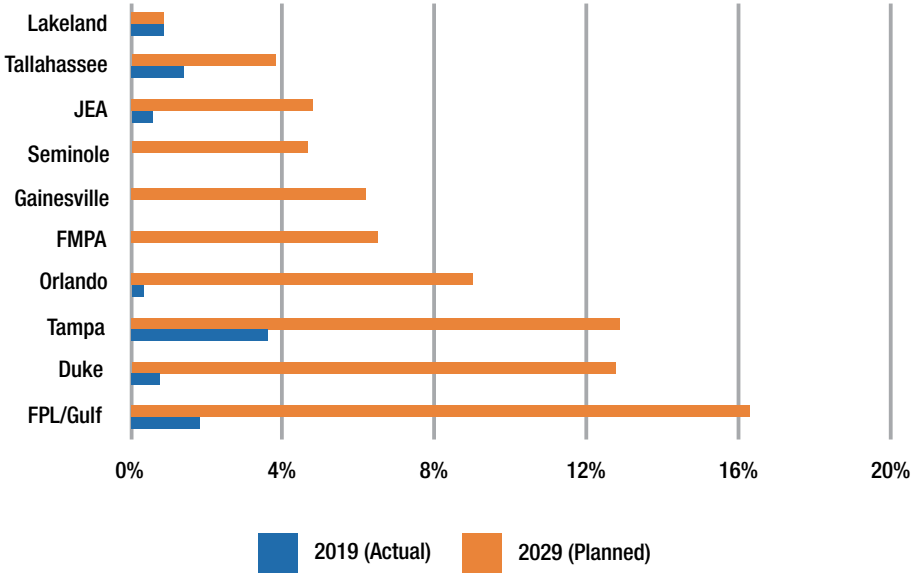
Utility Provider	Grade	Key Takeaway
Tampa Electric Company (TECO)	B+	Less coal, but not enough fuel diversity
Florida Power & Light (FPL)	B	Leading on solar, but still heavy on gas
Orlando Utilities Commission (OUC)	B-	Well done, but time for aging coal plants to retire
Duke Energy	B-	Making progress, but still too much gas
City of Tallahassee Utilities	C	Capital city could improve. The most reliant on gas
Gainesville Regional Utilities (GRU)	C-	Going the wrong direction: Come on Gators!
Seminole Electric Cooperative	D+	Should do better for Florida's co-ops
Florida Municipal Power Authority (FMPA)	D+	Not living up to potential to lead municipal utilities
JEA	D	Customers beware
Lakeland Electric	F	Doubling coal – 19th century style

The following charts show where each of Florida's 10 largest utility providers are in terms of gas, solar, and coal for electricity generation today and where they plan to be in 2029.

Florida Gas Dependence



Solar, As Percentage of Florida Utilities' Energy Mix



The clear result from these plans is that Florida is not nearly diversified enough when it comes to electricity generation. We invest far too much in volatile natural gas and not nearly enough in cost-effective solar. Moreover, while most utilities are moving drastically away from coal, a few increase their reliance on it.

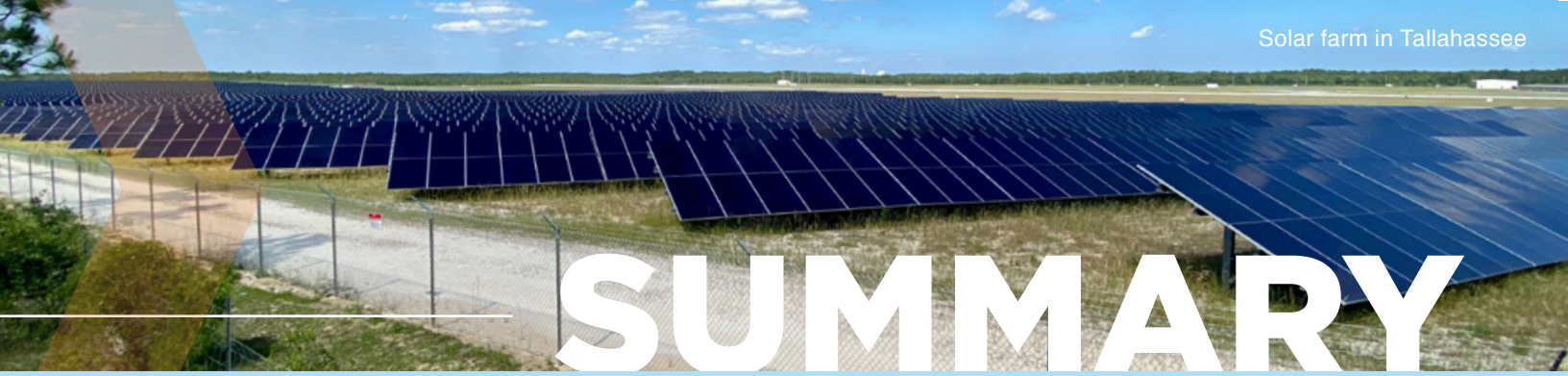
THE COSTS & RISKS OF FLORIDA'S DEPENDENCE ON NATURAL GAS

Produced by Vote Solar

VOTE SOLAR

www.VoteSolar.org

July 2020



Solar farm in Tallahassee

SUMMARY

When it comes to energy independence, Florida continues to move backwards, heading in the opposite direction from most of the country. For the past three decades, the so-called Sunshine State has embraced not solar but natural gas as the resource of choice for generating electric power. Instead of fully embracing lowest cost solar investments, Florida currently plans to expand that gas generation capacity even more over the next decade. The end result is that Florida is increasingly reliant on a volatile fuel source that must be imported, increasing risks and raising costs for every Florida ratepayer.

For every **FOUR DOLLARS** that Floridians pay their electric companies,

at least **ONE** of those dollars **IMMEDIATELY LEAVES FLORIDA** to pay for out-of-state gas. Every year, those fuel payments add up to **$5 billion leaving the state's economy.**

Florida's reliance on gas is among the very highest in the country today, and new information and filings show that its utilities are poised to continue that reliance into the next decade. This pattern creates risks for the state and a missed opportunity for local economic development. Because Florida does not produce its own natural gas, it is required to purchase it from out-of-state sources. As a result, $1 out of every $4 spent by Floridians for electricity is shipped out of state to pay for gas imports.

- Florida's share of gas generation is among the top four in the country, and **its 70% reliance on gas is double the national average.**
- Since 1990, the vast majority of all installed capacity in Florida has been in gas plants.
- Each year, some $5 billion leave the Florida economy to pay for fuel.
- If natural gas prices increase in the future, Floridians will disproportionately bear the financial burden because of the state's heavy reliance on that fuel source.
- Florida captured only one-twentieth of its energy efficiency potential in 2017.[1]

$1 out of every $4
Floridians spend on electricity goes out of state to pay for gas imports.

Florida long resisted the most obvious energy source associated with the state — solar power. Clean and more affordable alternatives to gas, such as solar, are in the marketplace today. These low-risk alternatives are threatening to make today's natural gas investments obsolete, saddling consumers with burdensome and unnecessary costs. Now is the time for leadership to secure a more affordable energy future for Florida.

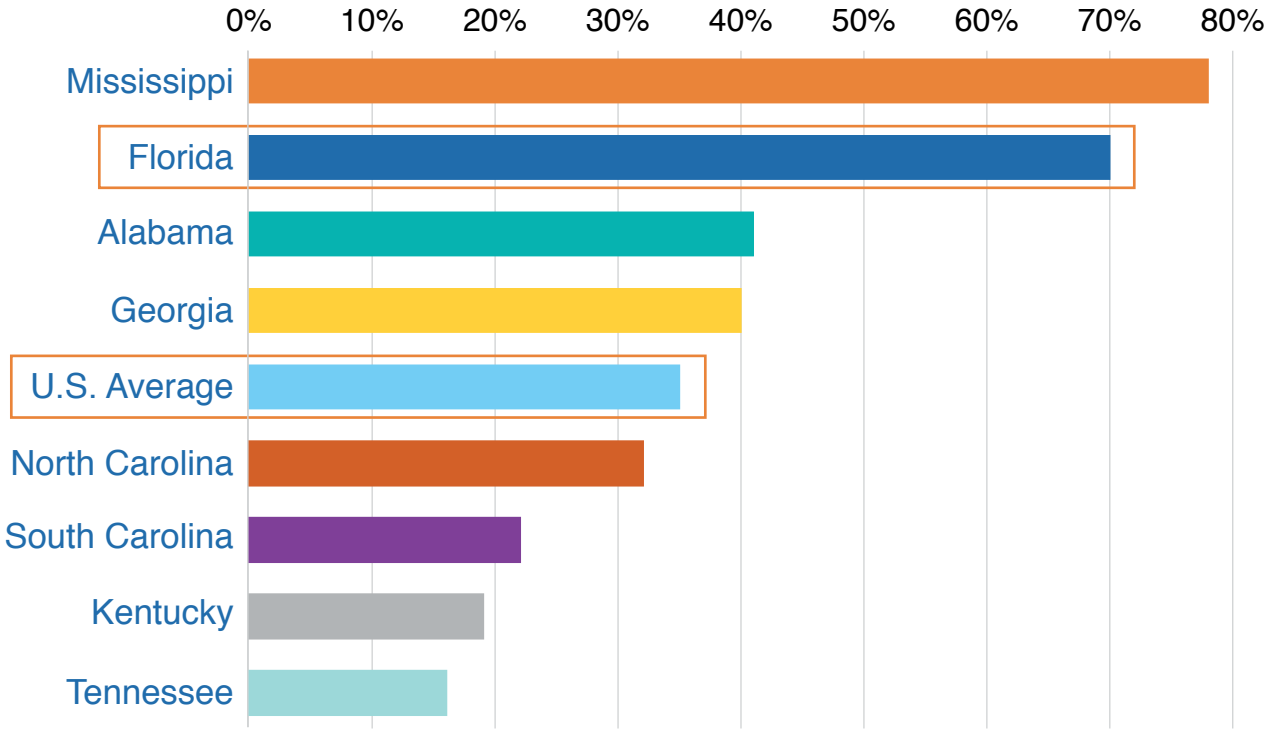
HOW DOES FLORIDA'S DEPENDENCE ON GAS COMPARE TO THE REST OF THE COUNTRY?

New natural gas pipelines being installed in Gilchrist County.

Florida's gas share is much larger than its peers in the Southeast. Fully 70% of Florida's electricity comes from burning gas, all of which must be piped in from out of state. Florida also stands out across the United States, which on average generates about 35% of its electricity from gas and has no single source of energy providing a majority of electricity.

Florida's share of gas generation is among the top four in the country, just behind Rhode Island, Delaware, and Mississippi. Yet as participants in larger energy markets, Rhode Island and Delaware have access to a broader energy mix than what they generate solely in-state, and as a result their overall supply of electricity comes from a mix that is less reliant on gas.

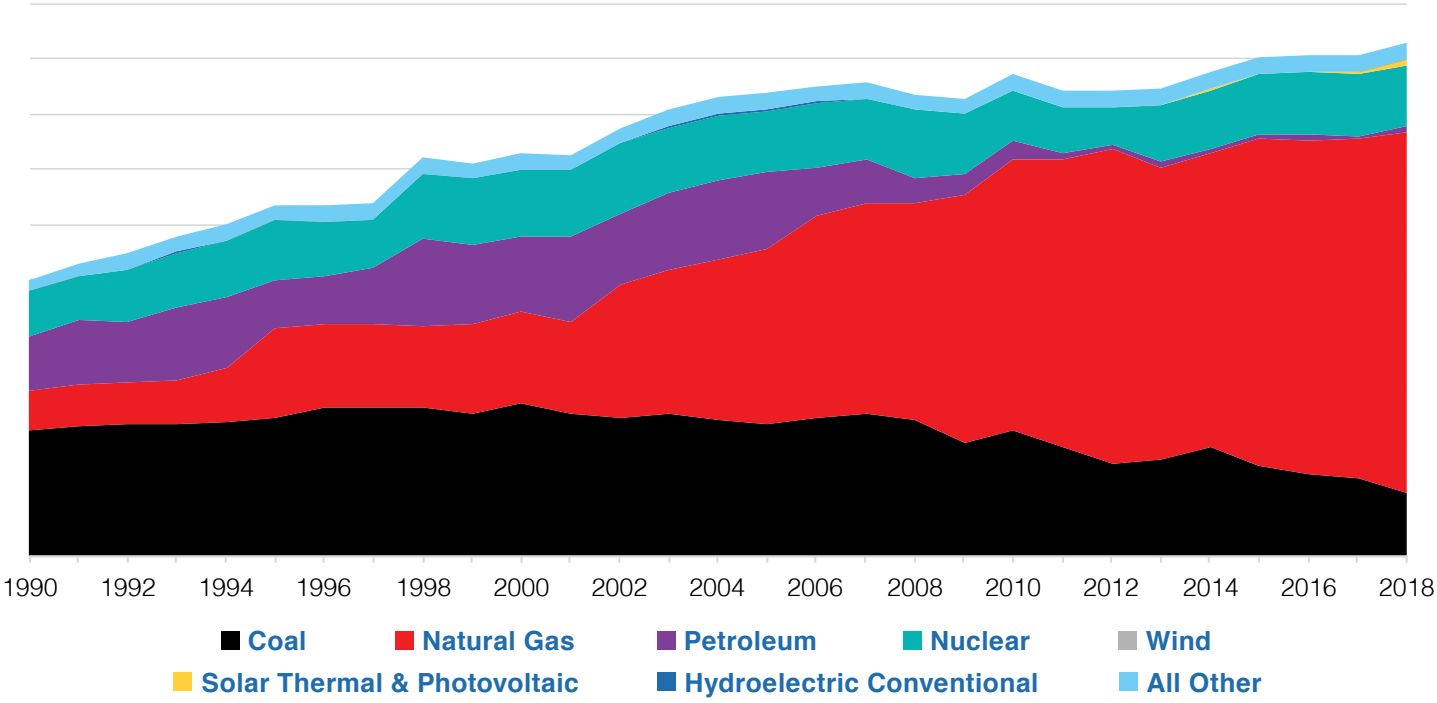
Southeast States – Gas as a Share of Electricity Generation, 2018



Source: Vote Solar analysis of 2019 U.S. Energy Information Administration Data

While Florida's reliance on coal and petroleum as fuel sources for electricity generation has significantly declined over the past several decades, those increasingly obsolete fuel sources have been replaced with volatile natural gas resources that now risk being priced out by emerging clean energy. Florida's reliance on natural gas is a relatively new phenomenon; just over a decade ago, the state derived less than half of its electricity from gas.

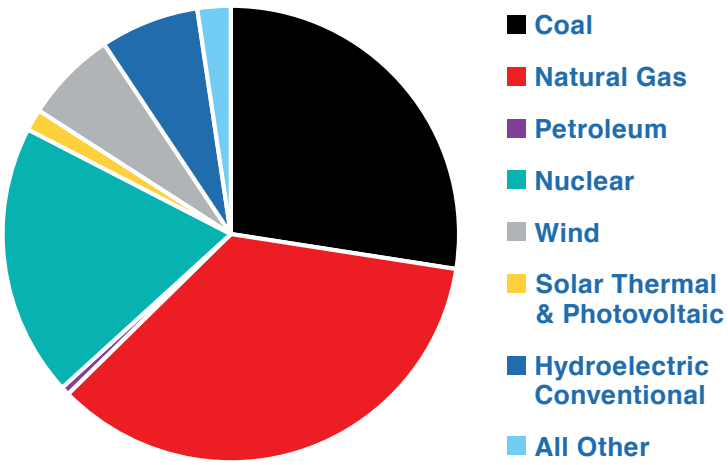
Florida's Total Electricity Generation Mix Since 1990, by Fuel



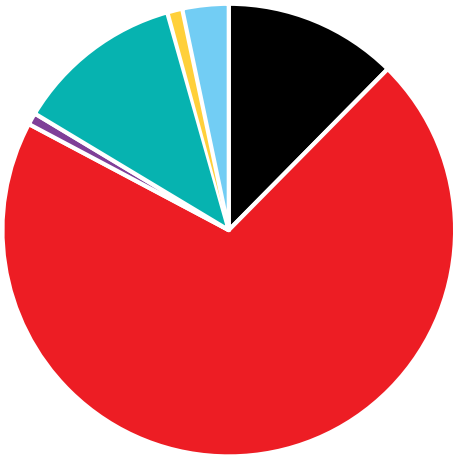
Source: Vote Solar analysis of 2019 U.S. Energy Information Administration Data

As shown in the pie charts below, while gas-fired generation plays a substantial role in electricity generation across the country, Florida's use is more drastic. The state now relies heavily on gas for electricity generation to serve its nearly 22 million residents.

Share of Generation, U.S. Total, 2018



Share of Generation, FL, 2018



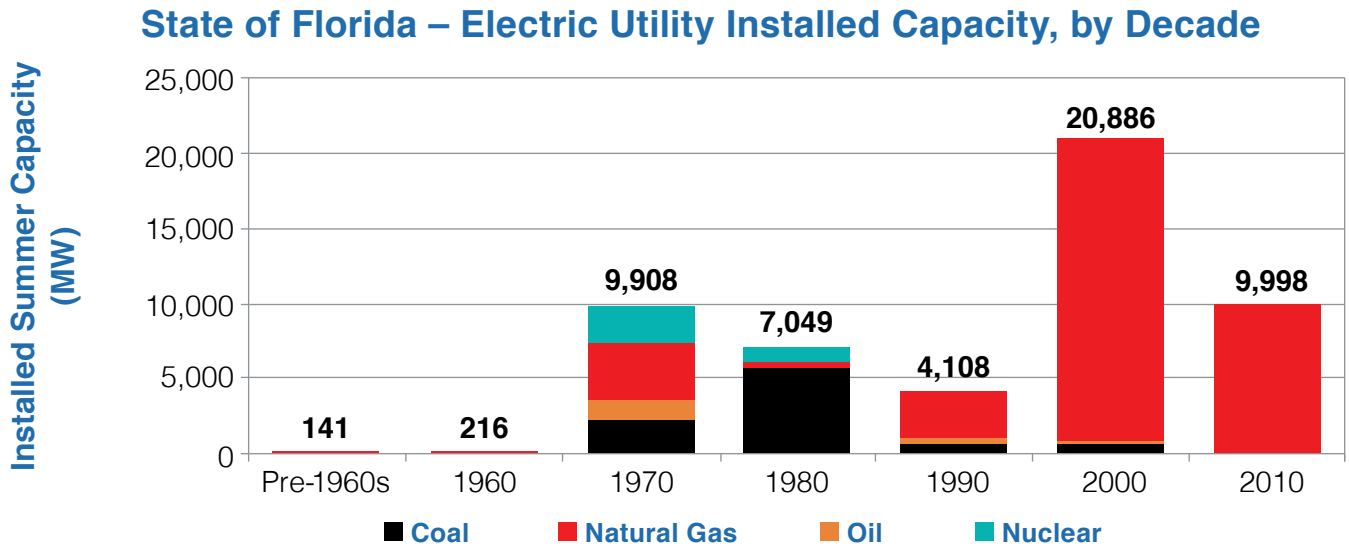
Source: Vote Solar analysis of 2019 U.S. Energy Information Administration Data

HOW DID WE GET HERE?

Big Bend Power Plant along the Manatee Viewing Center canal in Apollo Beach.

Each year, Florida's major utilities file proposals for meeting electricity needs over the next decade. These plans are evaluated by the Florida Public Service Commission (PSC), after which the PSC makes a determination as to whether each plan is suitable or unsuitable.[2] However, these plans may be amended at any time by utilities. Further, many natural gas investments — such as building a new gas combustion turbine — do not require advanced approval by the PSC prior to construction under Florida law. This dynamic gives utilities significant latitude over resource decisions.

Using this opaque process, Florida utilities have propelled Florida into this high-gas energy mix through a decade of overspending on gas generation. Since 1990, the vast majority of all installed capacity — over 33 GW of capacity — has been in gas plants.



Source: FRCC 2019 Regional Load and Resource Plan

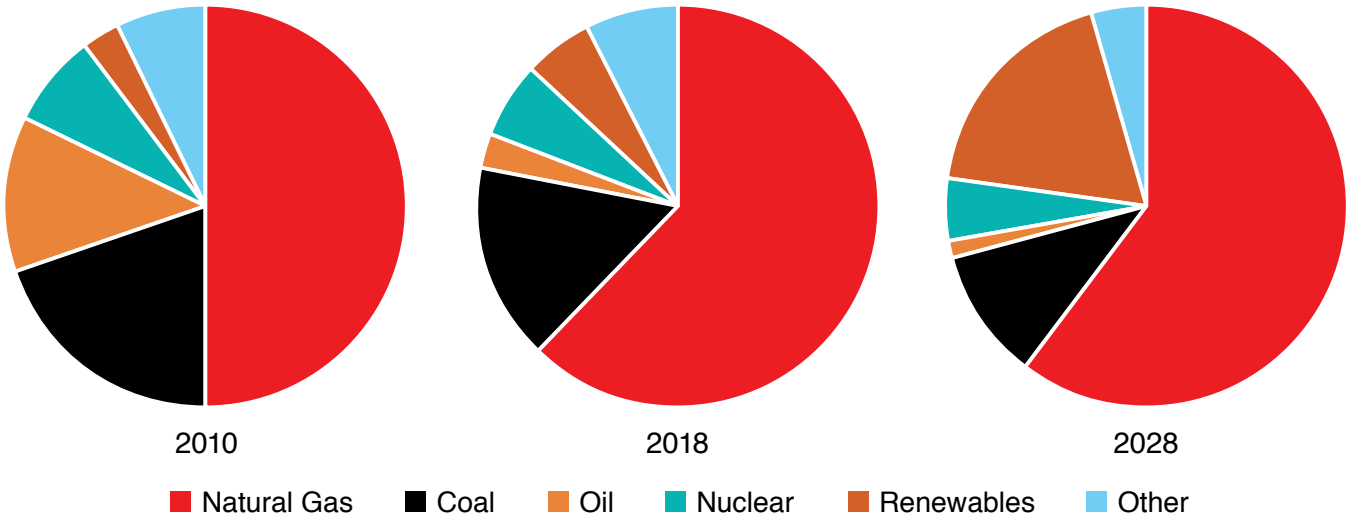
In its rapid turn toward gas generation, Florida has actually procured more resources than it needs to run the grid. A review by the National Energy Reliability Corporation found that Florida has 25% more generation capacity than it needs — almost double the recommended safety margin.[3] In fact, without adding any new capacity or counting energy imports, nuclear, or solar plus storage, Florida's fossil resources alone could serve peak summer loads through 2026. This oversupply of generation capacity means more equipment to maintain and higher costs for ratepayers.

WHAT'S ON TAP FOR THE NEXT 10 YEARS?

Florida Power & Light storage tanks sit along Manatee Lagoon in West Palm Beach at this natural gas plant. Photo taken May 2018.

Based on the most recently completed planning cycle, Florida plans to add several gigawatts of gas generation in this decade. Many of the projects being planned by major utilities are not subject to PSC pre-construction authorization.

Florida Historical, Current, and Projected Capacity, by Fuel Type



Source: U.S. Energy Information Administration Form 860, 2018.

The 2020 filings reveal more of the same from many Florida utilities, which will exacerbate consumers' exposure to gas risk over the next decade.[4] Upcoming projects include:

- FPL: Planning 600 MW of CC upgrades – *not subject to PSC pre-construction authorization*
- Gulf Power: Planning 938 MW of new combustion turbines – *not subject to PSC pre-construction authorization*
- Duke Energy: Total energy from gas to increase from 64.9% to 77.3% by 2029. They also plan to build 452 MW of new combustion turbines (*also not subject to PSC pre-construction authorization*)
- Tampa Electric Company (TECO): Total energy from gas to increase to 84.6% by 2029
- Florida Municipal Power Agency (FMPA): Total energy from gas to increase from 75.6% to 81.2% by 2029

FPL projects the cost of natural gas will almost double, increasing by 75% over the next decade from $2.42/MMBTU in 2020 to $4.25 in 2029.[5]

HOW DOES THIS IMPACT FLORIDA CONSUMERS?

NASA's first large-scale solar power generation facility at Kennedy Space Center. Image credit: NASA.

Florida utilities' over-reliance on gas is a gamble they are playing with Florida consumers' money. If gas prices increase, everyday Floridians will be on the hook for those payments. While natural gas prices are difficult to predict, at least one scenario from the U.S. Energy Information Administration would see gas double in price over the next ten years.[6] This would result in an extra $360 per year on every customer's electric bill.

Gas price shock is nothing new to Florida consumers. In 2006, in the wake of rising global prices compounded by supply disruptions caused by hurricanes in the Gulf of Mexico, the PSC approved a 19% bill increase for residential customers and a 30% to 41% bill increase for commercial and industrial customers of Florida Power & Light (FPL).[7] At that time, FPL's generation mix included only 37% natural gas — significantly less than it is today.

This Florida Power & Light power plant in Riviera Beach was demolished in 2011 and replaced with a natural gas plant.

If gas prices **double,**

Floridians could see their utility bills **increase by**

$360/year

In the past, electric utilities have turned to hedging their natural gas bet to mitigate this risk. But hedging brings its own hazards. Natural gas fuel contracts entered into by Florida's utilities lost consumers almost $7 billion between 2002 and 2016. Although the PSC imposed a moratorium on hedging in 2017, new hedging methods lost another $3.6 million in 2019 alone.

Adding to these risks, utilities now run a new risk of saddling consumers with stranded costs by building even more gas in an environment of cheaper, more reliable solar power and battery storage. Policymakers should carefully weigh these risks in assessing the prudence of continued investments of ratepayer funds in gas.

WHAT CAN FLORIDA DO ABOUT ITS DEPENDENCE ON GAS?

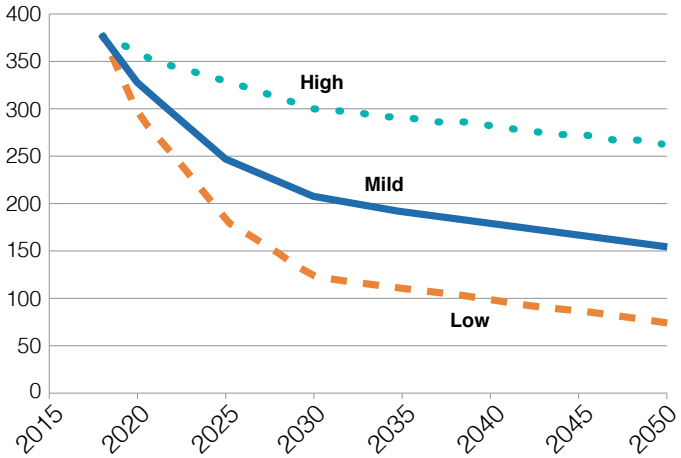
The cost of battery storage on large-scale solar projects continues to decrease.

Experts and advocates, from IHS Markit to the Edison Electric Institute, agree: The best way to mitigate risk is to minimize exposure through a diversity of fuels and technologies. Investing in a variety of resources will reduce Florida's overall exposure to any price fluctuation.

Fortunately, by combining clean energy resources, utilities can tap into cheaper, more flexible options for meeting future energy needs, while simultaneously diversifying Florida's energy mix. Battery storage promises to boost the efficiency and effectiveness of renewable energy sources, and is seeing significant price declines. This decline is projected to continue and makes solar plus storage opportunities even more attractive.[8]

- **According to the U.S. Energy Information Administration, solar power is now the cheapest generating resource available to Florida.[9] While Florida utilities' investments in solar power are growing, Florida drew just 2% of its electricity from solar in 2019.[10]**
- Solar is an even better investment in combination with other clean energy resources. An analysis by the Rocky Mountain Institute recently found that clean energy portfolios (a combination of solar, battery storage, and demand-side resources) can now provide the same services at lower cost than new gas-fired power plants.[11] **Clean energy portfolios can satisfy the same energy needs as four proposed natural gas plants in Florida — and save customers $1.1 billion along the way.**[12] As clean energy prices continue to decline, the potential for savings will only grow.
- The cost of battery storage has plummeted in recent years, and Florida is beginning to take notice. While Florida has only about 10 MW of storage installed, there is over 430 MW of such storage being planned for future implementation across the state.
- Unfortunately, Florida customers are missing out on savings from energy efficiency programs. Investor-owned utilities in Florida saved on average only about 0.22% of retail sales in 2015 through their efficiency programs.[13] And despite the fact that Florida's cost-effective energy efficiency potential is among the highest in the country,[14] the state captured only one-twentieth of its efficiency potential in 2017.[15]

Battery Cost Projections for 4-Hour Lithium Ion Systems



4-Hour Battery System Capital Cost (2018$/kWh)

Source: National Renewable Energy Laboratory, Cost Projections for Utility-Scale Battery Storage, June 2019.

Solar farm in Columbia County, FL.

CONCLUSION

Florida's reliance on gas is among the very highest in the country—and the state is poised to continue that reliance into the 2020s, creating significant risks for the state and a missed opportunity for local economic development. Cleaner and more affordable alternatives are available in the marketplace, offering a less risky path forward for Florida's electric utilities and ratepayers.

Florida needs strong leadership to promote investment in largely untapped clean energy resources like solar, battery storage, and energy efficiency that will keep Floridians' dollars in state, create local jobs, and power a clean, resilient future.

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