

## Carbon Wars

# Sunshine State lags on solar power, doubles down on natural gas

Florida is already feeling the effects of climate change. So why does it keep building carbon-spewing power plants it may not need?

By Jamie Smith Hopkins [🐦](#) [✉](#) email Kristen Lombardi [🐦](#) [✉](#) email 5:00 am, December 11, 2017 Updated: 8:09 am, December 11, 2017



Florida Power & Light's Riviera Beach gas-fired power plant, built in 2014. FPL now generates about 70 percent of its electricity with natural gas. Jamie Smith Hopkins / The Center for Public Integrity

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**VERO BEACH, Fla.—**The irony is rich. The Sunshine State taps the sun for less than half a percent of its electricity while making two-thirds with natural gas — a fuel that Florida must pipe in from other states.

Many have called this a risky bet. A coastal state already suffering punishing effects of global warming shouldn't keep building power plants that pump even more greenhouse gases into the atmosphere, the Sierra Club warned. Natural gas prices are low now but will inevitably wallop customers down the road, the Florida Industrial Power Users Group predicted. As far back as a dozen years ago, when gas supplied less than 40 percent of the state's

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electricity, then-Gov. Jeb Bush **said** utilities needed to stop depending so heavily on it.

But Florida's power providers and their state regulators haven't reconsidered their strategy. In fact, they're doubling down on it.

More gas-fired electricity generation is under construction or planned in this state than in all but four others, U.S. Energy Information Administration records show. The building boom includes not only these plants but also a hotly contested tri-state **pipeline** to feed them. The new construction follows a 15-year surge in gas-fueled electricity production in Florida that topped the nation, outstripping even major gas producers such as Texas and Pennsylvania.

Never in its history has the industry's key regulator, the state Public Service Commission, rejected a utility gas plant. The agency has repeatedly raised concerns about increasing reliance on gas, but its actions have moved the state further in that direction.

Now, even as they're finally accelerating solar development, Florida's electric utilities still expect to construct more than twice as many new megawatts powered by gas in the next decade as by the sun. Near Vero Beach on Florida's east coast, this tug-of-war is already on display.

On land next to citrus groves, workers are installing more than 300,000 panels for a new Florida Power & Light **solar site**, one of eight the utility has under construction. Together, they'll nearly triple FPL's solar-powered portfolio. But roughly 20 miles west, the company is building a gas-fired plant — among the three biggest planned nationwide — that will power far more homes than all those solar sites combined.

The Florida power users group, representing large industrial electric customers, was among those trying to convince the Public Service Commission two years ago that the \$1.2 billion-dollar Okeechobee gas plant wasn't necessary. Solar would be a cheaper, smarter alternative, the group argued.

"The proverbial 'You don't want to put all your eggs in one basket' comes to mind," Jon C. Moyle Jr., the group's attorney, **said** at a hearing.

FPL, the largest Florida electric utility, said falling costs are now making solar competitive and this power source should rise to 4 percent of the company's electricity mix by 2023. That's a significant hike. But it falls far short of top solar utilities such as Pacific Gas & Electric in California, already at **13 percent** last year.

Gas remains key to FPL's plans. Its switch from oil and coal over several decades has been an unalloyed positive, bringing cheaper electric bills, cleaner air and fewer climate impacts than many other power providers, said Matt Valle, FPL's vice president of development.

"We're completely unapologetic about making that shift," he said.

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But gas plants developed in Florida haven't simply displaced dirtier fuels. They're also serving growing areas or replacing older gas plants, expanding the reach and lifespan of fossil fuels in a region especially **vulnerable** to their side effects.

Already, coastal communities such as Miami Beach are **spending** millions of **dollars** raising roads and erecting pumps to combat flooding from sea-level rise. September's Hurricane Irma wreaked billions in damages after gaining strength in an abnormally warm ocean. Local officials face difficult choices as they try to tackle threats that climate-fueled changes pose to needs as basic as drinkable water and flushable toilets.

Nonetheless, Florida's three largest planned gas projects — two plants under construction and one plant FPL aims to rebuild — would pump out roughly 9 million tons of climate-warming carbon dioxide per year over their decades-long operating lives, according to the nonprofit Rocky Mountain Institute, which promotes cost-effective decarbonization. That's the climate **equivalent** of building two average-size coal plants. **Leaks** of the potent climate-warmer methane from infrastructure feeding the new projects will increase the **emissions hit**.

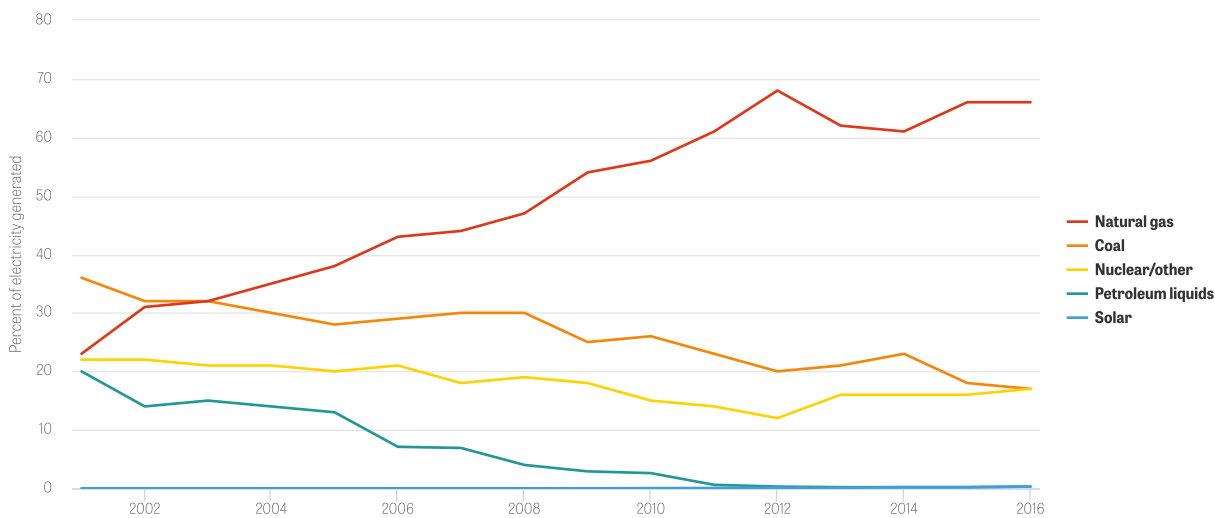
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### How the Sunshine State makes its electricity

Natural gas has rapidly become the dominant fuel for generating electricity in Florida. Estimates for 2017 through August show gas at 67 percent of the state's mix, with solar less than half a percent. Utilities are picking up the pace on solar development — but they're also adding more gas.



Source: U.S. Energy Information Administration

Highcharts.com

Florida has other options for keeping the lights on. But the path it's taking is a profitable route for its investor-owned utilities. The Public Service Commission keeps obliging them.

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The state wouldn't need so much gas if it prioritized energy efficiency to avoid expensive new power plants. But energy conservation costs Florida utilities money because they sell less power. Three years ago, the Public Service Commission cut conservation goals by 90 percent after the utilities argued they were no longer economical. This year, a national energy-efficiency nonprofit, comparing the largest electric utilities on conservation efforts, **ranked** Florida's among the worst.

Rooftop solar is another alternative. The state could offset nearly half its electricity needs this way, according to a 2016 federal **analysis**. But that too would **threaten** utilities' profits because they don't own those panels or the resulting power — their customers do. In 2014, the companies **convinced** the Public Service Commission to ax the state's solar rebate program. Last year, they spent more than \$20 million promoting a purportedly pro-solar ballot amendment **widely panned** as precisely the opposite.

Even without more conservation or solar, the state could have ensured that utilities build only those power plants Florida needs. But when weighing FPL proposals for projects in recent years, the Public Service Commission dismissed arguments from customer advocates that the company's own figures showed it already had plenty of extra power and was focused instead on increasing profits. FPL said it needed the plants for reliability, and the agency agreed.

The commission said it carefully weighs all its decisions to balance customers' and utilities' interests. Its deputy executive director for technical matters, Mark Futrell, said commissioners have seen value in — for instance — replacing old gas plants with more efficient new ones requiring less fuel for the same amount of energy.

"These things are considered fairly," he said.

But the watchdog group Integrity Florida concluded in a recent **report** that the system is effectively rigged in favor of the companies. Floridians representing consumers, businesses, environmental interests and state government echoed that finding in nearly 40 interviews with the Center for Public Integrity. They pointed to the millions of dollars the major utilities spend on campaign contributions that flow to state officials, many with a say over appointments to the five-commissioner agency, and the 96 lobbyists working on those companies' behalf.

"The power the utility industry has . . . is enormous," said Mike Fasano, a Republican who served in the state Legislature for two decades, "and anyone that tries to tell you differently is lying."

#### The natural-gas state

The story of natural gas in Florida is also a story of FPL, which serves roughly half the state's customers. The company, based in Juno Beach, started down this road to wean itself off oil. Then natural-gas prices jumped more than **fivefold** in the U.S. between early 1999 and mid-2008, with some of that increase ending up in utility bills.

Listen: FPL's Matt Valle on the utility's solar efforts

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In 2004, as FPL again sought to pass on higher fuel costs to customers, its officials **said** they would diversify their electricity generation to blunt such swings.



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Instead, FPL doubled its reliance on natural gas. Hydraulic fracturing — fracking — unlocked gas from shale, and that supply rush tanked prices beginning in 2009. Suddenly gas looked like a smart choice. Fuel diversity, not so much.

FPL said its strategy has saved consumers \$8.6 billion in fuel costs and prevented 108 million tons of carbon emissions since 2001.

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Its residential customers pay 19 percent less for each kilowatt-hour of electricity than do average Americans, according to federal figures for 2016. If the Obama-era Clean Power Plan were in effect, FPL said it would already be in compliance far ahead of schedule — with coal just 3.5 percent of its mix and **falling**, its rate of carbon emissions is 30 percent better than the national average. Even replacing old gas plants with new ones substantially reduces those emissions, FPL said.






What upsets critics isn't the shift to gas, but the extent of it — and that FPL and other Florida utilities are still adding gas plants. The electric grid covering most of the state is on track by 2021 to have the **largest** share of gas generation among all the U.S. and Canadian regional grids overseen by the North American Electric Reliability Corp., a regulatory body. This high reliance carries risks, the organization noted.

Florida utilities trying to protect against one risk — additional price spikes — have lost more than **\$6 billion** in the last 15 years in hedging bets gone bad, according to Public Service Commission filings. Customers shouldered that cost. Protecting against another danger — supply disruption — is one reason utilities said they needed the new Sabal Trail pipeline, upsetting out-of-state **property owners** whose land it crossed.

Past governors called for more renewable energy. Bush, a Republican who served from 1999 to 2007, **worried** about over-reliance on gas. Charlie Crist, the Republican-turned-independent (and later Democrat) who followed him, feared the consequences of global warming and pushed the state to take action, **winning no friends** in the utility industry.

His successor, heavily backed by utilities, has different priorities. Republican Gov. Rick Scott put an FPL executive on his transition team, **supported** the pipeline and made **national** news for **banning** the state's environmental protection agency from even referring to climate change.

### FPL's power mix

	Natural gas: 70 percent, up from 25 percent in 2001
	Oil: Half a percent, down from 26 percent
	Coal: About 3.5 percent, down from 6.5 percent
	Solar: Just under half a percent; FPL plans to hit 4 percent by 2023
	Nuclear: 22 percent

FPL buys the other 4 percent of its electricity.

Source: FPL. Images from the Noun Project: Tinashe Mugayi (oil), Ahock (power plant), Musmellow (coal) and Weltenraser (solar).

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Instead of being the renewable-energy leader Bush and Crist envisioned, Florida is rushing to catch up.

A 2017 **ranking** of states for the ease with which companies can use renewables, compiled for retail and information-technology trade groups, puts Florida sixth from the bottom. The state was 15th in the country for total solar generation last year, bested by less sunny places and far outstripped by other high-potential locales.

North Carolina — headquarters of Duke Energy, which runs Florida's second-largest utility — has nearly six times the electricity powered by rooftop and large-scale solar, according to Energy Information Administration data. If No. 1 California stopped building solar altogether and Florida added as much new production every year as it has right now in total, they wouldn't pull even until 2048.

FPL's solar track record helped fuel spirited **opposition** in Hawaii to parent NextEra Energy's ultimately **unsuccessful** plan to acquire that state's largest utility owner. Hawaii is aiming for 100 percent renewable energy for electricity by 2045. NextEra's sizable portfolio of solar and wind outside Florida — largest in the world, the company says — didn't assuage concerns.

Asked by the Center when it might reach 50 percent renewable power, as California may do as early as **2020**, FPL said that "setting an arbitrary goal for energy from renewable resources comes at a high cost and with reliability concerns." California has high electricity rates, FPL notes — though other factors have contributed, including an **overbuild** of gas-fired power plants.

Both FPL and Duke Energy said precipitous price drops only recently made solar competitive with gas in Florida, among the **minority** of states without a requirement for utilities to hit renewable targets. The state requires a cost-driven approach, and FPL's Valle said his company jumped on solar as soon as the economics worked.

"We're building more solar than just about any other utility in the nation now," he said.

Florida utilities told the state this year that they're expecting to build 4,000 megawatts of solar and 8,900 megawatts of gas-fired power plants in the next decade. FPL planned about 2,100 megawatts of solar, which it's now on track to build by 2023, and 2,900 megawatts of new gas-fired generation, retiring both coal and older gas units in the process.

*"We're building more solar than just about any other utility in the nation now."*

—Matt Valle, FPL's vice president of development

In August, Duke Energy Florida **agreed** to build 700 megawatts of solar over the next four years rather than the similar amount it had expected to spread over a decade, along with a battery-storage project and more than 500 electric-vehicle charging stations. Still, the utility is also building a 1,640-megawatt **gas plant**. It will be capable of making more electricity than the coal units the utility plans to retire next year and the incoming solar combined.

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The transition from fossil fuels isn't going faster because the company must consider customers' interests, said Tamara Waldmann, director of Duke Energy Florida's distributed generation strategy and renewables. "We want to be mindful of the affordability of electricity in our state."

#### The advancing disaster

Global warming brings its own costs. Air conditioning aside, these don't appear on electric bills.

Philip Stoddard thinks about this a lot. Sitting at his dining-room table in October, 32 days after Irma battered Florida, he said he and his wife are saving money to prepare for the day climate problems render their home worthless and force them out.

Stoddard, mayor of South Miami (population 12,000) and a biology professor at Florida International University, lives three miles inland in an area that would be **largely submerged** — along with much of South Florida — under what the federal government **considers** a worst-case but worryingly plausible scenario by the end of the century. Some Florida scientists **expect** even higher sea-level rise. Stoddard is focused on keeping the city livable as long as possible, which means battling a faster-arriving consequence of a warming world.

In low-lying South Florida with its porous limestone, climate-fueled heavier rains and rising oceans drive up groundwater levels. It's just a matter of time before that inundates a lot of septic tanks, said Leonard Berry, a coastal-risk consultant and professor emeritus at Florida Atlantic University. You flush your toilet, and the waste comes back — into your bathtub, your **sink**.

Stoddard, looking into fixes, sees a need for hard conversations with residents of his city's lowest-lying neighborhoods. Do they want to pay for expensive upgrades or risk owning homes without working toilets?

He sees a future where some communities get ahead of climate problems and others are overwhelmed. Meanwhile, he said, his utility company keeps building gas plants that emit even more of the carbon pollution fueling this slow-motion tragedy.

"It's going to cost more money, it's going to pollute the environment — it's like, why are they doing it?" said Stoddard, a fierce FPL critic. The answer, in his view: "They own natural gas."

*"It's going to cost more money, it's going to pollute the environment — it's like, why are they doing it?"*

—Philip Stoddard, mayor of South Miami

He's talking about FPL's 2015 investment in an Oklahoma shale-gas project, since turned over to another subsidiary of parent NextEra. NextEra also owns a third of the new pipeline, a deal in which Duke Energy took a smaller stake.

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1:45

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Stanley Pannaman, 74, a Vietnam War veteran helping the Sierra Club challenge a proposed gas-fired power plant, fears climate change's implications for his younger relatives.

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FPL said both investments mean “greater access to the fuel supplies needed to operate our power plants.” But the gas project was originally structured to make FPL money as well, and its parent will **profit** off the pipeline.

As for the Public Service Commission, it must approve the lowest-cost electricity — yet it could look at things more holistically. State law requires the agency to consider fuel diversity, for instance, but in practice it puts no value on it. In cost-benefit analyses, it doesn’t assign a monetary benefit to steps that would decrease gas reliance, according to the commission’s Futrell.

The commission also can examine future electricity costs related to climate change, a factor it cited in its **denial** of a proposed FPL coal plant a decade ago. That’s because customers will likely shoulder the cost of utilities’ power plants even if rules to curtail global warming force them into early retirement. But the agency couldn’t point to cases in which it had evaluated **the odds** that gas plants will become obsolete before they’re paid off.

That’s the fate facing new fossil plants if the world wants to meet the temperature goals set in the Paris climate agreement, which all countries **but the U.S.** have committed to achieve, said Drew Shindell, a climate scientist at Duke University. The alternative is installing expensive equipment to capture the plants’ carbon — or enduring more severe climate effects.

Shindell’s not arguing that gas is worse than coal. He’s saying the emissions are still too high. Continuing down the gas path, he warned, “will condemn Florida to going underwater.”

#### Florida’s power players

The shift across the country to cleaner electricity isn’t a simple exercise. Utilities must grapple with potential solar **tariffs, tax policy**, the likely future cost of battery storage, the best way of using intermittent energy sources. To make it easier and reward utilities for steps like helping customers use less power, some states have changed their regulatory structures by de-linking electric sales from revenues. Florida has not.

It’s hard to tell how much of Florida’s situation is driven by regulators as opposed to the companies they oversee. Investor-owned utilities, especially in recent years, have so much clout here.

The four largest of these utilities influence state lawmakers through political giving — in the 2016 election cycle alone, about \$1.4 million to the Republican Party, \$376,000 to the Democratic Party, at least \$1.5 million to political action committees supporting the governor and other major state officials, plus direct contributions to about 80 percent of currently serving state legislators. They influence appointments to the Public Service Commission, according to the Integrity Florida **report**, a process in which both the Legislature and governor play a role.

They even influence the commissioners, who know from **experience** that a good job in the industry could await “if they do the bidding of the electric companies,” said Aubrey Jewett, a University of Central Florida political



science professor. At least three former commissioners are lobbyists for electric utilities in the state.

Commission officials also realize if they push back too much, they'll lose their jobs, said Timothy Devlin, ousted as executive director of the agency in 2011. The same happened to four commissioners in 2010.

Early that year, those commissioners voted to approve just 6 percent of the nearly \$1.3-billion rate hike FPL asked for and rejected the \$500 million increase Duke Energy's predecessor requested. All were drummed out within months, **two** by the state Senate and the **rest** by a legislatively controlled nominating council.

During the rate case, FPL insiders said their company engaged in a covert campaign to undermine commissioners, according to a *Miami Herald/Tampa Bay Times* investigation. Consumer advocates saw their ousting as more of the same. FPL spokesman Dave McDermitt said in a statement that this and other claims about its pull in the state capital are "ludicrous charges by individuals or organizations with an old axe to grind or who are trying to advance their own political and/or policy agendas." Of FPL's spending on lobbying — **seventh-highest** in the state — and roughly \$15 million in political giving in the 2016 election cycle, he said, "Like most Americans, we participate in the political process."

Nancy Argenziano, an ousted commissioner who'd **complained about** furtive communications between commission staff and FPL, blames the **company** for her lost job. A fiery former Republican state legislator, she said the way the commission operates is appalling.

"It's a cesspool," she said. "The public has no chance."

David Klement bought a house in Tallahassee before getting kicked off the commission, and lost it to foreclosure. He said his credit has only just recovered.

"I was so sad and angry that my effort to be an objective commissioner was foiled," he said. "I could see the commission was going to go right back where it had been with rubber stamps and, sure enough, that's what it became."

There certainly seems to be no friction between the utilities and the commission anymore. At a regional conference last year, Julie Brown, its chair, welcomed the crowd of state utility regulators and industry executives, including from FPL and Duke Energy. She said she was looking forward to "the opportunity to have dialogue with fellow sister commissioners from different states in the South, and you know, not be subject to [the public-record] Sunshine Law ... and really talk about the best practices," according to audio recordings obtained by the Center, and urged "commissioners and utility leaders," who responded with laughter, to have coffee or a drink together, "get to know them and develop those relationships." Regulators and utility officials mingled over meals, golf and after-hours cocktails at the four-day conference.

The commission declined the Center's requests to interview Brown and other commissioners. In a statement, it said Brown was simply encouraging commissioners from other states to strengthen their relationships with each other "and learn best practices." The agency "vigorously strives to ensure that Florida's consumers receive reliable, safe service at a reasonable cost," balancing consumers' needs with those of utilities, it said in its statement.

Critics often point to FPL's gas-drilling deal in Oklahoma to illustrate how the commission tips the scales in favor of utilities. In 2014, the company asked to pass the cost of that investment on to customers, calling it an innovative way to lower fuel prices. Business and consumer groups argued the arrangement would force customers to shoulder "all the risk, 100 percent of it," while FPL would get a guaranteed profit, said J.R. Kelly, who represents ratepayers as the state's public counsel. Commissioners approved it against their staff's recommendations. Last year Florida's Supreme Court **ruled** that state law prohibited the move, overruling the commission. FPL had to refund \$24.5 million to its customers.

FPL, undeterred, asked for a new law authorizing the investments. Legislators lined up in **support** this spring until the House speaker spiked the bill. Some environmental and consumer advocates worry FPL will try again.

Utilities' vigorous attempts to shape rules that affect them extend to rooftop solar.

Slightly over half the states allow "third-party" companies to put panels on customers' roofs for free and sell them the power, popular because it costs nothing up front. In New Jersey, which has less sun and a lot more solar than Florida, residents have **largely** gone that route. In some states it's unclear whether the option is legal, but Florida is among the minority banning it outright.

As the Southern Alliance for Clean Energy, Conservatives for Energy Freedom and others worked to get a measure on the ballot to change that, four utilities spent millions funding a competing effort to protect it — by enshrining it in the state constitution with language that sounded misleadingly pro-solar. Only the utility-backed measure won enough signatures to appear on the ballot in November 2016.

The political-action **group** the utilities funded said the proposal "guarantees your right to place solar panels on your home" and would save residents from "rip-offs and scams," such as businesses that "don't want consumers to own and operate their own solar equipment" — presumably meaning firms that would offer an option to buy the power instead. (The group denied the measure would prohibit such deals.)

"The utility companies had a lot of people tricked," said Zayne Smith with AARP Florida, which advocates for older Americans.

A strange bedfellows coalition of Tea Party conservatives, climate activists, Florida's League of Women Voters, singer **Jimmy Buffett** and others turned the tide — along with a leaked recording of an official from a utility-funded think

tank **saying** how delightfully sneaky the ballot measure was. Voters defeated it.

The utilities still say they were looking out for customers. The “primary objective was to stop the dangerous, anti-consumer proposal” that never made it on the ballot, FPL’s McDermitt said in a statement.

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### The 'Ponzi scheme'

In states like Florida, where utilities still own power plants, the profitability of those assets acts as a “perverse” incentive to build more whether they’re needed or not, said Travis Kavulla, a Montana utility regulator and former president of the National Association of Regulatory Utility Commissioners. State officials must act as a check, he said.

Utilities do need some extra capacity as a cushion to avoid blackouts. The North American Electric Reliability Corp. uses a 15 percent reserve — after accounting for certain efforts to **reduce energy use** — as the standard for systems like those in Florida. Robert McCullough, a former utility executive now with energy consulting firm McCullough Research, said that even less — around 10 percent — would be sufficient for Florida.

But the state’s Public Service Commission struck a deal years ago with investor-owned utilities in Florida’s peninsula — most of the state — to have them keep a higher reserve of 20 percent. It stems from concerns that the peninsula is vulnerable because utilities can go only one direction if they need out-of-state power in an emergency. Florida “must be more self-reliant to maintain system reliability,” FPL’s McDermitt said in a statement.

But there’s so much queued-up generation that the peninsula’s electric reliability body **expects** the combined reserve will reach 25 percent by 2023.

Karl R. Rábago, a former utility executive and Texas utility regulator, examined FPL’s Okeechobee plant proposal for an environmental coalition challenging it in 2015. The company’s fleet was so large already that its own calculations showed a blackout risk equal to 1 day in roughly 2,600 years, “comparable to the risk of death caused by a falling meteor,” he told the commission. FPL expected the risk to rise before the plant’s opening, he said, but remain far smaller than the industry standard — 1 day in 10 years.

The Florida Industrial Power Users Group **made a similar case** about another proposed power plant. “FPL needs the Project largely to meet the financial projections provided to Wall Street,” the group told the commission.

FPL — which earned nearly \$11 billion in revenue last year, propelling its parent to 170 on the Fortune 500 — won in both cases. The company **called** arguments by Rábago and others “unreliable and not worthy of serious consideration.” It pointed to a day in 2010 when it said it narrowly avoided a

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blackout despite a low risk calculation. It told the commission its programs reducing power usage had over the years “avoided the construction of the equivalent of 14 new power plants of 400 MW each.”

Rábago, who heads the Pace Energy and Climate Center at Pace Law School in New York, said FPL could have avoided even more if it had pursued the energy conservation it had claimed wasn’t cost-effective.

“It’s a Ponzi scheme,” he said. “You can’t keep delivering profits to your shareholders if you’re not re-upping and building newer plants.”

#### The solar push

Jody Finver drew gasps as she showed her electric bills to a roomful of people in Miami Shores: under \$10 a month, down from roughly \$110 before she put solar panels on her roof. Finver was telling the crowd how to go solar cheaper with **Solar United Neighbors of Florida**, a nonprofit helping people form co-op buying pools to get bulk discounts and technical assistance.

Finver’s panels produce enough to power her house and then some. But any amount of utility-produced power you don’t need because you’re making it yourself is great, she told the crowd. On top of saving money, “it means you’re not relying as much on the grid.”

A chapter of an organization expanding around the country, the group formed in the middle of last year’s battle over the solar amendment. It was kick-started by people like Deirdre Macnab, former president of the Florida League of Women Voters.

Utilities say the state has low rooftop solar adoption because electric rates are cheap. But because Floridians use more electricity in their hot — and getting **hotter** — state, the average residential bill here is nearly 10 percent higher than (and FPL’s roughly the same as) the national average. Macnab, who paid \$3,000 a year for electricity before solar panels reduced that by two-thirds, said the co-op pitch is simple: You can save, too.

“We’re trying to get the state to a tipping point,” she said.

Solar United Neighbors of Florida has launched 19 co-ops, some still enrolling members and others that have helped about 500 households go solar. Six more co-ops are planned for January alone. Organizers are heartened by the demand — their waiting list for new co-ops extends through next fall — and by communities taking their own steps to move the needle.

Among those is Orlando, a city trying to go entirely renewable by 2050. Leaders made that commitment knowing their utility would cooperate: It’s municipally owned.

It’s also coal-heavy, so there’s a lot of work to do. Chris Castro, Orlando’s director of sustainability, thinks the goal is necessary and attainable. The city



A worker prepares the ground at Florida Power & Light’s Indian River solar-energy center, under construction near Vero Beach, Florida. Jamie Smith Hopkins / The Center for Public Integrity

is trying everything: Amped-up conservation that propelled Orlando from the 30th to the 20th most efficient large city in the country in a 2017 [ranking](#). A new solar site on a coal-ash landfill. A planned solar-with-battery-storage project. Panels on parking-lot roofs and a floating solar array in a pond.

And rooftop solar? Orlando's utility is getting into the business. Taking a page from the co-ops, it's launching a [program](#) to help customers aggregate their demand for lower prices.

But the utility serves 250,000 households and businesses. FPL, with 4.9 million customers, shapes Florida's future in a bigger way.

Becky Ayech of the Environmental Confederation of Southwest Florida, which failed to convince regulators to reject the Okeechobee power plant, rues the direction the state is going. She sees the television commercials touting FPL's record on solar. And all the while, Ayech said, "they're still building a giant gas plant."

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**Karl Rabago** · Consultant at Rabago Energy LLC

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