

FSEC Advisory Board Meeting

November 18, 2025

Virtual Meeting



Agenda

Time	Description	Speaker
3:00 p.m.	Welcome	Jen Szaro, Chair, FSEC Advisory Board; President & CEO, Association of Energy Services Professionals (AESP)
	Roll Call of Members	Sherri Shields, Communications Director, FSEC®
	Approval of June 5, 2025 Minutes	Jen Szaro, Chair
	Status of FSEC Programs	Jim Fenton, Director, FSEC®
	Open Discussion	
4:30 p.m.	Adjourn	

FSEC Advisory Board Meeting Status of FSEC Programs

November 18, 2025

**UCF laid off 90% of the FSEC Staff
(Due to Federal Clean Energy Cuts) on 11/14/25**



- In 2020 UCF main campus assessed FSEC's facilities and determined the cost to maintain them exceeded available funds and suggested a relocation to the main campus.
- Although that did not happen at the time, unfortunately, they have again reached that conclusion and have directed us to begin planning for the relocation.
- A working group is tasked with planning the move and timeframe over the next year with the aid of UCF Real Estate & Space Administration. Our working group will evaluate all possible solutions, including utilizing space at the UCF/EFSC joint-use facilities.
- While it is premature to speculate the exact outcome, I wanted to make you aware of our current situation, ~~and know that I am committed to keeping our team together and maintaining access to our current research facilities, if at all possible.~~
- Since our focus is now on relocation and funding challenges, we have decided to **cancel our 50th Anniversary Celebration and Open House on October 4th.**
- ~~• We will still hold our advisory board meeting on Friday, October 3rd, at our typical 9:30 a.m. to 12:30 p.m. time slot with lunch served afterward.~~
- The timeframe for any relocation is not immediate and we are moving forward with planned research and other events. ~~Our Middle School Science Bowl (February) and EnergyWhiz (April) events will continue to be held at FSEC in 2026.~~

SAVE *the* DATE!

SATURDAY

OCTOBER 4, 2025

10 AM - 4 PM

Join

Florida Solar Energy Center's
50th Anniversary Celebration
and **Open House**

- Tours of FSEC
- Consumer Information Sessions
- Hands-on Educational Activities
- Ask-An-Energy-Expert Station
- Clean Fuel Vehicles
- Indoor & Outdoor Exhibits
- Food Trucks



Celebrating 50 Years Under the Sun



<https://energyresearch.ucf.edu/50th-anniversary/>

1679 Clearlake Road, Cocoa, FL 32922



EnergyWhiz

*Empowering Student Innovation
for a Clean Energy Future*

EnergyWhiz is Cancelled!

All registration fees will be refunded.

Due to the defunding of Clean Energy programs by the Federal Government, the University of Central Florida (UCF) has laid off 90% of the Florida Solar Energy Center (FSEC) workforce. We are unable to continue the EnergyWhiz program at FSEC.

On November 14, 2025

UCF Laid off 90% of Remaining FSEC Staff

	Staff Before 07/01/2025	Staff Before 10/30/2025	Staff After 01/01/2026 (no Fenton Reports)	Staff After 07/1/2026
Directors Office:	2	1	1	0
Methane and H2	6	6	4	1
Workforce (WBD)	9	9	0	0
Solar	5	5	3	2
Computer (CIT)	5	5	2	2
Facilities	7	4	0	0
Buildings (BR)	22	22	6	2
Communications	3	2	0	0
Students (OPS)	7	7	0	0
TOTALS	66	61	16	7

What Happens Now?

Lots of Unanswered Questions



Excitement about Growth in Clean Energy, October 2024

**An Uncertain Future in June 2025
Becomes a**

Cancelled Future in October 2025



- **Zeroed Out DOE Funding for Solar, Wind, & Hydrogen**
 - Trump Administration Budget Request *June 2025*
 - House Republicans' Bill *September 2025*
- **Major cuts to Office of Energy Efficiency & Renewable Energy (EERE)**
 - 74%, Trump Administration Budget Request *June 2025*
 - 50%, House Republicans' Bill *September 2025*
- **Cancelled Current DOE Awards**
 - The administration **cancelled billions in previously approved clean energy funding** (back to Sept 2024).
 - Most cancellations after Government Shut Down on October 1, 2025
- **DOE Staff Reassignments or Layoffs:** Mid-Oct 2025
 - Solar, wind, and hydrogen office staff.
- **UCF FSEC Reductions (July 30 to Oct 30, 2025):** Fairey, McCarl, Aycart, Velez, Hale*, and Babilonia Hernandez.

* Business Administration Office SET Employee

Department of Energy: R&D to Decarbonize Buildings Under the DOE BENEFIT (Building Energy Efficiency Frontiers & Innovation Technologies) Program

- **Topic 2: Innovative, Replicable Low-Cost Roof and Attic Retrofits.**
“Improving Energy Efficiency and Moisture Control Using Lower-Cost Construction Methods to Unvent Attics in Hot Humid Climates.”
Award Letter Received: 09/18/2024 | POP 01/01/2025 – 12/31/2027 | **Withers, Sonne, Fenaughty, McIlvaine, Panchabikesan, Vieira**

This project aims to simplify and reduce costs for attic retrofits by demonstrating and validating the concept of ***burying ducts with blown-in insulation while converting the attic from a vented to unvented (sealed) attic without the need for more costly spray foam in hot-humid climates.***

Partners: Owens Corning & St. Johns Housing Partnership

\$1.2 million | PI: C. Withers

Department of Energy: R&D to Decarbonize Buildings Under the DOE BENEFIT (Building Energy Efficiency Frontiers & Innovation Technologies) Program

- **Topic 3: Building Resilience and Electricity Capacity Constraints**
Subtopic 3B: Resilient Cooling Solutions for Overheating Protection in Buildings
“Mitigating Extreme Heat Events in Hot Humid Climates.”

Award Letter Received 09/18/2024 | 06/01/2025 – 05/31/2028 | Chasar, Panchabikesan, Parker, Raustad, Martin, Vieira

The University of Central Florida and partners will develop and demonstrate an *affordable, energy-efficient, portable cooler to maintain indoor thermal comfort and survivability during extreme heatwaves.*

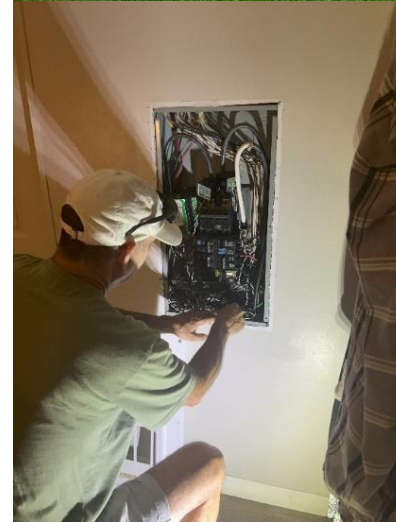
Partners: Transaera and Southeast Energy Efficiency Alliance

\$1.4 million PI: **D. Chasar**

Locked Up \$2.8M DOE Funds

- "PV-GEMS: Photovoltaic Powered, Grid Enhanced Mechanical Solution. A pre-packaged approach providing high efficiency and resilient space conditioning, and water heating" Budget Period 2, Phase 2
| U.S. Department of Energy | Prime |
07/01/2022 – 08/30/2028 | \$3,653,157 |
E. Martin, C. Colon | **Status: Seeking continuation to unlock remaining BP3 and BP4 funding (\$2,789,953), 12/31/2025**
- Other staff with hours: Parker, Chasar, Withers, Raustad, McIlvaine, Sonne, Nigusse, Fenaughty, Metzger, Shields, Waters

Delayed Current Program



\$6.11M

Cancelled and Delayed BUILDINGS DOE and DOE Subcontract Funding

- FSEC Prime



- **"Improving Energy Efficiency and Moisture Control Using Lower-Cost Construction Methods to Unvent Attics in Hot Humid Climates."** | U.S. Department of Energy | **Award Letter Received 09/18/2024** | **DOE Silent on Contract Negotiations** | POP 01/01/2025 – 12/31/2027 | Withers, Sonne, Fenaughty, McIlvaine, Panchabikesan, Vieira | PI: C. Withers **(\$1.2 M)**



- **"Mitigating Extreme Heat Events in Hot Humid Climates."** | U.S. Department of Energy | **Award Letter Received 09/18/2024** | **DOE Silent on Contract Negotiations** | POP 06/01/2025 – 05/31/2028 | Chasar, Panchabikesan, Parker, Raustad, Martin, Vieira | PI: D. Chasar **(\$1.4 M)**



- **"PV-GEMS: Photovoltaic Powered, Grid Enhanced Mechanical Solution. A pre-packaged approach providing high efficiency and resilient space conditioning, and water heating"** | U.S. Department of Energy | **Status: Seeking continuation to unlock remaining BP3 and BP4 funding, 12/31/2025 (\$2.8M)**

- FSEC Subcontracts



- **"Automation of Performance-based Compliance Quality Control and Reporting"** | Karpman Consulting [U.S. Department of Energy] | 10/1/2024 – 06/30/2025 | **Award Letter Received: 10/30/2024** | **Cancelled by DOE 10/03/2025** | Nigusse & Swami | Pls Nigusse & Swami **(\$130K)**



- **"Validated Automation of 90.1 PRM and S-PRM in Commonly Used Simulation Tools"** | Karpman Consulting [U.S. Department of Energy] | 1/1/25 - 12/30/2027 | **Award Letter Received: 09/12/2025** | **Cancelled by DOE 10/03/2025** | Nigusse, Swami, Panchabikesan | Pls B. Nigusse & M. Swami **(\$466K)**



- **"Zero Carbon Performance Code Implementation"** | City of Fort Collins [U.S. Department of Energy] | 9/24/2024-9/30/2025 **Status: Waiting for DOE for extension** | PI K. Fenaughty **(\$116K)**

\$1.2M+\$1.4M+\$2.8M+\$130K+\$466K+\$116K= \$6.11M



\$580K

Cancelled and Delayed METHANOL & H2 DOE Subcontract Funding

- FSEC Subcontracts

- “Intensified, Modular Plant for Conversion of Stranded associated Gas to Low-Carbon Methanol and Derivatives” | M2X [U.S. Department of Energy] | 10/1/2024 – 06/30/2025 | Award Letter Received: 05/17/2024 | **DOE Silent on Contract Negotiations** | Rigo and Chukwunta | PI Fenton (**\$240K**)



- “Long-duration Fleet Deployment of a Modular Plant for Flare Elimination and Low-carbon Methanol Production”— | M2X [U.S. Department of Energy] | 10/1/2024 – 06/30/2025 | **Leaked List to be Cancelled by DOE** | Rigo and Chukwunta | PI Rigo (**\$240K**)



- “Demonstration of Integrated Hydrogen Production and Consumption for Improved Utility Operations” | Orlando Utilities Commission [U.S. Department of Energy] 10/21/2021-09/04/2025 | **Sponsor Ended as of September 4, 2025** | **On Leaked List from DOE being Cancelled as of 10/10/2025** | Fenton, Haggi, Wang | PI Fenton \$583,583 (~\$100K left)



Leaked List to be Cancelled by DOE

\$240K+\$240K+\$100K= \$580K

FSEC™

<https://www.latitudemedia.com/news/theres-a-second-doe-project-cancellation-list>



Full Proposal



- “Fluorine-free, Highly Ion-conductive, Thermally and Chemically Stable Polynorbornene-based Block Copolymers for High-Temperature Proton Exchange Membranes and Ionomers” | University of Alabama (U.S. Department of Energy) [Advanced Hydrogen and Fuel Cell Technologies to Drive National Goals](#) | Subcontract | 36 months | **\$50,000** | J. Fenton | Status: Submitted to EERE on 02/14/2025. *No DOE Feedback on Full Proposal*

Concept Papers



- “Leveraging grid edge technical measures to bring resiliency and efficiency to underserved communities” **\$6M** DOE EERE Connected Communities RFP + (Jinko Solar \$1.7M, & UCF \$900K Matches) | UCF Prime | **Full Proposal not submitted as UCF is located in Florida as is JinkoSolar which manufactures ~4GW of solar panels in Jacksonville Florida.**

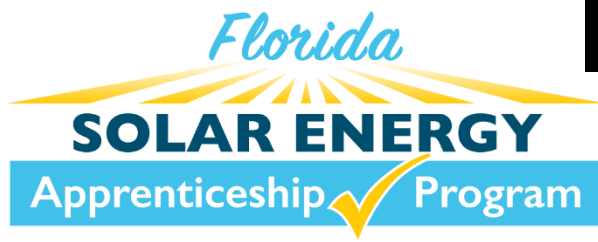


- “Farmers Empowered: Agrivoltaics Education and Support from Conception to Long-Term Operations” | U.S. Department of Energy [Solar with Wildlife and Ecosystem Benefits 2 \(SolWEB2\)](#) | Prime | 36 Months | **\$1,000,000** | M. Matam | Status: Submitted. *No DOE Feedback on Concept Papers* | Concept Papers Due EERE: 02/14/2025 | Full Application Due EERE: 05/02/2025 | Selection Notification EERE: 07/15/2025 | Expected Timeframe for Award Negotiations: July-December 2025 | UCF Concept Paper in EERE has been at Submitted Status since 02/14/2025 and hasn’t changed



- “D3Flex: Advanced Cable Management Solutions for Floating Solar Arrays” | D3 Energy [U.S. Department of Energy] [Solar Module and Solar Hardware \(SMASH\) Incubator](#) | Subcontract | 36 months | **\$1,000,000** | M. Matam | Status: Submitted. *No DOE Feedback on Concept Papers* | Concept Papers Due EERE: 03/21/2025 | Full Application Due EERE: 05/30/2025 | Selection Notification Date: 11/2025 | Award Negotiation Timeframe Not Announced | Nothing heard from DOE as of 10/22/2025





- Thirty-two apprentices, 12 employers
- FSEC produced and provides Related Technical Instruction
 - 250+ classroom hours
 - Online, on-demand
- Tax Credit Benefits to Large Customers
- Solar For All
 - Workforce Development Requirement
 - Would have generated hundreds of jobs and apprentices

Cancelled \$156M to Florida Low Income Households



Florida's low-income households lost a \$156M “Solar for All” grant under Trump's EPA (August 2025), halting free rooftop systems and sparking legal battles.

<https://southsidedaily.com/florida-low-income-solar-subsidy/>



What Happens to FSEC if Federal Funds are Released?



FSEC VISION

Promote the rapid transition to a sustainable energy economy through renewable energy, energy efficiency, and sustainable transportation research, demonstration, and education.

FSEC MISSION

Develop, research, and evaluate energy technologies that enhance the environment and economy, and **transfer the results to the public, students and practitioners.**

- **Advisory Board Becomes the “Florida Energy Think Tank”?**
- **Find Ways to Resurrect FSEC?**
- **Funding from the Rate Payers instead of the Federal Government?**
- **Florida Should Fund Energy Efficiency!**
Like Florida Funds Agriculture.

Advisory Board Partners

Consumers



Builders/ Consultants



Electric Utilities



Manufacturers



Associations/ Government



FSEC Helped Make This Happen in 2015 (Bush is an Oil Man)

President's Vision for the Solar America Initiative Changing the Way We Power Our Homes and Businesses

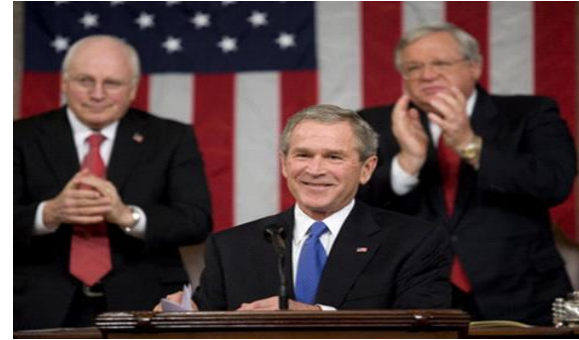


“I believe that with the proper amount of research, whether it be public or private, we will have solar roofs that will enable the American family to be able to generate their own electricity.”

- President Bush, National Renewable Energy Conference, St. Louis, MI, October 2006

“One day, technologies like solar panels and high-efficiency appliances and advanced insulation could even allow us to build ‘zero-energy homes’ that produce as much energy as they consume.”

- President Bush, 16th Annual Energy Efficiency Forum, Washington, DC, June 2005



“So tonight, I announce the Advanced Energy Initiative -- a 22-percent increase in clean-energy research -- at the Department of Energy, to push for breakthroughs in two vital areas. To change how we power our homes and offices, we will invest more in zero-emission coal-fired plants, revolutionary solar and wind technologies, and clean, safe nuclear energy.”

- President George Bush,
2006 State of the Union Address

The goal of the Solar America Initiative is to reduce the cost of solar photovoltaic technologies so that they become cost-competitive by 2015.

New survey shows majority of Florida GOP voters back clean energy initiatives

‘Pocketbook issues are clearly the number one issue of concern.’

BY: MITCH PERRY - SEPTEMBER 16, 2025 3:44 PM



<https://floridaphoenix.com/2025/09/16/new-survey-shows-majority-of-florida-gop-voters-back-clean-energy-initiatives/>

Results of Survey:

<https://cleanenergyconservatives.com/wp-content/uploads/2019/02/232432-CEN-FL.pdf>

An overwhelming number of Floridians report that their utility costs are rising, according to a statewide [poll](#) of voters showing that nearly **78%** back alternative, clean energy sources that could mitigate those rising prices. The survey of 1,000 likely 2026 voters commissioned by Conservatives for Clean Energy Florida shows that **63%** of Republicans support clean energy initiatives.

Florida Clean Energy Jobs


3.6 times Direct Agriculture Production

Florida Funds Agriculture. Florida Should Fund Energy Efficiency!

TABLE 4 // U.S. CLEAN ENERGY EMPLOYMENT by sector 2024

State	Clean Energy Jobs	2024 Growth	Jobs Added Since 2020	Renewable Generation	Storage & Grid	Energy Efficiency	Biofuels	Clean Vehicles
Florida	183,951	4.7%	23.3%	29,925	6,763	132,060	2,838	12,365
Georgia	85,535	4.0%	20.9%	11,403	4,868	61,036	553	7,675

FL SOLAR State Spotlight



RANKINGS

3rd
for total installed solar capacity

CAPACITY

2nd Residential	3rd Utility	17th Non-Residential DG
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PER CAPITA

17th Residential	9th Utility	36th Non-Residential DG
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Total Solar Installed (MW)

20166.8

4866.6 MW in 2024

14,108
Solar Jobs
Ranks 2nd

FL Solar Market Value

\$31.7B

\$6.7B Invested in 2024

Enough to Power

2,368,717
FL Homes

Powered by

447
Solar Companies

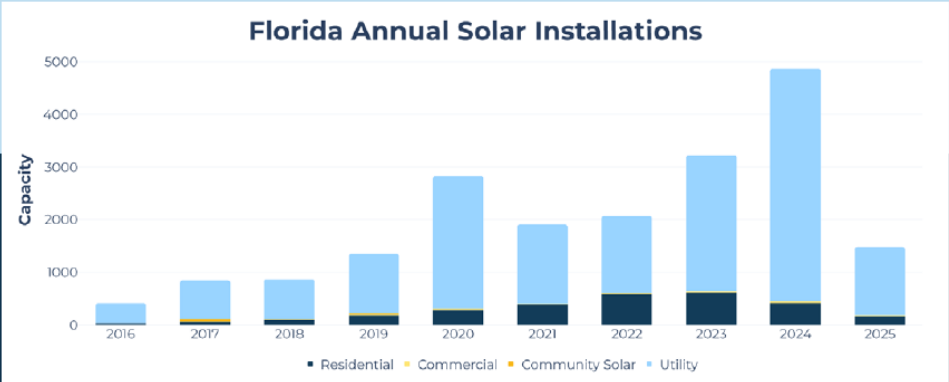
Growth Projection Over the Next 5 Years (MW)

12974

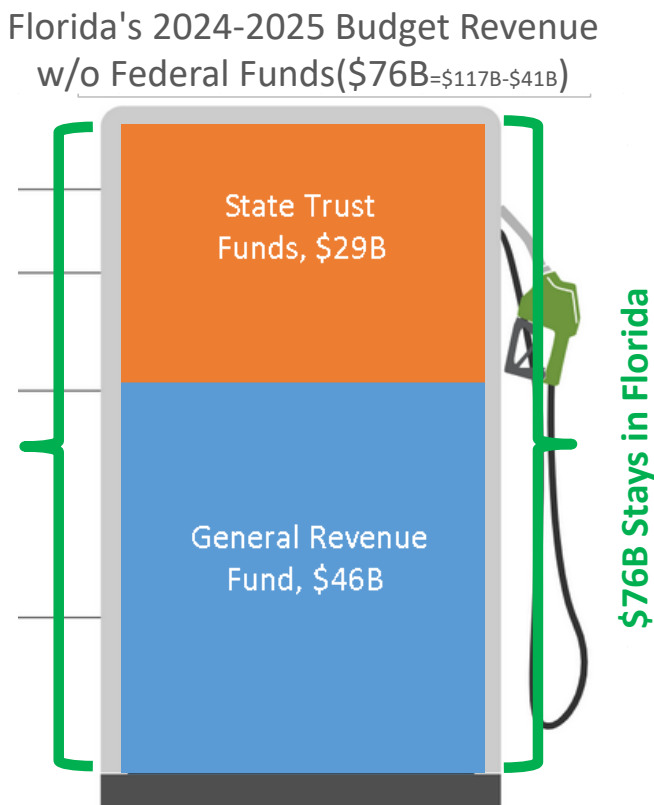
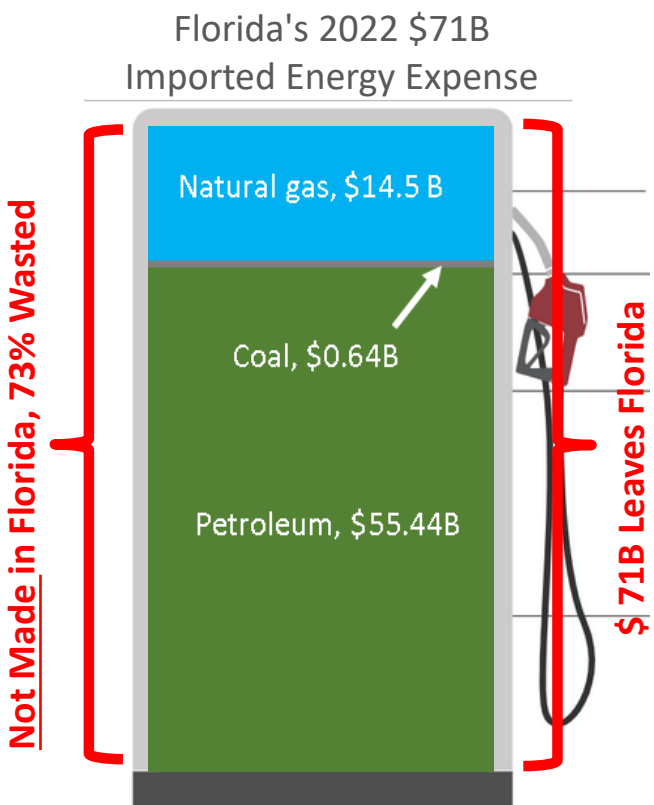
Ranks 4th

9.77% of FL electricity is from solar

4.65% of FL homes have solar



Florida's Fuel Imports Equal State Budget and 50% of US Exports

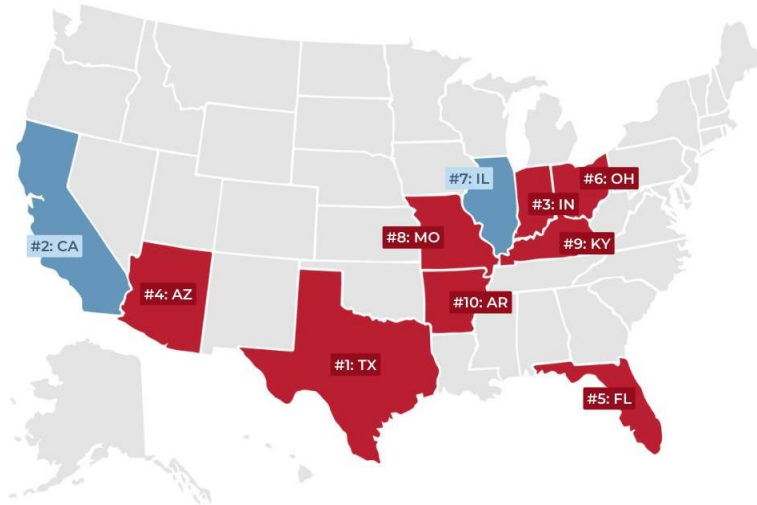


■ US oil and gas exports ■ China green tech exports



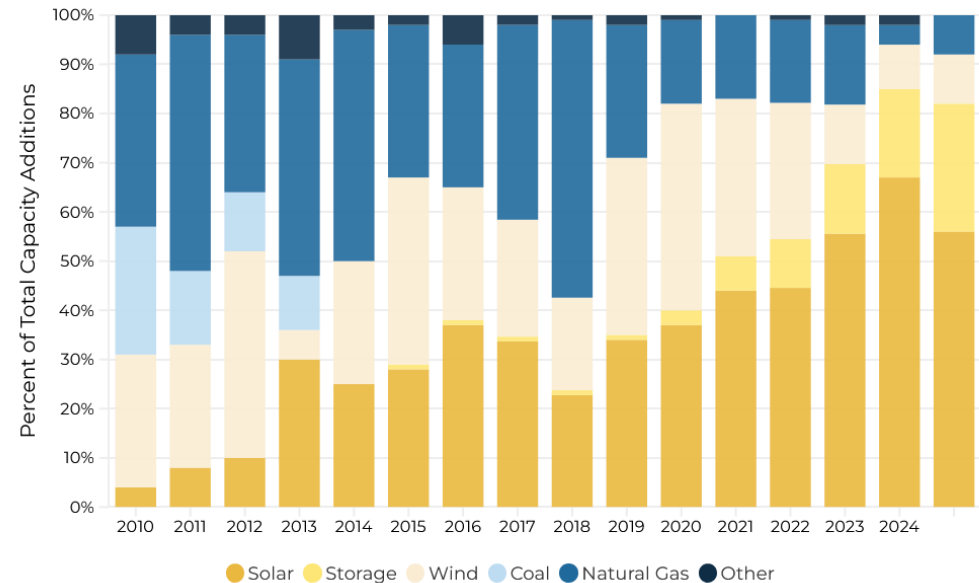
77% of the New Solar in 2025 Has Been Built in Trump States

Top 10 States for New Solar
Capacity Additions in 2025



Trump 2024 States Harris 2024 States

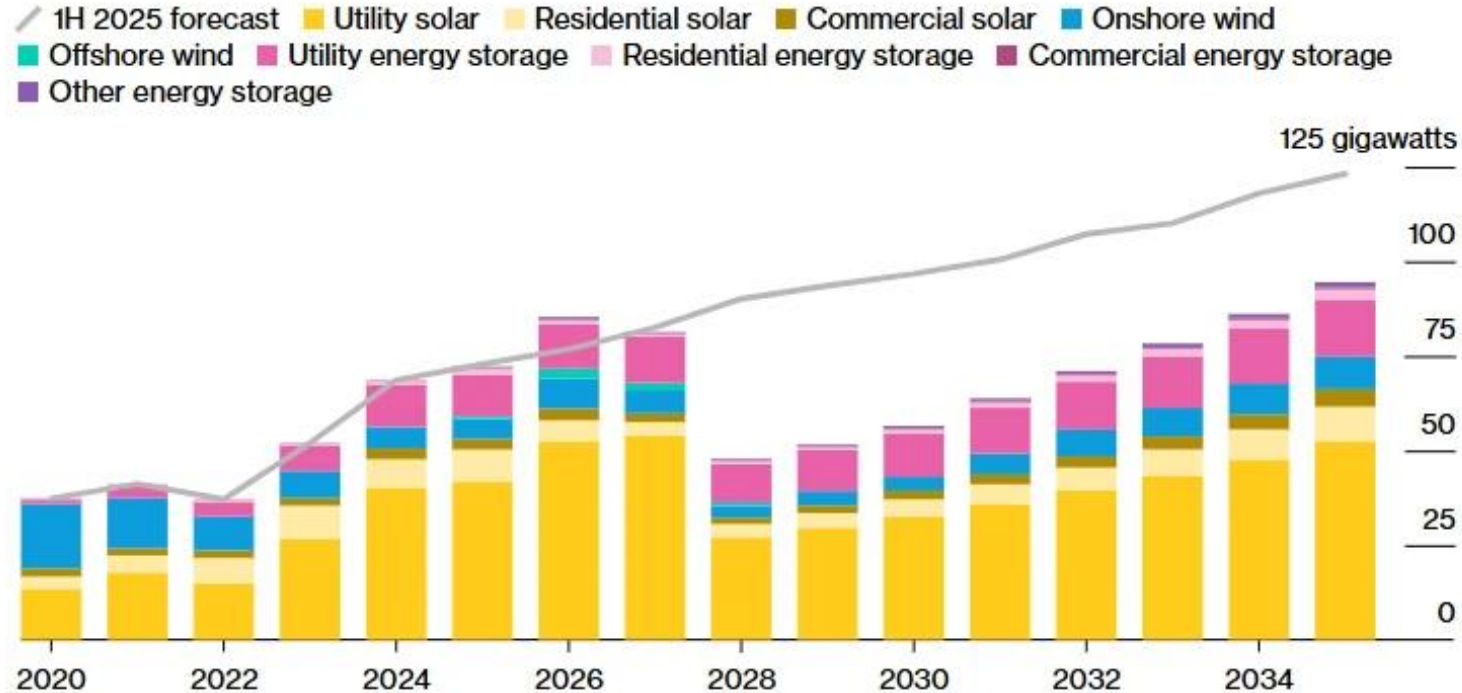
U.S. Annual Additions of New Electric Generating Capacity



Source: [SEIA/Wood Mackenzie Power & Renewables U.S. Solar Market Insight Q3 2025](#); EIA

'Big, Beautiful Bill' Has Slashed US Clean Energy Outlook by 23%

BNEF's new base-case build forecast versus the 1H 2025 Clean Energy Market Outlook



Source: BloombergNEF

Note: Solar here refers to photovoltaic solar (PV). Solar capacity is in direct current (DC).

BloombergNEF

Florida's Largest Utility Wants Solar & Batteries

NextEra CEO John Ketchum runs a \$145 billion U.S. energy company (headquartered in Florida). Investing in infrastructure and putting America first shouldn't divide us! If we don't add renewables and batteries, blackouts and reliability problems will occur and **we will lose the AI Race.** (June 10, 2025)

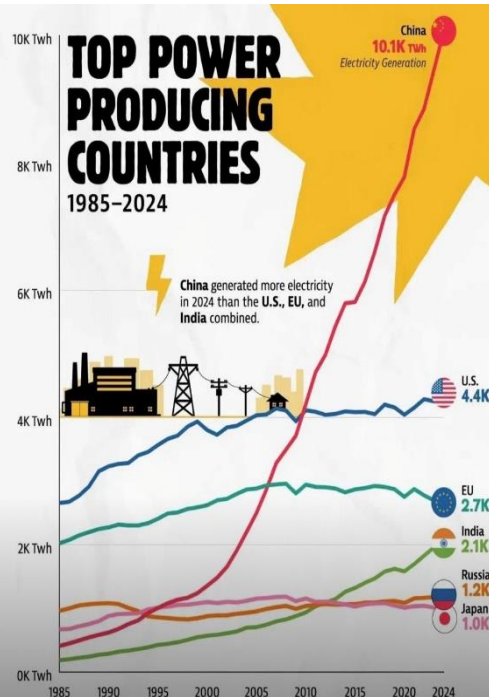
NextEra Energy is powered by two industry-leading companies, strengthened by a common platform



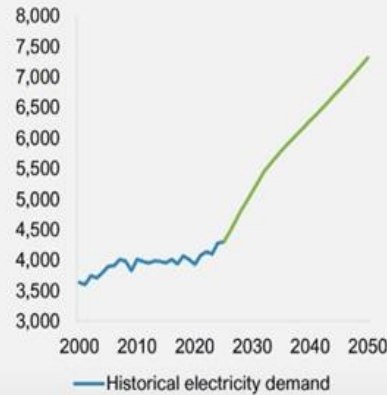
<https://x.com/SEIA/status/1983888115551859031>

Solar, Wind with Batteries Fastest to Deploy and Least Cost

After decades of stagnant electricity demand, we're now seeing growth across sectors



Electricity Demand^{1,2,3} (TWh)

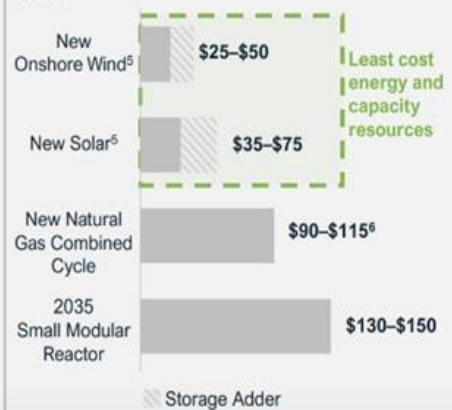


- Source: ISO/WHO Forecasts, NERC ES&D, Utility WPs, ICF
- Historical demand represents data from NERC ES&D from 2000 to 2023, 2024 represents forecast from NERC ES&D
- Q1 2025 represents ICF's demand projections from 2025 to 2050
- WoodMac Levelized Cost of Electricity as of December 2024 adjusted for renewable energy credits
- Assumes current tax law
- WoodMac, "Turbocharged vs turbo lag: The new landscape for gas-fired power," estimate of \$2,800/kW for 2026 COD, expected to remain relatively in-line by 2030; higher utilization for low end of the range

Expected Deployment Timelines by Generation Type



Estimated Costs of Firmed Generation Resources, 2030⁴ \$/MWh



<https://www.investor.nexteraenergy.com/~media/Files/N/NEE-IR/reports-and-fillings/quarterly-earnings/2025/Q2%202025/2Q%202025%20Slides%20vF.pdf>

From the lens of Bill Gates



3 jobs will survive the AI takeover:

- AI builders
- Biologists
- Energy professionals

The third one is Energy Professionals. It was FSEC Employees and people like the FSEC Advisory Board. People working to provide and efficiently use Made-in-Florida energy because Energy systems are complex, are growing, and cleaner is better.

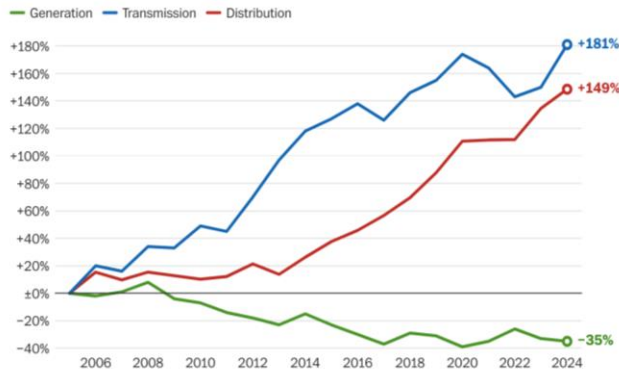


<https://www.youtube.com/shorts/U-dFnL6xLhQ>

The Washington Post
Democracy Dies in Darkness

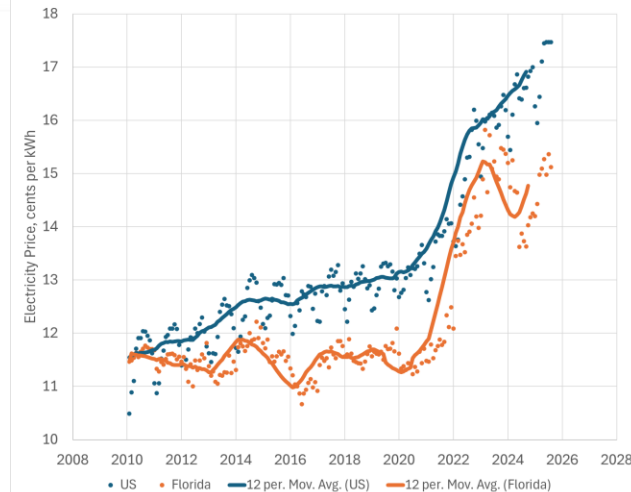
Distribution and transmission costs have soared, while generation costs have fallen

Percent change in capital and operational spending since 2005



Source: Brattle, Energy Information Administration

Residential Electricity Prices in the US and Florida



- Major Cost Increase in Distribution and Transmission
- Generation costs have fallen for all who own generation
- Best to Consume Solar Electrons at point of generation
- Utility Solar Fields Become Truck stops
- **Efficiency First** – The least expensive kWh is the one that we do not use (or produce)
- More Efficient Consumers, have 100% Solar, EVs & Batteries

Energy Efficiency Raters

On 11/6/2025 8:15 AM, Pietrzak, Joseph F wrote:

Dear Tei and FSEC Team,

On behalf of Duke Energy, Tampa Electric, and Florida Power & Light, we would like to express our sincere gratitude for hosting the successful New Construction Rebate Programs event on November 5, 2025, at the Florida Solar Energy Center.

We would like to extend special thanks to:

- **Tei Kucharski** - for your excellent organization and coordination of the event
- **Dr. Jim Fenton** - for your continued support and leadership as Director of FSEC

The event provided an excellent opportunity to present our utility rebate programs for both multi-family and single-family projects to Florida raters. The venue at the Florida Solar Energy Center was ideal, and the follow-up Rater meeting and Energy Gauge office availability added tremendous value to the day.

We look forward to continued collaboration with FSEC and appreciate your partnership in advancing energy efficiency programs in Florida.

Thank you again for your hospitality and support.

Best Regards,

Joe, Andy, Ian & Jaime

Joe Pietrzak, CEM

Sr. Residential Energy Efficiency Program Manager,

Duke Energy | Residential Product & Services

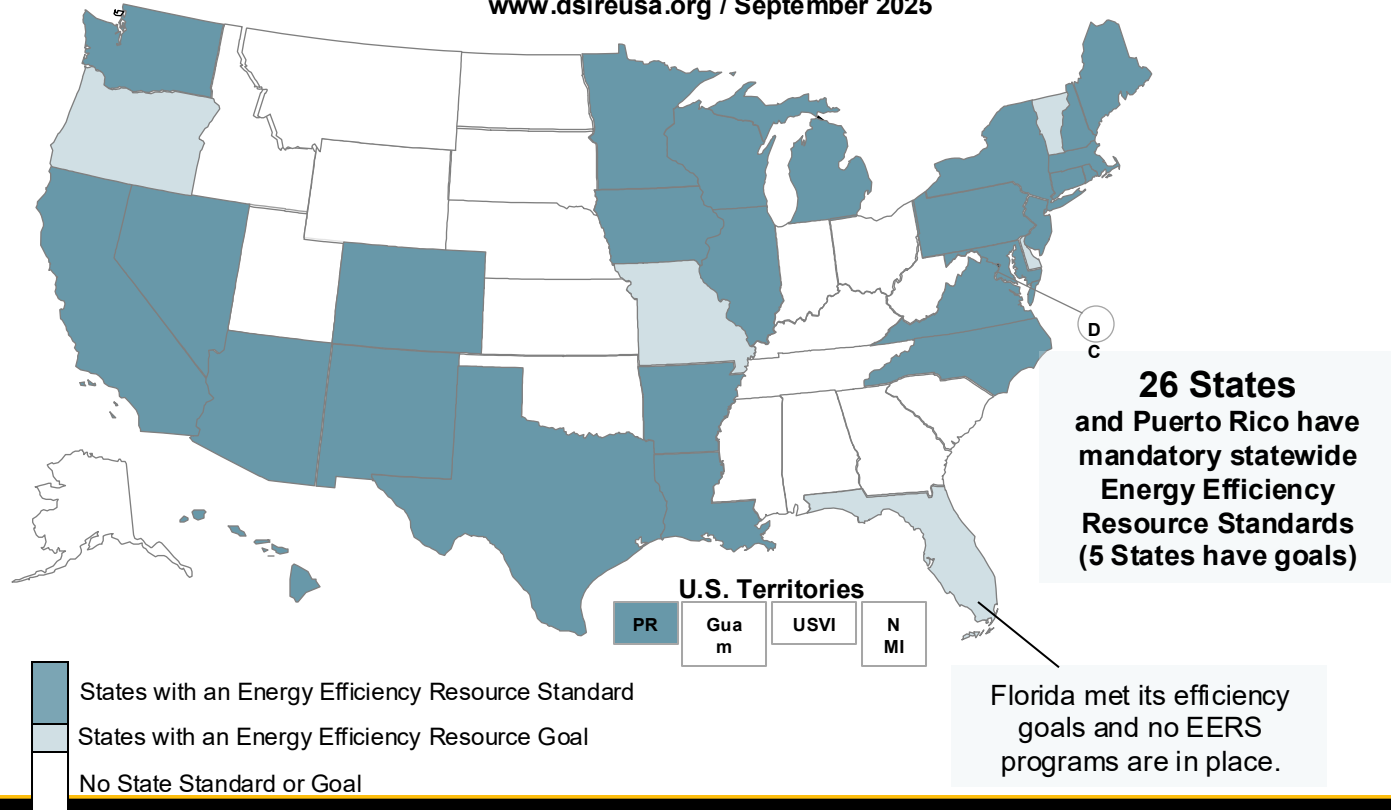
4359 SE Maricamp – Ocala, Florida 34480

Office 352-694-8515 | Joseph.Pietrzak@duke-energy.com



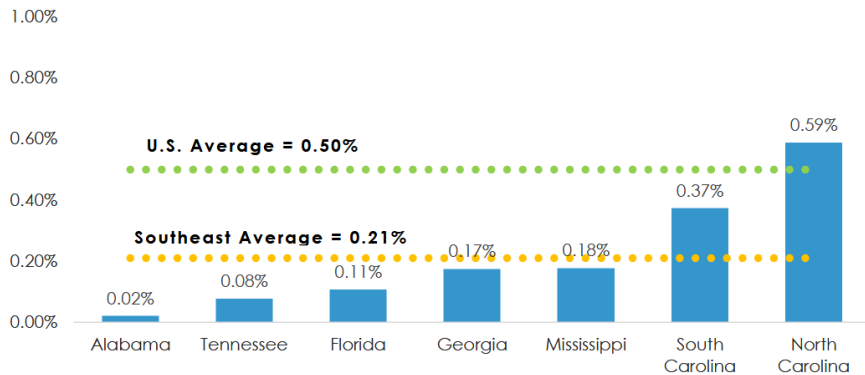
Florida Needs Energy Efficiency Standard

www.dsireusa.org / September 2025



REGIONAL TRENDS – SNAPSHOT OF 2023 ENERGY SAVINGS AND SALES

ENERGY SAVINGS AS A % ELECTRICITY SALES IN 2023



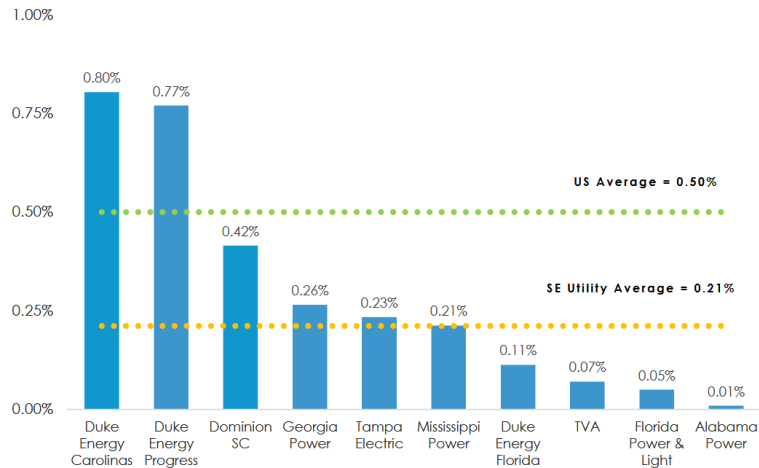
FLORIDA ENERGY EFFICIENCY PERFORMANCE IN 2023

UTILITY	% EE
Orlando Utilities Commission	0.31%
JEA	0.26%
Tampa Electric Company	0.23%
Southeast Average	0.21%
Duke Energy Florida	0.11%
Florida Average	0.11%
Florida Power & Light	0.05%
Florida Public Utilities Company	0.02%

MORE ENERGY EFFICIENCY NEEDED

UTILITY TRENDS – LARGE UTILITY RANKINGS

EFFICIENCY PERFORMANCE OF SOUTHEASTERN UTILITIES IN 2023



Efficiency First – The least expensive kWh is the one that we do not use (or produce)



Rate Payers Pay for Efficiency at Discount to Buying Electricity

Florida Electric Bill Charges

New Charges

Rate: RS-1 RESIDENTIAL SERVICE

Base charge: \$9.61

Non-fuel: (First 1000 kWh at \$0.096990) \$99.89

(Over 1000 kWh at \$0.107050)

Fuel: (First 1000 kWh at \$0.024080) \$25.00

(Over 1000 kWh at \$0.034080)

Difference

\$0.01 each

Electric service amount 134.50

2024 Public Benefit Fund (\$0.001/kWh per month)

	Number of	Energy Usage	Energy Per Customer	Energy Per Customer	PBF Monthly	Charge per kWh	Total yearly
	Customers	(GWh)	(kWh) per year	(kWh) per month	Charge		PBF funds
Residential	10,056,332	132,086	13,135	1,094.55	\$ 1.09	\$ 0.00100	\$ 132,086,000
Commercial	1,202,198	89,514	74,459	6,204.88	\$ 6.20	\$ 0.00100	\$ 89,514,000
Industrial	25,131	17,787	707,771	58,980.94	\$ 58.98	\$ 0.00100	\$ 17,787,000
Total	11,283,661	239,387					\$ 239,387,000

\$6M per year for FSEC to Manage Programs



DISCUSSION

Florida-Made Energy

Advisory Board Becomes the “Florida Energy Think Tank”

Finds Way to Resurrect FSEC?

Funding from the Rate Payers instead of the Federal Government?