

Economic Infrastructure Subcommittee

Tuesday, November 4, 2025
1:30 PM - 4:00 PM
Reed Hall (102 HOB)

Daniel Perez
Speaker

Chip LaMarca
Chair

The Florida House of Representatives

Commerce Committee

Economic Infrastructure Subcommittee

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Meeting Agenda

Tuesday, November 4, 2025
1:30 pm – 4:00 pm
Reed Hall (102 HOB)

I. Call to Order

II. Roll Call

III. Welcome and Opening Remarks

IV. Panel discussion on the Development and Deployment of Advanced Nuclear Technologies

V. Closing Remarks

VI. Adjournment

Public Service Commission

Advanced Nuclear Power Feasibility Report

Presentation to the

Florida House of Representatives
Economic Infrastructure Subcommittee

Cayce Hinton
Florida Public Service Commission
November 4, 2025

House Bill 1645

- Study and evaluate the technical and economic feasibility of using advanced nuclear power technologies, including small modular reactors, to meet the electrical power needs of the state
- Research means to encourage and foster the installation and use of such technologies at military installations in partnership with public utilities
- Consult with FDEP and FDEM
- Submit report by April 2025, containing findings and recommendations

Methodology

- Workshop
- Post-workshop comments
- Research

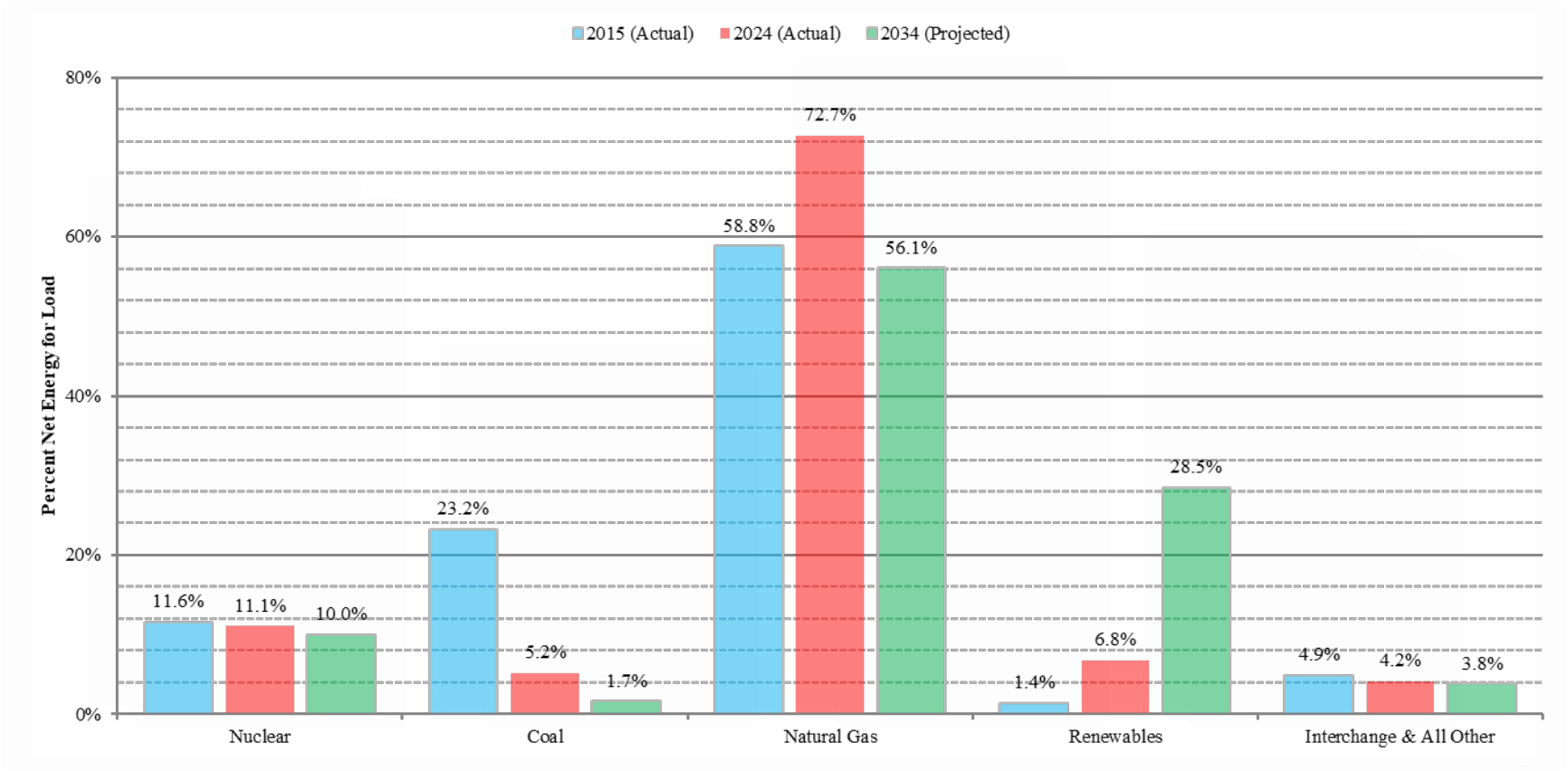
Workshop

- DOE Gateway to Accelerated Innovation in Nuclear (GAIN), Idaho National Laboratory
- Electric Power Research Institute (EPRI)
- Florida Electric Power Coordinating Group

Report Overview

- Chapter 2: Background of Nuclear in Florida
- Chapter 3: Economic and Technical Feasibility
- Chapter 4: Federal and State Actions
- Chapter 5: Military Applications
- Chapter 6: Findings and Recommendations

Generation by Fuel Type



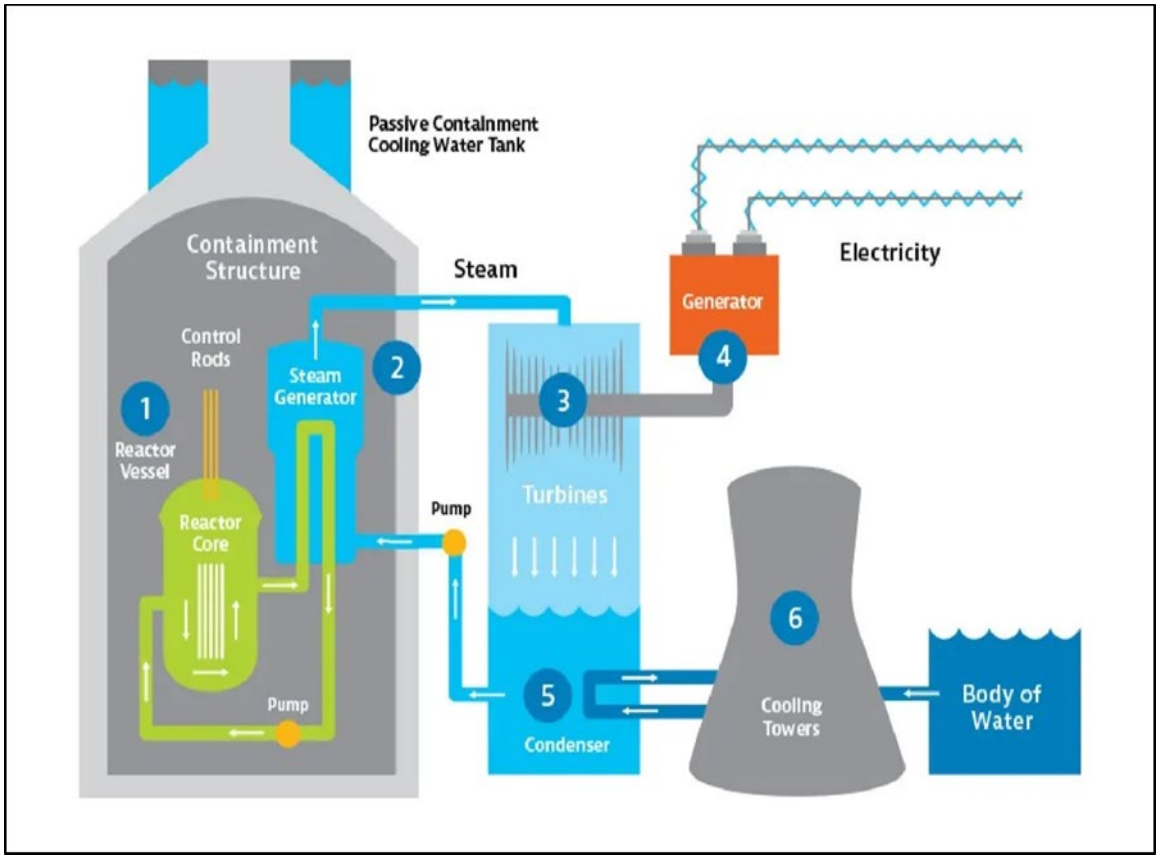
Advanced Nuclear Technology

- Passive safety features, Walk-away
- Versatility
- Reduced spent fuel disposal, Re-use
- Factory manufacturing

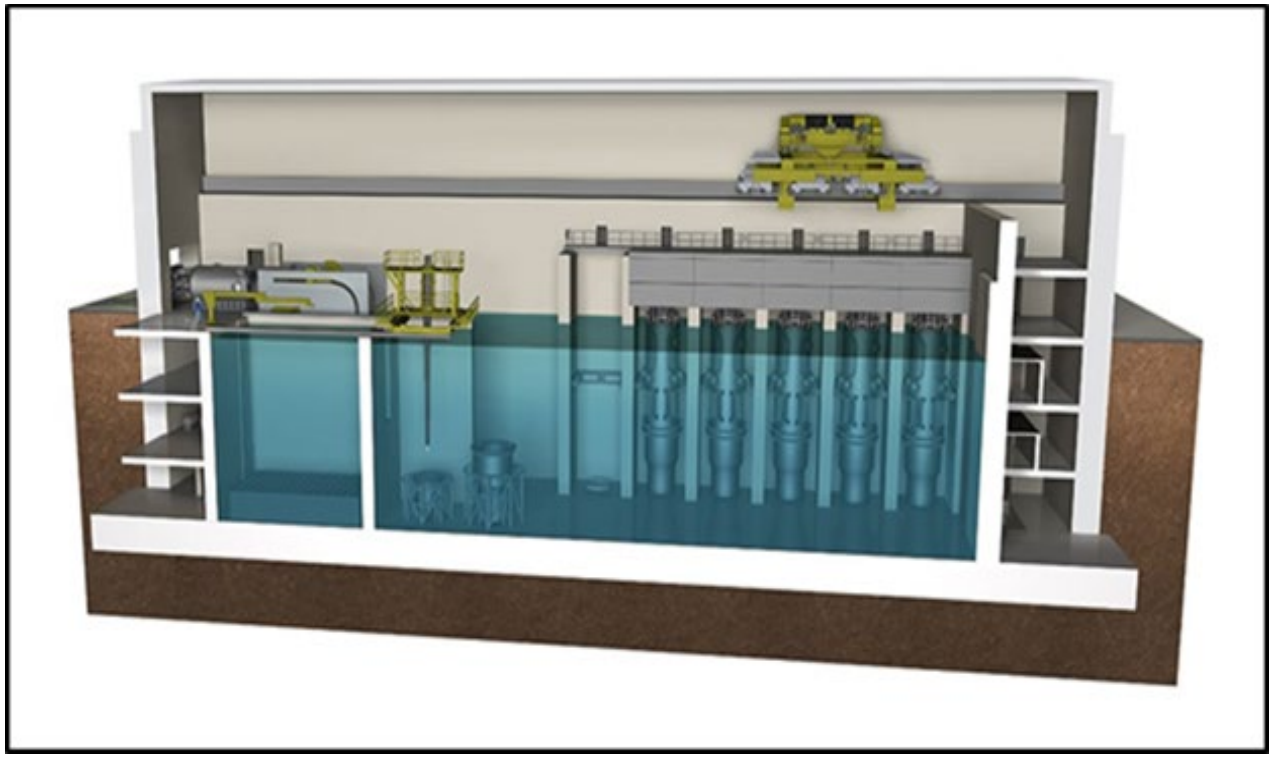
Advanced Nuclear Technology

Size	Operating (MW - Thermal)	Output (MW - Electric)
Micro	<=50	<= 50
Small (SMR)	150<=900	50<=300
Medium	100<=1800	300<=600
Large	>1800	>600

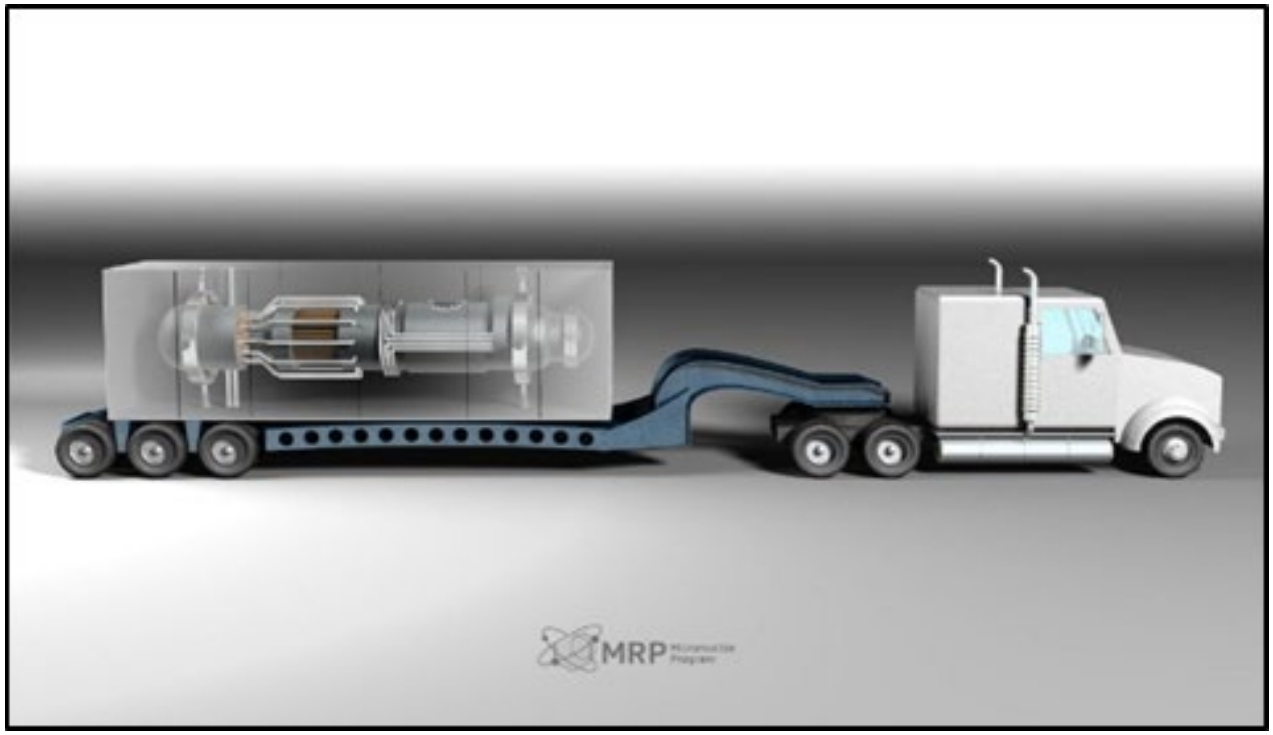
Large: Westinghouse AP1000



SMR: NuScale VOYGR Power Plant



Microreactor



Feasibility

- Technical Feasibility?
  - Yes, technically feasible, but as of yet unproven
- Economic Feasibility?
  - First-of-a-Kind to Nth-of-a-Kind
  - FOAK to NOAK

Military Applications

- DOD Strategic Capabilities Office – Project Pele
- Defense Innovation Unit (Army)
- Eielson AFB, Alaska
- Hill AFB, Utah
- Joint Base San Antonio, Texas
- Department of Navy

Recommendations

- Commission a more comprehensive study
- Ensure recovery for preliminary costs
- Enhance stakeholder engagement and education
- Grant funding and workforce development
- Flexibility to approve rate schedules specifically for entities (e.g., data centers) that pursue SMRs to serve their demand

Update

- Executive Orders
- NRC
- DOE

Questions?

Florida Electric Power Coordinating Group

FLORIDA ELECTRIC POWER COORDINATING GROUP

Economic Infrastructure Subcommittee
Panel Discussion Next Generation Nuclear

Tallahassee, Florida
November 4, 2025

Presenters: Jacob Williams, Past FCG Chair & Current Board Member
Sara Dussich, Chair, FCG Next Generation Nuclear Work Group

FCG BACKGROUND

For 52 years, FCG has operated as the umbrella organization in Florida representing investor-owned utilities, rural electric cooperatives, and municipal electric utilities on environmental, transportation, & mutual aid assistance issues affecting the utility industry.

FCG Members

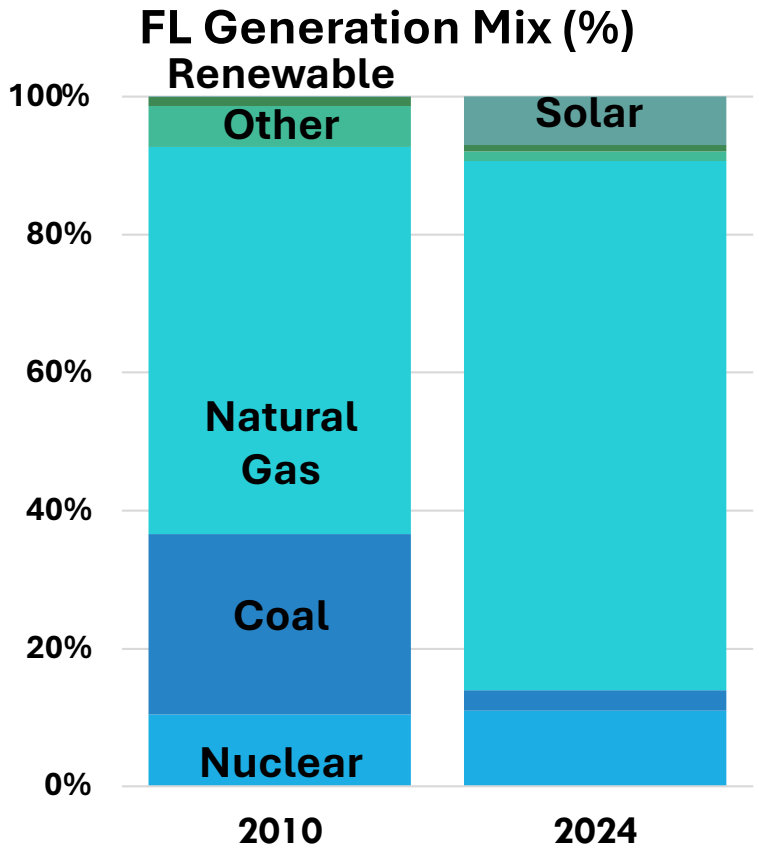
City of Lake Worth Utilities
City of Lakeland (Lakeland Electric)
City of Tallahassee
Duke Energy-Florida
Florida Municipal Power Agency
Florida Power & Light Company
Gainesville Regional Utilities
Homestead Energy Services
JEA
Ocala Electric Utility
OUC
Central Florida Tourism Oversight District
Seminole Electric Cooperative, Inc.
Sumter Electric Cooperative
Tampa Electric Company

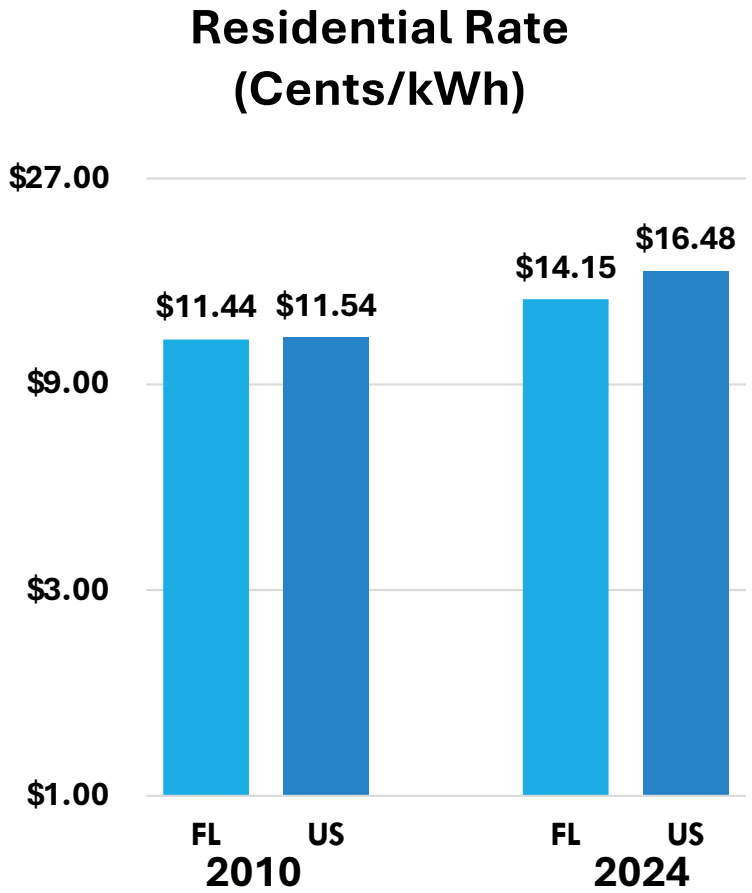
FCG Associate Members

Homestead Energy Services
Kissimmee Utility Authority
Florida Public Utilities
PowerSouth Energy Cooperative
Central Florida Electric
Escambia River Electric
Glades River Cooperative
Okefenoke Rural Electric
Peace River Electric
Withlacoochee Electric

FLORIDA GENERATION MIX

Florida Dependent on Natural gas 77%, While Keeping Costs Low; Nuclear Could Provide Florida Strategic Supply Diversification





INCREASING U.S. NUCLEAR EFFORTS

Recent Increase in U.S. Power Demand leading to Increased U.S. Nuclear Efforts

- Technology and large-scale manufacturing are driving increase in power consumption nationally
  - Population growth drives Florida power consumption growth
- Restarting 3 retired nuclear plants nationally underway
  - Three Mile Island – PA
  - Duane Arnold – IA
  - Palisades – MI
- Numerous potential new nuclear plants by utilities & big tech including
  - Tennessee Valley Authority (TVA)
  - Energy Northwest in Washington at existing nuclear site
  - Kewaunee in Wisconsin – SMR at retired nuclear site
  - Duke Energy in North Carolina – adjacent to former coal site

NUCLEAR STRATEGIC SUPPLY DIVERSITY

Next Generation Nuclear as Strategic Supply Diversification for Florida

- In 2024, FCG formed a Next Generation Nuclear Working Group (NGNW) to discuss potential state, legal, and regulatory changes needed to move advanced nuclear projects forward
  - FL Legislature mandated FPSC to conduct Energy Study. The NGNW participated in FPSC's workshop for study development and supported the Study's findings (May 2025)
- New nuclear 8 – 12 years from coming on-line
- Numerous new small modular reactor (SMR) technologies
- Standard AP1000 and SMR's being considered on national level
- Significant pre-development costs to permit site/technology
- Numerous Federal and other State incentives for nuclear being considered and/or implemented

2025 NUCLEAR EXECUTIVE ORDERS

Nuclear Gains Additional Federal Support via Executive Orders Through Funding & Regulatory Changes to Speed up Permitting

EO 1: Ordering the Reform of the Nuclear Regulatory Commission

- Increase deployment of new nuclear reactors to expand nuclear capacity from 100 GW to 400 GW by 2050, extend use of current plants and reactivate closed/partially closed plants
- Directs NRC reorganization promoting faster licensing & revise NRC's NEPA compliance

EO 2: Reinvigorating the Nuclear Industrial Base

- Prioritizes uprates of 5 GW to existing nuclear plants, have 10 new scale nuclear reactors under construction by 2030, & review potential funding for new nuclear plants
- Directs expanding the nuclear energy workforce.

EO 3: Deploying Advanced Nuclear Reactor Technologies for National Security

- Advance nuclear reactors like Generation III+, SMRs, microreactors, and stationary & mobile reactors, at speed necessary to support national security needs for military, national security, and national lab uses
- Sets deadline of Sept 30, 2028 for a domestic military installation.

EO 4: Reforming Nuclear Reactor Testing at the Dept of Energy

- Significantly expedite review, approval, and deployment of advance reactors. Requires expedited procedures to enable qualified test reactors to safely operate at DOE facilities within 2 years.

FEDERAL FUNDING OPPORTUNITIES

Federal Government Provides Support for Nuclear through Tax Credits, Grants and Loans

Federal Tax Credits

IRS Incentives[1]

IRC Sec:

- 30% ITC (48E) is a technology-neutral ITC for the COD year of the facility
- $30.0/MWh[1] PTC (45Y) is a technology-neutral, emissions-based PTC for facilities placed in service after 2025

$15/MWh PTC (45U) for electricity generated and sold by existing nuclear facilities from 2024 through 2032; credit offset when gross receipts exceed $26/MWh (2025 rate) and worthless when gross receipts ~$45/MWh

$18/MWh advanced nuclear tax credit under Section 45J for new nuclear generation facilities with pre-1994 reactor design; taxpayer must be allocated portion of national capacity limitation

45X manufacturer credit may be of interest to certain equipment and component manufacturers

DOE Grants

Gen III + SMR Pathway to Deployment Program[2]

- $800 MM for up to two projects focused on first mover support
- $100 MM used for fast follower support spread out across multiple awards

Low Enriched Uranium (LEU) Enrichment Acquisition Program

- Up to $3.4 B focused on securing a non-Russian supply chain
  - $2.7 B has already been appropriated to DOE who will then sell the LEU to operating U.S. facilities

DOE Loans

DOE Loan Program Office (LPO) can provide loan to support Advanced Nuclear projects

- LPO originally allocated $250 B for Energy Dominance financing
  - ~$60 B remaining
- Funds must be committed by September 2028 and used by September 2033

LPO has recently provided support to two nuclear projects

- $12 B in loan guarantees for Vogtle
- $1.5 B loan guarantee for Palisades restoration

1) Many of the tax credit programs cannot be stacked
2) Program is focused on project teams made up of developers, suppliers, customers, etc.

NRC BACKGROUND AND STRATEGIES

NRC Current Licensing Processes Based on Legacy Nuclear Technology, Namely Large-scale Light Water Reactors

NRC licensing experience for commercial reactors is based on large-scale light water reactors (LWRs)

- Light water reactors require large security and emergency planning areas; licensing processes are lengthy due to extended NRC reviews (environmental reviews typically take three years)
- Current licensing processes require each proposed reactor to be treated as a unique license since there are no standard reactor designs

NuScale, a LWR, is the only standard design approved by the NRC

- Design approval means the NRC will not revisit the technical plant design aspects but will review site specific details

NRC has also proposed alternative security, physical and emergency preparedness requirements for SMRs

- Updated requirements specific to SMRs would facilitate development of new advanced reactor projects

PERMITTING PROCESS OVERVIEW

Recent Interest in SMR Technology Spurred Industry's Push for Accelerated Permitting Processes

Two current NRC licensing pathways:

1) Part 50 is a two-step process with a construction permit followed by an operating license
2) Part 52 is a combined construction and licensing process that references an approved reactor design

- These are traditional, prescriptive and lengthy licensing processes

Third *proposed* NRC licensing pathway for SMRs:

3) Part 53 is a proposed risk-informed licensing process specifically designed for advanced reactor design[1]

- Intended to be more streamlined and efficient than the Standard Review Plan and can be completed within two years
- Part 53 pathway rulemaking in progress, including on-going feedback; NRC needs to provide additional clarity on site specific requirements (e.g., security) and sequence of licensing steps

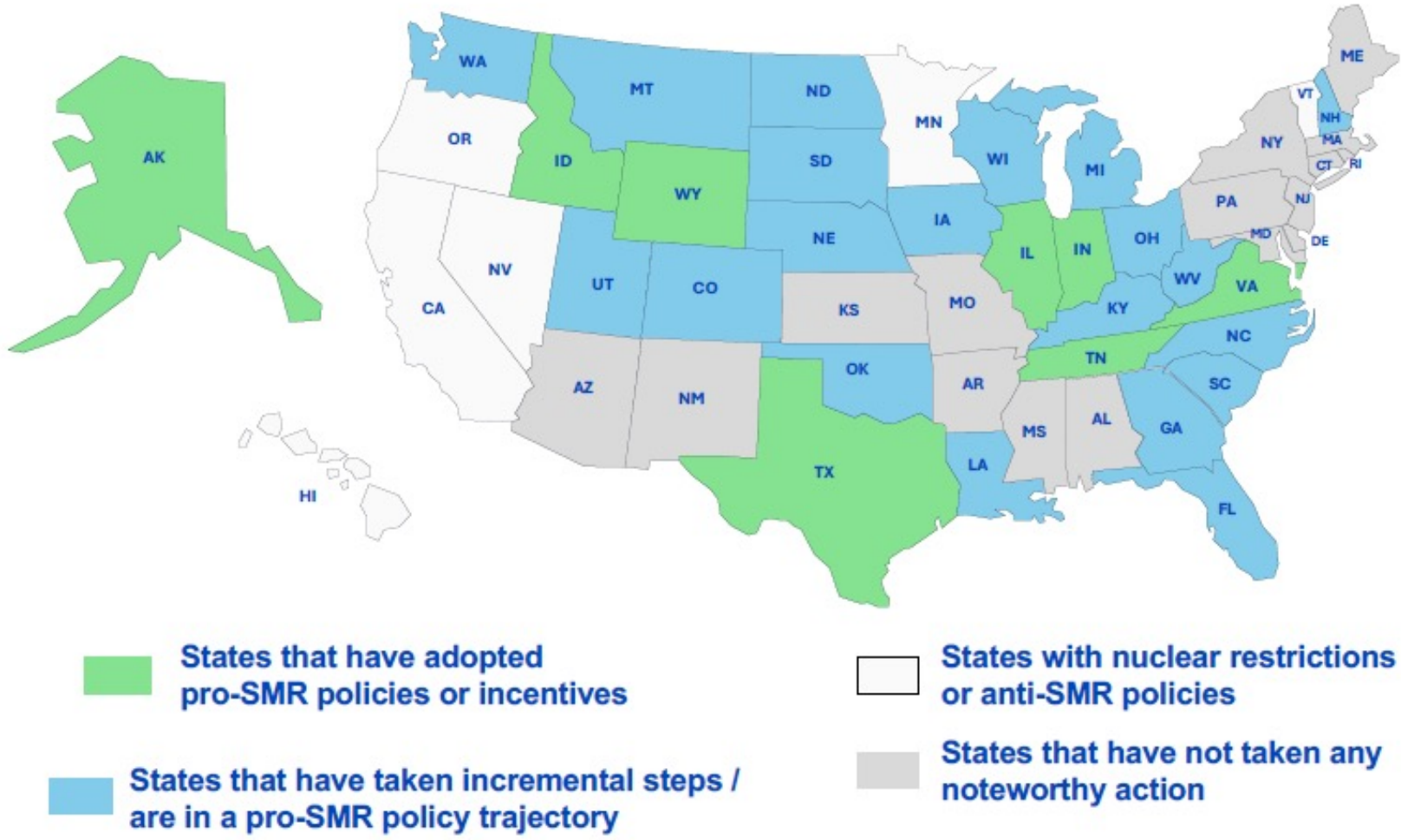
There is some risk that limited NRC resources could adversely impact permitting timelines for select later applicants

NRC's forecast final rule on Part 53 originally expected by end of 2025, now extended to May 2026.

1) Source: https://www.nrc.gov/reactors/new-reactors/advanced/rulemaking-and-guidance/part-53.html

SMR STATE LEGISLATION AND POLICY

More States Embracing Pro-SMR Policies Paving Way for Broad Adoption



FPSC'S 2025 FLORIDA ENERGY STUDY

FCG Supports FPSC's 2025 FL Energy Study Findings & Recommendations

FCG remains supportive of recommendations and conclusions contained in the FPSC's Energy Study (May 2025) including:

- Commissioning an expanded Study to focus on economic benefits of advanced nuclear technologies, including site selection and workforce development
- Cost Recovery for initial site evaluations to mitigate financial risks of early phases of project development
- Emphasis on safety benefits of advanced reactors and advocating for enhanced public education to build confidence in new technologies

FCG appreciates the opportunity to provide this update on the industry's perspective of next generation nuclear for Florida

APPENDIX

REGULATORY AND INCENTIVE SUMMARY

> *Support for nuclear is widespread, but many of the incentives available today are focused on first movers and technology development, not deployment*

At federal level, nuclear is seeing support through government funding efforts as well as regulatory changes to speed up permitting

- Government funding is currently offered through tax credits, grants and loans
- NRC rule changes regarding permitting are progressing with final action on Part 53 expected by May 2026

Many states created working groups to discuss opportunities and regulations for new nuclear

- Illinois and others undertaking studies to understand impact of new nuclear on state
- Idaho convened group to establish "Advanced Nuclear Energy Strategic Framework"
  - Mission to promote economic development opportunities around new technology

While there are many initiatives to support new nuclear at federal level, many programs will not have significant impact on projects for several years

RECENT STATE LEVEL ACTIONS

A handful of states have adopted pro-SMR incentives and policies

Alaska

- In 2022, Senate Bill 177 was enacted, which makes it easier to obtain permits for microreactors in Alaska

Iowa

- In April 2024, Iowa enacted HF 2279 to allow for advanced ratemaking for utilities with nuclear facilities
- While there are no direct incentives for SMRs in Iowa, state policymakers and the state's economic development leadership remain interested in nuclear

Illinois

- In 2023, HB 2473 was enacted, which started the process for the creation of a regulatory structure for the construction of SMRs, and requires the state to perform a study that will inform rules for regulating SMRs, which is set to be adopted by state regulators by January 2026

RECENT STATE LEVEL ACTION (CONTINUED)

A handful of states have adopted pro-SMR incentives and policies

Idaho

- In 2023, House Bill 93 was enacted, shifting the existing "renewable energy" definition to a "clean energy" definition inclusive of nuclear generation

Tennessee

- Governor Bill Lee stated his support for SMRs, and partnered with the state's General Assembly to create a $50 MM nuclear fund in the states 2023-2024 budget, to help support nuclear development and manufacturing

Virginia

- In 2023, the commonwealth enacted the Virginia Power Innovation Fund, which provides $10 MM in support to the development of advanced energy technology, including SMRs
  - *Additional background: There is a significant interest in SMRs especially given the large number of data centers within the commonwealth, and the governor has publicly stated his desire for an operational SMR by 2032*

RECENT STATE LEVEL ACTIONS (CONTINUED)

A handful of states have adopted pro-SMR incentives and policies

Texas

- Governor directed PUC to sponsor the Advanced Nuclear Task Force in 2023
  - Advanced Nuclear Task Force directed to study and plan for SMRs; expected to file a report in December 2024
  - Dow and X-Energy announced they are planning to develop a SMR in TX in May 2023

Wyoming

- In 2020, Wyoming enacted legislation to authorize the permitting and operation of SMRs, including allowing the operation on previously existing coal or natural gas generation facilities
  - The state took these actions to pave the way for the Terrapower project in southwest Wyoming
- In 2022, Governor Mark Gordon signed House Enrolled Act 59 to further set the regulatory framework for the Terrapower project
  - SMRs are currently subject to a generation tax of $5 per MWh, but the 2022 law set a tax exemption if 80% of an advanced nuclear reactor's uranium used for producing electricity is sourced from uranium mines located in the U.S. beginning July 1, 2035

FEDERAL LEGISLATIVE UPDATE

The bipartisan ADVANCE Act, passed in 2024 aimed to modernize licensing new reactor technologies

Congress passed bipartisan (Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy) ADVANCE Act in early 2024; legislation creates new authority for the NRC to prioritize and streamline permitting for new nuclear

- Reduces cost of NRC permitting of advanced reactor designs
- Requires NRC to issue a combined license not later than 25 months after date of which Commission accepts an application
- Incorporates efficient process for National Environmental Review Act (NEPA) by consolidating reviews and increasing funding for increased agency workload
  - NRC must consider existing site-specific environmental data and previously approved environmental reviews which would allow for existing environmental review documents to be utilized for new applications
- Requires the NRC to speed up permitting when using site locations that have retired or retiring fossil generation or at a brownfield site; rulemaking to follow
- NRC must complete rulemakings for several of the recently passed provisions, which will take two to three years for full implementation