State of Advanced Nuclear

NASEO: Energy Policy Conference Breakout: State-Federal Advanced Nuclear Development Action

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Advanced Reactor Roadmap

1	First Mover Success	1. Government policies are equitable for nuclear and fully funded 2. Policies support industry's implementation of project best practices 3. Building education and comfort in the investment community
2	Fast Followers	4. Decisions that support industry's achieving de-risking milestones 5. Actions that support industry's pursuit of standardization of fleets
3	Regulatory Efficiency	6. Reform and modernize the regulators 7. Congress and Parliament to enable regulatory reform
4	Siting Availability	8. Rapid decision making to enable designs that are capable of being deployed in a wide range of site conditions 9. Industry will need to develop flexible designs that are both standardized and adaptable
5	Public Engagement	10. Governments enable early engagement of public in processes 11. Enable communities to more effectively engage the industry on advanced reactors 12. Collaborative engagement of Indigenous peoples
6	Supply Chain Ramp-up	13. Congress and DOE establish programs to assure access to fuel 14. Government support for prototyping novel components early in design
7	Workforce Development	15. Government programs support industry's action to establishes programs to recruit, train and retain workers

https://publicdownload.epri.com/PublicAttachmentDownload.svc/AttachmentId=83812

Federal Funding Opportunities for New Nuclear

Tax Credits

- PTC: At least $30/MWh for 10 years
- ITC: 30% of investment
- Bonuses for energy communities and domestic supply

Demonstrations (Awarded)

- DOE funding 12 different designs, >$5B over 7 years
- ARDP Demos, Risk Reduction, Early development

Loan Guarantees

- >$250B in authority
- $63B in Nuclear Applications (6/2024)

Deployments (New)

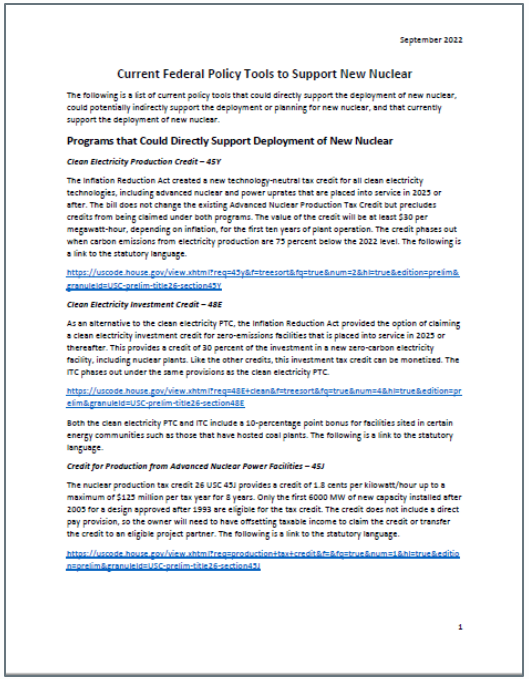
- $800 Million for utility use of light-water SMRs

Fuel and Supply Chain

- HALEU Fuel - $700M
- $2.7 Billion for fuel (conditional on Russian import ban)

Other Support

- GAIN Vouchers
- NRIC Partnerships



September 2022

Current Federal Policy Tools to Support New Nuclear

The following is a list of current policy tools that could directly support the deployment of new nuclear, could potentially indirectly support the deployment or planning for new nuclear, and that currently support the deployment of new nuclear.

Programs that Could Directly Support Deployment of New Nuclear

Clean Electricity Production Credit – 45Y

The Inflation Reduction Act created a new technology-neutral tax credit for all clean electricity technologies, including advanced nuclear and power uprates that are placed into service in 2025 or after. The bill does not change the existing Advanced Nuclear Production Tax Credit but precludes credits from being claimed under both programs. The value of the credit will be at least $30 per megawatt-hour, depending on inflation, for the first ten years of plant operation. The credit phases out when carbon emissions from electricity production are 75 percent below the 2022 level. The following is a link to the statutory language.

https://uscode.house.gov/view.xhtml?req=45y&f=treesort&fq=true&num=2&hl=true&edition=prelim&granuleId=USC-prelim-title26-section45Y

Clean Electricity Investment Credit – 48E

As an alternative to the clean electricity PTC, the Inflation Reduction Act provided the option of claiming a clean electricity investment credit for zero-emissions facilities that is placed into service in 2025 or thereafter. This provides a credit of 30 percent of the investment in a new zero-carbon electricity facility, including nuclear plants. Like the other credits, this investment tax credit can be monetized. The ITC phases out under the same provisions as the clean electricity PTC.

https://uscode.house.gov/view.xhtml?req=48E+clean&f=treesort&fq=true&num=4&hl=true&edition=prelim&granuleId=USC-prelim-title26-section48E

Both the clean electricity PTC and ITC include a 10-percentage point bonus for facilities sited in certain energy communities such as those that have hosted coal plants. The following is a link to the statutory language.

Credit for Production from Advanced Nuclear Power Facilities – 45J

The nuclear production tax credit 26 USC 45J provides a credit of 1.8 cents per kilowatt/hour up to a maximum of $125 million per tax year for 8 years. Only the first 6000 MW of new capacity installed after 2005 for a design approved after 1993 are eligible for the tax credit. The credit does not include a direct pay provision, so the owner will need to have offsetting taxable income to claim the credit or transfer the credit to an eligible project partner. The following is a link to the statutory language.

https://uscode.house.gov/view.xhtml?req=production+tax+credit&f=treesort&fq=true&num=4&hl=true&edition=prelim&granuleId=USC-prelim-title26-section45J

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Current Federal Policies: https://www.nei.org/CorporateSite/media/filefolder/advantages/Current-Policy-Tools-to-Support-New-Nuclear.pdf

States Taking Action for Nuclear

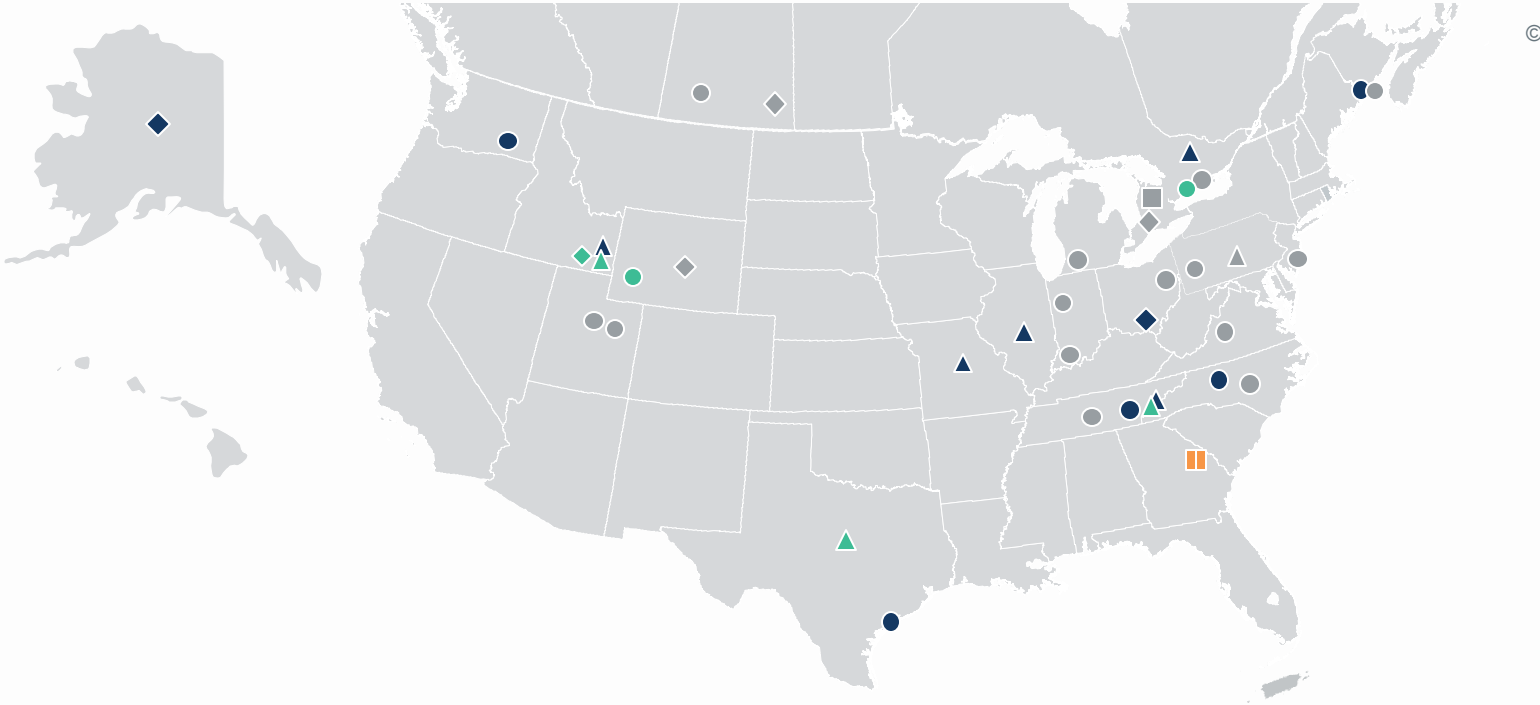
Exploring Nuclear Technology with Studies, Working Groups, Commissions and Task Forces	Connecticut, Indiana, Kentucky, Louisiana, Maryland, Michigan, Ohio, Tennessee, New Hampshire, Nebraska, Montana, Pennsylvania, Florida and Texas
Recognizing Nuclear as a Clean Energy Resource	Idaho, Michigan, Minnesota, North Carolina, Ohio, Tennessee, Utah, Virginia and Washington
Removing Barriers and Signaling Support	Repealing Nuclear Moratoriums: Wisconsin, Kentucky, Montana, West Virginia, Connecticut, Illinois repealed Signaling Regulatory Support: Indiana, Mississippi, North Carolina, South Dakota
Incentivizing Nuclear Technology and Supply Chain	Kentucky, Michigan, Tennessee, Virginia, Washington, and Wyoming

Current State Policies: https://www.nei.org/resources/reports-briefs/state-legislation-and-regulations
State Policy Options: https://www.nei.org/resources/reports-briefs/policy-options-for-states-to-support-new-nuclear

Advanced Nuclear Deployment Plans

Projects that may be in operation by early 2030s

Updated 01/17/2025



Legend

- Considered project
- Planned project
- Under construction
- Operating
- Large (1,000 MWe)
- Small (<300 MWe)
- Micro-reactor (<50 MWe)
- University / Research / Test

QUESTIONS?

By: Third Way, GENSLER