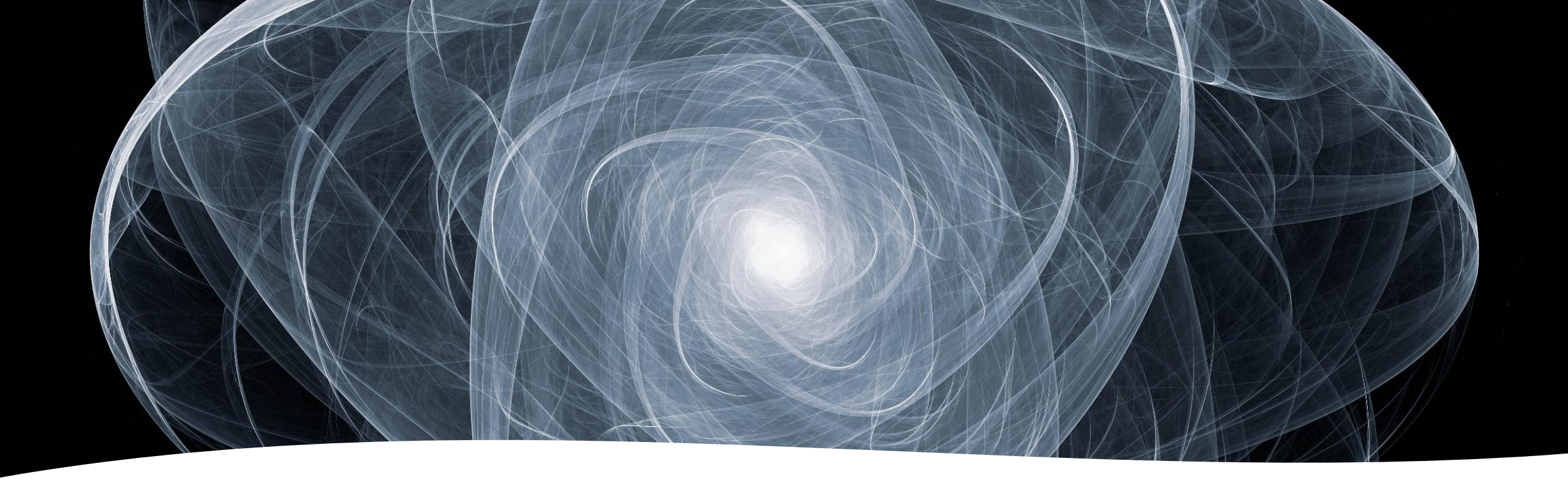

SMART Nuclear Energy Initiative – Executive Summary

The SMART Nuclear Energy Initiative envisions a **flexible, integrated, and scalable nuclear energy ecosystem** that supports clean energy goals, economic development, and energy security.

One Big Beautiful Bill Act (OBBBA)

SMARTX Community Exchange

- Signed into law by President Trump on **July 4, 2025**, the OBBBA is a sweeping federal tax and spending bill that:
- **Rolls back clean energy incentives** from the Inflation Reduction Act (IRA)
- **Prioritizes fossil fuels** and domestic energy production
- **Reshapes tax credits** for renewables, nuclear, and advanced manufacturing

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Nuclear Energy Provisions

Despite cuts to wind and solar, nuclear energy receives **preferential treatment**:

Tax Credit Extensions & Carve-Outs

Section 45U: Nuclear Production Tax Credit now sunsets in **2031**, one year earlier than planned—but retains generous terms

Sections 45Y & 48E: Nuclear facilities can still claim **Clean Electricity Production** and **Investment Tax Credits** if construction begins before 2029—**no placed-in-service deadline**, unlike other energy sources

Advanced Nuclear Support

Expanded Definitions: Includes facilities with NRC Construction Permits, not just Combined Operating Licenses

Energy Community Bonus: Projects in nuclear employment zones get a **10% bonus credit** under Section 45Y

Strategic Positioning

Nuclear is now seen as a **cornerstone of U.S. energy security**, especially for:

High-reliability power for AI-driven infrastructure

Clean baseload generation amid rising demand

National competitiveness vs. China and Russi

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Implications

Impact Area	Nuclear Energy Outcome
Tax Incentives	Extended eligibility and bonus credits
Market Position	Elevated as a foundational energy source
Investment Climate	Encourages SMR and Gen IV deployment
Workforce Development	Supports long-term job creation and training

•Focus on coordinated multilateral demonstration projects

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Key elements include:

Market and Policy Alignment

- Development of competitive business models
- Valuation of reliability, resilience, and non-emitting attributes in energy markets

Public Engagement and Communication:

- Increasing energy literacy and stakeholder involvement
- Addressing safety, equity, and community benefits

Advanced Reactor Deployment:

- Emphasis on Small Modular Reactors (SMRs) and Generation IV technologies
- Integration with renewables for hybrid energy systems
- Applications in data centers, desalination, hydrogen production, and microgrids

Systems Integration:

- Linking nuclear with solar, wind, and storage for grid flexibility
- Use of excess thermal energy for industrial processes and district heating

Global Collaboration:

- Coordinated multilateral demonstration project

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Workforce Training Initiative

To meet the demands of a rapidly expanding nuclear sector, the U.S.

Department of Energy launched Nuclear Safety Training and Workforce Development Program

Projected Workforce Growth

- From ~100,000 workers today to 375,000 by 2050
- Driven by advanced reactor deployment and clean energy transition

Focus Areas

- Curriculum Development: workforce training partnerships with industry, educational institutions, innovation labs

Training Implementation

- Credentialing programs and hands-on training

Strategic Goals

- Build a diverse, skilled workforce across K–12, higher education, technical training
- Support underserved communities and regions near nuclear facilities

Industry Collaboration

- Partnerships with utilities, labor organizations, and local governments
- Alignment with national decarbonization and infrastructure goals