



POWERING AMERICAN LEADERSHIP:

ACTIONS TO UNLEASH THE POTENTIAL OF NUCLEAR ENERGY

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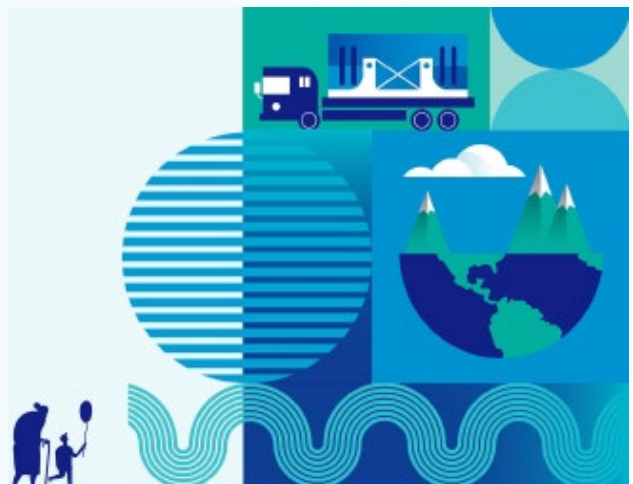


The American economy is increasingly driven by industries seeking reliable, clean and affordable energy. Nuclear energy is poised to be the engine powering this future.

The rapid growth of the digital economy combined with increasing domestic manufacturing will require significantly more energy that is available 24/7. Forecasts point to a need for the U.S. to build a wave of new electricity generation to meet this demand. Nuclear energy can provide this power.

Across the country, companies are working to secure access to nuclear power to meet their growing energy demands by extending the operating lives of existing nuclear power plants, re-commissioning prematurely closed nuclear power plants, and investing in new nuclear generation.

At the same time, the world is turning to nuclear power, and America must take the lead. Nuclear energy is a strategically vital industry, fostering 100-year commercial and political relationships with partner nations. Competing and winning in the global marketplace isn't just a commercial victory—it is also a victory for the U.S. in expanding energy security and national interests. As U.S. firms face increasing challenges globally from foreign state-owned enterprises, American workers should be designing and building nuclear power plants, both here and abroad.



Leadership in three key areas can unlock the potential for U.S. nuclear energy technology to meet domestic and global power needs.

1. Ensuring Continued Excellence

The current 94 U.S. nuclear power plants have demonstrated a remarkable safety and reliability record for more than 60 years and provide a foundation for economic growth and innovation for decades to come. Actions to secure these vital elements of our national infrastructure can ensure that they continue to produce reliable, affordable, and clean energy. In addition to the vital role these plants play in powering homes and businesses throughout the country, these plants also serve as local economic engines, providing hundreds of well-paying jobs that benefit neighboring communities.

2. Accelerating Nuclear Deployment

A new generation of innovative nuclear technologies is reaching the marketplace. These designs build upon decades of experience to create reactors that have new capabilities and open innovative business opportunities. Actions to encourage companies to take on the challenges of being early adopters will bring investment off the sidelines and create the order book that will accelerate economic opportunities.

3. Strengthening American Security and Competitiveness

To maximize the benefit nuclear energy can deliver to our collective energy security, we must maintain and build on existing efforts to establish a secure and reliable supply of nuclear fuels, build out the supply chains needed to support the next-generation of nuclear reactors, and expand efforts to ensure U.S. firms are able to compete and win in the growing global market for civil nuclear energy technologies.

The U.S. led the world into the age of nuclear energy, and even today the U.S. nuclear industry is the global leader in technology innovation. Recent federal initiatives and private-sector investments have enabled important steps to sustain this leadership, but key gaps remain.

The 94 nuclear power reactors operating across the country produce nearly 20 percent of the United States' electricity with an unmatched level of reliability — producing power around the clock, for up to 24 months between refueling. These reactors also generate nearly half the nation's clean energy supply, far beyond all other sources. The ability of nuclear power reactors to run 24/7/365 makes them a vital part of the energy mix that will power the economy of the future, and it is why companies are working to preserve existing nuclear generation and taking concrete steps to deploy new nuclear technologies.

States and communities are also working to maximize the operation of existing nuclear power plants and spur new construction because they know the economic and environmental benefits of nuclear energy. The nuclear energy industry is responsible for more than 250,000 direct, indirect and induced jobs across the U.S. economy. Average nuclear industry wages are 50 percent higher than other forms of power generation. That is why an increasing number of states and communities are investigating the construction of nuclear power plants to provide reliable and clean energy, along with well-paying jobs, for decades to come.

Yet while the U.S. brought the world into the nuclear age and American companies dominated nuclear trade for decades, Russia is the leading global nuclear exporter today and China will operate the world's largest nuclear reactor fleet by the end of the decade. Both countries have pursued long-term strategies to continue to build nuclear plants, develop robust domestic nuclear supply chains, and export nuclear technology. Russia and China are supporting the construction of dozens of foreign nuclear power plants, strengthening their influence in the Indo-Pacific, Africa, Eastern Europe, Asia, and the Middle East.

American policymakers have increasingly recognized the strategic value of a strong nuclear energy industry, but more needs to be done to respond effectively to Russian and Chinese efforts to exert greater control over global energy markets through nuclear exports.

The United States can ensure that we get the most out of our existing nuclear power plants, that more plants are built at home, and that U.S. companies can compete aggressively against state-owned enterprises, such as those in China and Russia, and win more nuclear power plant contracts overseas by:

- 1. Ensuring Continued Excellence**
- 2. Accelerating Nuclear Deployment**
- 3. Strengthening American Security and Competitiveness**

On behalf of our more than 340 members, the Nuclear Energy Institute stands ready to work with policymakers to implement the actions outlined below to enable nuclear energy to reach its full potential in promoting energy security, economic, clean energy, and job creation goals.

ENSURING CONTINUED EXCELLENCE

The U.S. nuclear power industry operates at the highest level of any country in the world. These plants have operated with capacity factors above 90 percent for more than two decades with an exemplary safety record. And they can continue to operate for decades to come with the necessary investments for maintenance and upgrades.

Congress and the Trump administration can take steps that will encourage these investments. Nuclear energy has seen great bipartisan support in Congress. In 2024, Congress passed the Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy (ADVANCE) Act to modernize the Nuclear Regulatory Commission (NRC) with overwhelming majorities in each chamber. We should build upon this momentum with additional actions.



Realizing Regulatory Modernization

In passing the ADVANCE Act, Congress provided a clear signal that the NRC must place a higher priority on ensuring that reactor licensing and oversight should be performed efficiently. NRC reform must span (a) the modernization of NRC processes, (b) the rightsizing of regulations, especially for innovative new designs, (c) the enhancement of project management and accountability practices, and (d) leadership commitment to change. Diligent oversight from Congress can help reinforce the efforts for a modernized regulatory approach that should be seen through more aggressive targets for modernizing regulatory oversight and eliminating process inefficiencies that unnecessarily extend licensing activities. Congress should continue to provide additional authority and funding to the NRC for the development of an efficient regulatory infrastructure for existing and advanced nuclear reactor technologies to address process inefficiencies and reduce the regulatory burden and associated fees.

Securing the Future for the Operating Nuclear Fleet

While the value of America's nuclear power plants is becoming increasingly evident, the economic forces that were responsible for a wave of early closures are still present. Congress has taken action to prevent early retirements of fully functional nuclear power plants, but this program only runs through 2032. Congress should seek to extend the credits supporting the operating plants to provide long-term certainty needed to unlock investments that will enable them to operate for decades to come.

Maximizing the Potential from Current Plants

In an economy that is desperately seeking reliable and clean power, the first step must be to preserve those assets that are currently providing that energy and maximize their potential. The NRC should be prepared to efficiently evaluate applications for license renewals and uprates that will increase the generating capacity of these power plants. The NRC can draw upon its decades of experience reviewing these kinds of applications to ensure their timely completion.

Accelerating Timelines Through More Efficient Permitting

There is bipartisan agreement that it simply takes too long to build things in America. We can do better. Congress and the Trump administration can maintain prudent environmental protections and ensure our environmental laws, such as the National Environmental Protection Act (NEPA), are upheld while reducing the time-consuming burdens that unnecessarily impede worthwhile critical projects from moving forward. The NRC can complement these efforts by expanding the use of informal hearing procedures (e.g., written comments and public meetings) in lieu of formal hearing procedures (i.e., trial-like evidentiary hearings).

Removing Roadblocks to the Next Generation of Nuclear Fuels

Congress and the Department of Energy (DOE) have invested substantial sums in the development of next-generation nuclear fuels, including fuels for liquid metal and gas-cooled reactors along with so-called Accident Tolerant Fuels, several of which are well along in the commercial demonstration process. Congress should ensure these investments result in meaningful benefits by ensuring the NRC establishes an efficient licensing process for these and other advanced fuels.

Creating the Workforce of the Future

The potential for a new generation of nuclear plants in the U.S. will be realized by the people who will build and operate them. Careers in nuclear energy support families and local communities, and they will require a wide range of skills and education. Congress and the Trump administration should support efforts to attract and train new workers into the skilled crafts that are so important to these facilities. In addition, Congress recently passed legislation to increase the capability of nuclear research at universities to allow them to strengthen their advanced nuclear energy technology capabilities. The administration should seek, and Congress should provide, funding to implement these important provisions.

ACCELERATING NUCLEAR DEPLOYMENT

A new generation of American nuclear technologies broaden the range of sizes and applications for nuclear energy while embedding the safety and nonproliferation standards that the U.S. and our allies have worked to establish over the last half-century. The U.S. government has supported the development and commercialization of many of these designs. As these technologies reach the market, there are important actions that can be taken to accelerate their deployment.



Mitigating Early Mover Risk

The U.S. has not built many new nuclear power plants in recent years, and as a result, our project execution is not where it needs to be. Many of the customers interested in deploying new nuclear energy systems are waiting for the industry to get additional manufacturing and construction experience before placing orders for new reactors. Congress can help accelerate this process by enacting legislation that will authorize DOE to protect ratepayers and customers by helping to cover the increased cost and risks of cost overruns for first-mover projects (including both demonstrations funded by DOE and projects not funded by DOE).

Meeting Federal Commitments for Technology Development and Reactor Demonstration Projects

To help mitigate first-mover risk, it is essential for the government to fully fund existing federal cost-share commitments to develop and demonstrate new technologies under the Advanced Reactor Demonstration Program and the Gen III+ Small Modular Reactor Program. Additional cost-shared risk reduction and demonstration projects would help accelerate the demonstration of a wider range of technologies, including microreactors. Fully funding existing cost-shared programs to develop supporting technologies for both existing and new reactors (including advanced fuels, instrumentation and control systems, physical and cyber security, advanced manufacturing and hydrogen production) will help maximize the benefits of both today's and tomorrow's nuclear reactors.

Unlocking Incentives to Promote Investment

Legislation passed in recent years has included strong incentives to make significant investments in new nuclear energy capabilities, including plant uprates and restarts. Allowing nuclear energy access to credits that have been historically available to wind and solar has made the deployment of new plants commercially feasible—even after inflationary pressures posed challenges. Congress should protect these credits that stand to create new infrastructure investments across the country, especially in smaller economies that will be in line for significant job growth. The Trump administration should ensure that the guidance to implement these credits allows companies to unlock the benefits of locating in energy communities and using domestic content in construction.

Financing Deployment at Scale

Building a new generation of nuclear plants in the U.S. will require mobilizing large amounts of capital for construction. This scale of expansion will be a financial challenge for many of the companies seeking to advance nuclear deployment. For two decades, the Department of Energy has developed loan authorities to help provide the financing that would be unavailable through private markets. These tools should be preserved now that they are on the cusp of reaching their potential.

Shaping Markets Through Federal Offtake Agreements

The federal government can use its purchasing power to accelerate commercial deployment of technologies that can strengthen national security and meet environmental goals. The Trump administration should use tools such as federal power purchase agreements to support both existing nuclear power plants and the construction of next-generation reactors. If necessary, the administration should seek Congressional authority to extend such agreements to 30 years and should seek appropriations to ensure that the attributes that nuclear energy provides can be supported at a premium to market value of electricity commodity pricing.

Preserving Jobs in Coal Communities

As operating generating facilities such as coal plants reach the end of their life, local economies face uncertain futures as older coal generation facilities close and jobs are lost with them. New nuclear power plants are uniquely suited to replace those facilities. Many of the skills needed to operate a coal plant are directly transferable to nuclear ones. Policymakers should preserve the financing and tax programs that enable these communities to continue producing the power America needs and the careers that will ensure thriving local economies.

STRENGTHENING AMERICAN SECURITY AND COMPETITIVENESS

Energy security IS national security. As the U.S. faces increasing competition abroad, there is a recognized urgency to ensure that our energy production is within our control, including our fuel supply. A robust and promising international market for U.S. nuclear energy has emerged. Building nuclear plants overseas provides tremendous benefits to U.S. job creation and balance of trade. Estimates predict that U.S. exports of civil nuclear technology could exceed \$1 trillion through 2050. To unlock these markets, these technologies will need to be initially built and proven on U.S. soil.



Establishing a Reliable Fuel Supply

In the wake of Russia's invasion of Ukraine and the renewed emphasis on energy security in the global economy, the U.S., in concert with our G7 allies, is bringing nuclear fuel supply capabilities closer to home. Congress has provided funding that is poised to catalyze investment in mining, conversion, and enrichment that will provide security and reliability. The Trump administration should seek to quickly inject these resources into the marketplace to rapidly pivot away from reliance on untrustworthy partners. Congress can provide meaningful oversight to ensure that this is done efficiently.

Bringing Nuclear Energy to More of the Economy

Nuclear energy is poised to contribute beyond the power sector to create new options for industrial heating and heavy transportation. The U.S. can take a leadership position in these new markets by preserving the credits that have been enacted to promote the production of hydrogen and support the use of nuclear energy to provide heat for industrial processes. These credits will help ensure that new domestic manufacturing will have the reliable energy they need to compete globally.

Demonstrating New Nuclear Energy Systems for National Security

Nuclear technology is uniquely positioned to strengthen U.S. national security by powering installations in remote locations and by powering space exploration. The administration should seek, and Congress should provide full funding for, the micro-nuclear reactor demonstration at the Department of Defense Strategic Capabilities Office and pursue the use of microreactors at domestic defense installations.

Supporting America's Exports

Due to the strategic and highly regulated nature of civil nuclear exports, government must work alongside industry to help U.S. firms compete fairly against their state-owned rivals. However, U.S. policies to promote nuclear exports lag behind competitors such as Russia and China, placing U.S. companies at a competitive disadvantage. To enable U.S. firms to compete and win in the global market, the Trump administration and Congress should urgently pursue policies in the following areas:

- **Ensuring Federal Coordination:** Nuclear cooperation and subsequent commercial projects are often the product of government-to-government engagement at the highest levels. Strategic leadership within the Executive Office of the President is an important step in ensuring coordination and focus on nuclear energy including deployment of U.S. technologies abroad. The appointment of a senior administration official for civilian nuclear energy policy is a key step in achieving this goal.
- **Enhancing Export Financing:** Financing is critical to U.S. nuclear competitiveness abroad. Congress and the Trump administration should ensure that the Export-Import Bank (EXIM), the U.S. International Development Finance Corporation (DFC) and the U.S. Trade and Development Agency have the necessary authorities and are effectively enabling U.S. nuclear energy exports. Congress should act swiftly to provide long-term reauthorizations for both DFC and EXIM and empower these agencies with enhanced capabilities to compete with Russia and China.
- **Boosting Trade Support and Market Access:** It is critical that nuclear cooperation be part of the strategic engagement between the U.S. and our partners. Elevating nuclear engagement and advocacy in bilateral dialogues is essential. Less than one-third of countries are covered under a nuclear energy cooperation agreement with the U.S. and intergovernmental agreements on cooperation for the development of civil nuclear power programs are increasingly needed to enable the export of U.S. nuclear reactors. With the expansion of global interest in nuclear energy, the State Department and other agencies must have the needed resources to facilitate conclusion of these bilateral agreements before our competitors in Russia and China lock up these new markets.
- **Improving Export Control Efficiency:** It will be imperative to improve the speed and predictability of DOE's export control licensing process by expanding general and fast-track authorizations for low-risk activities and by implementing bilateral mechanisms in key markets to facilitate export authorization. Congress should consider legislation and conduct oversight to ensure the DOE 10 CFR Part 810 export licensing process is made more efficient.
- **Providing Appropriations to Expand International Programs at Key Agencies:** The Departments of State, Energy, and Commerce, the NRC, and offices in numerous other federal agencies play important roles in facilitating U.S. nuclear energy technology exports. These agencies require sufficient resources to keep up with the rapidly growing global interest in U.S. nuclear energy exports.

Increasing Partner Country Access to U.S. Nuclear Engineering Education

To compete and win in nuclear energy export markets, the U.S. needs to capitalize on every advantage it holds. One of the areas in which the U.S. holds the clear global lead is in nuclear engineering education. A program to fund students from nuclear energy partner nations to pursue advanced education at U.S. institutions can serve as an instrument of U.S. trade policy and a key component of U.S. energy and security assistance. The State Department should be funded to set up such a program, modeled on the highly successful International Military Education and Training program which provides training and education on a grant basis to students from allied and friendly nations.

Investing in R&D Capabilities

The primary U.S. neutron irradiation testing facility is nearly 60 years old. Such facilities are needed to develop advanced nuclear fuels and materials. For certain types of nuclear fuels, the only testing resource available to U.S. companies in recent years was in Russia, an option that is no longer available. Several U.S. allies are interested in developing a modern capability for fast neutron irradiation, so the DOE should take the lead in determining if a multinational consortium could be established to appropriately fund and execute a modern test reactor program with the objective to have a new fast neutron user facility up and running by the early-to-mid 2030s.

Leading on Used Fuel Management

This long-standing impasse must be resolved if nuclear energy is to achieve its full potential in meeting the growing demands on the increasingly clean U.S. energy system. While Congress considers the future of the Nuclear Waste Policy Act, the government should take steps to stand up an organization to resume management of the nuclear waste program. The Trump administration should seek additional funding to continue ongoing efforts toward the establishment of an integrated nuclear waste management system that allows for private consolidated interim spent fuel storage approaches.



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