INDUSTRY OVERVIEW SEGMENTS

NUCLEAR

ENERGY & MANUFACTURING in Appalachia

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Industry Overview

The nuclear industry is experiencing a resurgence, driven by the demand for clean, reliable energy, with small modular reactors (SMRs) emerging as a key innovation due to their smaller size, lower costs, and flexibility for applications like power generation and industrial heat. The global SMR market was valued at approximately $6.14 billion in 2023 and is projected to grow to $7.14 billion by 2030 at a compound annual growth (CAGR) rate of 3.0%, with some forecasts suggesting it could reach $16.13 billion by 2034 at a CAGR of 8.9%, fueled by decarbonization goals and technological advancements. Traditional nuclear power continues to provide about 10% of the world's electricity, while SMRs are expected to contribute 2% by 2043, supported by over 80 designs in development worldwide.

NUCLEAR ENERGY IS SEEN AS A BIPARTISAN PRIORITY

Nuclear energy has emerged as a bipartisan priority across multiple U.S. administrations, reflecting its role as a reliable, carbon-free energy source critical for climate and energy security goals. During the Trump administration (2017–2021), policies like the Nuclear Energy Innovation and Modernization Act (NEIMA) streamlined advanced reactor licensing, while billions in loan guarantees supported projects like Vogtle Units 3 and 4, the first new U.S. reactors in over 30 years. The Biden administration (2021–2025) built on this momentum, leveraging the Bipartisan Infrastructure Law to allocate $6 billion for the Civil Nuclear Credit program to prevent reactor closures and $2.5 billion for advanced reactor demonstrations. The Inflation Reduction Act further introduced tax credits for existing and new nuclear facilities, reinforcing nuclear's role in achieving net-zero emissions by 2050. Both administrations supported small modular reactors (SMRs), with Trump's Department of Energy (DOE) funding NuScale's Carbon Free Power Project and Biden's DOE committing $900 million for Gen III+ SMR deployments. This continuity underscores nuclear's bipartisan appeal, driven by its ability to provide stable, zero-carbon baseload power amid rising energy demands.

BIG TECH IS INVESTING IN THE FUTURE OF NUCLEAR ENERGY

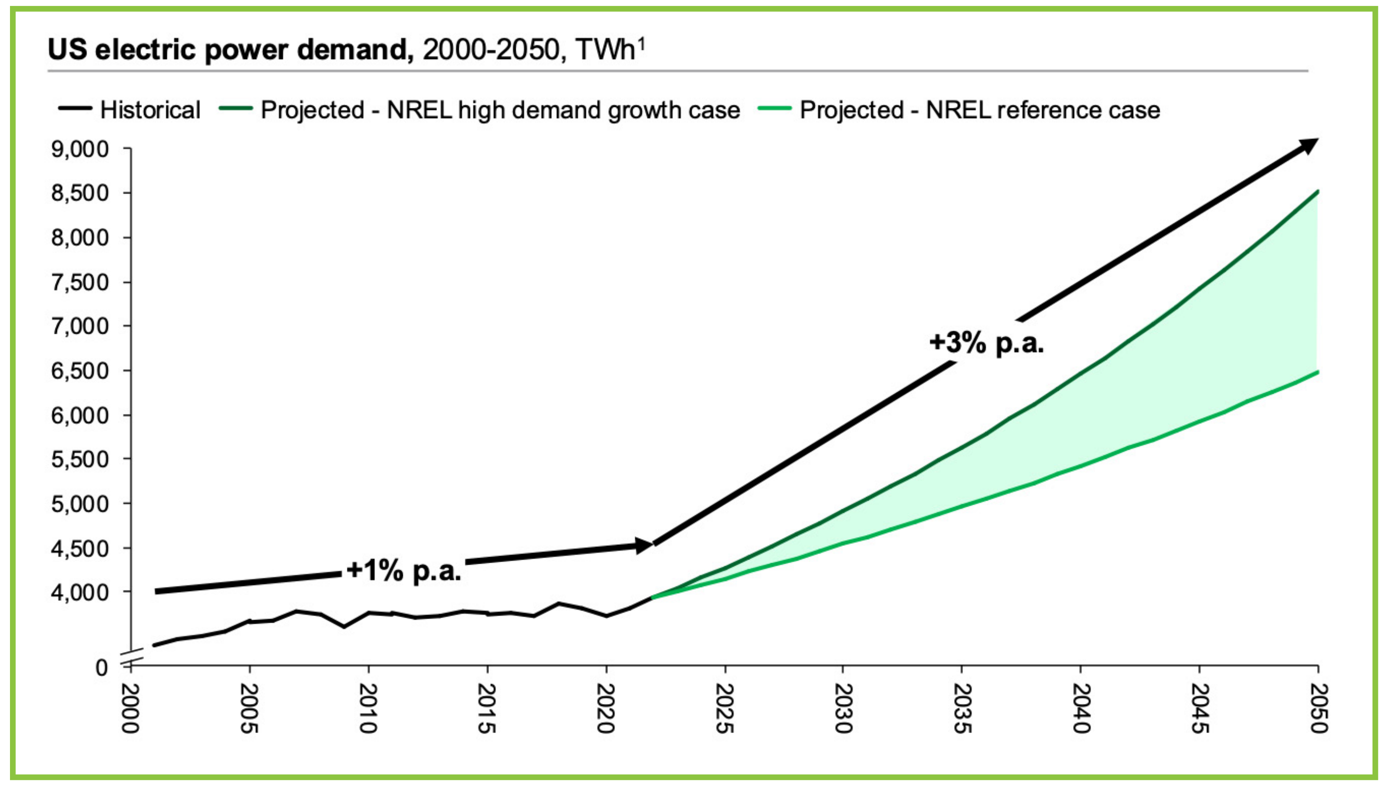
Big Tech's investment in nuclear energy has further catalyzed its revival, as companies like Microsoft, Amazon, and Google seek carbon-free, 24/7 power to meet the soaring energy needs of AI-driven data centers. Microsoft's $1.6 billion deal with Constellation Energy to restart Three Mile Island's Unit 1 by 2028 will supply 837 MW for its mid-Atlantic data centers. Amazon Web Services (AWS) invested $500 million in X-energy for 5 GW of SMR capacity by 2039 and partnered with utilities like Dominion Energy to explore SMRs in Virginia. Google's agreement with Kairos Power targets 500 MW from advanced reactors by 2030 to power its data centers. These investments align with the Electric Power Research Institute's projection that data center electricity consumption could double by 2030, necessitating reliable, carbon-free sources like nuclear, which offers scalability that renewables alone cannot match. By financing first-of-a-kind reactors and signing long-term power purchase agreements, Big Tech is reducing deployment risks and driving down costs, positioning nuclear as a cornerstone of the clean energy transition.

MARKET SIZE & GROWTH FORECASTS

- **Current Market Size:** The U.S. nuclear power industry's market size is estimated at approximately **$37.9 billion** in 2025, driven by electricity generation from 93 operating commercial reactors across 54 plants. Despite a slight decline in revenue over the past five years at a CAGR of -0.9% from 2019 to 2024, nuclear power remains a cornerstone of the nation's energy mix, contributing about 19% of total electricity in 2023. The industry faces competition from renewables and natural gas, but federal incentives like production tax credits bolster its economic viability. High operational reliability, with plants running at over 93% capacity, supports consistent revenue streams. The market is concentrated, with major players like Exelon Corporation holding significant shares.

- **Installed Capacity and Output:** The U.S. nuclear energy market boasts an installed capacity of roughly 398.24 gigawatts (GW) in 2025, generating **over 771.5 billion** kilowatt-hours annually, making it the world's largest nuclear electricity producer. This capacity reflects the output of aging reactors, averaging 42 years old, with many receiving license extensions from 40 to 60 years by the Nuclear Regulatory Commission (NRC). Recent additions, like Vogtle Units 3 and 4, have increased capacity, with Unit 4 set to make Vogtle the largest U.S. nuclear plant at 4,536 MW. The focus on clean energy and rising electricity demand from data centers and AI applications underscores nuclear's role in meeting baseload needs.

Electricity demand could more than double by 2050



Source: Pathways to Commercial Liftoff: Advanced Nuclear US Department of Energy, September 2024

- **Growth Forecast to 2030:** The nuclear power market is projected to grow modestly, with installed capacity expected to **reach 439.69 GW by 2030** at a CAGR of 2% from 2025. This growth is driven by life extensions of existing reactors and limited new builds, though only Vogtle's expansions have come online recently. Federal policies, including the Inflation Reduction Act, provide tax credits and loan guarantees, encouraging investment in advanced reactors like small modular reactors (SMRs). However, high construction costs and public safety concerns limit rapid expansion compared to renewables like wind and solar. The industry's ability to deliver projects on time and budget will be critical to meeting these forecasts.

- **Long-Term Ambitions by 2050:** The U.S. aims to triple nuclear capacity to 200 GW by 2050, adding 35 GW by 2035 and 15 GW annually by 2040, as announced at COP29. This ambitious plan responds to surging demand for clean, firm power from data centers and industrial sectors, potentially requiring **700–900 GW** of additional low-carbon capacity. New reactor designs, standardized construction, and lessons from Vogtle's cost efficiencies (Unit 4 was 20% cheaper than Unit 3) could support this growth. However, challenges include financing, supply chain constraints, and regulatory hurdles, which must be addressed to achieve these targets. The strategy aligns with global pledges to expand nuclear for energy security and decarbonization.

- **Nuclear Equipment Market Growth:** The U.S. nuclear power plant and equipment market is expected to grow at a CAGR of over **6.9% from 2025 to 2030**, driven by demand for auxiliary and island equipment critical for safety and efficiency. Investments in pressurized water reactors (PWRs), which dominate with 64 of the 93 U.S. reactors, fuel this growth due to their high-pressure systems requiring robust components. The market benefits from federal funding, such as the **$20 million allocated in 2021** for clean hydrogen production from nuclear plants. Aging infrastructure necessitates upgrades, further boosting equipment demand, though delays from past supply chain disruptions linger.

- **Policy and Investment Drivers:** Federal initiatives like the Bipartisan Infrastructure Law and Inflation Reduction Act are pivotal, offering tax incentives and **$8.5 billion** in loan authority to extend reactor lifespans and restart retired plants. These policies counter economic pressures that led to plant closures in the 2010s, with Diablo Canyon's operation extended past its planned 2024 shutdown. Rising energy demand, especially from AI and high-performance computing, positions nuclear as a reliable low-carbon solution, potentially attracting private investment. However, the industry must navigate public skepticism and high initial costs for new projects to sustain growth momentum.

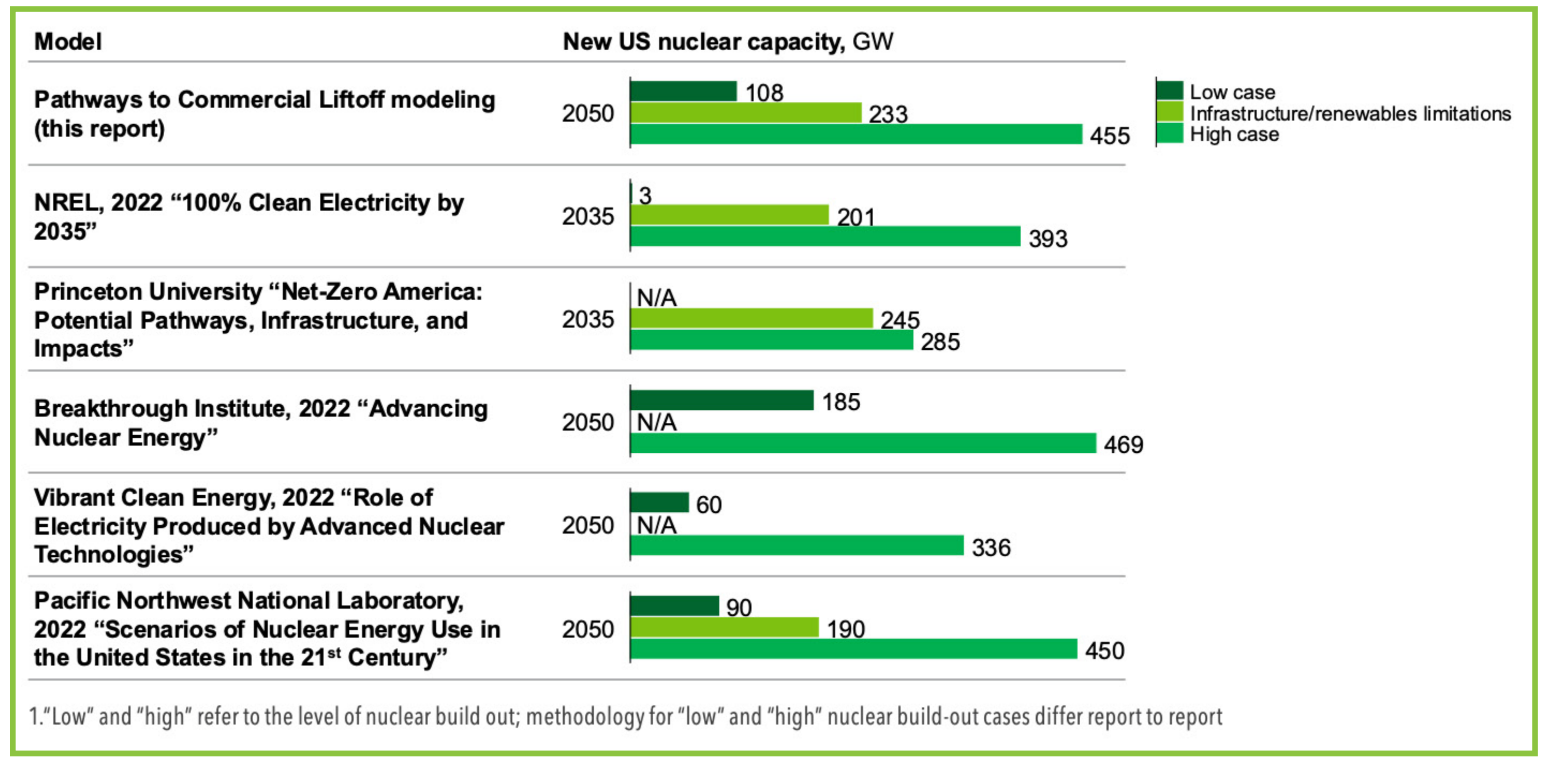
- **Challenges to Growth:** Despite growth potential, the U.S. nuclear industry faces restraints from high construction costs, with first-of-a-kind projects like Vogtle **exceeding $9,000/kW**, and competition from cheaper renewables. Public concerns over safety, fueled by historical accidents like Three Mile Island, and radioactive waste management issues dampen expansion enthusiasm. The industry's growth is also limited by a lack of new reactor projects, with only five under construction in 2014 and none since Vogtle's completion. Regulatory stability and workforce training are critical to overcoming these barriers, as is public acceptance of advanced technologies like SMRs.

MARKET DRIVERS

- **Rising Demand for Clean, Reliable Energy:** Growing electricity needs, particularly from data centers and AI applications, are pushing demand for stable, low-carbon power sources like nuclear. Nuclear energy's ability to provide baseload power with over 93% capacity factor makes it uniquely suited to meet these needs compared to intermittent renewables. Federal and state policies emphasizing net-zero emissions by 2050 further incentivize nuclear as a cornerstone of clean energy strategies. The completion of Vogtle Units 3 and 4 highlights nuclear's potential to deliver large-scale, emissions-free electricity. However, scaling up to meet ambitious targets will require overcoming public perception challenges and high initial costs.

- **Federal Policy and Financial Incentives:** The Bipartisan Infrastructure Law and Inflation Reduction Act provide significant support through tax credits, loan guarantees, and **$8.5 billion** to prevent premature reactor retirements. These policies have reversed closure plans for plants like Diablo Canyon, extending their operations to maintain zero-carbon generation. The ADVANCE Act of 2024 streamlines regulatory processes for advanced reactors, encouraging innovation and deployment. Such incentives make nuclear more economically competitive against cheaper natural gas and renewables. Still, long-term success depends on consistent policy implementation and private investment.

A variety of net-zero modeling efforts indicate the need for 200+ GW of new nuclear capacity in the US by 2050



Source: Pathways to Commercial Liftoff: Advanced Nuclear US Department of Energy, September 2024

- **Advancements in Small Modular Reactors (SMRs):** SMRs are gaining traction due to their smaller size, lower capital costs, and flexibility for deployment in diverse settings, including remote or industrial sites. Companies like NuScale and X-Energy are securing contracts with tech giants like Google and Amazon, signaling strong market interest in SMRs for decarbonizing energy-intensive sectors. The Department of Energy estimates SMRs could add 80 GW globally by 2040 if costs drop to competitive levels. However, regulatory hurdles and unproven commercial viability at scale remain challenges. Continued R&D investment is critical to realizing SMRs' potential.

- **Energy Security and Grid Reliability:** Nuclear power's role in ensuring energy security is increasingly valued amid volatile fossil fuel markets and rising global tensions. With reactors supplying nearly **20% of U.S. electricity** and over **50% of zero-carbon power**, nuclear reduces reliance on imported fuels. Its dispatchable nature complements renewables, stabilizing the grid during extreme weather or peak demand. Policies rewarding reliability, like those proposed for market redesign, could enhance nuclear's economic edge. Yet, competition from subsidized renewables and gas plants pressures nuclear's market share.

- **Decarbonization of Industrial Sectors:** Nuclear energy's ability to provide high-temperature heat and hydrogen production is driving interest in applications beyond electricity, such as steel, cement, and chemical manufacturing. Pilot projects for nuclear-derived hydrogen, supported by **$20 million** in DOE funding, aim to decarbonize hard-to-abate industries. This versatility positions nuclear as a multi-faceted solution for achieving net-zero goals across sectors. However, scaling these applications requires technological breakthroughs and infrastructure investment, which are still in early stages.

- **Workforce and Supply Chain Development:** The nuclear industry is investing in workforce training and supply chain resilience to support new projects and reactor life extensions, spurred by lessons from Vogtle's construction. **Over 30,000 workers** trained for Vogtle's AP1000 reactors form a skilled labor pool for future builds, reducing costs and delays. Federal programs targeting STEM education and minority-serving institutions aim to **grow the nuclear workforce by 275%** to meet projected needs. A robust supply chain for uranium and reactor components is also critical, though dependence on concentrated global markets poses risks.

- **Public and Private Sector Collaboration:** Partnerships between utilities, tech companies, and government are accelerating nuclear innovation, with firms like Microsoft and Google backing SMR projects to power data centers. These collaborations leverage private capital to offset high upfront costs, as seen in Amazon's investment in X-Energy. The Nuclear Energy Institute notes states are also driving investment to boost local economies and energy security. However, public opposition and regulatory complexity could slow progress unless addressed through transparent engagement and streamlined licensing.

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CHALLENGES & CONCERNS

- **High Construction Costs and Delays:** Building new nuclear reactors, like the Vogtle Units 3 and 4, often exceeds budgets by billions, with costs reaching **$9,000/kW** compared to renewables' lower price tags. Delays, sometimes stretching **eight years**, stem from incomplete designs, supply chain issues, and an untrained workforce, as seen in Vogtle's decade-long construction. These financial risks deter investment, making nuclear less competitive against natural gas and solar. Standardized designs and lessons from recent projects could reduce costs, but the industry must prove it can deliver on time. Public-private partnerships are vital to share these risks.

- **Public Safety Perceptions:** Historical accidents like Three Mile Island and Fukushima fuel public fears, associating nuclear power with catastrophic risks despite modern safety advancements. Many Americans view nuclear as unstable, a perception worsened by media portrayals linking it to weapons or disasters. This skepticism slows regulatory approvals and local acceptance for new projects. Education campaigns and transparent safety data from the Nuclear Regulatory Commission (NRC) aim to counter myths, but rebuilding trust is a long-term challenge.

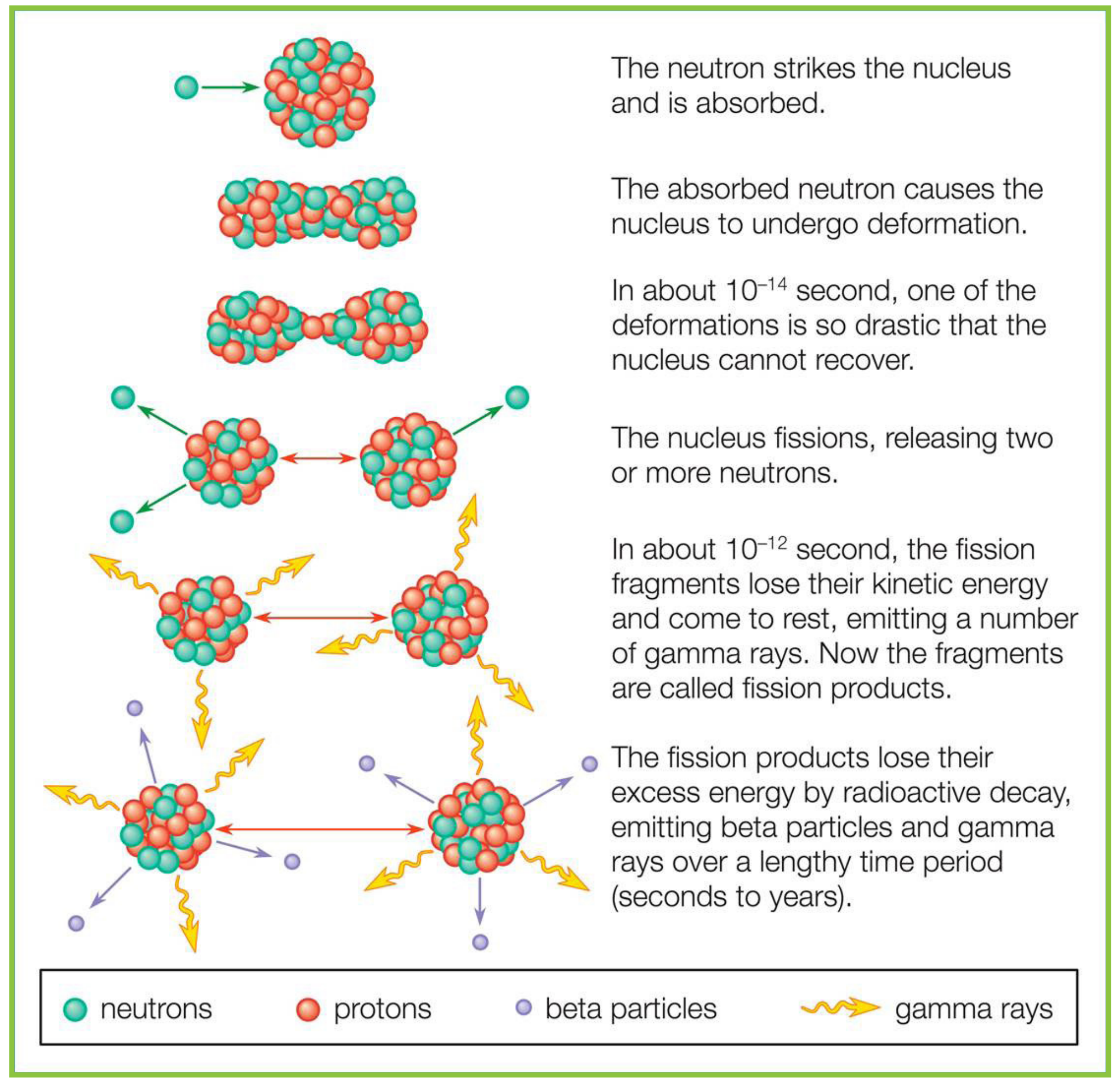
- **Radioactive Waste Management:** Nuclear reactors produce high-level waste that remains hazardous for thousands of years, with no permanent U.S. repository since the Yucca Mountain project stalled. Temporary on-site storage in dry casks is safe but not a long-term solution, raising concerns about capacity and security. Public opposition to waste transport and disposal sites complicates policy efforts. Research into advanced fuels that produce less waste offers hope, but solutions are decades away. The industry must balance operational needs with environmental and ethical responsibilities.

- **Aging Reactor Fleet:** Most U.S. reactors, averaging 42 years old, face retirements or costly upgrades to extend licenses from 40 to 60 or 80 years. Plants like Palisades require major repairs, such as steam generator fixes, raising safety and economic questions about restarting old units. Retirements since 2017 have cut **4,736 MW of capacity**, threatening grid reliability. While life extensions are cheaper than new builds, they demand rigorous NRC oversight to ensure safety. The industry's reliance on aging infrastructure limits growth without new construction.

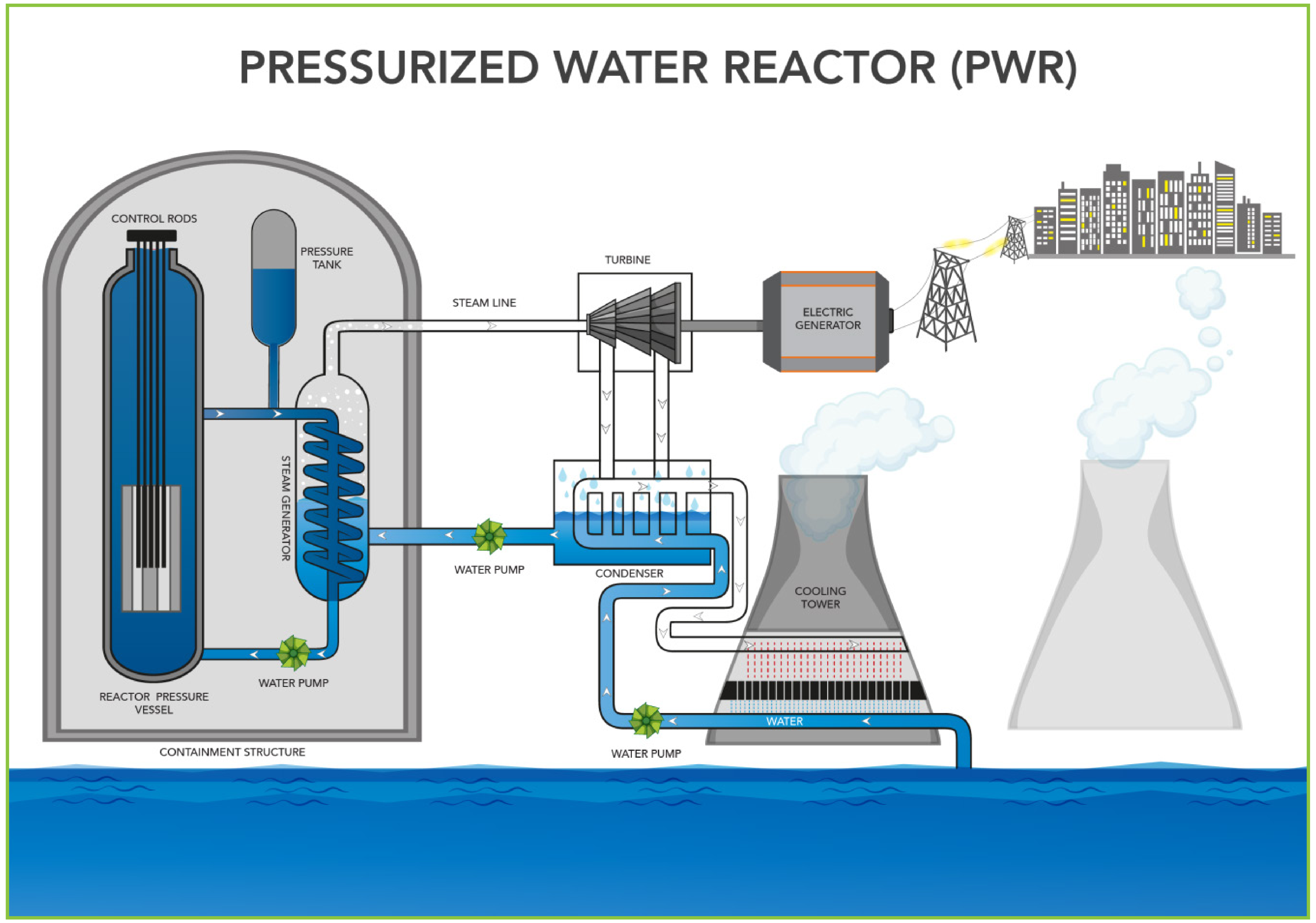
- **Competition from Renewables and Gas:** Cheap natural gas and falling costs for solar and wind challenge nuclear's market share, with nuclear's electricity contribution dropping to **18.2%** in recent years. Renewables benefit from faster deployment and lower upfront costs, while nuclear struggles with long lead times. Financial pressures have led to closures, though federal credits have saved some plants like Diablo Canyon. Nuclear's reliability is a strength, but market structures often undervalue its carbon-free baseload power. Policy reforms could level the playing field.

- **Regulatory and Financing Hurdles for SMRs:** Small modular reactors (SMRs)promise flexibility, but their undeveloped regulatory framework and high initial costs slow commercialization. Projects like NuScale's 2023 termination, after a **75% cost spike**, highlight economic risks for unproven designs. Tech firms like Amazon back SMRs for data centers, but the NRC's slow licensing process frustrates developers. Clearer policies and global standards could attract investment, yet public concerns about waste from SMRs persist. Scaling SMRs by the 2030s hinges on overcoming these barriers.

- **Supply Chain and Fuel Dependency:** The U.S. relies on Russia for **over 20%** of its enriched uranium, a national security risk exposed by geopolitical tensions. Building domestic fuel production, like high-assay low-enriched uranium (HALEU) for advanced reactors, could take years and billions, with DOE contracts targeting 2027. Supply chain gaps for reactor components, worsened by decades of limited construction, inflate costs and delay projects. A trained workforce of 30,000 from Vogtle helps, but scaling requires more investment. Self-reliance is critical to meet 2050 goals.



Nuclear Reactor Components



https://www.energy.gov/ne/articles/nuclear-101-how-does-nuclear-reactor-work

- **Control Rods:** Control rods are neutron-absorbing rods made of materials like boron or cadmium that are inserted into the reactor core. They regulate the rate of nuclear fission by absorbing excess neutrons, allowing operators to control the chain reaction. By adjusting their position, the reactor's power output can be increased, decreased, or stopped entirely.

- **Reactor Pressure Valve:** The reactor pressure valve is a safety device designed to release excess pressure from the reactor pressure vessel to prevent over-pressurization. It opens automatically when pressure exceeds safe limits, venting steam or coolant to a containment system. This ensures the integrity of the reactor vessel and prevents potential accidents.

- **Pressure Tank (Reactor Pressure Vessel):** The reactor pressure vessel is a robust steel container that houses the reactor core and coolant. It withstands high temperatures and pressures generated during nuclear fission, ensuring the reaction occurs safely. The vessel also serves as a barrier to prevent the release of radioactive materials.

- **Steam Generator:** Most U.S. reactors, averaging 42 years old, face retirements or costly upgrades to extend licenses from 40 to 60 or 80 years. Plants like Palisades require major repairs, such as steam generator fixes, raising safety and economic questions about restarting old units. Retirements since 2017 have cut 4,736 MW of capacity, threatening grid reliability. While life extensions are cheaper than new builds, they demand rigorous NRC oversight to ensure safety. The industry's reliance on aging infrastructure limits growth without new construction.

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Nuclear Reactor Components

- **Water Pump:** Water pumps circulate coolant, typically water or heavy water, through the reactor core and steam generators. They ensure a continuous flow to remove heat generated by fission and maintain proper operating temperatures. These pumps are critical for both power production and reactor safety.
- **Containment Structure:** The containment structure is a reinforced steel and concrete building that encloses the reactor and its associated systems. It is designed to withstand extreme events, such as earthquakes or explosions, and prevent the release of radioactive materials. This structure is a key safety feature to protect the environment and public.
- **Steam Line:** The steam line is a network of pipes that transports high-pressure steam from the steam generator to the turbine. It is designed to handle extreme temperatures and pressures while maintaining system integrity. The steam line ensures efficient energy transfer for electricity generation.
- **Turbine:** The turbine is a mechanical device with rotating blades driven by high-pressure steam from the steam generator. It converts the thermal energy of steam into mechanical energy by spinning a shaft. The turbine is directly connected to the electric generator to produce electricity.
- **Electric Generator:** The electric generator is a device connected to the turbine that converts mechanical energy into electrical energy. As the turbine spins, it rotates magnets within coils of wire, inducing an electric current. This electricity is then transmitted to the power grid for distribution.
- **Cooling Tower:** The cooling tower is a large structure that dissipates excess heat from the reactor's cooling system into the atmosphere. It cools the water used in the condenser by allowing it to evaporate or transfer heat, maintaining efficient operation. Cooling towers are iconic features of many nuclear power plants, though not all reactors use them.
- **Condenser:** The condenser is a heat exchanger that converts steam back into liquid water after it passes through the turbine. It uses cool water from a water source to absorb heat from the steam, creating a vacuum that improves turbine efficiency. This process allows the water to be reused in the steam cycle.
- **Water Source:** The water source, often a nearby river, lake, or ocean, provides the cooling water needed for the condenser and other plant systems. It ensures a steady supply of water to absorb, transfer, and dissipate heat generated during power production. The water is typically treated and returned to the source to minimize environmental impact.

Components of Nuclear Reactor (with NAICS code)

COMPONENT	NAICS CODE	DESCRIPTION	USE
Reactor Core	332410	The reactor core is the central part of the nuclear reactor where nuclear fission occurs. It contains fuel rods, typically made of uranium or plutonium, and a moderator.	It generates heat through fission, which is used to produce steam that drives turbines for electricity generation.
Control Rods	332999	Control rods are made of neutron-absorbing materials like boron or cadmium. They are inserted or withdrawn from the core to regulate the reaction rate.	They control the nuclear chain reaction by absorbing excess neutrons, ensuring the reactor operates safely and efficiently.
Coolant	325199	The coolant is a fluid, often water, heavy water, or gas, that circulates through the reactor core. It absorbs and transfers heat generated during fission.	It removes heat from the core to prevent overheating and transfers it to a heat exchanger or steam generator.
Steam Generator	332410	The steam generator is a heat exchanger that converts water into steam using heat from the coolant. It's a critical component in pressurized water reactors (PWRs).	It produces steam to drive turbine generators, converting thermal energy into electrical power.
Turbine	333611	The turbine is a mechanical device with rotating blades driven by high-pressure steam. It's connected to a generator to produce electricity.	It converts the kinetic energy of steam into mechanical energy, which powers the generator to produce electricity.
Containment Structure	327390	The containment structure is a robust, sealed building made of steel and concrete surrounding the reactor. It's designed to withstand extreme conditions.	It prevents the release of radioactive materials into the environment in case of an accident, ensuring safety.

Note: NAICS codes are based on manufacturing or production categories related to these components
(e.g., 332410 for "Power Boiler and Heat Exchanger Manufacturing," 325199 for "All Other Basic Organic Chemical Manufacturing")

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Traditional and SMR Nuclear Developers and Manufacturers

TRADITIONAL NUCLEAR REACTOR DEVELOPERS AND MANUFACTURERS

1. Westinghouse Electric Company
- A historic leader in nuclear technology, Westinghouse designs and supplies large-scale pressurized water reactors (PWRs) like the AP1000, along with fuel and services.
- Website: **www.westinghouse.com**

2. GE Hitachi Nuclear Energy (GEH)
- A partnership between GE and Hitachi, GEH provides boiling water reactors (BWRs) and advanced nuclear services for traditional large-scale power plants.
- Website: **nuclear.gepower.com**

3. Framatome
- A French company specializing in designing and building large nuclear reactors, fuel assemblies, and providing maintenance services for global nuclear fleets.
- Website: **www.framatome.com**

4. Rosatom (State Atomic Energy Corporation)
- Russia's state-owned nuclear energy corporation, Rosatom designs and constructs large VVER reactors, offering a full nuclear fuel cycle portfolio.
- Website: **www.rosatom.ru/en**

5. China National Nuclear Corporation (CNNC)
- CNNC develops and operates large-scale nuclear power plants in China, including the Hualong One PWR, and supports the country's nuclearn expansion.
- Website: **en.cnnc.com.cn**

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Traditional and SMR Nuclear Developers and Manufacturers

SMALL MODULAR NUCLEAR REACTOR (SMR) DEVELOPERS AND MANUFACTURERS

1. NuScale Power
- A U.S.-based pioneer in SMRs, NuScale's VOYGR power module is the first SMR design certified by the NRC, offering scalable, safe nuclear energy.
- Website: **www.nuscalepower.com**

2. X-Energy
- X-Energy develops the Xe-100, a high-temperature gas-cooled SMR using TRISO fuel, aimed at providing flexible, carbon-free energy solutions.
- Website: **www.x-energy.com**

3. BWX Technologies, Inc. (BWXT)
- BWXT manufactures nuclear components and is developing the BANR microreactor, alongside supporting traditional reactor fuel and services.
- Website: **www.bwxt.com**

4. Rolls-Royce SMR
- Rolls-Royce is designing a compact PWR-based SMR to deliver affordable, low-carbon electricity with factory-built modular construction.
- Website: **www.rolls-royce.com/smr**

5. TerraPower
- Founded by Bill Gates, TerraPower develops the Natrium SMR, a sodium- cooled fast reactor with energy storage for enhanced grid flexibility.
- Website: **www.terrapower.com**

6. Holtec International
- Holtec's SMR-160 is a light-water SMR designed for simplicity and safety, targeting deployment in diverse global markets.
- Website: **www.holtecinternational.com**

7. Oklo Inc.
- Oklo is innovating with the Aurora microreactor, a compact fast reactor using recycled fuel for small-scale, sustainable power generation.
- Website: **www.oklo.com**

8. NANO Nuclear Energy Inc.
- NANO Nuclear is developing portable micro-SMRs like ZEUS and ODIN, focusing on advanced, on-demand clean energy solutions.
- Website: **www.nanonuclearenergy.com**

9. Moltex Energy
- Moltex designs the Stable Salt Reactor (SSR), an SMR using molten salt technology for safe, efficient, and proliferation-resistant energy.
- Website: **www.moltexenergy.com**

10. EDF (NUWARD Project)
- EDF, a French energy giant, is developing NUWARD, a compact PWR- based SMR to complement its traditional large reactor offerings.
- Website: **www.edf.fr/en** (NUWARD-specific info under nuclear innovation sections)

Nuclear Industry Trade Association & Resources

1. Nuclear Energy Institute (NEI)
- The policy organization for the U.S. nuclear technologies industry, advocating for nuclear power as a clean, reliable energy source.
- Website: **www.nei.org**

2. World Nuclear Association (WNA)
- A global organization that promotes nuclear energy, connects industry players, and provides authoritative information on the nuclear fuel cycle.
- Website: **www.world-nuclear.org**

3. Nuclear Industry Association (NIA)
- The trade association representing the UK's civil nuclear industry, advocating for nuclear's role in achieving net-zero emissions.
- Website: **www.niauk.org**

4. United States Nuclear Industry Council (USNIC)
- A leading U.S. advocate for advanced nuclear energy and the American supply chain, supporting innovation and global competitiveness.
- Website: **www.usnic.org**

5. Nuclear Innovation Alliance (NIA)
- EA non-profit "think-and-do" tank focused on advancing nuclear energy as a climate solution through policy, research, and outreach.
- Website: **www.nuclearinnovationalliance.org**

6. American Nuclear Society (ANS)
- A professional organization uniting nuclear science and technology experts, offering publications and fostering industry advancements
- Website: **www.ans.org**

7. International Atomic Energy Agency (IAEA)
- A UN-affiliated organization promoting the safe, secure, and peaceful use of nuclear technologies worldwide.
- Website: **www.iaea.org**

8. Canadian Nuclear Association (CNA)
- Represents Canada's nuclear industry, promoting the development and peaceful use of nuclear technologies.
- Website: **www.cna.ca**

9. European Nuclear Society (ENS)
- A network of nuclear professionals and societies across Europe, advancing nuclear science and technology.
- Website: **www.euronuclear.org**

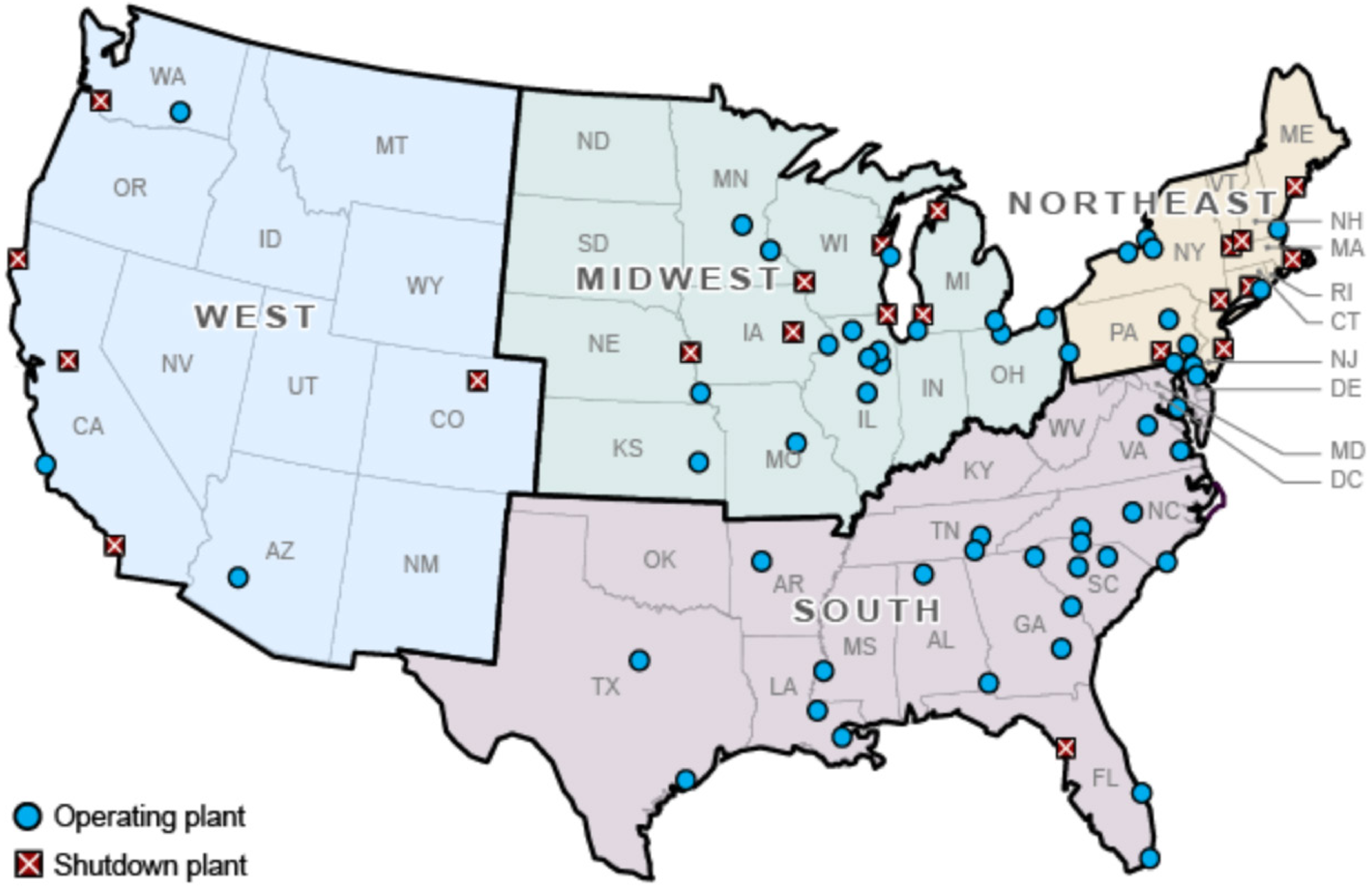
10. World Nuclear News (WNN)
- A resource supported by the World Nuclear Association, providing news, features, and analysis on the global nuclear energy sector.
- Website: **www.world-nuclear-news.org**

11. U.S. Nuclear Regulatory Commission (U.S.NRC)
- U.S. NRC is an independent agency responsible for ensuring the safe use of nuclear materials and regulating the civilian use of nuclear energy. Its main functions include licensing nuclear facilities, inspecting facilities and activities, and developing regulations to ensure the safety and security of these facilities.
- Website: **https://www.nrc.gov**

12. U.S. Department of Energy (Office of Nuclear Energy)
- The Office of Nuclear Energy is responsible for implementing programs designed to promote the development and expansion of nuclear power, both in the U.S. and overseas.
- Website: **https://www.energy.gov/ne/office-nuclear-energyCia nus sinia elesequi**

Map of Where Nuclear is Today

Operating and Shutdown Nuclear Power Plants in the U.S.



Sources: GAO analysis of U.S. Census Bureau and Nuclear Regulatory Commission data; U.S. Census Bureau (map). | GAO-24-106326

Links to Websites

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Energy & Manufacturing in Appalachia Program

This energy overview research and report was created under the Energy & Manufacturing in Appalachia (EMA) program made possible with grant funding from the Appalachian Regional Commission. EMA provides technical assistance and business support to small and medium manufacturers and enterprises seeking to expand business, production and jobs in the energy supply chains. Energy is a big expense for manufacturing companies. EMA helps companies save money with energy efficiency and emissions reductions.

The Nuclear Industry Overview was drafted by the Penn State Extension Energy Team, which gathered content and information from a variety of sources referenced within the document. The Penn State Extension Energy Team is committed to providing science-based, general education on numerous energy-related topics. To contact the team or for more information, go to **www.extension.psu.edu/energy**.

The EMA program supports Appalachia in 156 counties of Maryland, New York, Ohio, Pennsylvania, and West Virginia. This program was established to help small and medium manufacturers be a part of this Energy Economy. This program is managed by Manufacturing Extension Partnership (MEP) organizations from five Appalachian states. The activities and intended outcomes of EMA align with the National Institute of Standards and Technology (NIST) MEP and its mission to enhance the productivity and technological performance of U.S. manufacturing.

Learn more about the Energy & Manufacturing in Appalachia program by visiting: **https://www.wemakeithere.org/energy/** and join the **EMA LinkedIn group**.

Contact EMA Program Manager, Tom Reed, directly at **Tom@WeMakeItHere.org** and (412) 918-4269 with any questions or assistance.