State of Idaho Advanced Nuclear Strategic Framework

Idaho Strategic Energy Alliance

September 2025

Acknowledgements

The Advanced Nuclear Strategic Framework (ANSF) was developed through a workgroup of the Idaho Strategic Energy Alliance. The workgroup represents a broad cross-section of public and private sectors, including the utility, mining, manufacturing, and nuclear industries, as well as state agencies, public universities, and the Idaho National Laboratory (INL). These subject matter experts made the development of this report possible.

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Executive Summary

The ANSF outlines a comprehensive strategy for positioning Idaho as a national and global leader in advanced nuclear energy. Building on the state's historic role in nuclear innovation—home to the first U.S. city powered by nuclear energy and decades of pioneering research at Idaho National Laboratory (INL)—this framework identifies the opportunities, challenges, and coordinated actions necessary to meet Idaho's growing energy needs while enhancing economic competitiveness.

Demand for electricity in Idaho is expected to increase by nearly 30% by 2035, driven by population growth, industrial expansion, and the electrification of transportation and other sectors. Existing utility integrated resource plans show limited capacity to expand hydroelectric, natural gas, or other renewable portfolios at required scale, underscoring the need for new sources of reliable, firm baseload generation.

Compared to other energy resources, nuclear is dramatically more land-efficient—up to 173 times more than wind and 31 times more than solar per generated megawatt per acre. Many new reactor designs incorporate enhanced safety features, modular construction methods, and the ability to recycle fuel, lowering long-term costs and environmental impacts. Unlike intermittent renewables, advanced reactors provide around-the-clock, carbon-free baseload electricity, offers the flexibility to ramp output in support of variable wind and solar, and supports reliability and affordability. Idaho's natural resources, advanced workforce pipeline, and world-class research capabilities make it uniquely suited to lead in this space.

The framework highlights the roles of key players in Idaho—including INL, utilities, the Leadership in Nuclear Energy (LINE) Commission, the Idaho Advanced Energy Consortium (IAEC), and Idaho's universities—in advancing technology development, supply chain readiness, and workforce training. Regional initiatives such as the Intermountain-West Nuclear Energy Corridor and the Tri-State Compact with Utah and Wyoming strengthen Idaho's position as a hub for nuclear development and innovation. To accelerate progress, the ANSF recommends establishing a dedicated State Energy Fund, renewing and expanding the LINE Commission's role in coordinating nuclear strategy, leveraging the new Strategic Permitting, Efficiency, and Economic Development Council (SPEED Council) to streamline permitting, and strengthening regional collaboration through the Intermountain-West Nuclear Energy Corridor (INEC) Tech Hub. These efforts should be supported by a clear alignment of state agencies, legislative action, educational institutions, industry partners, and local governments.

By coordinating across stakeholders, securing sustainable funding, and building on its legacy of nuclear innovation, Idaho is poised to drive advanced nuclear development that supports reliable energy, economic growth, and national security. Through decisive leadership, coordinated policy, and targeted investment, Idaho can ensure that it not only avoids looming shortfalls but also positions itself as the nation's foremost center for advanced nuclear development.

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Introduction

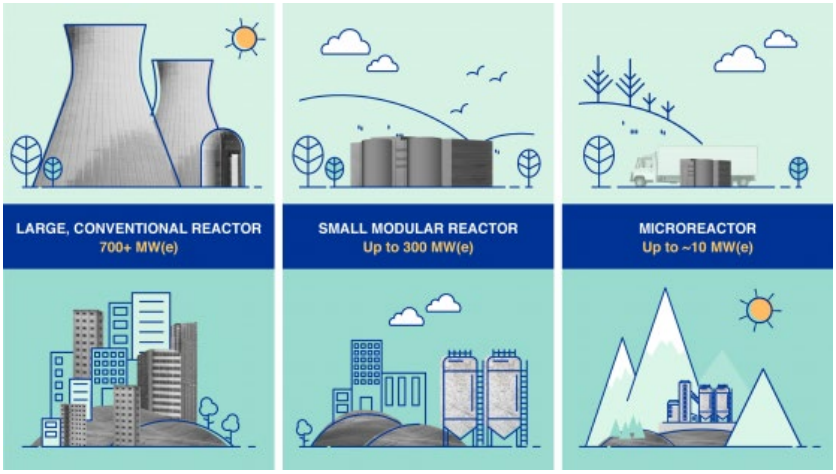
The Advanced Nuclear Strategic Framework (ANSF) highlights the potential of advanced nuclear and strategies to enable development in Idaho in accordance with the State of Idaho's energy policy to lead on reliable, affordable, sustainable, and innovative energy strategies by advancing strategies that responsibly enhance Idahoans' quality of life and support a prosperous state economy.

The ANSF is produced by the Idaho Strategic Energy Alliance, which was established by Governor Little in 2017, and then most recently continued through Executive Order 2024-10. ISEA is tasked to advise and provide information to elected officials, stakeholders, and the public through a Board of Directors.[1] The work of the Idaho Strategic Energy Alliance centers on increasing awareness and understanding of Idaho's diverse energy resources; improving cooperation, collaboration, and communication among Idaho's public and private-sector entities in the areas of energy efficiency, conservation, and affordable and sustainable energy development; and providing a forum to showcase Idaho's innovative energy technologies.

The Western Electricity Coordinating Council anticipates a 20% increase in electricity demand across the Western Interconnection and a 30% increase in Idaho by 2035. [2] Advanced nuclear energy technologies are at the forefront of innovation in the power sector, offering flexible and low-carbon solutions to meet growing energy needs. Idaho's utilities indicate there is limited capacity for the expansion of existing generation portfolios in their Integrated Resource Portfolios (IRPs), leaving adoption of high energy density resources, such as advanced nuclear energy, as a viable path forward.

A competitive benefit of advanced nuclear power is its land-efficiency compared to other energy resources—173 times more land efficient than wind and 31 times more land efficient than solar in terms of megawatt-hours generated per acre.[3] The next-generation reactors have planned designs for enhanced safety, improved efficiency, and greater adaptability, supporting both centralized grid applications and distributed energy systems.

Nuclear Reactor Types[4]



[1] OEMR, Idaho Strategic Energy Alliance, https://oemr.idaho.gov/isea/, accessed April 9, 2025.
[2] WECC. "State of the Interconnection." https://feature.wecc.org/soti/topic-sections/load/index.html
[3] Nuclear Energy Institute, Nuclear Needs Small Amounts of Land to Deliver Big Amounts of Electricity, https://www.nei.org/news/2022/nuclear-brings-more-electricity-with-less-land, published April 22, 2022.
[4] International Atomic Energy Agency. "What are Small Modular Reactors?" https://www.iaea.org/newscenter/news/what-are-small-modular-reactors-smrs

Many advanced reactors have planned safety features such as the capability to shut down without external power or human intervention. They also utilize a range of coolants—including water, molten salt, gas, and liquid metal—and vary in size from microreactors (under 10 MW) to large-scale designs exceeding 1,000 MW. Several reactor designs can also recycle fuel from existing used nuclear fuel, which can support longer-term management.[5]

Advanced nuclear can be used flexibly to complement variable energy sources by ramping power output up or down as needed. Microreactors can provide reliable, off-grid power for remote communities, industrial sites, and military installations. A microreactor can be deployed to generate power supplying up to 10,000 homes or as a practical solution for co-locating large electrical loads with behind the meter advanced nuclear facilities.[6]

In recognition of growing energy demand across the nation, in 2025, the Trump Administration released a series of four nuclear-focused Executive Orders to accelerate the deployment of advanced nuclear reactors. These Executive Orders include actions to streamline the National Environmental Policy Act and environmental reviews, strengthen the domestic nuclear fuel cycle, expand the nuclear energy workforce, and reform the Nuclear Regulatory Commission. A key deadline from these Executive Orders is the federal approval of at least three new reactors by July 4, 2026.

Altogether, the ANSF demonstrates that Idaho has an important role in the history of nuclear energy and is prepared to play a key role in the nation's advanced nuclear future.

Idaho's Advanced Nuclear Leadership

Idaho is home to Arco, the first city in the world to be powered by nuclear energy. On July 17, 1955, the Borax III reactor at the National Reactor Testing Station supplied the small town of Arco with nuclear power for a total of one hour.[7] This milestone marked a key beginning to Idaho's proud legacy in nuclear energy and affirmed the state's commitment to advancing and commercializing nuclear power.

Today, Idaho is home to a range of key players, organizations, and supply chain resources that play an important role in driving the advanced nuclear industry forward. These groups include the Idaho National Lab, electric utilities, the Idaho Strategic Energy Alliance, the LINE Commission, the IAEC, the Boise State-led Common Ground Consortium, and Idaho's technical and higher education institutions. Idaho has a wide range of stakeholders that expand educational opportunities to both upskill the current workforce and train new students to design, build, maintain, and operate next generation reactors. Idaho also has critical minerals key to next generation reactor fuels. Central to each of these groups and efforts is a shared vision to effectively expand the advanced nuclear supply chain and improve the development of advanced nuclear facilities in Idaho.

Key Players

Idaho National Lab

Idaho's leadership in nuclear energy is supported by a robust and collaborative network of stakeholders committed to the safe and responsible development of nuclear technologies. At the heart of this ecosystem is INL, the U.S. Department of Energy's lead national laboratory for nuclear energy research and development.

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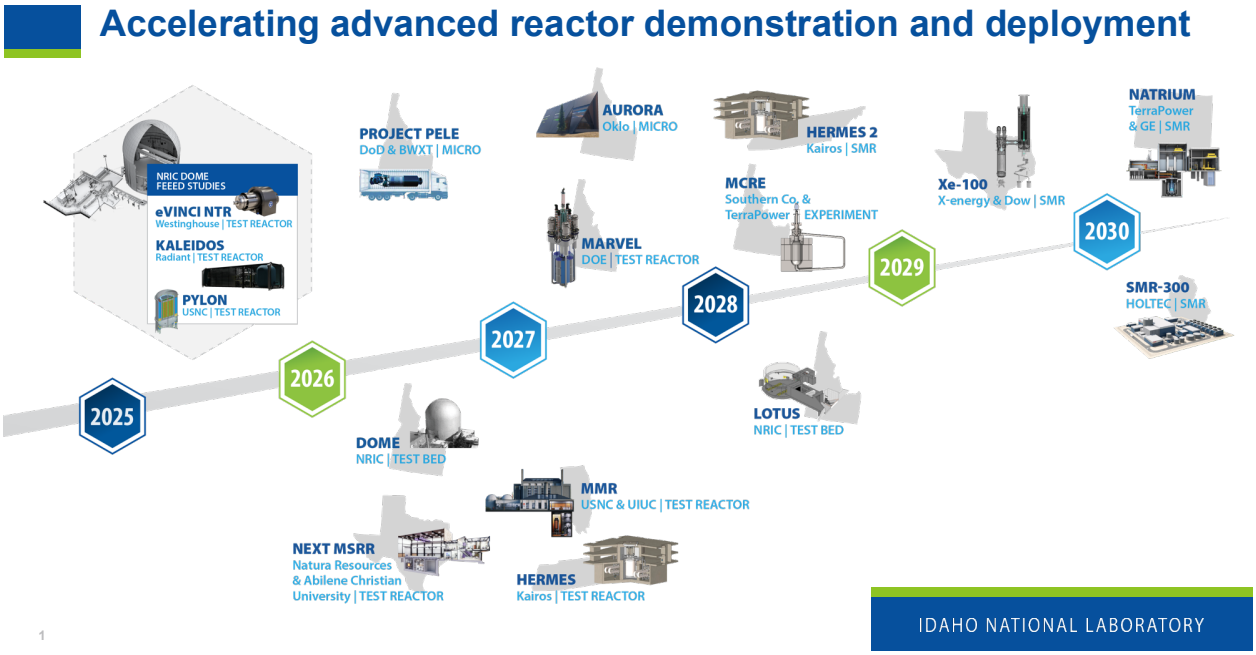
[5] Nuclear Energy Institute. "Advanced Nuclear". https://www.nei.org/advanced-nuclear-energy/advanced-nuclear-101

[6] United States Department of Energy, The Big Potential for Nuclear Microreactors, https://www.energy.gov/ne/articles/big-potential-nuclear-microreactors, published August 7, 2019.

[7] Argonne National Laboratory. "Reactors Designed by Argonne National Laboratory." https://www.ne.anl.gov/About/reactors/borax3/index.shtml

Situated on an 890-square-mile site near Idaho Falls, INL has facilitated over seventy years of groundbreaking nuclear research and development. More than 50 reactors were developed at the lab, and the surrounding region boasts an unparalleled concentration of expertise in nuclear energy, advanced reactor technology, cyber, materials testing, and energy manufacturing. In 2022, the U.S. Bureau of Labor Statistics reported that Idaho Falls had the highest metropolitan location quotient for nuclear engineers in the country. [8]

Through INL programs, supply chain firms are afforded the opportunity to gain experience in constructing demonstration reactors. INL executes public-private partnership agreements to support the nuclear industry by providing access to the technical, regulatory, and financial resources necessary to accelerate the commercialization of next-generation nuclear technologies.[9] Additionally, INL plays a role in bridging the gap between concept, demonstration, and commercialization of advanced reactors. It supports technology development through infrastructure enhancements and the construction of new facilities across DOE laboratories. Over the next 15 years, INL will demonstrate next generation SMR and MR technologies such as molten salt, gas, and liquid metal reactors. These first-of-a-kind projects will provide critical insights into the safety, licensing, and operation of small modular and microreactors.



Source: Idaho National Laboratory, August 2025

Electric Utilities

As nuclear technology matures, it may become a viable option for Idaho utilities to consider in their generating resource portfolios. Idaho utilities are generally open to bringing advanced nuclear into their generating resource portfolios as evident by their IRPs. Rocky Mountain Power, one of Idaho's three investor-owned utilities (IOU), plans to bring 500 MW of firm baseload nuclear energy online in the next 10 years according to its 2025 IRP.[10] Of Idaho's two other IOUs, Idaho Power Company did not select nuclear as a generating resource in their 2025 IRP Preferred Portfolios while Avista Corp's IRP indicates it plans to bring on 100 MW of nuclear by 2045. Idaho Power Company's IRP stated the utility did not project nuclear to be an option to be a selectable resource in its Preferred Portfolio until 2035 due to the

[8] U.S. Bureau of Labor Statistics. "Nuclear Engineers." https://www.bls.gov/oes/2022/may/oes172161.htm#(9).
[9] Idaho National Laboratory. "Gateway for Accelerated Innovation in Nuclear." https://gain.inl.gov/
[10] PacifiCorp. "Integrated Resource Plan." https://www.pacificorp.com/energy/integrated-resource-plan.html

current state of advanced nuclear technology combined with uncertainty in the federal regulatory approval process.[11] Avista Corp's 2025 IRP states its demand projections for the 2036-2045 time period will require Avista to invest into new technologies including nuclear energy. Avista's IRP further elaborates on the need for nuclear power due to limited ability to add other generating resources to its portfolio at the scale required for future load projections. Avista's IRP notes industry immaturity and the lack of regulatory clarity as reasons nuclear energy is not a "selectable resource" in the next 10 years. While there are hurdles to immediate investment, particularly prospective increased costs to rate payers, as the advanced nuclear industry matures and investment derisks, Idaho can expect to see broader adoption of new nuclear generating technologies.

One of Idaho's municipal power providers, Idaho Falls Power, shares in the state's commitment to providing low-cost electricity to residents and businesses and has taken a leading role in developing advanced nuclear. Idaho Falls Power is in the process of acquiring 75 MW of firm baseload power through the development of 6 SMRs. Utility interest and ability to reasonably invest into nuclear is central to the enablement of new nuclear technology. Idaho's utilities are recognizing advanced nuclear as a viable and scalable solution for Idaho's energy needs.

Core Initiatives

Leadership in Nuclear Energy Commission

The LINE Commission was established by Governor C.L. "Butch" Otter through Executive Order 2013-02. LINE was formed to advise the Governor on policies and actions of the State of Idaho that support and enhance the long-term viability and mission of INL as well as associated industries in Idaho.

Historically, the LINE Commission served as a meeting place for the Governor's Office, INL, industry, universities, state agencies, and members of the legislature to both discuss where the nuclear industry is going and provide recommendations to the Governor pertinent to preserving Idaho's leadership in the nuclear industry.

Moving forward, the LINE Commission will serve as a coordinating group that provides strategic direction to the various groups advancing the nuclear conversation in Idaho. In the fast-moving environment the nuclear industry finds itself in, Idaho needs to consolidate and coordinate where investments are being made to avoid duplicitous work across groups with the same vision for nuclear enablement. With such coordination between government, research institutions, and private industry, no region in the country is better positioned than Idaho to lead the future of advanced nuclear energy. As these and other advanced nuclear technologies continue to be adopted across the nation, investment in advanced nuclear will become less risk averse and allow for expanded adoption of nuclear into Idaho's generation portfolio.

Idaho Advanced Energy Consortium

The Idaho Advanced Energy Consortium was formed in 2023 to convene industry and educational stakeholders across the advanced energy sector to identify, plan, and address evolving and shared supply chain, workforce, community, infrastructure, and security needs, needs which center around advancements in nuclear and clean energy and their related projects in Idaho and the region.

In 2023, the IAEC's Intermountain-West Nuclear Energy Corridor (INEC) Tech Hub application was designed as a U.S. Economic Development Administration (EDA) Official Designee. The EDA Tech Hubs Program aims to strengthen U.S. economic and national security with investments in regions across the country with assets and resources with the potential to become globally competitive in the

[11] Idaho Power Company. "2025 Integrated Resource Plan". https://docs.idahopower.com/pdfs/AboutUs/PlanningForFuture/2025IRP/2025%20IRP%20Final.pdf.

technologies and industries of the future—and for those industries, companies, and the good jobs they create, to start, grow, and remain in the United States.

Intermountain-West Nuclear Energy Corridor[12]

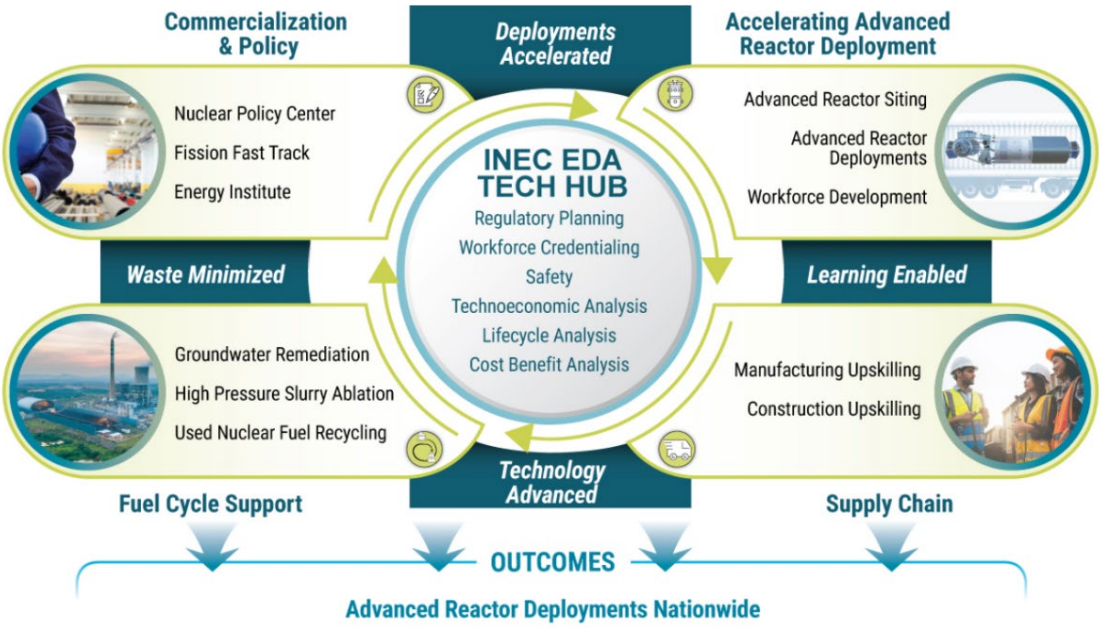
INEC is the only nuclear energy Tech Hub in the country and in 2023 was awarded a Strategy Development Grant of $464,880 to refine its plans to:

- Establish a center to create a favorable policy and regulatory framework for nuclear energy in the region;
- Support the creation of domestic nuclear fuel-fabrication capabilities and build a portfolio of sites to attract future commercial deployments within the region, including on Tribal land;
- Conduct a commercialization demonstration project to recover residual uranium from waste uranium stockpiles;
- Take proactive steps to enhance the supplier ecosystem and grow the sector's workforce; and
- Establish a governance system that incorporates feedback from an Advisory Council composed of key stakeholders from Wyoming, Idaho, and Tribal communities to direct policy, procedure, and long-term planning for the consortium.

In 2024, INEC received a second $500,000 grant from EDA, the Consortium Accelerator Award, to continue to promote its technology hub strategy focus on advanced nuclear reactor deployments. This focus includes technological advancements, workforce and supply chain development, and fuel support for the domestic nuclear industry. Pathways to develop Idaho's advanced nuclear supply, generation, and value chains have been explored through the INEC proposal. INEC presents a clear, strategic vision to coordinate infrastructure development, foster public-private collaboration, and advance workforce, supply chain, and policy efforts necessary to position Idaho as a regional hub for advanced nuclear deployment.

[12] Idaho Advanced Energy Consortium. "2024 Annual Report. "https://idahoadvancedenergy.org/media/fyxjikcg/iaec_2024annualreportsummary_digital.pdf

INEC Overview[13]



Tri-State Nuclear Compact

On April 29, 2025, the Governors of Idaho, Utah, and Wyoming signed a tri-state agreement to strengthen regional energy collaboration. The partnership seeks to accelerate the development of a reliable and affordable nuclear energy corridor between the three states. The three states are working together to identify and implement strategies that will turn the Tri-State Agreement's shared goals into concrete action.

Under the Tri-State Agreement, the three states will collaborate in key areas, including:

- Aligning energy policies to support innovation and private investment;
- Coordinating the development of critical energy infrastructure;
- Jointly navigating regulatory and environmental challenges;
- Advocating for federal support of regional energy priorities;
- Enhancing energy resilience and grid reliability;
- Expanding workforce development efforts to support the growing energy sector; and
- Ensuring continued delivery of affordable energy to residents.

Advanced Nuclear State Collaborative

Through the Idaho Governor's Office of Energy and Mineral Resources (OEMR) and the Idaho Public Utilities Commission (PUC), the State of Idaho is engaged in national and regional discussions about advanced nuclear. Since 2023, OEMR and PUC have been members of the Advanced Nuclear States Collaborative, a joint initiative of National Association of Regulatory Utility Commissioners (NARUC) and National Association of State Energy Officials (NASEO) funded by the U.S. Department of Energy's Office of Nuclear Energy. The Advanced Nuclear States Collaborative convenes state utility regulators and state energy officials to enhance collective understanding of the unique regulatory and policy questions surrounding the consideration and deployment of new nuclear generation, and to support peer

[13] Idaho Advanced Energy Consortium. "Intermountain West Nuclear Energy Corridor." https://idahoadvancedenergy.org/intermountain-west-nuclear-energy-corridor-inec/

learning across states.[14] The Advanced Nuclear States Collaborative has been a valuable resource for OEMR and the PUC, facilitating the exchange of information as states collectively work to advance shared goals in advanced nuclear development.

The NARUC represents the state public utility commissions who regulate the utilities that provide essential services such as energy, telecommunications, power, water, and transportation and who have largely shaped the profile and substance of public utility regulation in America. The NASEO is the only national non-profit organization for the governor-designated State Energy Directors and their offices from each of the 56 states and territories. Formed by the states in 1986, NASEO facilitates peer learning among state energy officials, serves as a resource for and about State Energy Offices, and advocates the interests of the State Energy Offices to Congress and federal agencies.

Common Ground Consortium (National) and Energy Policy Institute

The Common Ground Consortium is a U.S. Department of Energy-funded initiative dedicated to creating effective processes for siting our nation's critical infrastructure.[15] Led by Boise State University's Energy Policy Institute, starting in 2023, the consortium's central mission is to advance collaborative-based strategies for siting facilities, with an emphasis on spent nuclear fuel and integrated nuclear waste management. Drawing on historical analysis and extensive feedback from forums and interviews, the initiative engages a diverse range of stakeholders—including communities, policymakers, Tribal groups, industry leaders, and technical experts—to develop guidance and recommend processes to the Department of Energy.

The Energy Policy Institute (EPI) is an objective and evidence-based center that focuses on advancing energy decision-making with analysis, advising, training, and neutral facilitation.[16] For over two decades, EPI has been at the foreground of nuclear-related analysis, including better practices in siting; regulation of cyber-nuclear risk, security, safeguards, safety and NEPA; policy changes at the state and federal levels; regional diversification, economic and workforce assessments of small modular reactor and microreactor adoption; emerging market potential with co-location of nuclear power and data centers, nuclear-powered critical minerals mining and nuclear-powered hydrogen production, etc.

Supply Chain

Mineral Advantage

Idaho's "Gem State" nickname and the miner proudly depicted on Idaho's state seal pay homage to Idaho's strongest industry at the inception of statehood. Today, the State of Idaho proudly supports and recognizes the benefits that mining provides to not only Idaho, but the nation. Idaho is home to significant reserves of minerals essential to modern energy technologies such as thorium and uranium which are used in nuclear reactor fuels.

Uranium was discovered in Idaho in 1920. Deposits were primarily identified in Lemhi County. Idaho's interest in uranium extraction began in the late 1940s, following national interest in domestic sources of nuclear fuel, and by 1955 the first uranium ore was exported from Idaho. The Bear Valley in Central Idaho was once the only commercial uranium deposit in the world. [17] Idaho has also played a significant role in thorium exploration, particularly in the Lemhi Pass district in east-central Idaho near the Idaho/Montana border. This area contains a large number of thorium-rich veins and is considered the

[14] NARUC. "Advanced Nuclear State Collaborative." https://www.naruc.org/core-sectors/electricity-energy/nuclear-energy/advanced-nuclear-state-collaborative/
[15] Common Ground Consortium. https://www.boisestate.edu/epi/consent-based-siting/
[16] Energy Policy Institute. https://www.boisestate.edu/epi/
[17] https://www.idahogeology.org/pub/Mineral_Resource_Reports/MR-08.pdf

largest concentration of thorium resources in the country. Estimated reserves in this area total over 64,000 metric tons of thorium oxide with potential resources exceeding 120,000 metric tons.[18]

Idaho's geology and history give it strong potential to be a key source of fuel for next-generation nuclear reactors. Considering Idaho's proven potential as a source for nuclear fuels and the abundance of critical minerals to support energy-related technology, combined with world class nuclear research, the state is well positioned to support the future of nuclear energy.

Existing Workforce

The deployment of advanced nuclear reactors requires a strong base of supply chain manufacturers and builders that not only have expertise in their fields, but also a firm grasp of nuclear industry standards and best practices. Advanced nuclear facilities must be constructed with rigorous construction standards with little room for error or deviation. Idaho is the home to a fleet of existing firms with experience, exposure to nuclear projects, and a willingness to get to work. These include:

- Structural steel fabricators
- Structural Steel Erectors/Iron Workers – including field welders and fastener installers
- Weld inspectors including radiographic, ultrasonic, magnetic particle
- Field laborers/superintendents – includes laborers/supervisors involved in concrete placement and rebar related activities
- Rebar cage developers (modular prefab rebar cages) and rebar tying, placement groups
- Non-destructive evaluation (NDE) for concrete using ultrasound, impact echo, x-ray, etc.
- Local testing labs for steel and concrete material characterization including structural properties, mechanical properties, chemical composition, microstructure
- Concrete mix designers
- Ready mix concrete suppliers
- Precast concrete suppliers and prestressing yards
- Construction/Field Engineers (engineers who are knowledgeable in the applicable "means and methods" and help plan/implement the necessary field construction activities)

Workforce Training and Career Pipeline

Idaho's universities and community colleges play an increasingly important role in nuclear workforce development, leveraging both their academic programs and their proximity to INL. Boise State University, Idaho State University, the University of Idaho, and Lewis-Clark State College all have expanded programs in engineering, health physics, chemistry, policy, and workforce-aligned technical training that directly connect to nuclear energy and advanced reactor development. Idaho State University houses one of the few university-operated nuclear research reactors in the country, giving students unique hands-on training. Boise State has leading capabilities in nuclear and cyber-nuclear policy research, education and advising, as well as materials science and advanced manufacturing associated with next-generation reactors. The University of Idaho contributes through programs in nuclear engineering, mechanical engineering, and policy research, and uses one of two nuclear reactor power plant simulators in the US (Western Services Corporation) for nuclear fuel cycle, power systems and cyber security research.

Currently a fully online certificate program in Nuclear Safeguards and Security is offered through a unique collaboration between three Idaho universities: Boise State University, Idaho State University, and

[18] USGS. Thorium Deposits of the United States – Energy Resources for the Future? 2009. https://pubs.usgs.gov/circ/1336/pdf/C1336.pdf.

the University of Idaho. This certificate offers students and professionals specialized training in the policy and engineering challenges of protecting nuclear and radioactive materials. The offering is provided in response to the need for highly qualified experts in nuclear security and safeguards. Jobs in power generation, medicine, industrial use, and the military require specialized training to protect against malicious acts with nuclear and radioactive material. This program is taught via:

- Boise State University, School of Public Policy and School of Computing
- Idaho State University, Nuclear Engineering Department
- University of Idaho, Nuclear Engineering and Industrial Management Department.

Ideal for both degree and non-degree seeking individuals, the certificate provides comprehensive training in a flexible online format. Applicants may apply for admission through any of the three partner universities.[19]

Additionally, the University of Idaho offers four graduate certificate options related to the nuclear industry. These include the Used Fuel Management and Nuclear Power Plant Decommissioning Certificate, Nuclear Criticality Safety Certificate, Technology Management Certificate, and the Nuclear Materials Engineering Certificate.

The Used Fuel Management and Nuclear Power Plant Decommissioning Certificate is designed for professionals with prior nuclear engineering education or experience. The certificate instructs on the technical and managerial skills needed to lead decommissioning projects and ensure compliance with environmental and safety standards.

The Nuclear Criticality Safety Certificate provides students with a comprehensive understanding of nuclear engineering principles, criticality safety practices, emergency procedures, and regulatory standards. Coverage of the certificate prepares students for roles in nuclear operations, safety analysis, and regulatory compliance.

The Technology Management Certificate is a specialized program designed to provide a comprehensive understanding of the safety, regulatory, and operational challenges associated with nuclear reactors. It is an ideal add-on for students actively pursuing degrees in technology management or nuclear engineering.

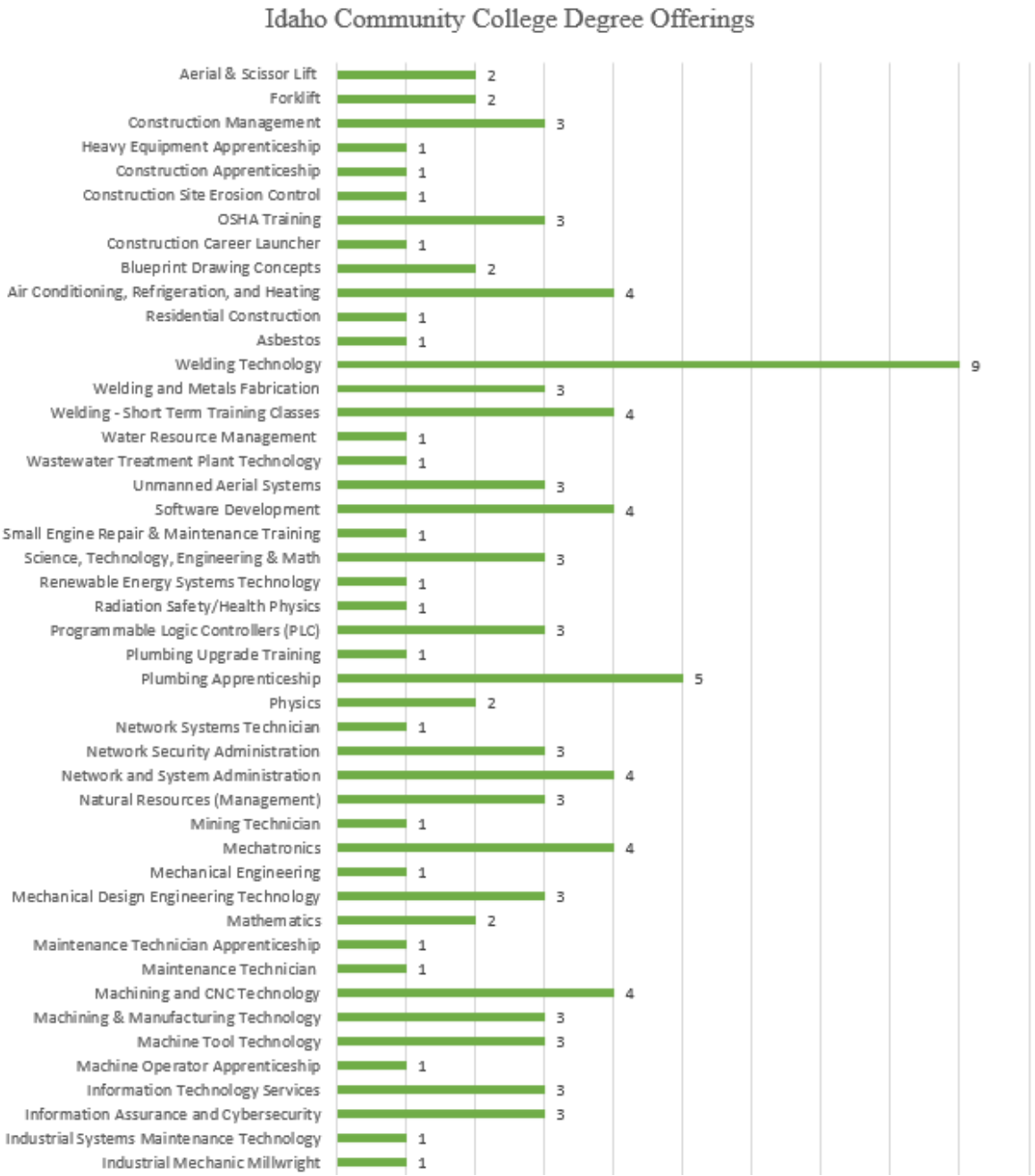
The Nuclear Materials Engineering Certificate is designed for part-time study providing training to select, design and develop materials systems for applications ranging from advanced reactors to radiation shielding and fuel storage.

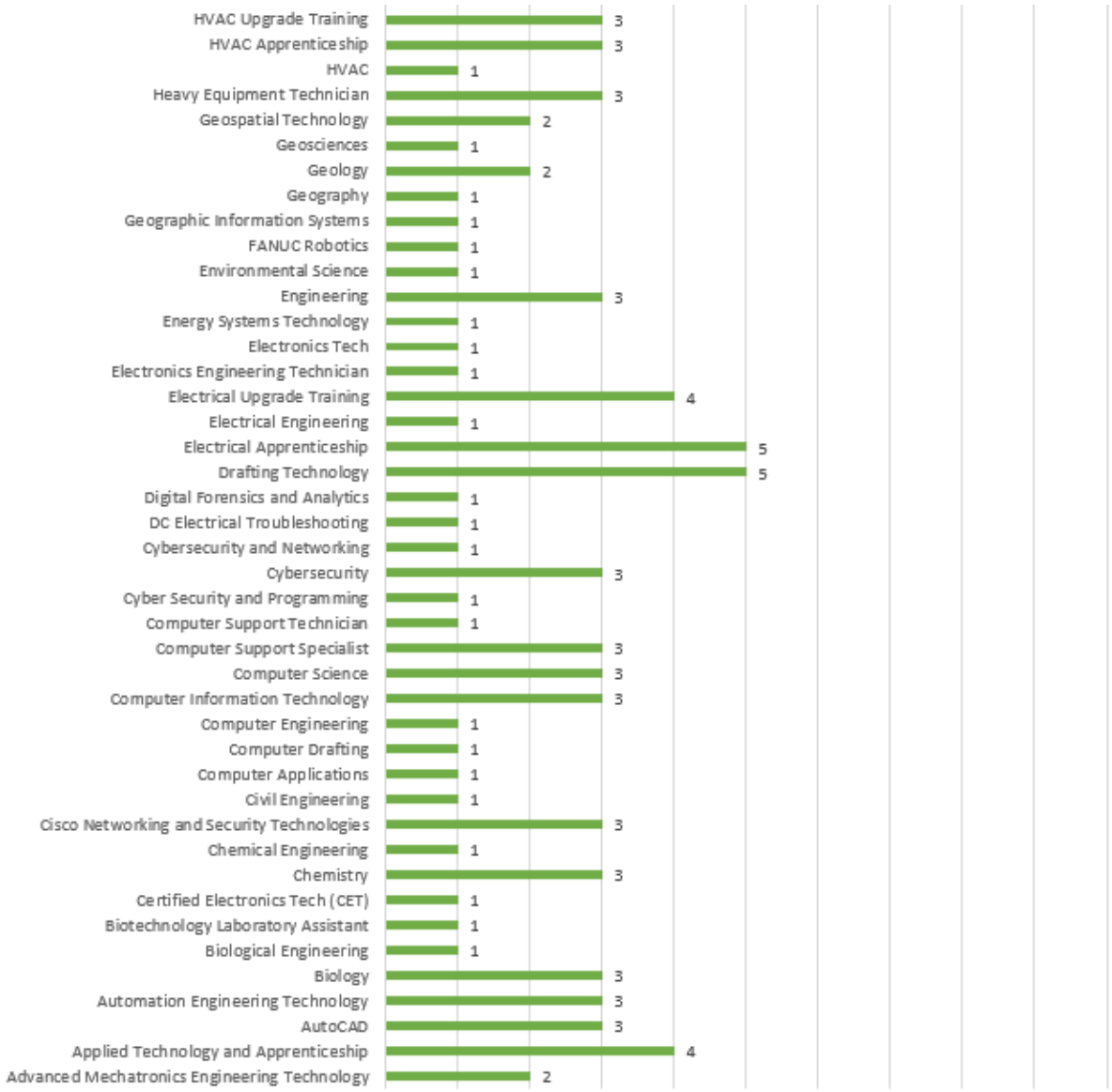
Collaboration among these universities and with INL has also created a pipeline of students prepared for both technical and professional roles in the nuclear field. Joint initiatives include internships, co-op programs, and federally funded research projects where students can work directly on advanced reactor technologies, nuclear materials testing, radiation safety, regulation, and cybersecurity for energy systems. These partnerships ensure Idaho students gain real-world experience with industry-leading technologies and facilities, bridging the gap between classroom learning and workforce readiness. By aligning their educational offerings with the growing demand for nuclear talent, Idaho's four-year universities are

[19] Boise State University. Nuclear Safeguards and Security Certificate (On-line). https://www.boisestate.edu/epi/nuclear-safeguards-and-security-certificate-on-line/.
University of Idaho. Nuclear Safeguards and Security. https://www.uidaho.edu/academics/degree-finder/nuclear-safeguards-security-gr-cert.
Idaho State University. Nuclear Engineering. https://www.isu.edu/ne/.

positioning the state as a national leader in preparing the next generation of scientists, engineers, operators, and policy professionals who will drive innovation in advanced nuclear energy.

Idaho's community colleges prepare students for trades essential for the construction and maintenance of advanced nuclear facilities. These include a range of 90 certificate and degree offerings spanning computer science, physics, and information technology offerings to construction management and heavy equipment operator programs. Where Idaho's universities have partnered with INL to develop their degree offerings, Idaho's community colleges have done the same.





Source: Idaho National Laboratory, August 2025

IAEC, in partnership with the College of Eastern Idaho (CEI), Western Wyoming Community College (Western), and Idaho State University's Energy Systems Technology Programs (ESTEC), proposed the Advanced Nuclear Workforce Ecosystem (ANWE), a regionally supported training network that advances skills to meet current and emerging needs for industries in advanced nuclear technologies. In January 2025, IAEC was awarded almost $3.6 million from the EDA's Good Job Challenge Grant program.

The EDA award will be allocated among the regional community colleges to deliver nuclear technician training that results in an AAS in Nuclear Technology at Western, develop and deliver nuclear informed trades curriculum at CEI to be applied across trades programs, and enhance transitional workforce training opportunities in the intermountain west. Funding will also support learners' success, build earn-and-learn opportunities, and increase program awareness through strategic and coordinated outreach.

These training programs are designed to be adaptable and scalable to meet the needs of employers with both existing and emerging skills. Through ANWE, the educational institutions will collaborate and share resources to reduce barriers and enhance the availability of programming in the region. These efforts magnify the emphasis on advanced nuclear technologies and support our region's industry and economies with a nuclear workforce training network.

Recommendations

Leadership in Nuclear Energy (LINE) Commission

Looking ahead, the State of Idaho should identify the distinct roles and strengths of various nuclear groups in Idaho and work in a more coordinated fashion to accelerate advanced nuclear development across the state.

The LINE Commission's Executive Order expired in 2025 and will be renewed by the end of the year. The State should engage stakeholders to determine the best path forward for the LINE Commission's Executive Order renewal and explore opportunities to align its work with that of other state groups and interested parties to more effectively coordinate state efforts to support the growth of Idaho's nuclear industry. The next iteration of the LINE Commission should be charged with providing the strategic direction and coordination of all State efforts directed towards the next stage of advancement for advanced nuclear technologies. This would involve assigning roles to both state agencies and stakeholder groups to ensure milestones are being met and efforts are not needlessly duplicative. Moving forward, the LINE Commission should be the singular meeting place where the State's nuclear policy position is established and implemented.

State Energy Fund

Idaho does not yet have a consistent source of dedicated non-federal funding to carry out nuclear energy-related efforts. Most states already offer state funding to their energy offices to administer activities such as grants, rebates, tax incentives, loans, and technical assistance. Many of these state legislatures directed additional funds to specifically support the development of advanced nuclear in their states. In these instances, funding has come from various sources such as tax incentives or more broadly drawn from state general funds.

For example, in 2025 the Utah Legislature passed legislation requiring the Utah State Tax Commission to deposit into an energy-related fund the portion of new tax revenue generated by a radioactive waste facility receiving waste from a new generator. The legislation also establishes a radioactive waste facility expansion tax, applied to any facility that submits an application to the Division of Waste Management and Radiation Control to construct a new facility or expand an existing one.[20]

The Utah legislation also established the Electrical Energy Development Investment Fund. This expendable special revenue fund consists of property tax differential revenue from electrical energy development zones that overlap with an area designated by a community reinvestment agency as a community reinvestment project area. The fund is administered by a council and can be used for the following purposes:

(1) facilitate electrical energy infrastructure development within the state, including:
  (a) transmission and distribution lines;
  (b) pipeline development;
  (c) energy storage facilities;

[20] Utah State Legislature. "H.B. 249 Nuclear Power Amendments." https://le.utah.gov/~2025/bills/static/HB0249.html

(d) generation facilities; and
(e) related infrastructure;
(2) provide matching funds for federal energy development grants;
(3) support energy workforce development programs;
(4) provide incentives for electrical energy development projects; and
(5) pay for administrative expenses related to the council's duties.

As another example, in 2022, Virginia Governor, Glenn Younkin, announced a proposal to allocate $10 million to establish the Virginia Power Innovation Fund. Approximately half of that initial funding went to the Virginia Nuclear Innovation Hub to fund efforts including grants to higher education institutions to study SMR technology, funding for nuclear workforce development, and exploration of SMR siting locations.[21] The State of Idaho should study the feasibility of establishing an Energy Fund to support advanced nuclear development.

Strategic Permitting, Efficiency, and Economic Development (SPEED) Council

In January 2025, Governor Little signed Executive Order 2025-02, the Strategic Permitting, Efficiency, and Economic Development Act (SPEED) aimed at better coordinating state permitting on big projects that promote energy independence, support national security, and drive Idaho's economy.[22] If supported with adequate funding, SPEED could draw advanced nuclear developers to Idaho by bringing together agency directors — especially those with permitting and regulatory authority and subject matter expertise — to collaboratively reduce barriers and accelerate project timelines. This Council could provide important feedback regarding appropriate state permitting for the deployment of advanced nuclear facilities, evaluate opportunities for efficiency in permitting critical mineral mines and advanced nuclear facilities, and ultimately signal that Idaho is open to nuclear innovation and committed to creating a supportive environment for nuclear energy.

Idaho's state agencies and policymakers could convene to identify practical pathways for establishing dedicated funding for advanced nuclear permitting— such as by examining successful models from other states. Tennessee's Department of Environment and Conservation has developed a resource that outlines all relevant permits and licenses that must be obtained from the state when developing a facility of any kind. This is a resource the State of Idaho should develop through the SPEED Council to ensure Idaho remains competitive in attracting investment, accelerating deployment, and securing its place as a regional, national, and global leader in energy innovation through developing a transparent process that provides industry a clear look into the regulatory process.

Intermountain Nuclear Energy Corridor (INEC)

Regional collaboration is pivotal as western states aim to deliver affordable, reliable power that supports economic growth and the quality of life for citizens. Idaho is well-positioned to build on its strong foundation of regional partnerships to develop robust supply, generation, and value chains to help meet the West's rising energy demands in the years ahead.

INEC's concept is already a well-developed, federally recognized framework that involves numerous stakeholders and experts. In addition to receiving nearly $1 million in federal support through an EDA Strategy Development Grant and a Consortium Accelerator Award, INEC was awarded a $1.7 million Good Jobs Challenge grant in January 2025 (matched for a total of $3.6 million). This funding supports

[21] Governor of Viriginia. "Governor Glenn Youngkin Announces $10 Million Virginia Power Innovation Fund for All of the Above Energy and Nuclear Advancement." https://www.governor.virginia.gov/newsroom/news-releases/2022/october/name-941293-en.html
[22] Office of the Governor. "Gov. Little signs SPEED Act to further streamline state permitting." https://gov.idaho.gov/pressrelease/gov-little-signs-speed-act-to-further-streamline-state-permitting/

the creation of a robust Advanced Nuclear Workforce Ecosystem, with investments in curriculum development, apprenticeships, and job placement programs across Idaho and Wyoming.[23]

While INEC was not selected by EDA to receive full Phase 2 implementation funding, the State could consider ways to support the strong groundwork already laid. Through a coordinated, state-led strategy, Idaho could prioritize and advance key elements of the INEC proposal — such as siting support, permitting coordination, and supply chain development — to attract private investment, accelerate workforce readiness, and establish long-term nuclear infrastructure. Doing so would reaffirm Idaho's leadership in advanced nuclear and ensure that the state remains at the forefront of energy innovation.

In the future, EDA is expected to issue a new Notice of Funding Opportunity that could provide as much as $70 million in funding for the INEC Tech Hub. While the State should look for opportunities to fund the work of IAEC and the INEC Tech Hub independently, Idaho and the ISEA should be prepared to support IAEC as it prepares application materials for the EDA funding opportunity.

[23] Idaho Advanced Energy Consortium. "IAEC wins grant to fund training for future nuclear workforce." https://idahoadvancedenergy.org/blog/iaec-wins-grant-to-fund-training-for-future-nuclear-workforce/#:~:text=IDAHO%20FALLS%2C%20ID%2D%20The%20Idaho,totaling%20a%20%243.6%20million%20program.

Stakeholder Roles

To successfully implement the recommendations outlined above, it is essential to clearly identify and engage the diverse range of stakeholders involved in Idaho's advanced nuclear development. The following tables summarize roles of key stakeholders—spanning state agencies, the legislature, industry, workforce development entities, national laboratories, federal partners, and local governments. By clarifying these roles, Idaho can foster coordinated collaboration, streamline decision-making, and effectively leverage resources to accelerate the state's leadership in advanced nuclear energy.

Legend	
	Leading
	Supporting

Recommendations and Key Stakeholders

	State Agencies (OEMR, IPUC, DEQ, etc.)	State Legislature	Developers & Utilities (IAEC, IPCo, RMP, Avista, Municipal and COOP Utilities, etc.)	Benefitting Industries (agriculture, manufacturing, technology, industrial, etc.)
SPEED Council	 Lead coordination & policy alignment	 Explore budgets & legislation	 Provide input & collaborate	 Collaborate on energy needs & infrastructure planning
Establish a State Energy Fund	 Administer funding programs and partner on grants	 Create & appropriate funding	 Apply for funds & invest	 Participate as fund beneficiaries or co-investors
Intermountain Nuclear Energy Corridor	 Integrate existing ideas with state energy and economic goals	 Support funding & legislation	 Develop projects & workforce plans	 Support deployment through demand aggregation & infrastructure

Recommendations and Key Stakeholders (Continued)

	Supply Chain & Manufacturing (advanced parts manufacturing, workforce, construction firms, etc.)	Education (BSU, ISU, UI, LCSC, Community Colleges, EPI, etc.)	INL & National Labs	Federal Agencies (DOE, NRC, EPA, etc.)	Local Governments
SPEED Council	Support supply chain alignment	Develop workforce pipeline	Technical & research support	Regulatory & funding guidance	Support permitting & outreach
Establish a State Energy Fund	Match investment opportunities	Support training funding	Provide data for funding justifications	Provide federal funds	Provide input on community benefits
Intermountain Nuclear Energy Corridor	Foster supply chain growth	Lead training & apprenticeship efforts	Lead technical development	Provide regulatory & funding support	Assist with site approvals