



U.S. DEPARTMENT
of **ENERGY**

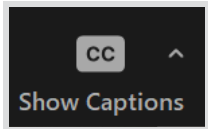
Office of Indian Energy
Policy and Programs

Tribal Pathways to Nuclear Energy: Technology, Opportunities, and Federal Support

August 13, 2026

Webinar Logistics

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**Today's
Webinar Will
Cover**

Foundational Overview of Civilian
Nuclear Energy Technologies

Opportunities and Considerations for
Tribes

DOE Resources & Support for Tribes

Office of Indian Energy Mission

The Office's mission is in its Congressional authorizing statute:

- **Promote** Tribal energy development, efficiency, and use.
- **Reduce** or **stabilize** energy costs.
- **Enhance** and **strengthen** Tribal energy and economic infrastructure.
- **Electrify** Indian lands and homes.

The Office of Indian Energy was established by Congress in the Energy Policy Act of 2005 under 45 USC 7144e & 25 USC 3502(b).



The remote Native Village of Unalakleet, Alaska completed two rounds of technical assistance with the Office of Indian Energy, focused on energy efficiency and microgrids. Photo by Werner Slocum / NLR.

How the Office Supports Indian Country

Financial Assistance



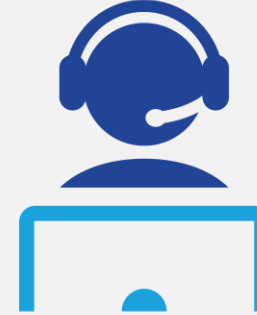
Cost-share leveraged funding to support Tribal energy development

Technical Assistance



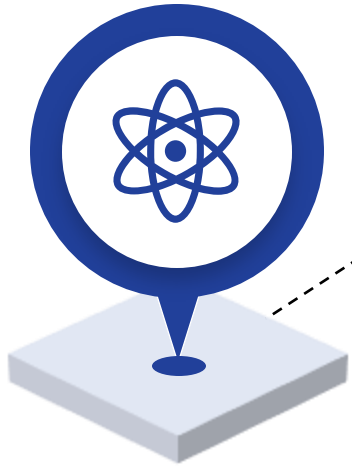
No-cost planning, analysis, commerce, and engineering support for successful project outcomes

Capacity Building



Capacity building to enable Tribes to fully participate in unleashing American energy

Nuclear Energy Value Chain Opportunities



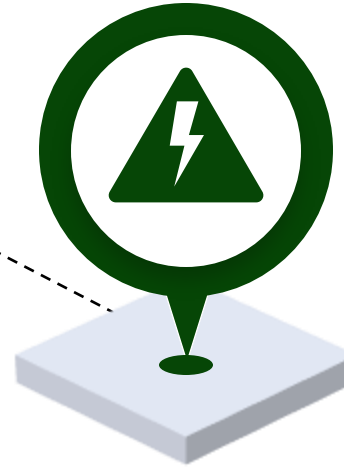
Upstream

Preparing fuel for nuclear energy reactors via uranium extraction, conversion, and enrichment



Midstream

Innovation and engineering in reactor design, construction, and operation



Downstream

Nearby nuclear power plants can ensure affordable, reliable, and secure energy, as well as jobs for nearby communities

Beyond power generation, nuclear has applications across defense, industry, medicine, and agriculture.



Webinar Goals



Gain foundational knowledge about civilian nuclear energy and emerging technologies



Understand the uses, opportunities, and considerations nuclear presents for Tribal communities



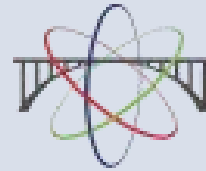
Learn about available DOE support, including technical assistance, funding, and other opportunities

Today's Speakers



U.S. DEPARTMENT
of **ENERGY** | Office of
Nuclear Energy

Rick Christensen



GAIN Gateway for Accelerated
Innovation in Nuclear

Emily Nichols



U.S. DEPARTMENT
of **ENERGY** | Office of Indian Energy
Policy and Programs

Rodney Feazel



CLDP
COMMERCIAL LAW DEVELOPMENT PROGRAM

Anna Sherman



Nuclear Energy Overview

Rick Christensen

Acting Deputy Assistant Secretary

Office of Nuclear Reactors

U.S. Department of Energy, Office
of Nuclear Energy

INTRODUCTION

THE OFFICE OF NUCLEAR ENERGY

Mission is to advance nuclear science and technology to help meet America's energy, environmental, and economic goals.

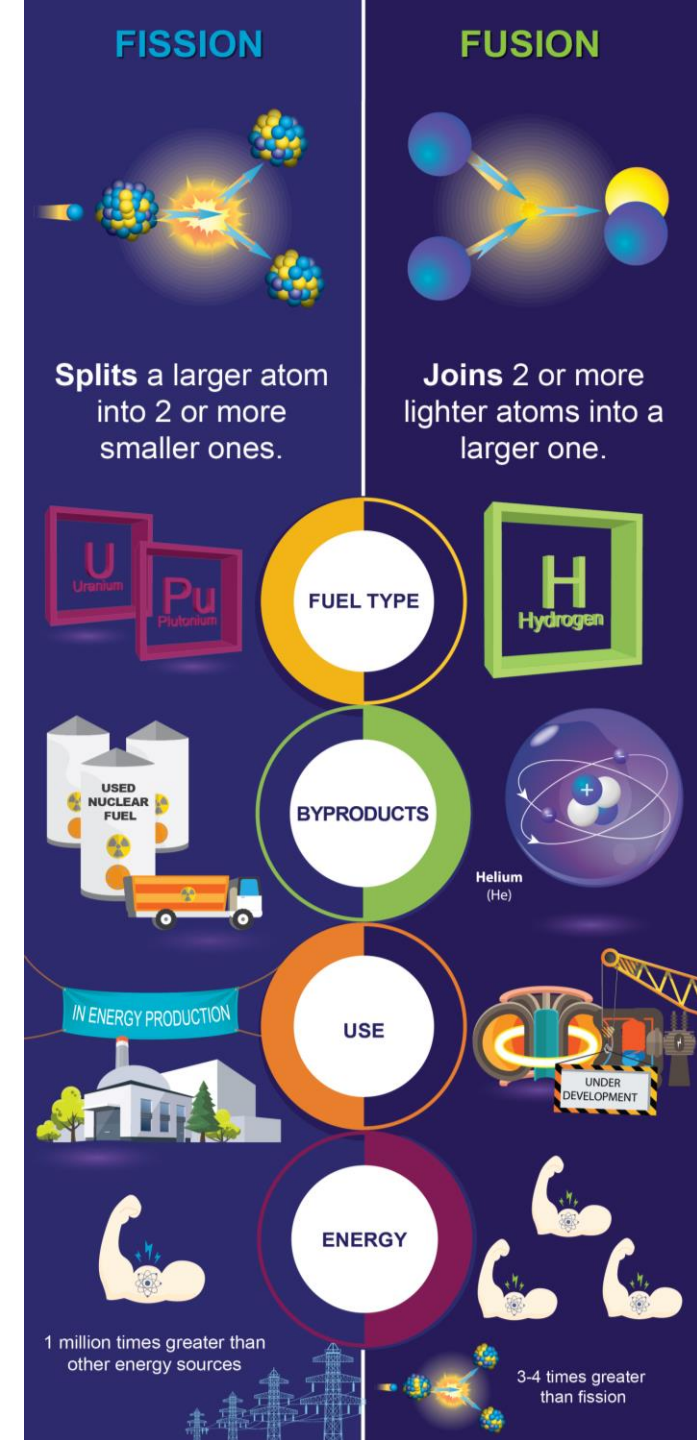
Priorities:

- Support the development and deployment of advanced reactors
- Advance nuclear fuel technologies and fuel cycles
- Help to keep today's reactors operating safely and reliably
- Support international collaboration



FISSION VS. FUSION

- Fission is splitting atoms to release energy
- Heat from fission is used to create steam that spins a turbine to generate electricity
- Fusion joins two smaller atoms into a larger atom to produce energy
- Fusion is still under development for large-scale power generation
- When we say, “nuclear energy,” we usually mean fission





BEYOND ELECTRICITY

APPLICATIONS OF NUCLEAR ENERGY

Nuclear technology supports critical needs across many sectors:

- Reliable, 24/7 energy for communities, industry, data centers, and critical infrastructure
- Resilient power for defense and military operations
- Radioisotopes for:
 - Medical applications including life-saving medical imaging, diagnostics, and cancer treatments
 - Agriculture, protecting crops and preserving food
 - Industrial applications such as radiographs of welds



NUCLEAR ENERGY 101

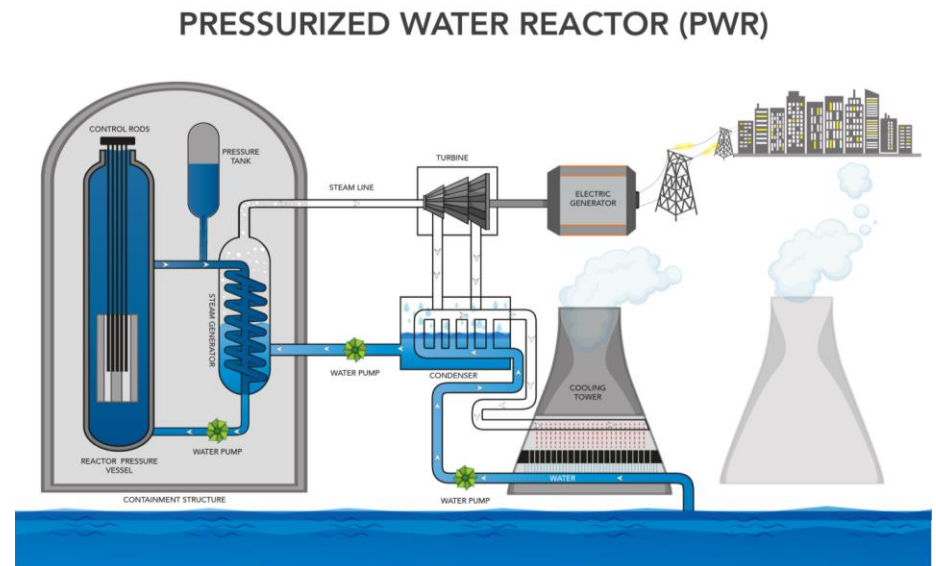
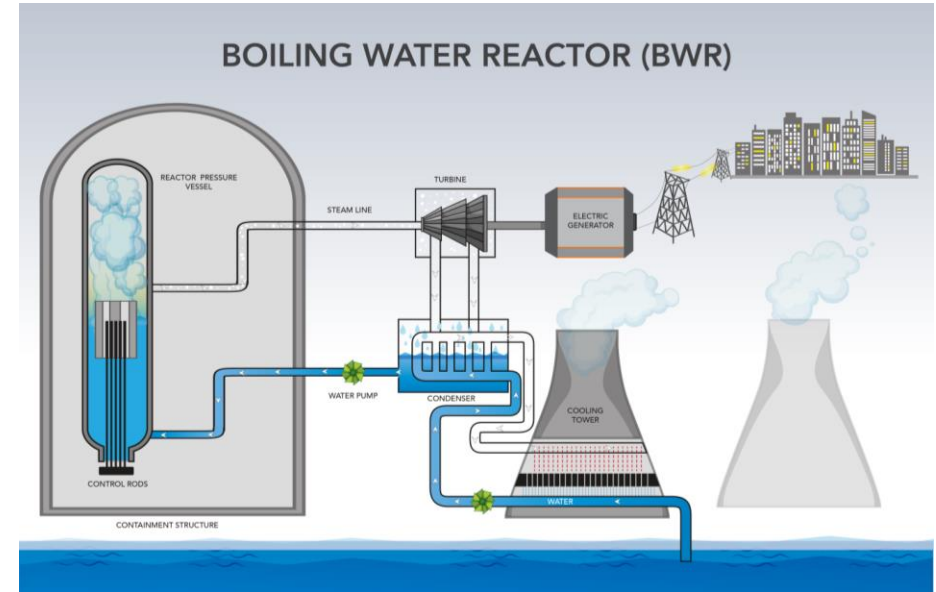
NUCLEAR ENERGY IN THE UNITED STATES

- 94 nuclear reactors operate at 54 sites across the United States
- Provides about 20% of United States electricity
- Current reactors will operate for 80+ years
- An affordable, reliable, and resilient source of electricity
- Generates large amounts of energy from a small amount of fuel

<https://www.nrc.gov/reactors/operating/list-power-reactor-units>
<https://pris-stats.iaea.org/>

HOW CURRENT REACTORS WORK

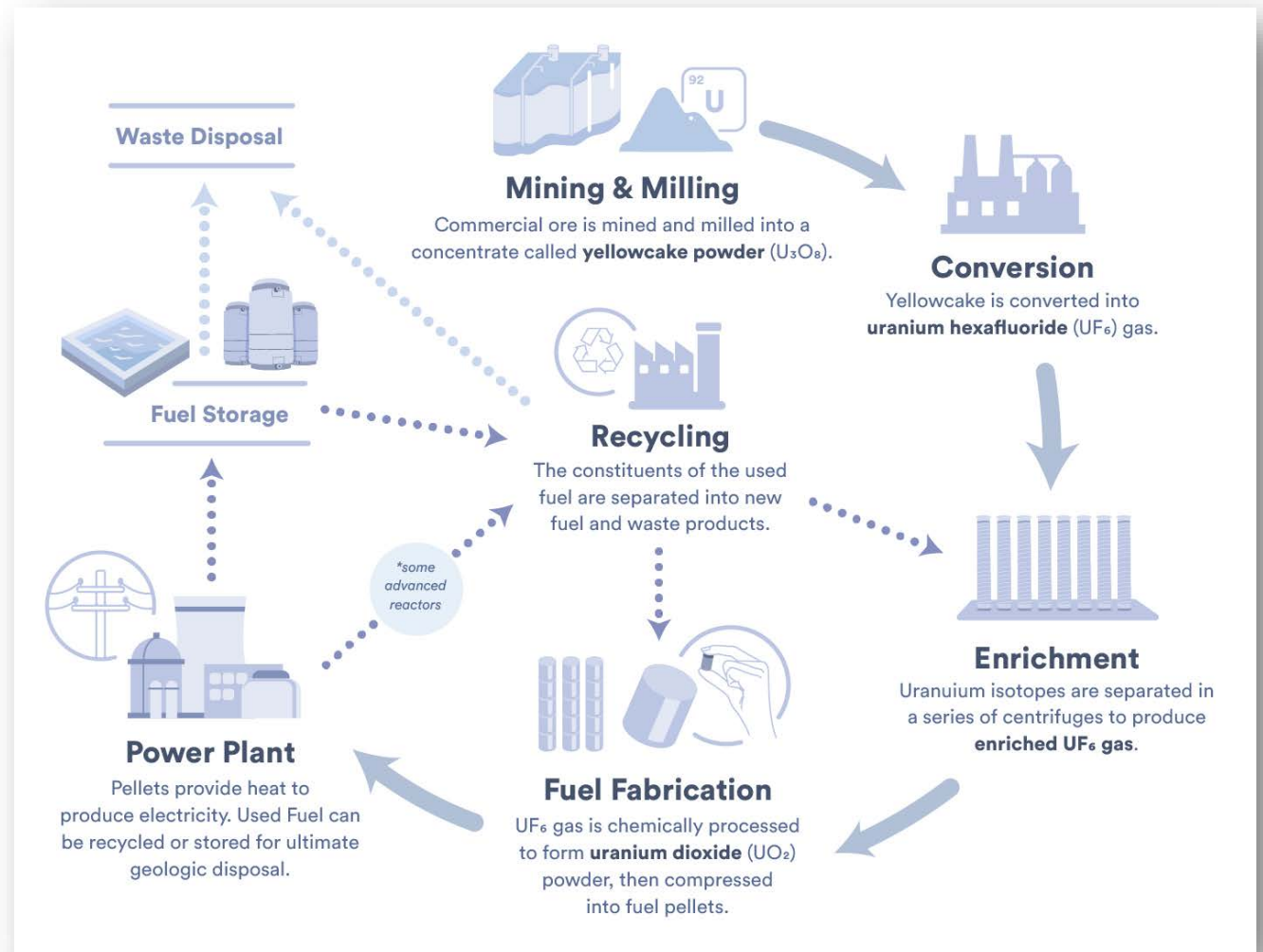
- Nuclear reactors contain and control nuclear chain reactions
- Nuclear chain reactions produce heat through fission, the process of splitting atoms
- The heat is used to create steam that spins a turbine to generate electricity
- Uranium is a common fuel for reactors because it is easy to initiate and control fission
- Inside the reactor, nuclear fuel rods are immersed in water, which acts as both a coolant and a moderator
- Control rods are inserted or withdrawn to control the rate of the nuclear chain reaction



FROM ROCK TO REACTOR

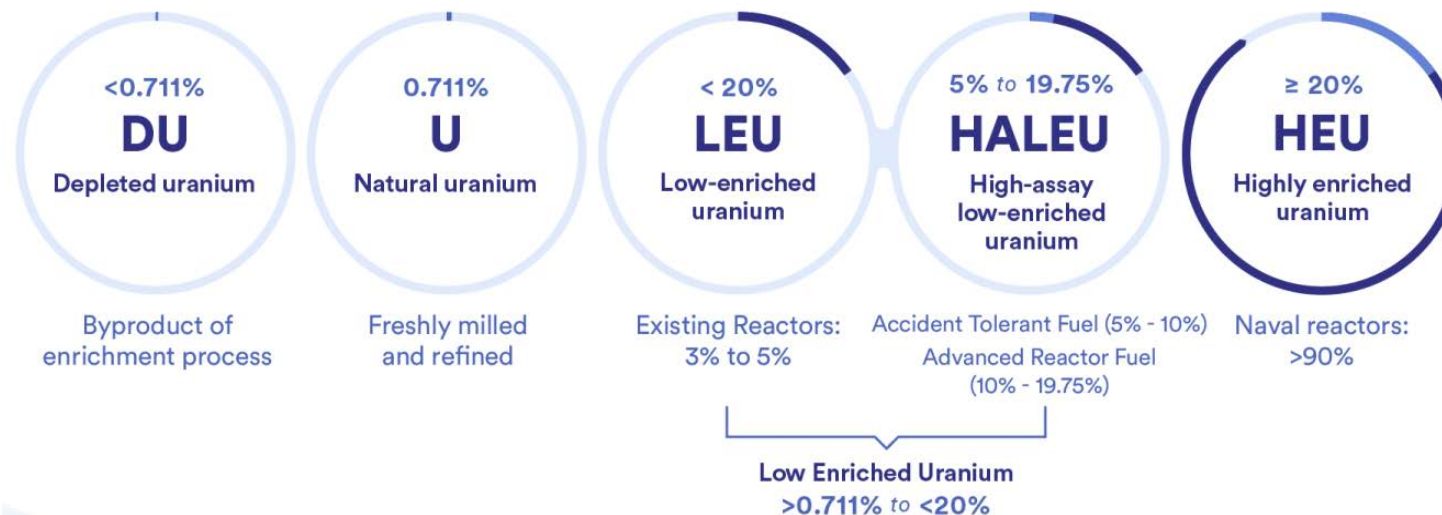
NUCLEAR FUEL CYCLE

- Uranium is the primary fuel used in United States' nuclear reactors
- It enables a controlled chain reaction
- Fuel preparation includes mining & milling, conversion, enrichment, and fuel fabrication
- U-235 is the main naturally occurring fissile isotope that produces energy through fission



FUEL ENRICHMENT

- LEU (low-enriched uranium) fuel is used in today's United States reactors
- LEU is enriched up to 5% U-235
- HALEU (high-assay low-enriched uranium) is fuel enriched between 5% and 19.75% U-235
- HALEU is needed for advanced reactors to achieve smaller designs, longer operating cycles, higher efficiency, and reduced waste



WHAT ABOUT THE WASTE?

MANAGING THE BACK END OF THE FUEL CYCLE

- Nuclear fuel is currently used in a reactor for about 5 years before being replaced
- Used fuel is stored in steel-lined concrete pools filled with water to cool
- After 2-5 years, it is moved to dry storage casks made of steel and concrete
- Dry casks provide safe, secure, long-term storage
- Used fuel is currently stored at more than 70 sites in 35 states





MAXIMIZING ENERGY POTENTIAL

RECYCLING USED NUCLEAR FUEL

- Today's fuel cycle uses only a small fraction of the fuel's energy potential
- After use in a reactor, more than 90% of the fuel's energy potential remains
- Reprocessing and recycling used fuel for advanced reactors can recover untapped energy
- Recycling can also reduce the amount of nuclear waste
- DOE is working with industry to re-establish commercial recycling in the United States.

TYPES AND FEATURES

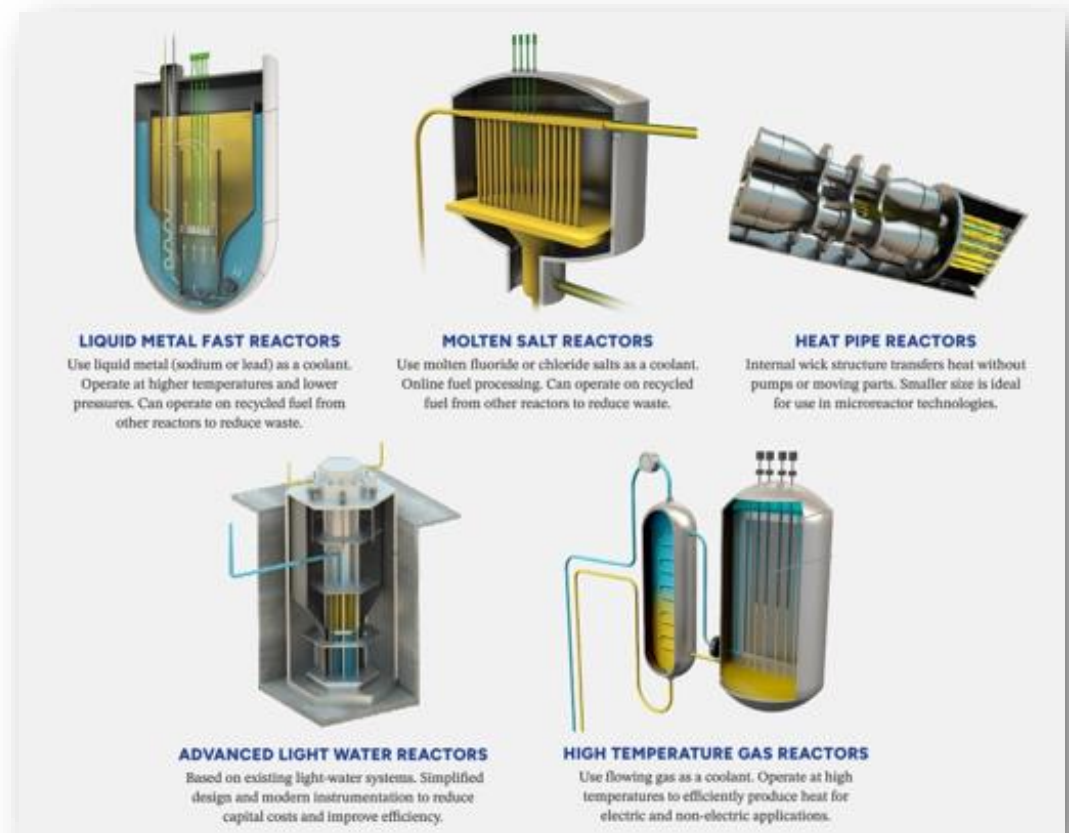
ADVANCED NUCLEAR

Advanced reactors combine innovative designs with enhanced safety, security, and operational resilience

- Passive safety systems
- Below-ground construction
- Advanced fuels

Advanced reactor designs:

- Liquid Metal Fast Reactors
- Molten Salt Reactors
- High Temperature Gas Reactors
- Advanced Light-Water Reactors
- Heat Pipe Reactors



SIZES

ADVANCED NUCLEAR

Advanced reactors are the next generation of nuclear technology, designed to be safer, more efficient, and easier to deploy.

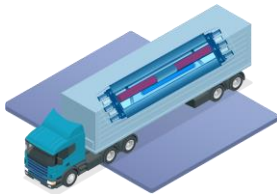
Size	Output	Land Use	Key Applications
Microreactors	Up to 50 MWe	A few acres	Remote communities, military installations, hospitals, universities, industrial sites
Small Modular Reactors (SMRs)	50–300 MWe per module	≤ 10 acres	Scalable power generation, complements wind and solar
Large Advanced Reactors	1,000+ MWe	~ 1 square mile	Large-scale power generation, abundant clean, reliable energy on the grid

SIZES

ADVANCED REACTORS

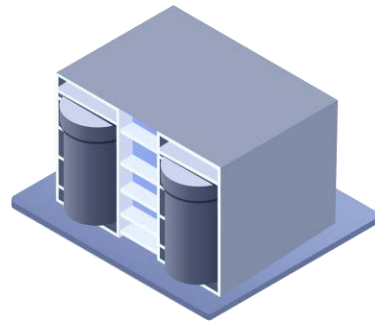
Microreactor

1 MWe to 50 MWe



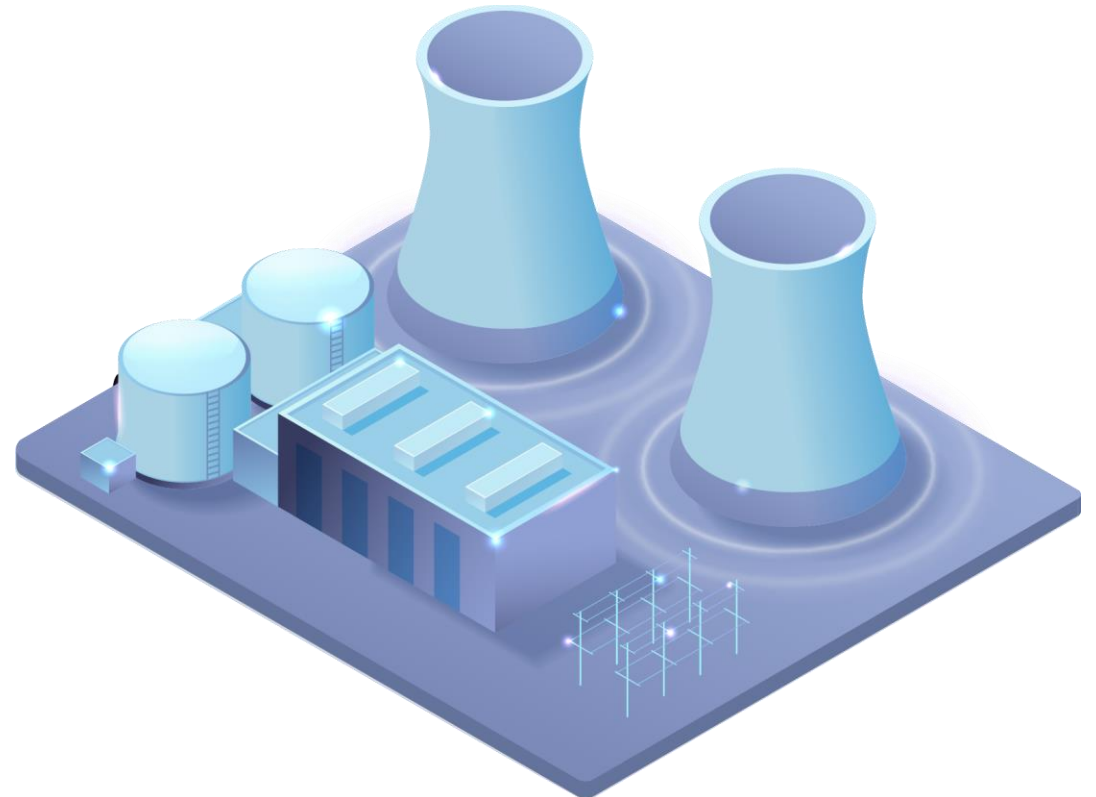
Small Modular Reactor

50 MWe to mid-100s
MWe



Large Scale Reactor

Mid-100s MWe to
1,000+ MWe





REINVIGORATING THE INDUSTRY

NUCLEAR RENAISSANCE

The United States is entering one of the biggest periods of nuclear energy growth in decades

- Current nuclear generating capacity is 100GW
- Expand to 400 GW by 2050

A nuclear renaissance means...

- New reactors
- Reactor restarts
- New fuel production
- Manufacturing investments
- Workforce expansion

A photograph of two large, white, hourglass-shaped cooling towers of a nuclear power plant. They are set against a dramatic sky at sunset or sunrise, with thick, dark clouds and a bright orange glow near the horizon. The foreground is a rocky, pebbly shore. The image is partially obscured by a dark blue diagonal shape on the left side of the slide.

CONTEXT

WHY NUCLEAR?

Energy demand is growing due to:

- AI and data centers
- Advanced manufacturing
- Electrification of everyday life

Nuclear energy is well-suited to meet our energy needs

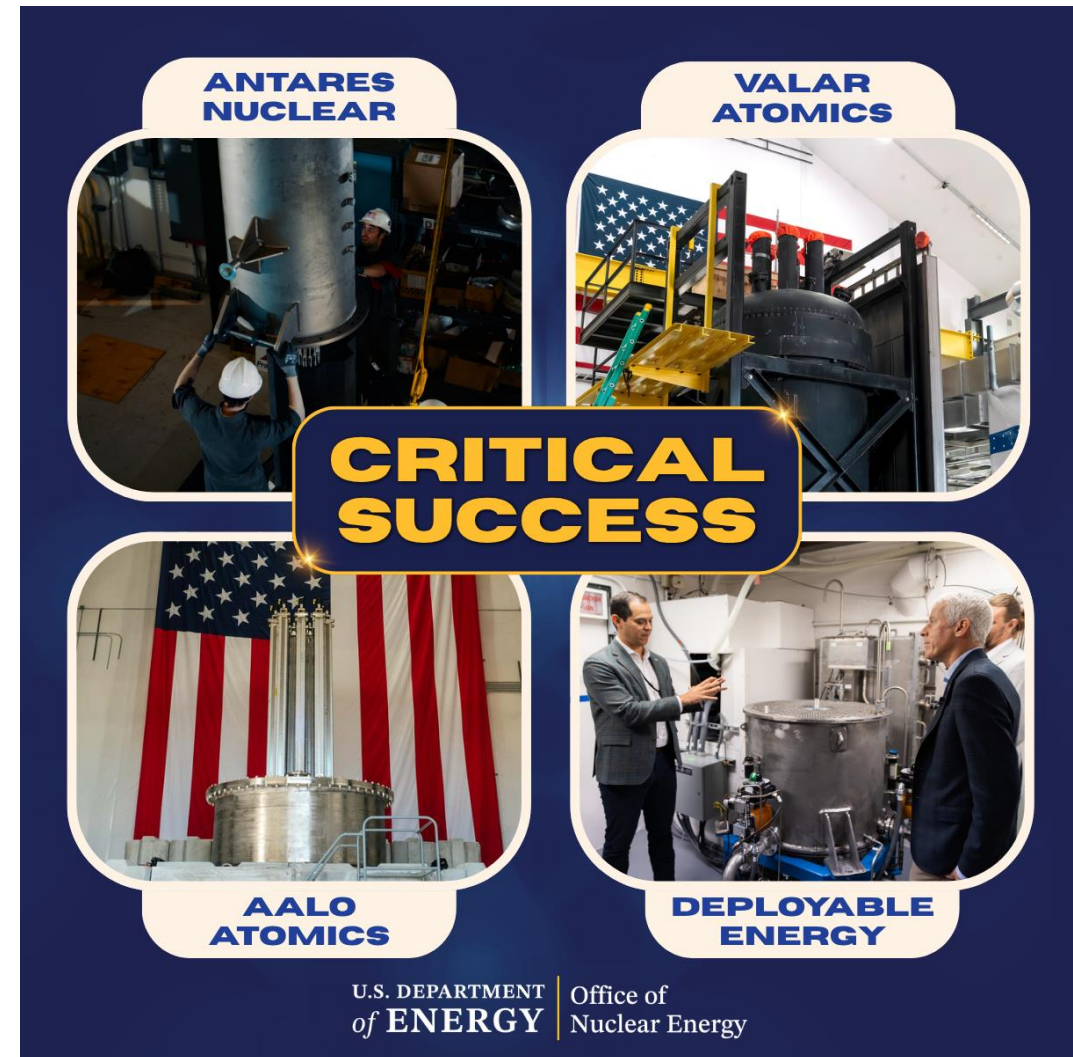
- Operates 24/7 regardless of weather
- Requires very little land to operate
- Supports national security and energy independence

THE NUCLEAR RENAISSANCE IS HERE

ADVANCING NEW REACTOR TECHNOLOGY

Reactor Pilot Program

- Pathway for advanced reactors to accelerate development and demonstrations to fast-track commercial licensing
- Target was for three advanced reactor designs to reach criticality by July 4, 2026
- In collaboration with DOE, four developers did so successfully by July 4th:
 - Antares Nuclear's Mark-0
 - Valar Atomics' Ward 250
 - Deployable Energy's Unity reactor
 - Aalo Atomics' Aalo-X Critical Test Reactor
- Oklo Groves reactor reached criticality on Aug 5th, and more are expected.



THE NUCLEAR RENAISSANCE IS HERE

ADVANCING NEW REACTOR TECHNOLOGY

Advanced Reactor Demonstration Program (ARDP)

- Accelerates the development and demonstration of advanced reactors
- 10 innovative United States advanced reactor designs
- TerraPower received the construction permit issued for a commercial, non-light water reactor to build its Natrium reactor in Kemmerer, WY
 - Permit is issued by the U.S. Nuclear Regulatory Commission (NRC)
- X-energy's construction permit for its Xe-100 reactor in Seadrift, TX is currently under review by the NRC



INNOVATION CAMPUSES

DOE is exploring full nuclear lifecycle innovation campuses through federal-state partnerships. Potential activities could include:

- Fuel fabrication
- Uranium enrichment
- Used fuel recycling
- Waste disposition
- Advanced reactor deployment
- Advanced manufacturing
- Co-located data centers

DOE selected Utah, Tennessee, Oklahoma, Louisiana, and Idaho as potential host states



THE NUCLEAR RENAISSANCE IS HERE

ADDING MORE NUCLEAR POWER

Utility Power Reactor Incremental Scaling Effort (UPRISE)

- Focuses on extending reactor lifetimes, increasing plant output, restarting dormant facilities, and improving plant efficiency
 - Goal is to add 2.5 GW by 2027
 - Add 5 GW by 2029

Reactor Restarts

- Palisades Nuclear Plant in Michigan (supported by DOE loan)
- Crane Nuclear Power Plant in Pennsylvania (supported by DOE loan)
- The Duane Arnold Energy Center in Iowa



TRIBAL CONSIDERATIONS

Some Tribes are exploring opportunities to host new nuclear projects for energy sovereignty and economic benefits

Economic opportunities of hosting nuclear projects (power plant or supply chain)

- Stable, high-paying jobs direct jobs for generations
- Spur hundreds of supplementary jobs, additional business through added revenue and household spending
- Current reactors operate for 80+ years, providing reliable energy and local employment for generations
- Local and state taxes support improvements to local infrastructure, education, and public services

Be an informed neighbor

- Don't have to host a nuclear project to stay informed
- Capitalize on adjacent projects: workforce, business opportunities



HOSTING NUCLEAR PROJECTS

WORKFORCE NEEDS

- The nuclear sector projects major workforce growth
- Nuclear careers go far beyond one major or one job title
- Jobs in nuclear include engineers, operators, technicians, welders, electricians, chemists, materials scientists, computer scientists, cybersecurity experts, and more
- Many pathways into nuclear from education programs to internships and fellowships to national lab experience
- Transitional opportunities exist for both skilled trades, vocational, military, and those that require a degree

RESOURCES TO CONSIDER

Informational Resources

- [DOE's Office of Nuclear Energy](#)
- DOE's Gateway for Accelerated Innovation in Nuclear ([GAIN](#))
- Other

Financial Resources

- Technical Assistance (through [DOE's Office of Indian Energy](#))
- Loans (through DOE's Office of Energy Dominance Financing (EDF)), [Tribal Energy Financing Program](#))
- Tax Credits





Tribal Considerations & Opportunities

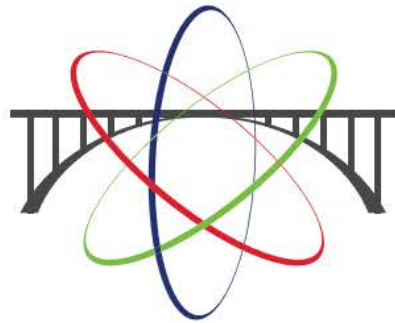
Emily Nichols

Community & Tribal Engagement
Manager

U.S. Department of Energy,
Gateway for Accelerated Innovation
in Nuclear

Gateway for Accelerated Innovation in Nuclear

Small enough to be nimble, big enough to be relevant



GAIN

Gateway for Accelerated
Innovation in Nuclear

G GATEWAY

Gateway to national labs.

A ACCELERATED

Accelerated to match advanced
nuclear developer pace and
market window.

I INNOVATION

Innovation in all spaces with
a bias toward taking risks.

N NUCLEAR

Nuclear to meet the nation's
energy, environmental and
economic needs

GAIN's Areas of Expertise

- Department of Energy Office of Nuclear Energy initiative
- Focus on initiating and completing projects that support commercial deployment of advanced reactors and technologies

HIGHLIGHTS



Industry Focus

- Vouchers for private companies to access U.S. Department of Energy national laboratories
- Legacy nuclear program documents and data
- Industry research and reports



State and Community Focus

- Vouchers for states and non-profits
- Nuclear industry facts and statistics for the current fleet and advanced reactors
- Customized service for state and community energy needs



GAIN Tribal Engagement

GAIN works with nuclear-curious Tribal Nations, states, and communities as they consider advanced nuclear in their energy portfolios.

- Attend public meetings with local partners
- Host nuclear 101 conversations
- Testimony for state-level energy committees
- Brief staffers for legislative discussions
- Customize webinars and workshops
- Work with local economic development organizations
- Partner with governmental organizations on technical assistance
- Provide neutral resources and information about nuclear energy



GAIN Nuclear Feasibility Studies



CORONADO GENERATING STATION

Location: St. John's AZ

Owner: Salt River Project (SRP)

Results:

- The site has ample, developable land for potential nuclear deployment.
- SRP will need to assess water availability, local ecology, and continue community engagement going forward.



COLSTRIP POWER PLANT

Location: Colstrip, MT

Owner: Northwestern Energy

Scope: Assess the feasibility of different technology options at Colstrip Power Plant.

Baseline: Uninterrupted coal plant operations.

High-level investigation of site viability for nuclear deployment in NWE service territory



GHENT GENERATING STATION

Location: Ghent, KY

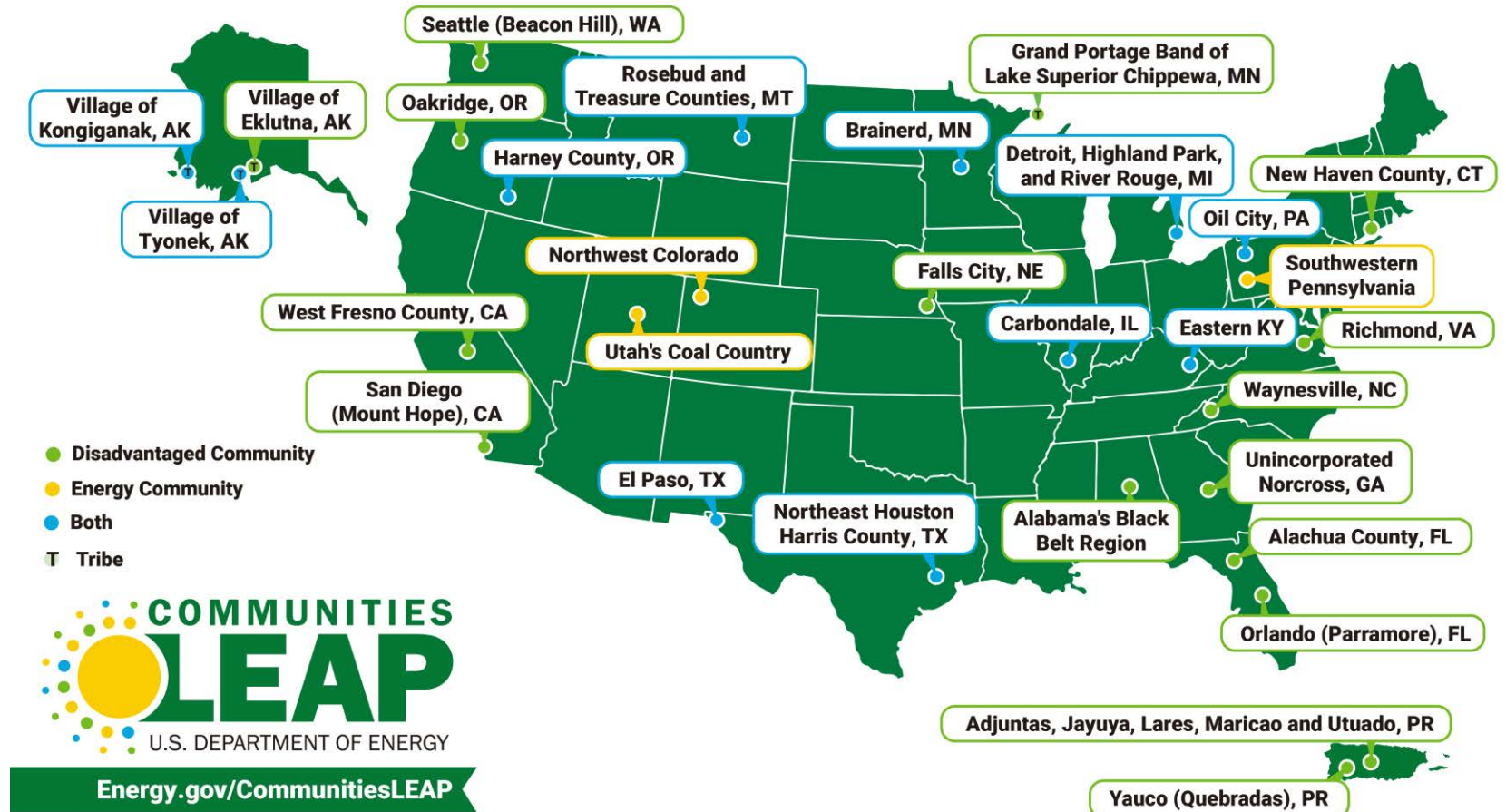
Owner: Louisville Gas and Electric, Kentucky Utilities (LG&E, KU)

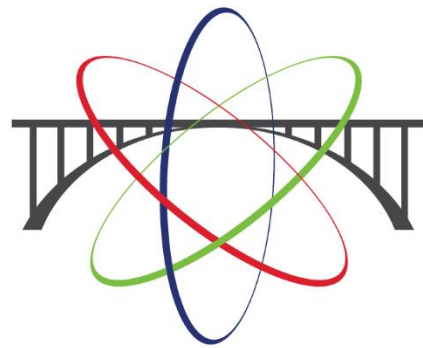
Results:

- The site is capable of hosting small and medium-sized reactors, but site topography and potential coal combustion residue will limit the amount of developable land, and therefore total capacity.

DOE C-LEAP Funding Opportunities

- C-LEAP communities exploring nuclear:
 - Eastern Kentucky
 - Northwest Colorado
 - Rosebud and Treasure Counties, Montana
 - Southwestern Pennsylvania
 - Utah's Coal Country





GAIN

Gateway for Accelerated
Innovation in Nuclear



@GAINnuclear

gain.inl.gov



Technical Assistance for Tribe-Led Nuclear Energy Development

Rodney Feazell

Technical Assistance Specialist

U.S. Department of Energy, Office
of Indian Energy

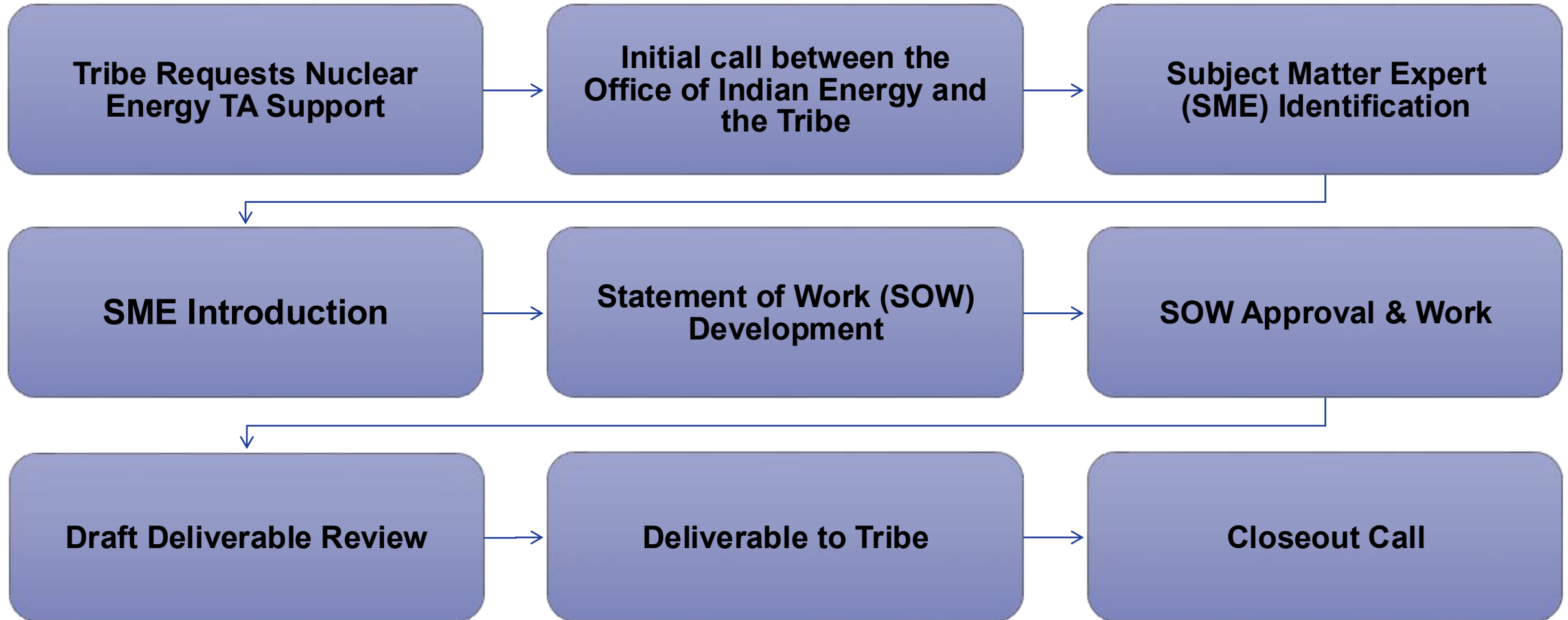
Nuclear Energy Technical Assistance (TA)



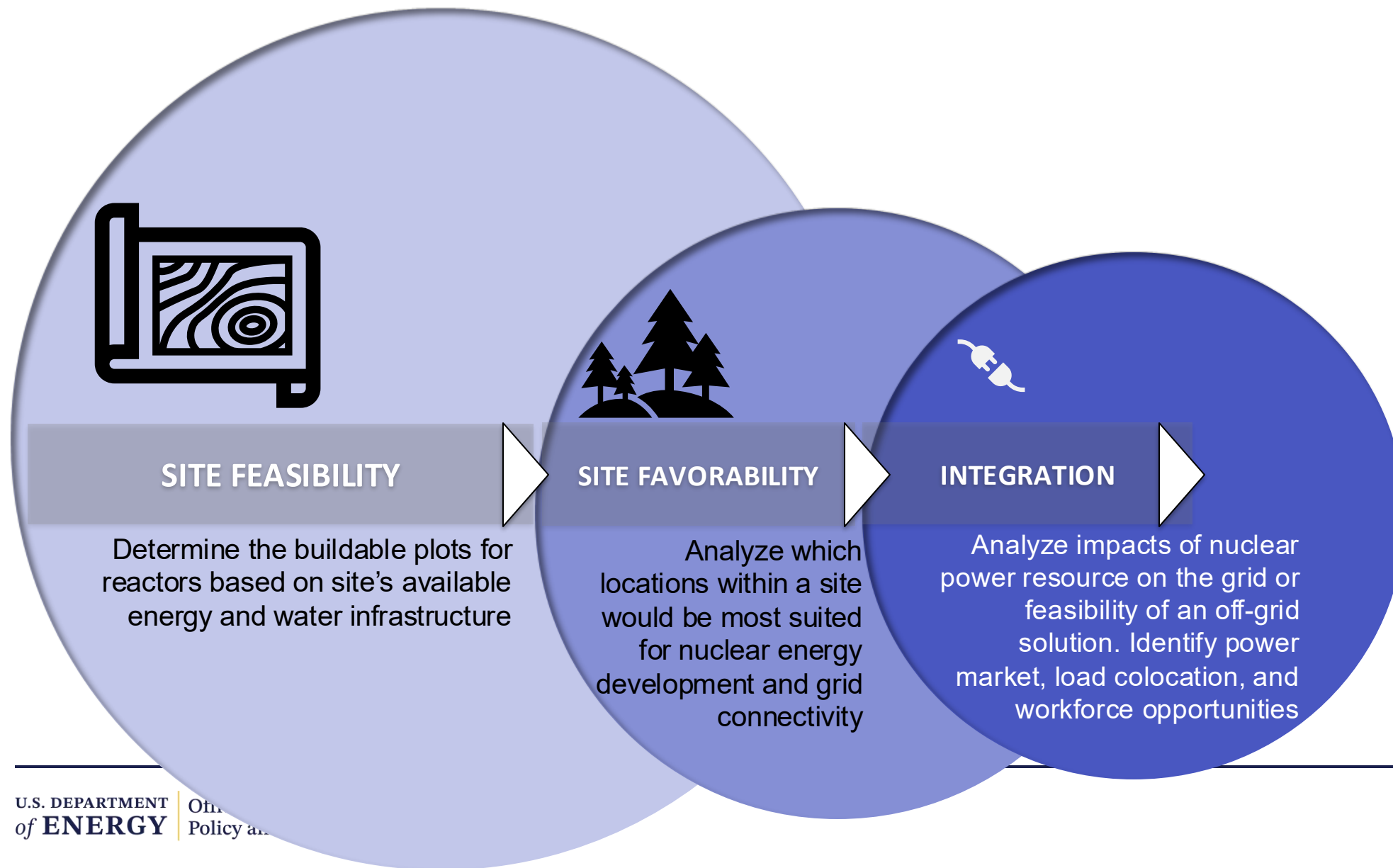
- Eligibility: Federally recognized Tribes, Alaska Native regional and village corporations (also TEDOs, intertribal organizations and Tribally chartered entities)
- Mission: Advance strategic energy planning, energy projects and energy commerce with expert support
- No cost to recipients
- Available on a rolling basis and easy to request, with a simple email
- Supported by experts at DOE national laboratories and other partners
- Focus on early-stage work on siting, sizing, and resources around nuclear energy (no legal advice, detailed engineering, or grant applications)

energy.gov/indianenergy/request-technical-assistance

Indian Energy TA Process for Nuclear Energy Project Support



Potential Areas for Nuclear Energy Project Support



How to Access Indian Energy Technical Assistance for Nuclear Energy Projects

Visit our website to learn more and to access our technical assistance request form:

<https://www.energy.gov/indianenergy/technical-assistance-tribal-energy-projects>

You may also submit a request by emailing us directly at ie-ta@hq.doe.gov

An official website of the United States government [Here's how you know](#)

U.S. DEPARTMENT of ENERGY Policy & Priorities Leadership & Organization Topics News & Events About Funding Opportunities

Office of Indian Energy Policy and Programs > Technical Assistance > Technical Assistance for Tribal Energy Projects

Technical Assistance for Tribal Energy Projects

Technical assistance for Tribal energy projects is provided at no-cost by experts from the U.S. Department of Energy (DOE) Office of Indian Energy, DOE's national laboratories, and other partnering organizations. This support assists federally recognized Indian Tribes and Tribal entities, including Alaska Native regional corporations and village corporations, with energy planning, energy efficiency assessments, resource assessments, project planning, energy codes and utility formation activities, as well as support to enhance the legal environment for energy sector commerce.

The goal of Tribal energy technical assistance is to address a specific challenge or fulfill a need that is essential to successful project implementation. This includes modernizing or developing legal, regulatory, and contractual frameworks for Tribal energy; enabling a sustainable competitive business environment; and effectively participating in power markets. Technical assistance to enhance the legal environment for energy sector commerce will be implemented through the U.S. Department of Commerce, Commercial Law Development Program (CLDP), referred to as "CLDP technical assistance."

The intended result of this Tribal energy technical assistance is:

- To provide a tangible product or specific deliverable designed to help move a project forward
- To support Tribes' self-determination and energy sovereignty through assistance to identify and support bankable structures for energy projects through legal technical assistance
- To assist Tribes in strengthening their "in-house" capacity to independently lead, advise, and implement such structures in the future.

The Office of Indian Energy cannot advise or facilitate a grant application.

[Download the Tribal energy technical assistance flyer](#).

[Request Tribal energy technical assistance](#).



CLDP Legal Technical Assistance and Tribal Nuclear Primer

Anna Sherman

International Program Specialist,
Energy & Minerals

U.S. Department of Commerce,
Commercial Law Development
Program

CLDP Legal Technical Assistance and Tribal Nuclear Primer



Made possible by:



U.S. DEPARTMENT
of ENERGY

Prepared by:



CLDP
COMMERCIAL LAW DEVELOPMENT PROGRAM

About CLDP and our Technical Assistance

The Commercial Law Development Program (CLDP) is a division of the U.S. Department of Commerce, Office of General Counsel, that advances commercial interests abroad by facilitating legal reforms, institution building, and human capital development.

The Energy and Minerals team at CLDP advises policymakers and regulators on the policy, legal, regulatory, and contractual reforms that attract investment in minerals, energy, and power – **including nuclear.**



About CLDP and our Technical Assistance

Through sponsorship by the DOE/Office of Indian Energy, CLDP delivers tailored legal technical assistance and capacity building assistance to federally recognized Indian Tribes.

We started in late March 2025, working on a range of issues:

- Legal/Regulatory Frameworks vis-à-vis generation proposals (including nuclear)
- Energy development opportunity analysis
- Energy sovereignty, including utility formation
- Data center legal and regulatory questions



What is the Tribal Nuclear Primer?

- The primer provides an overview for Tribes considering nuclear power on Tribal lands. It seeks to answer common questions related to developing, financing, constructing, and licensing civil nuclear power.

The Primer discusses questions the Tribes may have such as:

- - 1) **What civil nuclear technologies are currently available?**
 - 2) **Who are the key regulators and what is the process for licensing?**
 - 3) **What are the costs and how are nuclear power plants financed?**
 - 4) **What competitive advantages might a Tribe have?**
 - 5) **What strategies could a Tribe adopt to attract partners?**

Why a Tribal Nuclear Primer?

- The Primer walks through potential questions to provide a “starting point” from which Tribes can proceed with greater confidence.
- The primer provides an overview of **advanced nuclear reactor technology, the role of Tribal government in a nuclear project, and the first steps a Tribe can take toward participation in a nuclear project.**
- The deployment of new civil nuclear power and related infrastructure by sovereign Tribes on Tribal lands could fuel local economic prosperity and support both Tribal and national development.

Request CLDP Technical Assistance

1. Please visit: <https://www.energy.gov/indianenergy/technical-assistance-tribal-energy-projects>
2. Select the CLDP request link
3. Provide necessary information about your request
4. A member of the DOE team will respond ASAP

Request Tribal Energy Technical Assistance

Thank you for your interest in requesting Office of Indian Energy Tribal energy technical assistance! Please read the certification below, and, if you agree, proceed by clicking the box below, providing the requested information, and sending the email.

By submitting a technical assistance request, you are agreeing that:

- You, as the requestor, have the authority to request assistance on behalf of the eligible Tribe or Tribal entity.
- The request applies specifically to advancing a Tribal energy goal or an energy project.
- A designated Tribal contact will be available and responsive to DOE's and/or its technical assistance provider's requests.
- The designated Tribal representative will be available to participate on a call to discuss the scope of the assistance.
- The designated Tribal representative will provide any additional information (e.g., energy usage data) requested in a timely manner.

Complete this email to request Tribal energy technical assistance

Complete this email to request CLDP technical assistance

If you are having any issues with applying for technical assistance, please email ie-ta@hq.doe.gov directly.



Stay Connected!



Office of Indian Energy

(240) 562-1352

indianenergy@hq.doe.gov

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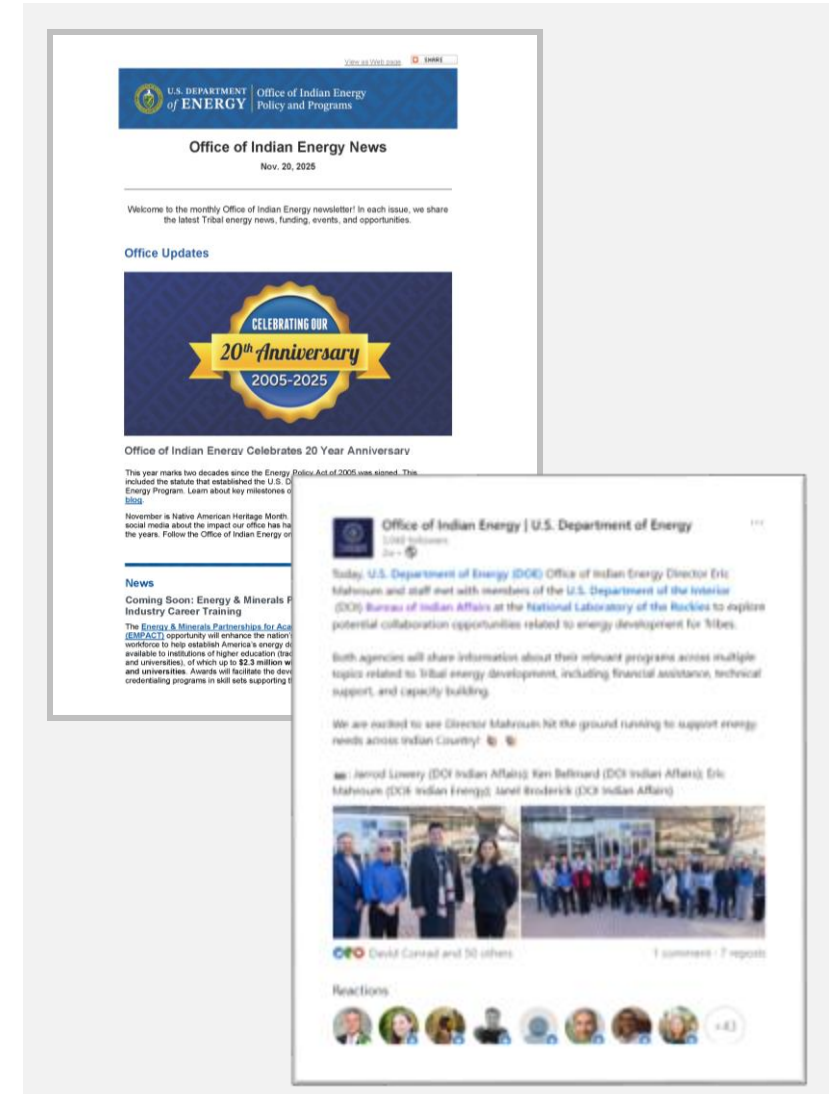
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Thank you!



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Policy and Programs