

ARKANSAS NUCLEAR FEASIBILITY STUDY

Final Report | July 2026

Prepared for the Joint Committee on Energy of the Arkansas General Assembly. A technical feasibility study of new nuclear generation in Arkansas, directed by Act 707 of 2025.

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NEW NUCLEAR IS FEASIBLE AND ADVISABLE IN ARKANSAS

The study's conclusion, and the four findings behind it

01 THE STATE NEEDS THE ENERGY

Entergy Arkansas projects power needs to grow more than 35 percent over the next five years, and longer-term projections indicate the figure could more than double. The cooperatives are evaluating roughly 4,000 MW of prospective load requests.

02 WORKABLE SITES EXIST

The study screened six candidate areas. Southwest Arkansas and Central Arkansas screen best, and the ANO area is well suited with transmission upgrades. Retiring coal plants and military installations offer additional routes.

03 FEDERAL SUPPORT, STRONGEST IN DECADES

The financing plan draws on Department of Energy debt and export credit financing, and first movers are building now: TVA at Clinch River, TerraPower in Wyoming, and X-energy's units for Dow in Texas.

04 STATE LAW NEEDS ONLY MODEST CHANGES

Act 373 of 2025 already authorizes key financing tools. The Atomic Coordinator role already exists in Arkansas Code. The proposed Arkansas Nuclear Competitiveness Act makes five targeted changes.

The recommended course: prepare and permit sites now, and build when nth-of-a-kind (NOAK) prices arrive.

ARKANSAS POWER DEMAND IS SURGING

The case for nuclear starts with load growth and retiring coal capacity

The load is coming and coal is leaving

Entergy Arkansas projects power needs to grow by more than 35 percent over the next five years, with longer-term projections indicating the figure could more than double as technology, lithium, steel, manufacturing, aerospace, defense, and forestry operations consider locating or expanding in the state.

The Arkansas Electric Cooperative Corporation, whose system peaks near 3,000 megawatts, is evaluating roughly 4,000 MW of prospective load requests.

Some existing generation is retiring at the same time. Under a Clean Air Act settlement, Entergy will cease burning coal at White Bluff by the end of 2028 and at Independence by the end of 2030.

35%+

projected growth in Arkansas power needs within five years

4,000 MW

prospective load requests the cooperatives are evaluating, against a system peak near 3,000 MW

2028 | 2030

coal exits at White Bluff, then Independence, under a Clean Air Act settlement

NUCLEAR FILLS THAT GAP BETTER THAN ANY ALTERNATIVE

Baseload, non-emitting, compact, safe, and secure

91%

U.S. nuclear fleet capacity factor in 2025, the highest of any source, vs. about 25% for solar and 35% for wind

1.3 sq mi

land for a 1,000 MW nuclear plant. An equivalent solar farm needs about 75 square miles, a wind farm about 260

ZERO

carbon dioxide produced during operation, with lifecycle emissions comparable to wind and generally less than solar

18-24 mo

of uranium fuel can be stockpiled on site, energy security no fossil plant can match

Safer than the alternatives

Nuclear has one of the lowest mortality rates per unit of energy of any electricity source. The worst commercial nuclear accident in U.S. history, Three Mile Island in 1979, caused no deaths and no detectable health effects. By comparison, the Buffalo Creek coal-waste dam failure killed 125 people in 1972.

Proven against grid shocks

Winter Storm Uri showed in 2021 what a gas-supply disruption does to grids across the South-Central United States, including Arkansas. Nuclear runs around the clock, in any weather, and its fuel is already on site.

A PLANT TRANSFORMS ITS HOST ECONOMY

Jobs, local purchasing, and tax base at SMR and large-reactor scale

237

permanent positions a small modular reactor (SMR) could create, for the life of the plant

500-800

workers employed by an operating large reactor, and as many as 4,500 at peak construction

\$470M

a typical large plant's annual local sales of goods and services

\$16M

a typical plant's annual state and local taxes

Arkansas Nuclear One shows the effect

About 1,048 direct jobs, an annual payroll near \$84 million, and an economic pillar of Pope County.

ANO has anchored the Russellville area for five decades, the model for what a new plant does for its host county.

PREPARE SITES NOW, BUILD AT NOAK PRICES

First units of any design pay for industry maturity. Arkansas does not have to.

The first units pay for maturity

Reactor designs, supply chains, and financing structures must mature before deployment becomes widespread. No current project is fully mature in all three.

Vogtle Units 3 and 4 in Georgia, the only new large reactors completed in the United States in decades, cost about \$35 billion against an original \$14 billion estimate and finished nearly seven years late.

A first-of-a-kind (FOAK) build should be expected to cost about three times, and take about twice as long as, a later build of the same design.

Position for the NOAK price: support the acquisition, characterization, and permitting of sites now. A project entering site selection in 2027 could reach commercial operation in the mid-2030s.

Repetition cures this: projected AP1000 overnight cost

\$15,000

per kWe, the first-of-a-kind

\$6,200

per kWe by the fourth two-unit plant

\$4,700

per kWe at nth-of-a-kind (NOAK)

The study puts the crossover at about the fifth plant of a given design, the tenth at most.

SITING: SIX CANDIDATE AREAS, TWO SCREEN BEST

EPRI siting methodology, transmission first: a 600 MW injection floor at the state's 230-500 kV nodes

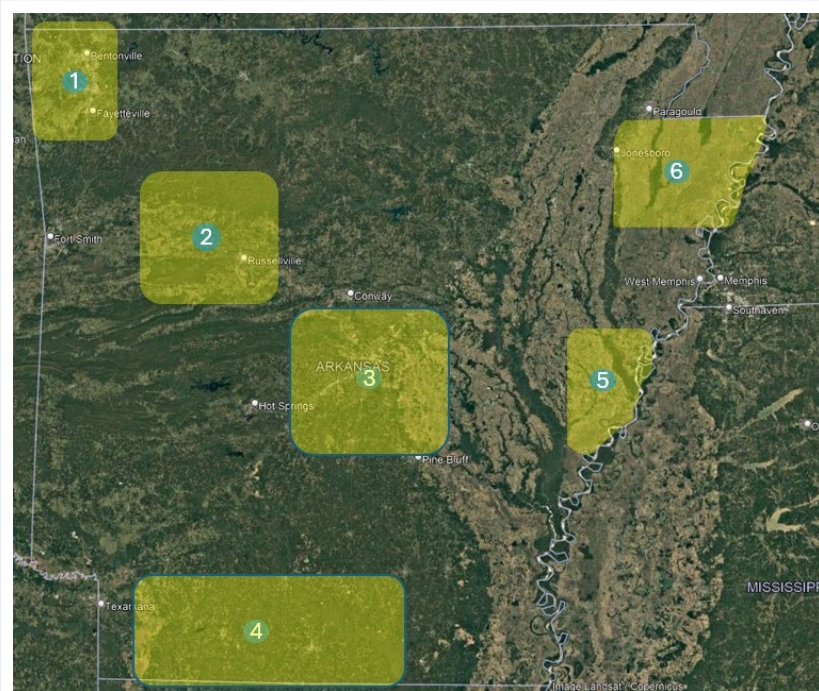


Figure 1 from the executive summary: candidate regions

#	AREA	N-1 MW	STATUS
1	Flint Creek Benton County	531	Below floor, no excess water identified
2	Arkansas Nuclear One Pope County	614	Well suited, transmission upgrades for larger builds
3	Central Arkansas South of Little Rock	768-929	Screens best
4	Southwest Arkansas Near Camden	1,003	Screens best
5	Phillips County Helena-West Helena	716	Eliminated, most designs (seismic)
6	Craighead / Mississippi Northeast Arkansas	2,424	Eliminated, most designs (seismic)

Areas 5 and 6 sit at or above the New Madrid seismic screen, eliminated for most designs and carried provisionally for advanced designs whose seismic bases may accommodate the ground motion.

MORE PATHS TO A SITE

The candidate areas are not the only route to new nuclear in Arkansas



Retiring coal plants offer ready sites

White Bluff and Independence keep their grid interconnections, cooling water access, and switchyards. Reusing them shortens development.



Military bases are another route

The proposed bill directs the state to consider sites at military installations. Those projects would run through the Department of Defense.



West and Southwest Arkansas warrant further study

Little River County at Millwood Lake and Scott County may support new nuclear and should be evaluated in the future.



A 2023 siting rule change helps SMRs statewide

The rule sizes the emergency planning zone by more flexible means rather than a fixed ten-mile circle, so a qualifying SMR may be able to site closer to towns and load centers.

Northeast Arkansas would be strong on its industries alone: Mississippi County is the largest steel-producing county in the U.S., and a multibillion-dollar Google data center campus is coming to West Memphis.

FINANCING MUST CHANGE AS THE PROJECT ADVANCES

Passive investors are reluctant to fund development or construction. Costs generally decline once the plant operates.

DEVELOPMENT PHASE

Present → construction permit

- Sponsor equity
- State bridge loan
- Export credit financing for early engineering

CONSTRUCTION PHASE

Permit → commercial operation

- Sponsor equity
- Department of Energy debt
- Export credit debt
- Protection against cost overruns

OPERATION PHASE

Commercial operation forward

- Long-term contract with a creditworthy power purchaser
- Refinancing at a lower cost
- Target structure: about 60 percent debt, 40 percent equity

A nuclear project is like a stadium: the developer spends money for years, including site studies, engineering, approvals, and long-lead equipment, before selling a single ticket. State support bridges that gap.

THE LEGISLATURE CAN SUPPORT EACH STAGE

Arkansas already has key tools on the books, and the record shows support must come with discipline

Already on the books

Act 373 of 2025 already authorizes recovery of construction work in progress, special rate contracts, and alternative financing for nuclear strategic investments.

Tools the legislature could add

A bridge loan program for early development work

A cost-overflow mechanism

A state guarantee supporting export credit agency debt

State tax incentives

Assistance securing a long-term buyer for the power

The record on cost recovery is mixed

Georgia's cost-recovery mechanism helped carry the Vogtle project through its contractor's bankruptcy to completion. South Carolina's V.C. Summer project had similar rate support but was abandoned after severe cost, schedule, and contractor failures.

Construction cost recovery may be necessary, but it is not sufficient without strong project controls and disciplined execution.

State support matters most in three places: early development, completion of the plant, and assistance with the long-term contracts that keep the project viable.

LEGAL: ACTIVATE AUTHORITY THE STATE ALREADY HAS

Appoint the Atomic Coordinator, and pass one bill that makes five changes

Appoint and fund the Atomic Coordinator

Arkansas Code § 15-10-305 already authorizes the Governor to appoint a Coordinator of Atomic Development Activities. The role has existed on paper for decades and gone unused.

The study recommends the Governor appoint the Atomic Coordinator and the General Assembly fund the position. The role focuses on economic development, coordination, and public engagement. Safety regulation stays with the Nuclear Regulatory Commission.

Texas, Virginia, New Hampshire, and New York have created comparable offices.

The Arkansas Nuclear Competitiveness Act makes five changes

- 1** Defines nuclear as clean energy under the Clean Energy Development Act, aligning Arkansas law with federal clean energy programs.
- 2** Expands the Atomic Coordinator's duties to cover siting, workforce, supply chain investment, and federal program tracking, with staff support.
- 3** Creates the Arkansas Nuclear Energy Development Fund to pay for siting studies, license applications, workforce training, and supply chain development.
- 4** Requires a state Low-Level Radioactive Waste Management Plan within eighteen months.
- 5** Permits licensing of a private, in-state, low-level waste disposal facility, subject to health, safety, and financial assurance requirements.

N E X T S T E P S

New Nuclear Is Feasible and Advisable in Arkansas

The state needs the energy, workable sites exist, federal support is the strongest it has been in decades, and state law needs only modest changes.

The recommended course: enact the bill, fund supply chain entry, and prepare sites with willing counties, so Arkansas can build at nth-of-a-kind prices.

Out of scope, but important: HCR 1015 of 2019 and Act 1092 of 2021 support used nuclear fuel recycling. Recycling could be an economic boon on the order of tens of billions of dollars and warrants study.

1 | Enact and fund

The Arkansas Nuclear Competitiveness Act activates the Atomic Coordinator, the development fund, and the waste amendments in a single bill.

2 | Fund supply chain entry

Help Arkansas industries obtain nuclear quality assurance certifications, NQA-1 and ISO 19443. No Arkansas firm holds nuclear-grade fabrication certification today.

3 | Prepare sites with willing counties

Fund the siting studies and licensing that turn a candidate area into a permitted site. When NOAK costs arrive, projects could go first to states with permitted sites in hand.