

UPRISE of Nuclear Energy for Power Demand Growth

Industry Needs, Opportunities and Perspectives

EMBERVAULT

Empowering Sustainable
Infrastructure Solutions

EmberVault

EVT is not (just) a project developer — it is a platform that unlocks nuclear-powered AI infrastructure at scale by integrating energy, compute, and capital.

Formed from the basis that a ‘single silo’ approach is too slow to be effective for delivery at pace and scale

Brings experience, realities & cynicism of the development of GW scale project sites in the UK, USA and Europe

Focused on power advantaged sites that can be progressed with strong partnerships in place & fully financed.

EmberVault

AI-Scale Data Centre Infrastructure

15,150 MW Portfolio Across US, UK & EU

The Conventional DC Industry Is Hitting a Wall

Sources: Data Center Watch 2025; DCD Feb 2026; U Chicago Sustainability Dialogue 2026; Food and Water Watch Dec 2025

THE PERMITTING WALL — Conventional Greenfield DCs

\$64B

Community opposition: \$64B blocked or delayed

\$18B blocked, \$46B delayed May 2024–Mar 2025. 25 projects canceled in 2025 alone — 4x the 2024 rate. 188 organized opposition groups active in 40 states. Source: Data Center Watch, 2025.

40%

Water: #1 complaint driver

Cited in >40% of contested projects. Two-thirds of U.S. DCs built since 2022 are in water-stressed regions. By 2030 global DC water demand doubles to 1,200 billion liters/yr. Source: Data Center Watch; DCD, Feb 2026.

CO2

Air: lawsuits under the Clean Air Act

Stargate/Oracle Michigan: 1.5M tons CO2/yr from gas turbines, 1.8B gallons/yr water draw. Elon Musk's xAI Memphis facility: NOx spikes from backup generators. Class-action Clean Water Act suit filed Feb 2026. Source: Sustainability Dialogue, U Chicago, 2026.

14+

Moratoriums: 14 states and counting

State legislatures now moving to codify local opposition into law. Senator Bernie Sanders called for a national construction moratorium, Dec 2025. 230+ organizations signed a letter to Congress calling for a full freeze. Crossing party lines: 55% R, 45% D among opposing politicians. Source: Data Center Watch; Food & Water Watch, Dec 2025.

VOTE

Electoral consequences are real

Warrenton, Virginia: every council member who approved Amazon's DC lost re-election. Court ordered 1-year project stall. Virginia governor's race: data center policy was the defining issue. Source: E&E News 2024; Data Center Watch 2025.

UPRISE + Nuclear Fenceline Sites = Structurally robust, low risk

Sources: INL Director Brian Smith (Roll Call Dec 2025); Westinghouse design specs; NRC 10 CFR Part 52; DOE EO 14318 Jul 2025

Low Risk

Away from people — by design, but engagement and communication is still critical

Nuclear exclusion zones keep residential communities at minimum 0.5-1.0 mile radius. Fenceline land is rural industrial. No 500-person town hall. No recall election. Federal DOE site designation removes state/local permitting jurisdiction entirely. Source: INL Director Brian Smith: 'Doing it on federal lands is a way to get at this and get at it quickly.' Roll Call, Dec 2025.

Low Risk

Zero water competition — by technology selection; SOFC's + SMR +LWR's

Bloom SOFC: electrochemical reaction produces water as a byproduct — net zero water withdrawal. AP-1000 passive cooling: closed 1.7M-gallon recirculating tank on containment shell — no river or aquifer draw. eVinci: heat pipe cooling — no water at all. None of the three compete with municipal water supply. Source: Westinghouse design specs; NRC 10 CFR Part 52 Appendix D.

Low Risk

Zero combustion air pollutants at point of use

SOFC electrochemical reaction: no combustion, no NOx, no particulates at the point of electricity generation. AP-1000/AP-300/eVinci: zero CO2, zero criteria air pollutants in operation. No Clean Air Act permit threshold triggered. No backup diesel generator NOx spikes — nuclear provides continuous firm power eliminating generator runtime. Source: EPA Clean Air Act S.112; Westinghouse AP-1000 Environmental Report.

Low Risk

Existing designated Nuclear sites = federal permitting = lower risk of community veto; Federal land – no risk

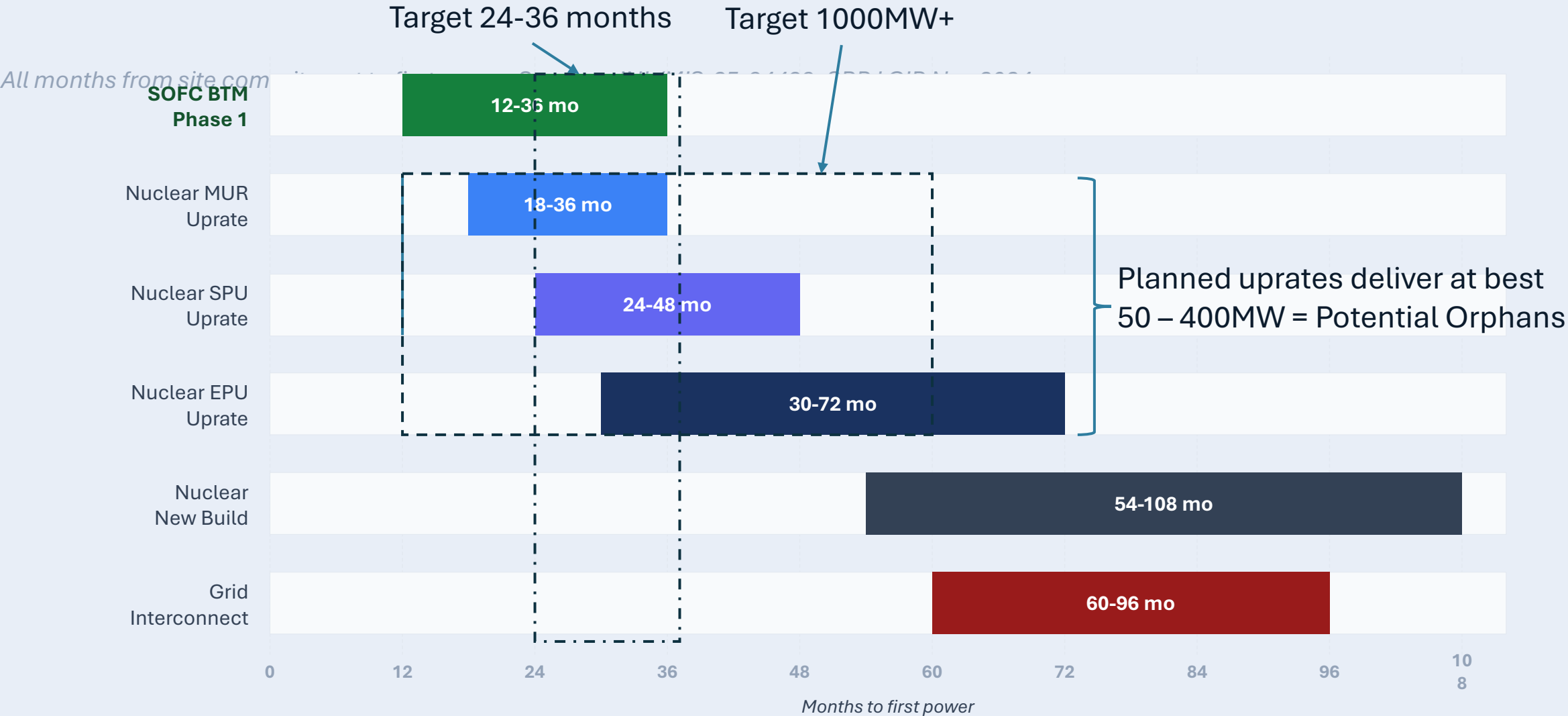
DOE Executive Order 14302 (May 2025): rebuild the U.S. nuclear industrial base by prioritizing 5 GW of uprates to existing reactors and getting 10 new large reactors with complete designs under construction by 2030, while expanding domestic nuclear fuel-cycle capacity, supply chains, reactor financing, and workforce programs on 30- to 240-day implementation timelines. DOE Executive Order 14318 (Jul 2025): federally designated AI data center sites bypass state/local permitting processes. DOE identified 16 federal sites : existing regulatory perimeter eliminates new community permitting baseline. Source: DOE press release Jul 24 2025; Congress.gov CRS R48762, Dec 2025.

Medium Risk

Pre-cleared fiber — few Nuclear sites may already have secure backbone

Assessment required to ensure available Dark Fiber capacity, or ability to utilise RoW for new fiber

Speed to Power – Solid Oxide Fuel Cell (SOFC) BTM as the Revenue Bridge



KEY: SOFC BTM is 2-4 years faster than grid interconnection and generates revenue WHILE the nuclear uprate License Amendment Request (LAR) runs in parallel. The bridge funds the development budget and proves DC off-take to the plant owner before uprate completion.

Data Center Project Development + UPRISE

Infrastructure bottleneck (not just power)

- AI/data center growth needs **power + land + integration**
- Traditional models stall at **single projects, technologies or silos**

AI demand is exploding, but infrastructure can't be deployed fast enough — power, compute, and capital are not coordinated

UPRISE is a key UNLOCKING mechanism

- DOE UPRISE = **\$289B budget authority but ZERO committed capital**
- UPRISE workshop series connects **plant owners + oftakers + investors**

The U.S. government has created the framework — but hasn't yet mobilized capital. That gap is where value is created

OPPORTUNITY

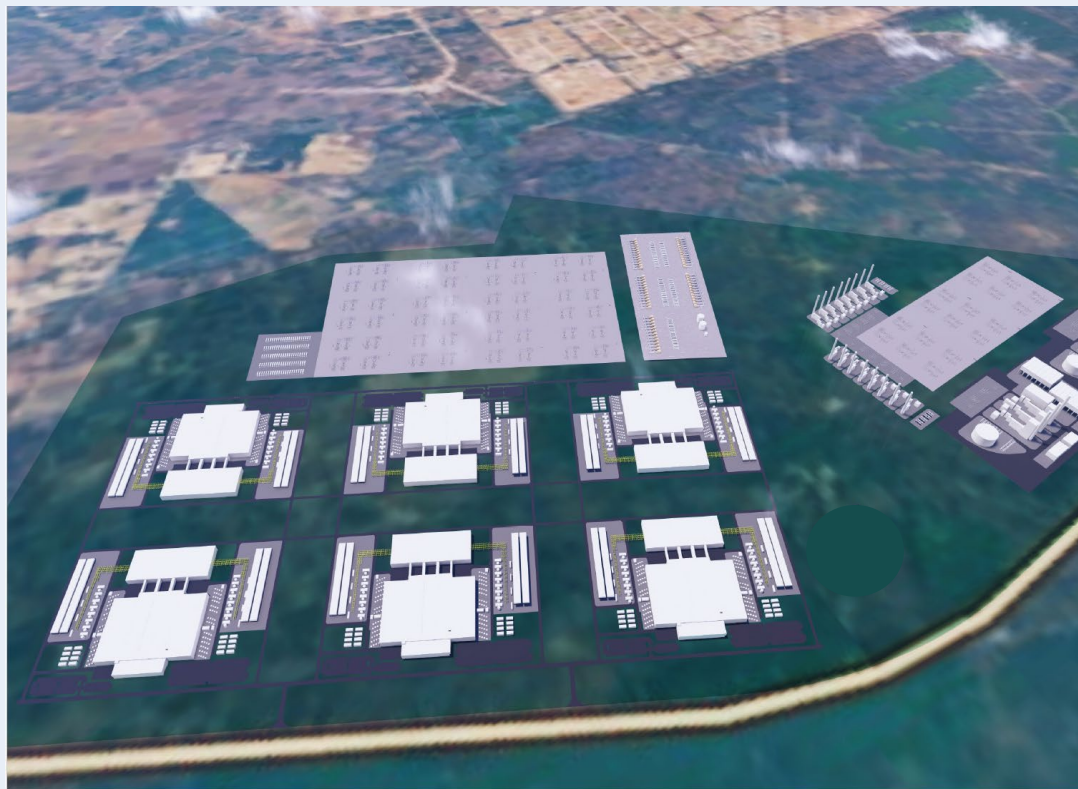
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INCENTIVE

Integrates **DevCo + DataCo + PowerCo** · Structures cross-silo execution consortium · Turns U.S. Government framework into **bankable projects**

Development at Scale

10GW Data Center campus + 10GW Onsite Power Generation – 10-year delivery



Consortium partners

- **EmberVault** — Project developer/integrator, asset owner, asset operator
- **Brookfield Asset Management** — Capital backbone
- **Fluor** — Lead Engineering, Procurement, and Construction
- **Olsson** — Data center and infrastructure engineering
- **Bloom Energy** — Natural gas SOFC firm-power OEM

Delivery plan

A transformative, secure, scalable, and financeable AI and energy infrastructure program

- Phase 1: 2.4GW of compute and associated power by 2030; first power in 2027 (18 months after project initiation); first nuclear power in 2033
- Phase 2: 7.2GW of compute with follow-on baseload from onsite SMR/LAR; first nuclear power from 2034
- **Multi-\$Bn CAPEX — fully backed by Brookfield**

FLUOR®

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EMBervault

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Bloomenergy