

Get to Know The Nuclear Company

Staff Subcommittee on Nuclear Energy

Nuclear history 101

1942: Scientists create the world's first self-sustaining nuclear fission reaction beneath the stadium at Chicago University.

1946: U.S. government creates the Atomic Energy Commission. The commission was created to oversee all nuclear reactors and nuclear research in the U.S.

1955: The USS Nautilus, [the first nuclear-powered submarine](#), is launched.

1955: Arco, Idaho becomes the first U.S. town to be powered by nuclear energy

1956: U.S. completes its first large-scale nuclear power plant in Shippingport, Pennsylvania.

1970: [84 nuclear power reactors](#) were in operation world-wide with a combined electricity generation capacity of [17.6 GW](#).

Nuclear history 101

1971: The American Medical Association officially recognizes nuclear medicine as a medical specialty.

1980: 245 nuclear power reactors were in operation world-wide with a combined electricity generation capacity of 133,037 megawatts.

1983: Nuclear power generates more energy than natural gas in the U.S.

1990: 416 nuclear power reactors were in operation world-wide with a combined electricity generation capacity of 318,253 megawatts.

2008: International Atomic Energy Agency publishes “Climate Change and Nuclear Power” to promote nuclear power solutions to the world’s greenhouse gas emission targets.

Nuclear history 101

2025:

~440 **nuclear power reactors** in operation world-wide with a combined electricity generation capacity of **~400,000 megawatts**

In the U.S., there are 94 reactors across 54 facilities with a combined electricity generation capacity of **~97,000 megawatts**

74 SMR designs in development around the world, with 54 in the licensing process.

2030:

Projected operating date for the first SMRs

Nuclear reactor types

1.

Large light water

Generally around 1,000 MW, these are essential for bulk electricity production. The U.S. nuclear operating fleet consists of large light water reactors that designers and operators chose to make bigger over time to take advantage of economies of scale in operations, driving a lower cost per MW than smaller reactors.

2.

Small modular

Generally considered ~50 to ~350 MW, these may be more expensive than large reactors as measured by \$/MW and \$/MWh but offer advantages for certain applications. Those can include industrial processes requiring high temperature heat.

3.

Micro

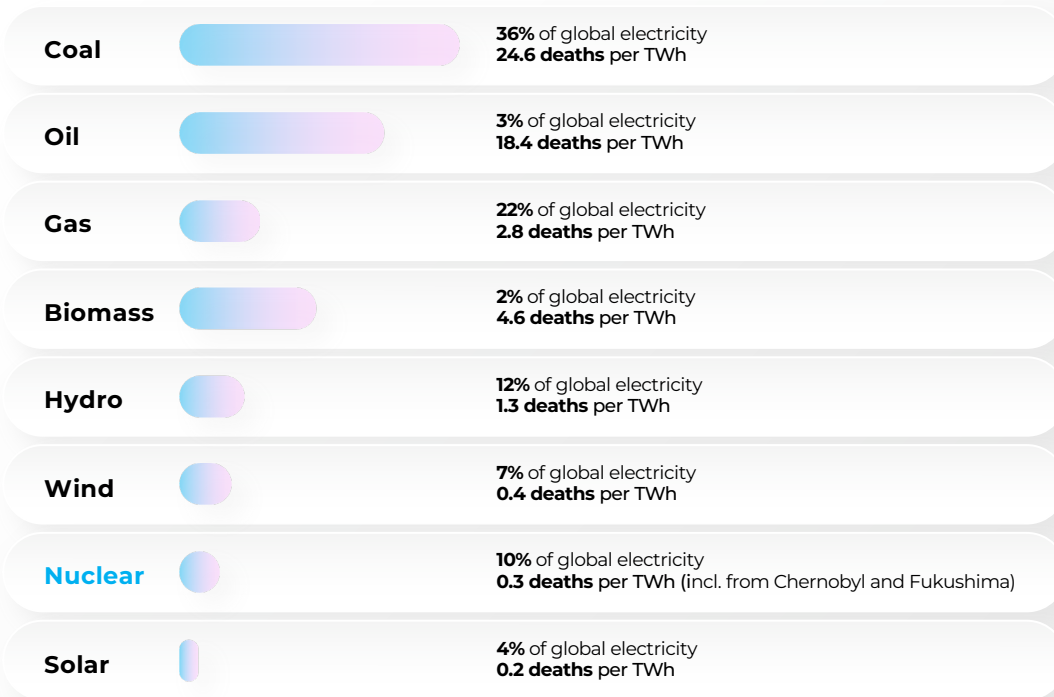
Generally less than 50 MW, these serve a variety of use cases where reliability, transportability and compactness are highly valued and alternatives are expensive. Examples are military bases and remote applications such as mining.

Nuclear is safe and clean.

Death rate from accidents and air pollution

Measured as deaths per terawatt-hour of electricity production.

Terawatt-hour is the annual electricity consumption of 150,000 people in the EU.

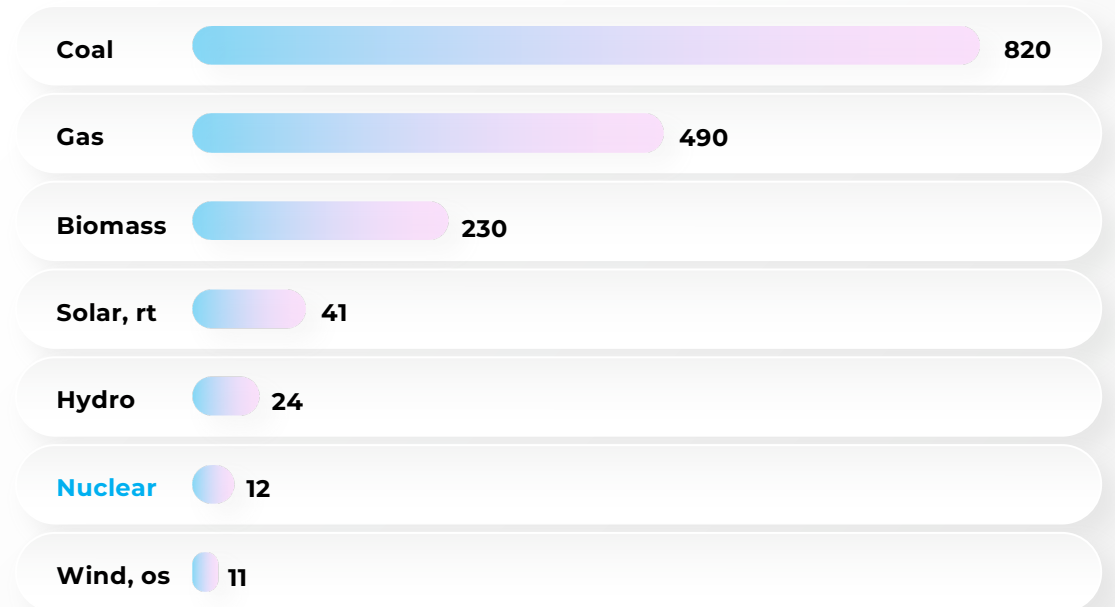


Data Sources: Markandya & Wilkinson (2007); UNSCEAR (2008; 2018); Sovacool et al. (2016); IPCC AR5 (2014); UNECE (2022); Ember Energy (2021).
OurWorldinData.org/safest-sources-of-energy

Lifecycle CO₂ equivalent emissions

Measured g/kWh.

Median values calculated by IPCC.



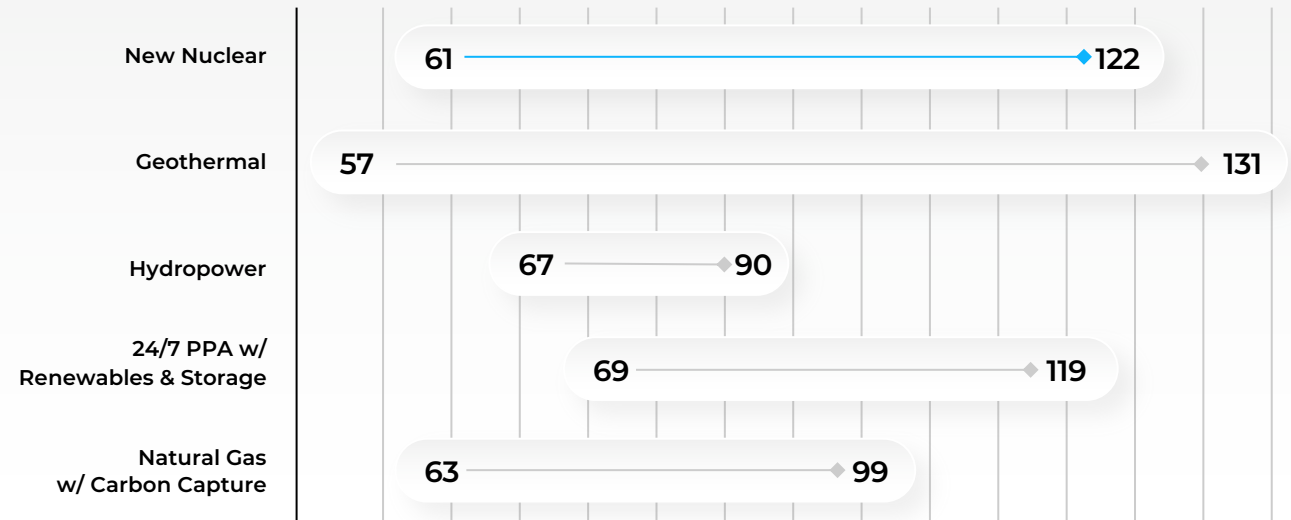
Data Source: "IPCC Working Group III – Mitigation of Climate Change, Annex III: Technology - specific cost and performance parameters - Table A.III.2 (Emissions of selected electricity supply technologies (gCO₂ eq/kWh))" (PDF). IPCC, 2014, p. 1335. Archived (PDF) from the original on 14 December 2018. Retrieved 14 December 2018.

Nuclear is economical.

Fleet-scale nuclear is the most reliable, carbon-free power source, offering unmatched energy density, cost competitiveness, and the ability to meet rising energy demands without straining the grid.

- Fleet-scale deployment offers a clear path to cost competitiveness when factoring in capital, operating, and fuel costs over the reactor's **80-year lifespan**.
- By leveraging **standardized designs, economies of scale**, and **modular construction**, a fleet-based approach reduces project costs by **up to 50%** compared to single-reactor deployments.
- The ability to **co-locate energy-intensive AI and industrial facilities** creates additional revenue streams and maximizes power utilization, driving down the effective cost per MWh even further.

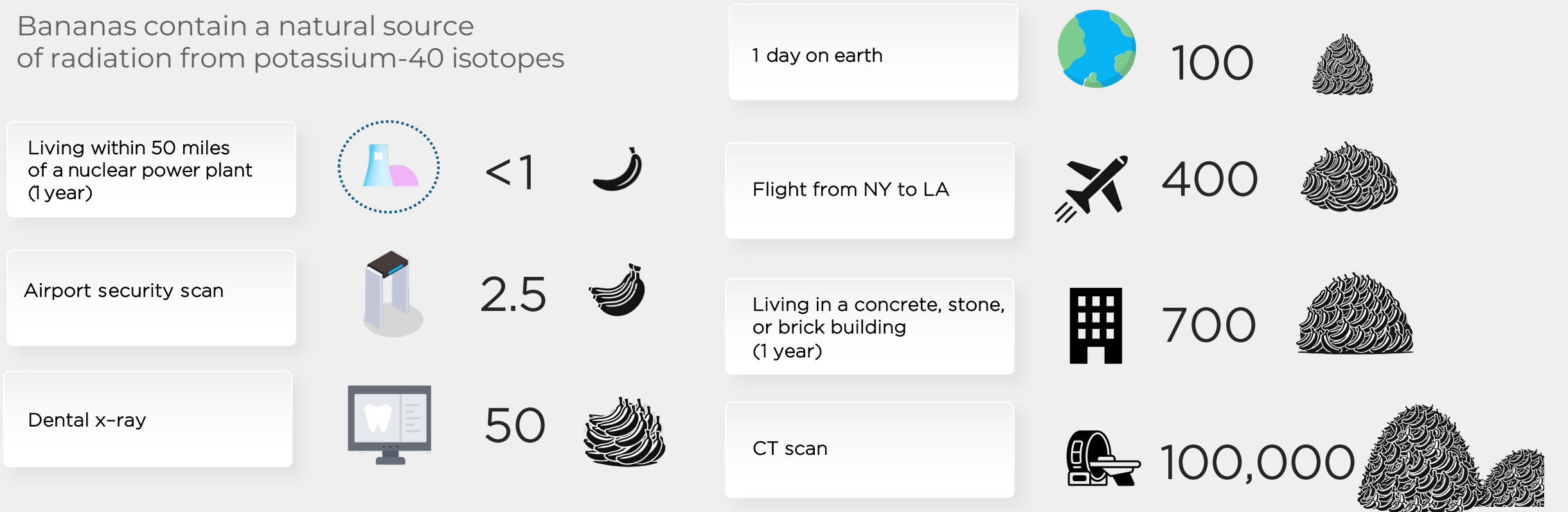
Illustrative LCOE ranges by Energy Source with relevant tax credits, \$/MWh



Annual radiation emissions from nuclear are negligible.

Putting radiation concerns in context of bananas

Bananas contain a natural source of radiation from potassium-40 isotopes



My role in the nuclear power industry



Rising through the ranks:

40 years in the industry as an:

- intern
- engineer
- manager
- VP
- mother
- recipient of the Real Leaders Award for Most Valuable Mission: Deploying Clean Energy through Nuclear



As U.S. Women In Nuclear (WIN) chair

U.S. WIN: Positioning the United States for the future of nuclear energy and technology through the advancement of women.

NEXT: Nuclear Executives of Tomorrow

GROW: Growth, Relationships, and Opportunities (GROW) through WIN mentoring program

NEXT-UP: Serving motivated individuals on the path to senior leadership positions

U.S. WIN Leadership Award: 2024 recipient

WIN Global: Executive board member, mentoring young generation



The Nuclear Company: Answering the call to supply the U.S. with abundant, reliable, clean baseload power.

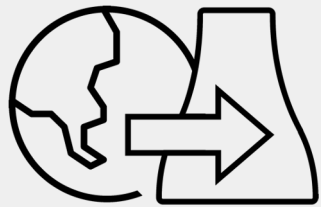




This is being accelerated by unstoppable megatrends, all of which require 24/7 firm, carbon-free power.

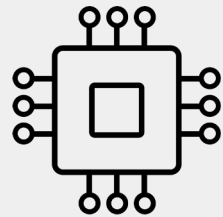
1.

Deglobalization & Reindustrialization



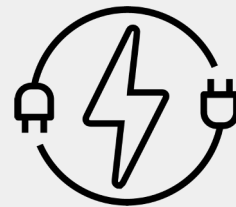
2.

Artificial Intelligence & Advanced Compute



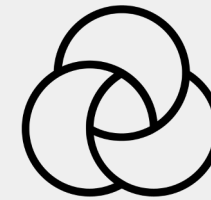
3.

The Electrification of Everything



4.

Global Decarbonization Goals



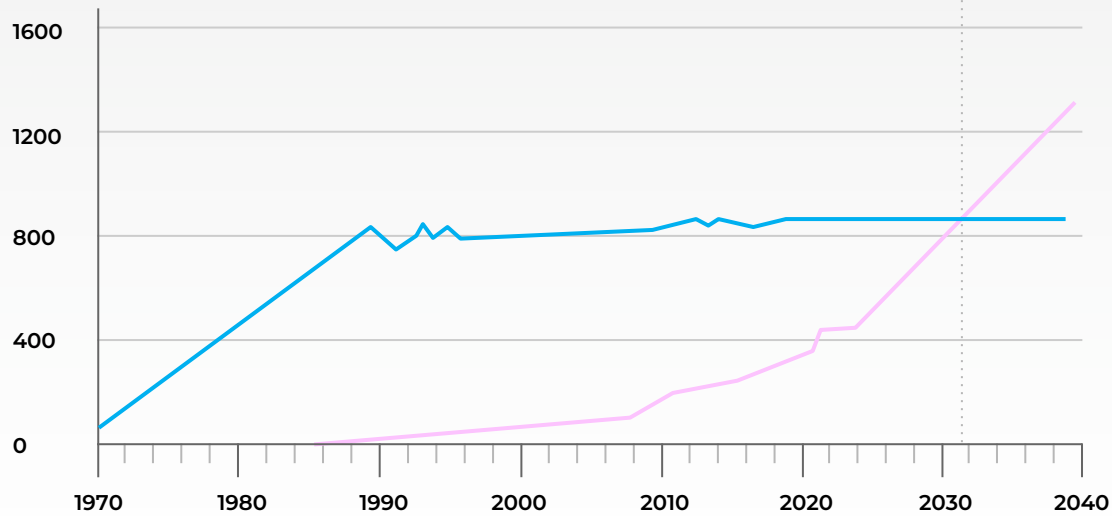
American dominance is slipping.

Maintaining leadership in A.I. requires retaking leadership in nuclear.

Projected nuclear energy generation

Trillion Kilowatt Hours

● United States
● China



China

27 reactors under construction.
Estimated to reach 200 gigawatts, double that of the United States' current nuclear capacity, within 15 years.

[Read more](#)



United States

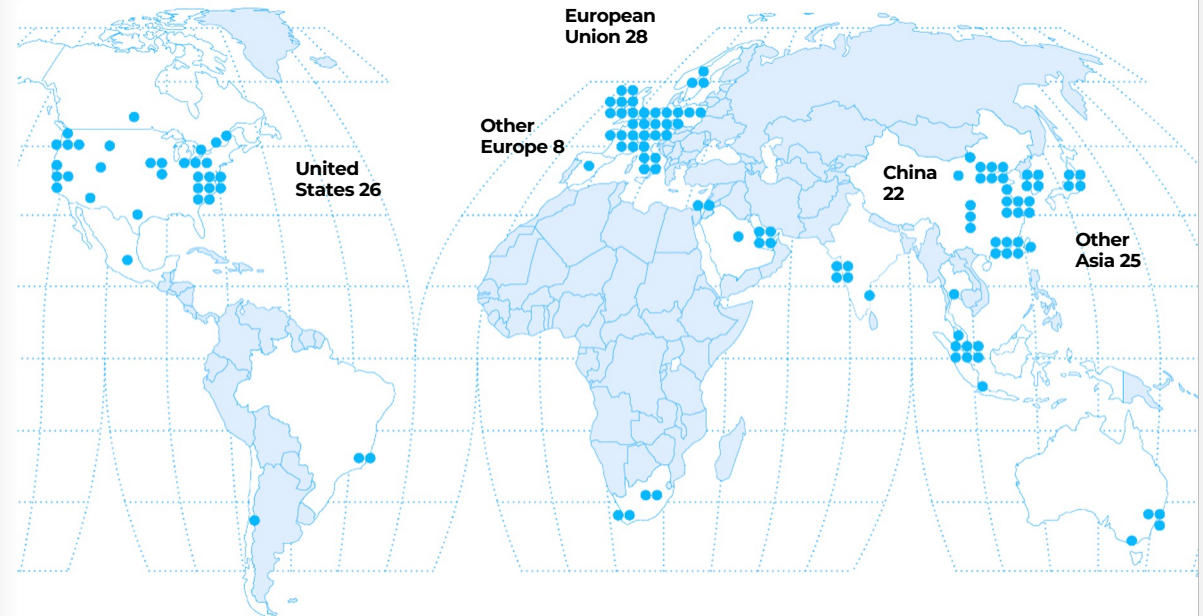
Zero reactors under construction.
Ninety-four active nuclear reactors built largely in the 1960s and 70s.

[Read more](#)

Global A.I. Data Centers

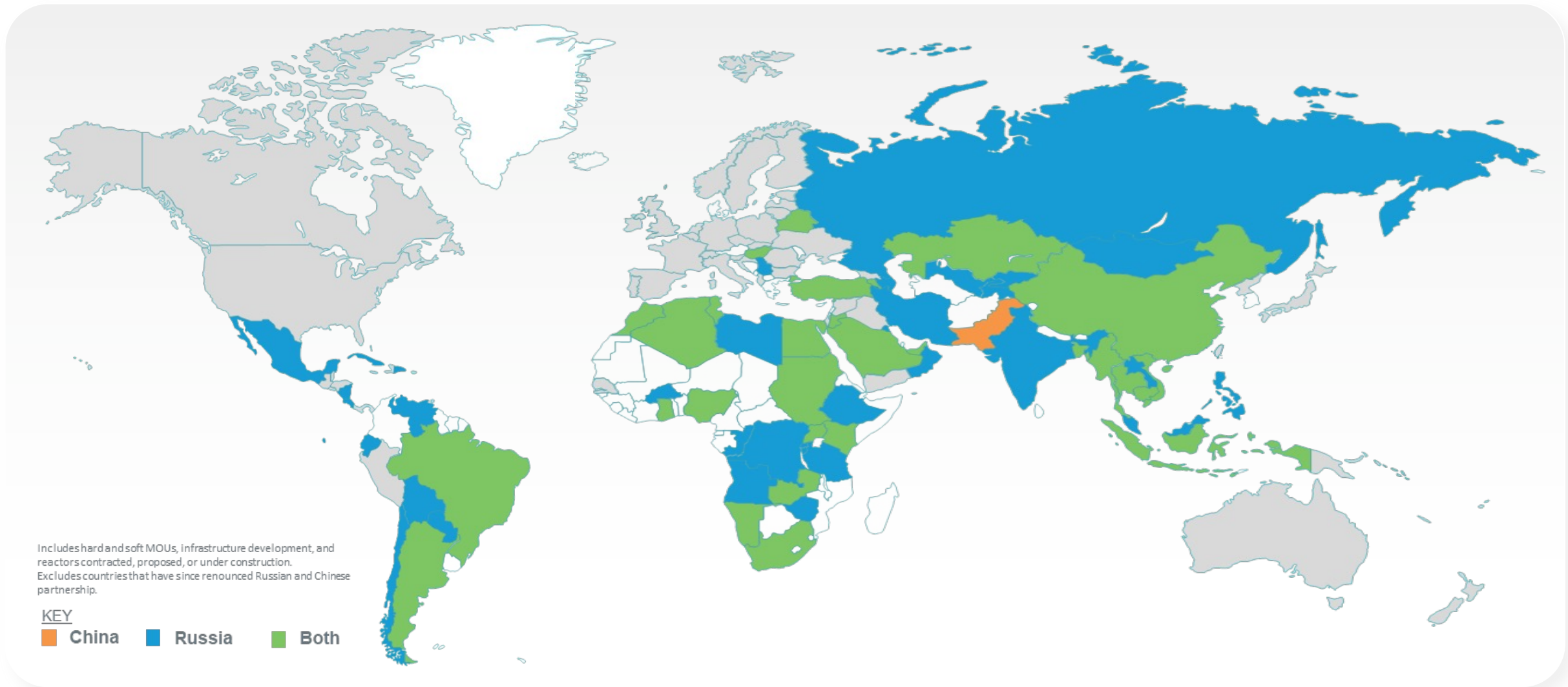
32 nations, mostly in the Northern Hemisphere, have A.I. - specialized data centers

● Data Centers



Source: Oxford University Note: Count of data centers in China excludes facilities in Hong Kong and Taiwan.

China and Russia have a focused strategy to surpass the United States in nuclear influence.



Nuclear's contribution to statewide economies.

Nuclear power has been consistently shown to generate significant economic benefits, including substantial contributions to GDP, job creation, and local investments. These benefits extend over long periods and can be crucial in revitalizing regions affected by industrial transitions or energy shifts. Localized impact includes high-paying jobs, developing local skills and infrastructure, and supporting domestic supply chains.

**Illinois (6 plants w/
11 reactors)**

**\$11.8 billion
economic impact**

**\$386 million
tax revenue**

**South Carolina (4 plants
w/7 reactors)**

**\$5.1 billion
economic impact**

**\$1.3 billion
tax revenue**

**Georgia (2 plants w/6
reactors)**

**\$4.4 billion
economic impact**

**\$389 million
tax revenue**

**North Carolina (3 plants
w/5 reactors)**

**\$4.3 billion
economic impact**

**\$426 million
tax revenue**

In the five-state region of Georgia, North Carolina, South Carolina, Tennessee and Virginia, the nuclear industry directly employs 54,692 people earning \$6.6 billion in income and produces a direct economic output of \$21.3 billion with \$3.7 billion paid in taxes.

World-class team driving the future of nuclear.



Jonathan Webb
Co-Founder & CEO

Built 8 million square feet of cleantech facilities as AppHarvest Founder & CEO. Over \$1B deployed, 2,000 jobs created.



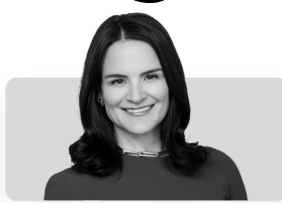
Jason Thompson
President & CFO

Past CFO of Redwood Materials. Led team from \$200 million valuation to \$5 billion. Raised \$10B over career lifetime.



Joe Klecha
Chief Nuclear Officer

Stepped in at critical time to recover, transition first-of-a-kind Vogtle Units 3 & 4 to completion. Fleet leader for Duke. Operator for Southern. Roles at U.S. Navy, Constellation.



Stephanie Donner
Chief Admin. Officer

Former Chief Legal Counsel and Deputy Chief of Staff to Colorado Gov. John Hickenlooper. Extensive C-suite work at intersection of law, policy, and regulatory at Inspire, Galvanize and Sovrn.



Juliann Edwards
Chief Development Officer

Chair of U.S. Women in Nuclear. Led build-out of \$16 billion in energy projects at TC Energy. Former Board member of Bruce Power.



Greg Reichow
Director

Partner at Eclipse. Led Tesla's global factory/automation engineering, manufacturing, supply chain, and product excellence. Former SVP of Operations, SunPower.



Kiran Bhatraju
Co-Founder & Director

Developed 2,000 acres of sustainable energy projects and abated 10 million tons of carbon at Arcadia Power.



Patrick Maloney
Co-Founder & Chairman

E&Y Entrepreneur of the Year. Successful exits to both Shell and NRG (Inspire, Independence Energy, Energy Plus).

Owen Lloyd
VP, Software Engineering,
Head of NOS

Former Sr. Engineering Manager, Tesla.
Former Sr. Director of Engineering, Microsoft.



Dave Woods
VP, Engineering

Former Engineering Director, Vogtle Units 3 & 4, Southern Nuclear. Roles at Exelon, Constellation.



Dennis Spielman
Director of Digital Engineering
and Technology
Solutions

Former Digital I&C Engineering Mgr., Southern Nuclear



Rob Stough
Director, Testing and Startup

Former Director of Operations, Vogtle Units 3 & 4, Southern Nuclear



Jhansi Kandasamy
VP, Advanced Nuclear and
External Affairs

Former VP of Engineering Services, GE Hitachi



Ron DeGregorio
EVP, Strategy

Former President, Exelon (spun off into Constellation)



Stephen Kuczynski
Chair, TNC Industry
Working Group

Former Chairman & CEO, Southern Nuclear



Laura Dudes
VP, Regulatory Affairs

Former Regional Administrator, U.S. Nuclear Regulatory Commission



Kevin Stafford
VP, Construction

Former Site Manager, Vogtle Units 3 & 4, Bechtel. Construction Engineering Manager, Westinghouse.



Matt Gosnell
Head, Special Projects

Former Project Developer, U.S. Department of Defense



George Koucheravy
Sr. Director, Procurement &
Construction

Former Project Director, Southern Nuclear



Glen Chick
Executive Advisor

Former Executive Vice President, Southern Nuclear



Jeff van Heel
Executive Advisor

Former Engineering Director, Tesla. Former Engineering Manager, Intel.



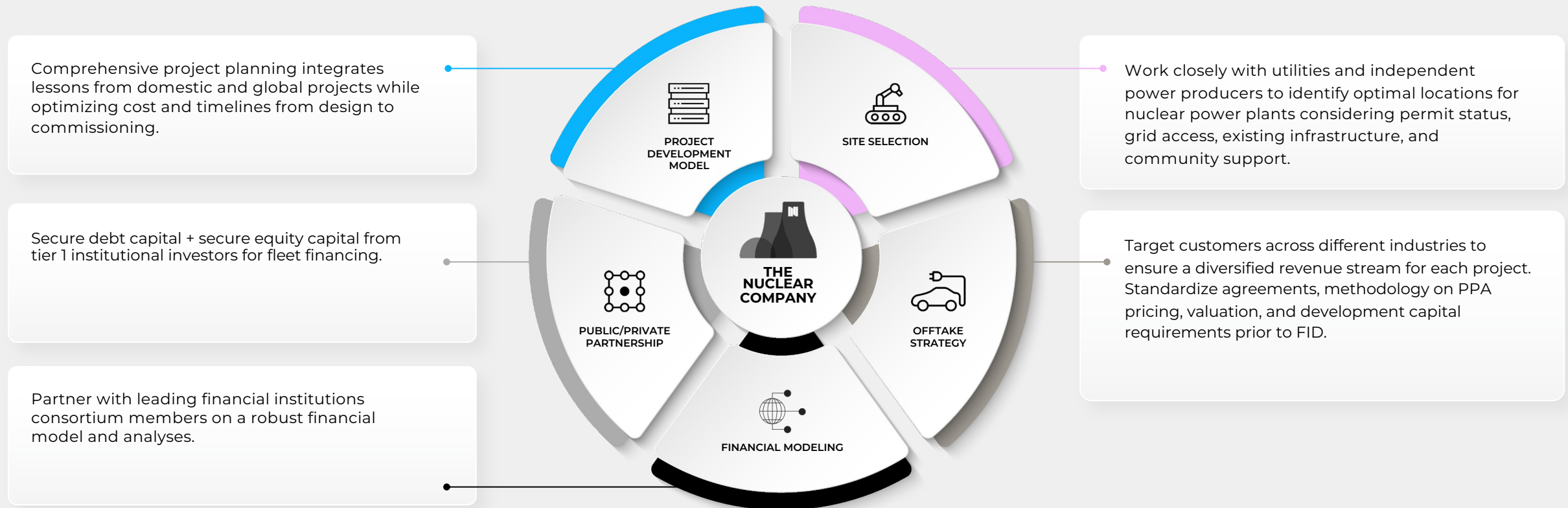
Hunter Patton
VP, Finance and Treasurer

Former Managing Director, Wells Fargo. Former Director of Global Strategy and Business Dev., Ford.



The Nuclear Company's strategy is to bring baseload nuclear capacity to the US at fleet scale.

Ensuring that no one entity bears the burden or risk of building nuclear infrastructure in the United States.



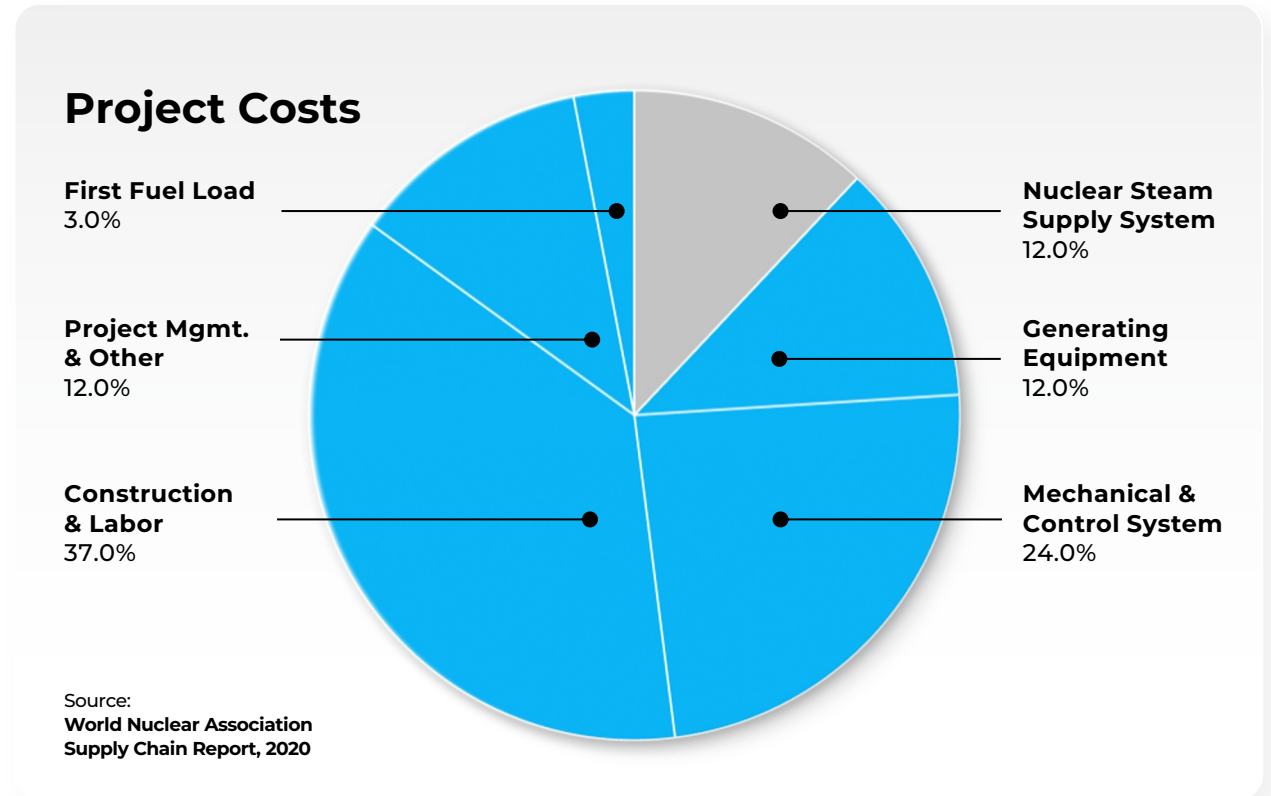
Reactor technology is 12% of nuclear costs. We're solving the other 88%.

TNC capitalizes on existing, already-approved systems that offer a faster pathway to scale & achieve our national energy goals.

Our in-house digital nuclear deployment platform **Nuclear OS (NOS)** will transform the construction of nuclear reactors into a data-driven and predictable process, enabling us to build nuclear power plants faster and safer for less.

We are teaming with **Palantir** to co-develop and deploy NOS with TNC owning IP and data.

NOS will be the first AI-driven, real-time software system built exclusively for nuclear construction and is focused on delivering efficiencies across supply, construction, management, and labor.



Yesterday's approach to nuclear doesn't work.

For nuclear to scale to meet America's energy challenges, construction **must become significantly faster** and, for once, be **on time** and **on budget**.

The industry must solve for large-scale nuclear's most critical challenges:

Massive cost overruns: Initially budgeted at \$14 billion, Vogtle units 3 and 4 cost more than twice that at \$30 billion. Similarly, Britain's Hinkley Point C is projected to cost more than \$40 billion due to supply chain issues.

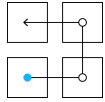
Severe delays: The typical large-scale nuclear build takes between 8 to 15 years because of fragmented supply chains, poor coordination and a complex regulatory framework.

Lack of modern digital tools: Nuclear construction still relies on outdated, disconnected enterprise tools that were not designed for projects of this scale. This results in manual errors, rework, and inefficiencies that cost billions of dollars per project.

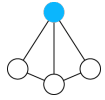


NOS

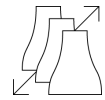
Our digital platform NOS, being built with Palantir as the backbone, will optimize fleet-scale deployment.



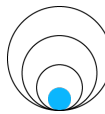
Automation: Automated workflows to speed up site selection, permitting, procurement, and construction.



Optimization: Blockchain-backed procurement tracking to prevent material delays.



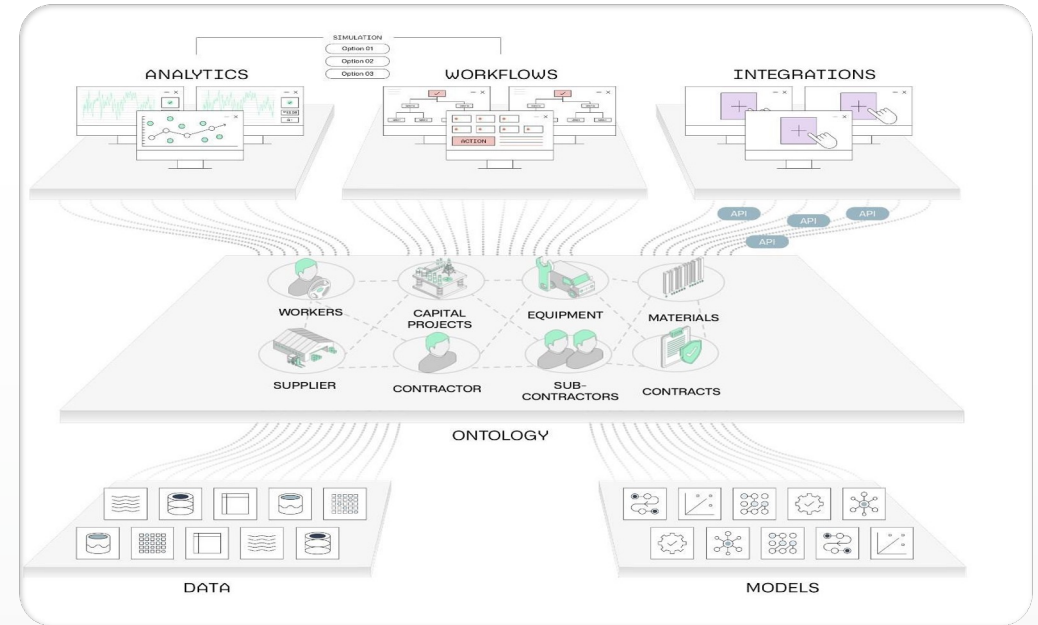
Anticipation: Digital twins to allow project managers to identify risks and inefficiencies before they become problems. Safety monitor to detect workplace hazards, ensuring compliance and preventing accidents.



Coordination: Real-time, AI-powered scheduling to ensure optimal labor deployment.



Simplification: Speed up time-consuming Inspections, Tests, Analyses, and Acceptance Criteria reporting.



- Deploys NOS to any environment — cloud, edge devices and more — in a unified, automated way.
- Complements NOS in specialized areas involving complex network analysis, geospatial intelligence, and security insights.
- The AI platform will infuse NOS with cutting-edge capabilities, including large language models and machine learning workflows. Developing compliance coach to support regulatory tasks.

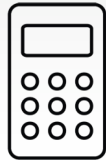
We are simplifying the construction process.

Our **NOS** technology will deliver the first AI-driven, real-time software system built exclusively for nuclear construction.



Schedule Certainty:

Construction teams will receive instantaneous, context-aware guidance that adapts to real-time constraints, maximizing productivity.



Cost Savings:

A supply chain will track and verify all parts and documentation. NOS will initiate backup options or prioritize other work in its place when delays are unavoidable.



Real-Time QA & QC:

Sensors placed across construction sites feed data in real-time to a digital twin. Predictive analytics help identify problems in advance.



Regulatory Confidence:

AI will turn a traditionally labor- and time-intensive task to a process that becomes nearly instantaneous. LLMs will rapidly review tens of thousands of documents, while AI agents trained on regulatory requirements will help validate the data recorded at construction sites.

PSC/PUC FAQs

CapEx v OpEx: Nuclear is the cheapest carbon-free energy considering the life of the asset (60-80 years). Nuclear's higher upfront costs (CapEx) come with a MUCH longer lifespan that lowers OpEx.

Fleet-scale as a strategy: The U.S. has not built nuclear at fleet scale. TNC deploys the same licensed and proven technology to realize the cost and time efficiencies that come with fleet-scale deployment (like Henry Ford).

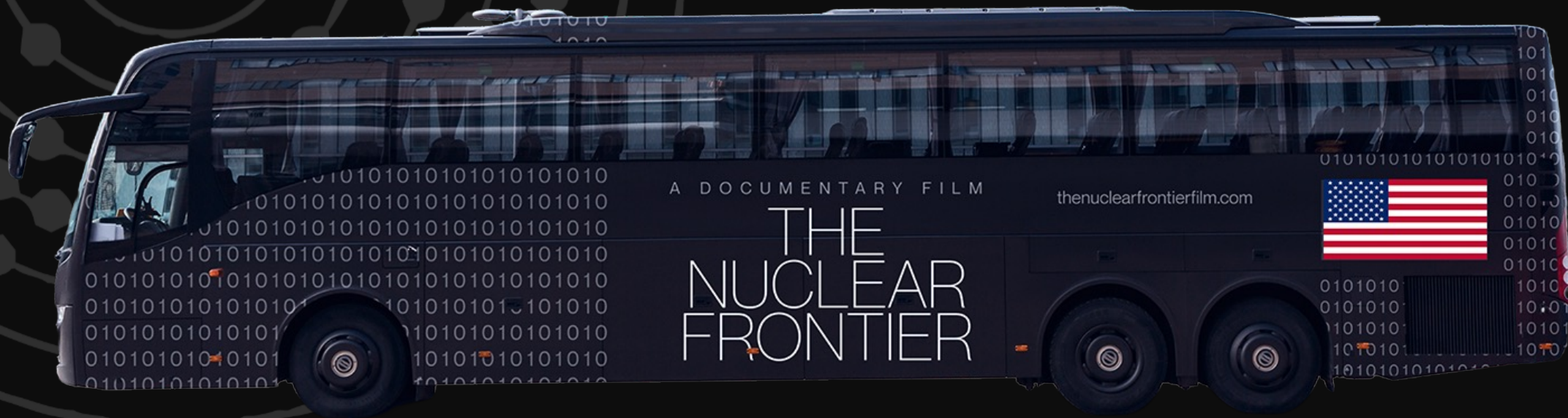
Nuclear lifespan: Nuclear has a long life span at 80 years, whereas intermittent sources are 25-30 years.

Balancing intermittent and baseload sources: Baseload power sources such as nuclear help improve grid stability and resiliency when solar and wind aren't producing. A grid without baseload power is more vulnerable to outages.

Grid stability: Advanced nuclear reactors have better load-following capabilities than their predecessors. That helps them to work more dynamically on a diversified grid.

Waste management: Nuclear is the only energy source that manages its waste and that has done so safely and without accident. Nuclear waste is also small—all of the waste created by the U.S.'s 90+ reactors, which generate 20% of the nation's electricity, can fit into a football field 3 meters deep.

Bipartisan support + public support: Consistent support for nuclear across administrations, as evidenced by EO 14141 + EO 14299, 14300, 14301, & 14302; 2025 Gallup poll: 61% of Americans support nuclear energy



Presented By



**The time to build is now.
The scope is global.
The future is here.**



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