Lightbridge

NASDAQ: LTBR

INVESTOR PRESENTATION | **NOVEMBER 2025**

SAFE HARBOR STATEMENT

With the exception of historical matters, the matters discussed in this presentation and today's oral comments, including in response to questions, are forward-looking statements. These statements are based on current expectations and involve a number of risks and uncertainties that may cause actual results or outcomes to differ significantly from such estimates and expectations. The risks include, but are not limited to: Lightbridge's ability to commercialize its nuclear fuel technology; the degree of market adoption of Lightbridge's product and service offerings; Lightbridge's ability to fund general corporate overhead and outside research and development costs; market competition; our ability to attract and retain qualified employees; dependence on strategic partners; demand for fuel for nuclear reactors; Lightbridge's ability to manage its business effectively in a rapidly evolving market; the availability of nuclear test reactors and the risks associated with unexpected changes in Lightbridge's fuel development timeline; the increased costs associated with metallization of Lightbridge's nuclear fuel; public perception of nuclear energy generally; changes in the political environment; risks associated with war in Europe; changes in the laws, rules and regulations governing Lightbridge's business; development and utilization of, and challenges to, Lightbridge's intellectual property; risks associated with potential shareholder activism; potential and contingent liabilities; as well as other factors described in Lightbridge's filings with the Securities and Exchange Commission (the "SEC").

A further description of risks and uncertainties can be found in Lightbridge's Annual Report on Form 10-K for the fiscal year ended December 31, 2024, and in its other filings with the SEC, including in the sections thereof captioned "Risk Factors" and "Forward-Looking Statements", all of which are available at http://www.sec.gov/ and www.ltbridge.com.

Lightbridge does not assume any obligation to update or revise any such forward-looking statements, whether as the result of new developments or otherwise, except as required by law.

LIGHTBRIDGE:
Pioneering Advanced Nuclear Fuel

We're a leading developer of nuclear fuel technology for current and future reactors, expected to enhance the safety, economics, and proliferation resistance of nuclear fuel by operating ~1000 °C cooler than standard fuel, enabling power uprates and extended cycle lengths, and producing less plutonium than standard fuel.

Delivering More Power: Substantial increases to the power output of reactors and to the economics and safety of the reactors

Fuel for Today's and Tomorrow's Reactors: Large numbers of existing reactors can benefit from Lightbridge Fuel, as well as most reactors under construction and planned

Ongoing testing at U.S. National Laboratories
Recent co-extrusion demonstration at Idaho National Laboratory
February 2025

KEY DRIVERS FOR GROWTH

ENHANCED SAFETY & EFFICIENCY

- Lightbridge Fuel improves safety, economics, and proliferation resistance for nuclear power plants

INCREASED CAPACITY & REDUCED COSTS

- Helps meet energy demands while cutting emissions & operator expenses

STRONG PATENT PORTFOLIO

- Extensive patents protect our IP and support commercialization into the future

GOVERNMENT SUPPORT & FUNDING

- US bipartisan policies and DoE funding are helping to accelerate nuclear innovation.

GLOBAL COMMITMENT TO NUCLEAR EXPANSION

- COP28 agreement saw 20 countries agree to triple the world's nuclear capacity by 2050 to 1,110 GWe

LARGE MARKET OPPORTUNITY

- Lightbridge Fuel is compatible with nearly every reactor in the world, including existing and planned reactors & future water-cooled SMRs

OUR FUEL

OUR VISION: Lightbridge Fuel as the Global Standard for Nuclear

Lightbridge Fuel will offer **step-change improvements in safety, fuel performance, power plant economics, waste reduction, and proliferation resistance** compared to the current industry standard nuclear fuel

The market is lucrative & large
Lightbridge Fuel is designed to work in both new and existing ($20+ billion market) reactors.

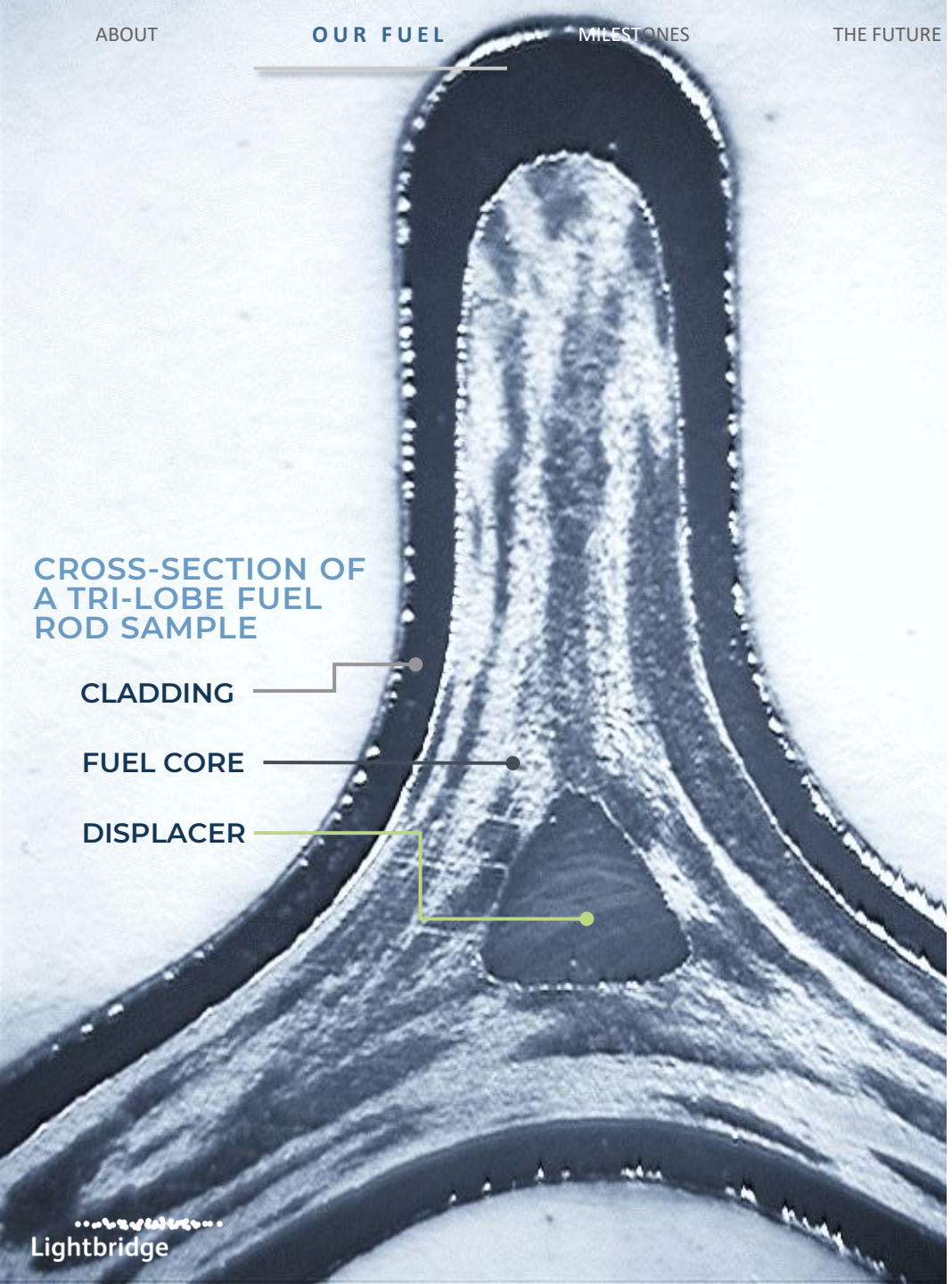
Anticipated waste reduction benefits
There is less spent fuel created per plant power output when using Lightbridge Fuel and the spent fuel is useless for weapons purposes.

Expected safety benefits
Lightbridge Fuel is expected to meet or exceed the performance of conventional fuel in many accident scenarios.

There's an anticipated economic benefit
Lightbridge Fuel may be able to increase power output and extend the length of the fuel cycle, potentially offering the lowest cost to add reliable zero-carbon electricity to the grid in existing reactors.

A quicker ramp-rate may enable load following
Lightbridge Fuel is expected to offer nuclear plants a better solution for load-follow operations on a grid with renewables, potentially replacing natural gas plants and coal plants.

LIGHTBRIDGE TEST ASSEMBLY MOCKUP USED FOR A THERMAL-HYDRAULIC EXPERIMENT



LIGHTBRIDGE FUEL FEATURES:

Powering next-generation performance

Absence of spacer grids...

may reduce core pressure drop by up to 50%, which contributes to enabling power uprates and improves the natural circulation of the water coolant.

Metallurgic bond...

between fuel components significantly reduces radiological consequences of cladding breach due to fuel-cladding mechanical interactions & provides a robust design.

Increased cladding thickness...

at the lobes increases the durability of the fuel at the contact points as seen in the image on the left.

Absence of fuel-clad gap...

eliminates the mechanism for widespread coolant-cladding interaction on the inner surface in case of cladding breach & improves heat transfer from fuel to coolant.

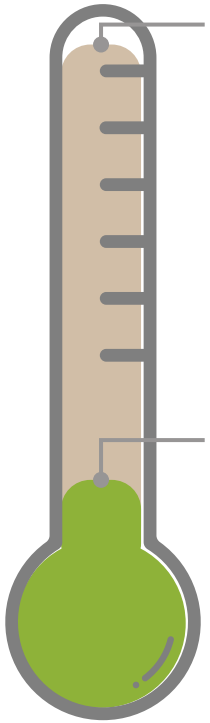
Coextrusion fabrication process...

eliminates several possible sources of undesired manufacturing defects (e.g., pellet chipping).

LIGHTBRIDGE FUEL: DESIGNED FOR SAFETY

Lightbridge Fuel is designed to operate nearly 1000°C cooler than conventional nuclear fuel.

AVG. INTERNAL TEMP:



CONVENTIONAL FUEL:
1250°C

LIGHTBRIDGE FUEL:
360°C

ANTICIPATED SAFETY BENEFITS:

- Metal fuel has better heat transfer
- Reduces fuel operating temperature
- Does not generate hydrogen gas under design basis accidents
- Buys more time to restore active cooling during accidents
- Improves non-proliferation benefits of used fuel
- Enhances structural integrity of the fuel

NRC TAKES NOTICE:

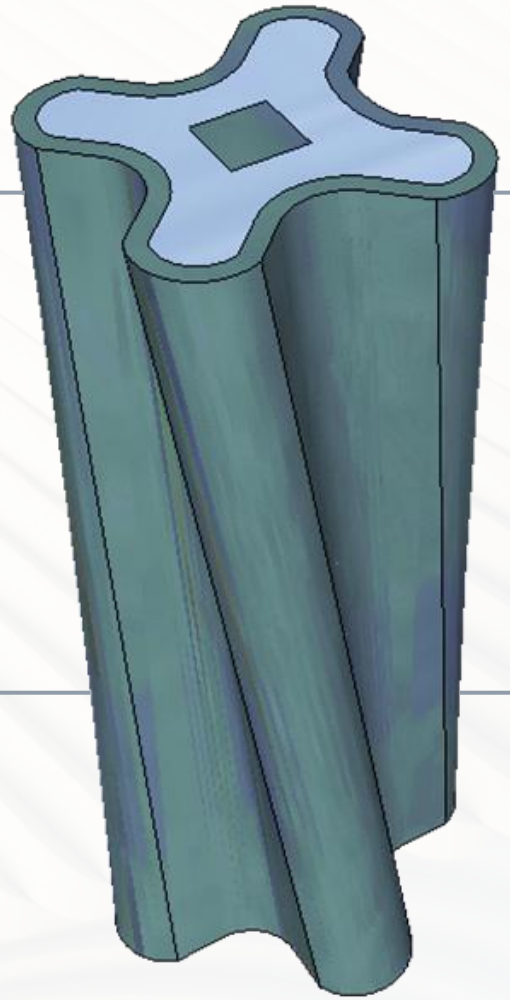
CLICK THIS LOGO TO VIEW THE FULL ARTICLE

"The company Lightbridge is developing a new fuel design that incorporates an extruded metallic bar composed of a zirconium-uranium matrix within a zirconium alloy cladding.
-January 12, 2021

HOW WE DESIGN SAFER FUEL

FABRICATION

The three components of Lightbridge Fuel are **metallurgically bonded** during the fabrication process. This bonding **improves the structural integrity** of the fuel rod and may **reduce a potential radiation exposure to plant workers** if the cladding is breached during off-normal events**.**



SHAPE

Helically-twisted multi-lobe fuel rod – increased coolant mixing, increased fuel surface area, and shorter distance for heat generated in the fuel rod to reach the water **may improve the coolability of the fuel.** Swelling is expected to occur primarily in the valleys between the lobes & along the rod.

OPERATIONS

At lower fuel operating temperatures, fission products are expected to behave like solids (versus gases) and remain where they are created. **No fission product release is anticipated during design-basis events.**

MATERIALS

1. **Displacer** helps to reduce centerline temperature and may contain burnable poison material for reactivity control.
2. **Fuel core** made out of a uranium-zirconium alloy, which has higher thermal conductivity.
3. **Metallurgically bonded barrier** made out of corrosion-resistant zirconium-niobium alloy that reduces the consequences of cladding breach due to fuel-cladding mechanical interactions.

INCREASING CAPACITY FACTOR

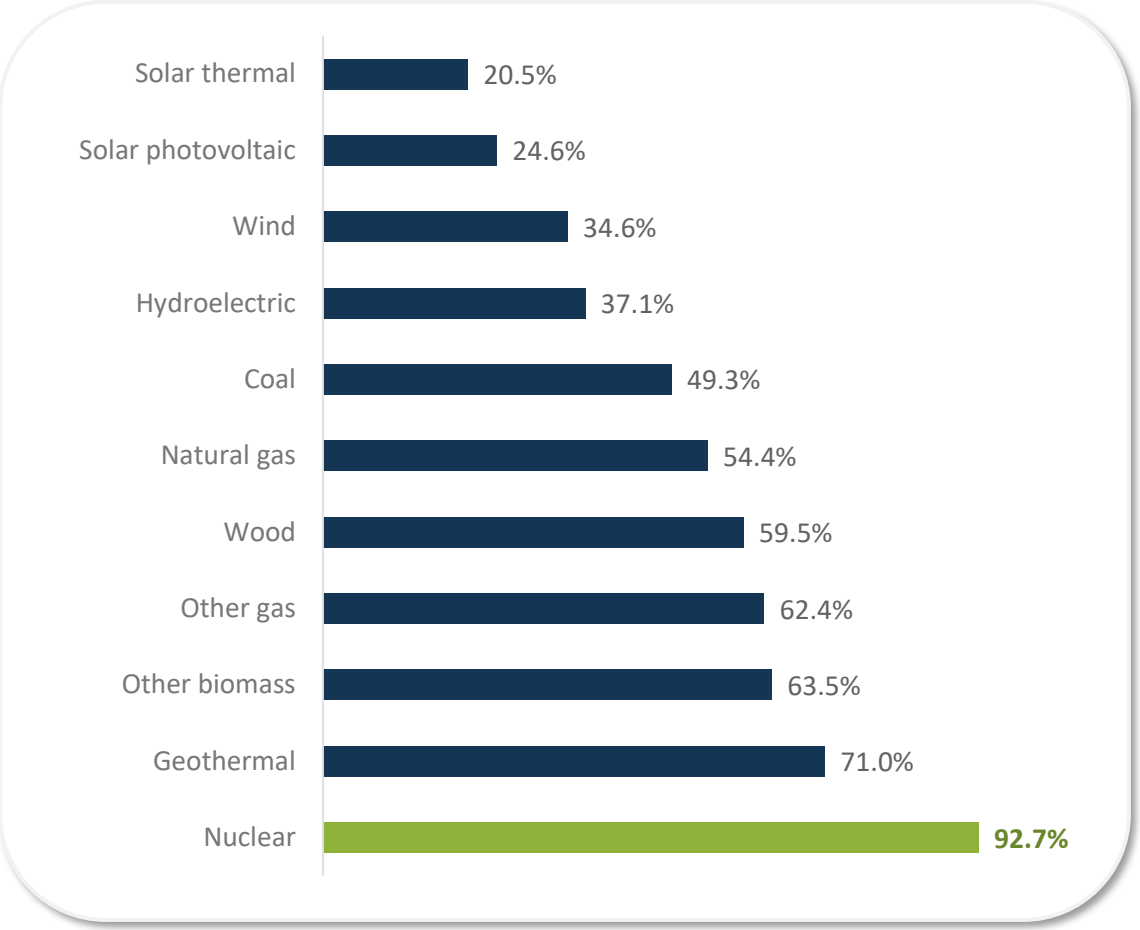
CAPACITY FACTOR OVERVIEW

- Capacity factor measures how often a power plant runs for a specific period, **indicating how fully a unit's capacity is used.**
- The U.S. nuclear fleetwide capacity factor is about 92.7%, **topping out at over 98% in 2014.**
- Utilities would like to find ways **to increase capacity factor** but have struggled to do so **economically.**

WAYS LIGHTBRIDGE FUEL COULD INCREASE CAPACITY

- **Longer fuel cycles** (lengthening from 18 to 24 months eliminates the need for one refueling outage in every six-year period)
- **Quicker ramp-up when adjusting power** (the current fuel requires longer periods to ramp-up power level to prevent cladding breach, thus inhibiting load-follow operation). Lightbridge Fuel, like other metallic fuels, is expected to accommodate rapid power adjustments – enabling load-follow operation.

MAJOR ENERGY SOURCE CAPACITY FACTORS



ROBUST PATENT PLATFORM
PROTECTS RETURN ON INVESTMENT

- Lightbridge has invented and developed its technology to meet the needs of the growing energy marketplace, **backed by a powerful worldwide patent portfolio.**
- Expanding our patent portfolio **continues to be a strategic focus** for Lightbridge.
- These new patents will help **safeguard the Company's intellectual property,** which is an integral element of our plans to monetize Lightbridge Fuel.

EXISTING PATENTS RELATED TO THE FOLLOWING CORE AREAS

- Fabrication method using the casting route
- Fab. method using the powder metallurgic route
- An all-metal fuel assembly design
- Multi-lobe metallic fuel rod design

RECENT FUEL DEVELOPMENT **MILESTONES**

LIGHTBRIDGE ACHIEVES CRITICAL FABRICATION MILESTONE:

From Extrusion to Co-Extrusion (March 2024 – February 2025)

March 2024: Initial Extrusion Process Demo

- Successfully extruded a sample of depleted uranium-zirconium alloy at Idaho National Laboratory
- Established foundational parameters for Lightbridge Fuel™ material fabrication
- Prepared for future HALEU-based fuel sample production

February 2025: Advanced Co-Extrusion Achieved

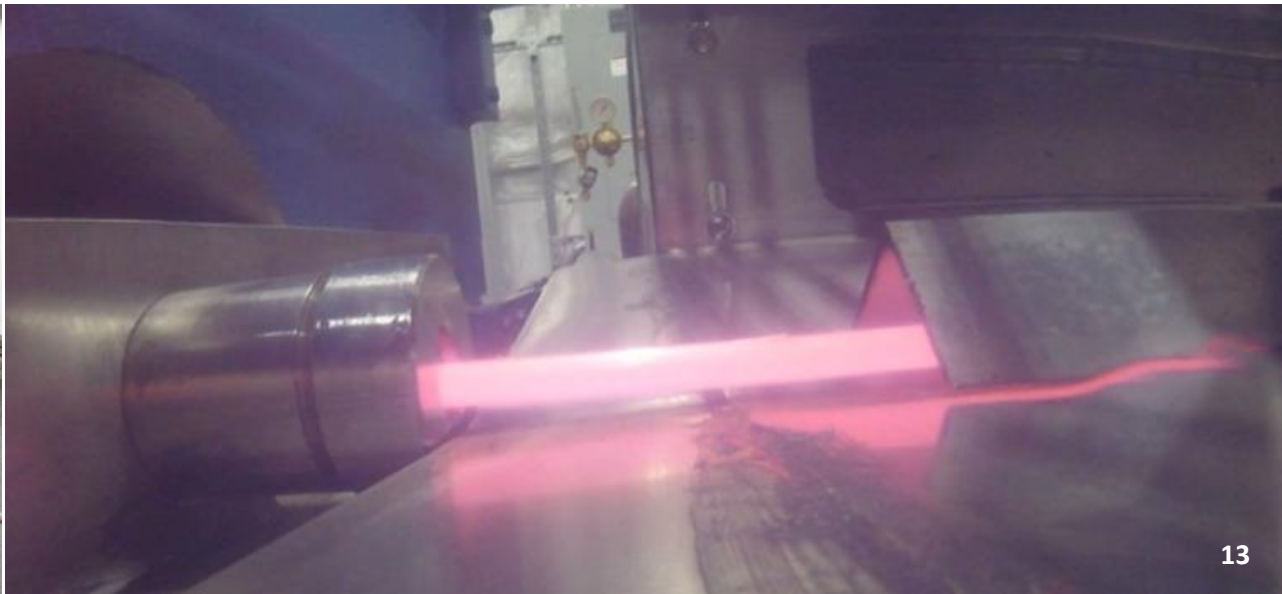
- Completed co-extrusion demonstration integrating depleted uranium-zirconium alloy with nuclear-grade zirconium alloy cladding
- Produced 8-foot cylindrical rod demoing commercial-scale potential
- Material composition identical to planned commercial Lightbridge Fuel™ product

Strategic Significance

- Idaho National Laboratory collaboration validates Lightbridge's innovative approach
- Technical progression advances safety, efficiency, and performance capabilities
- Establishes critical pathway toward capsule irradiation testing in Advanced Test Reactor (expected to begin in 2026)
- Progress supports regulatory licensing strategy for commercial deployment

URANIUM-ZIRCONIUM ROD POST-EXTRUSION:

EXTRUSION PROCESS AT THE TRANSFORMATION OF THE ALLOY:



LIGHTBRIDGE & OKLO COLLABORATION:
Fuel Fabrication and Recycling

Collaboration Objectives

- The partnership establishes a framework for two strategic initiatives ->

Facility Co-Location Study

- Conduct feasibility assessment for co-locating Lightbridge's Commercial-scale Fuel Fabrication Facility at Oklo's proposed commercial fuel fabrication site
- Evaluate capital expenditure synergies and operational cost efficiencies
- Develop integrated facility planning approach

Advanced Fuel Recycling Exploration

- Investigate joint opportunities in nuclear waste recycling technologies
- Align complementary capabilities to advance sustainable nuclear solutions
- Support circular economy principles in nuclear fuel management

Strategic Significance

- This collaboration represents a pivotal development in nuclear innovation, combining Lightbridge's advanced fuel technology with Oklo's expertise in next-generation nuclear power and recycling capabilities.

LIGHTBRIDGE LAUNCHES ENGINEERING STUDY:

To assess our fuel for use in CANDU reactors

- **Location:** Institutul de Cercetări Nucleare Pitești, a subsidiary of Regia Autonoma Tehnologii pentru Energia Nucleara (RATEN ICN) in Romania
- **Study Completed:** Q4 2024
- **Purpose:** To assess the compatibility and suitability of Lightbridge Fuel™ for use in CANDU reactors
- **Focus:** Assessment included mechanical design, neutronic analysis & thermal / thermal-hydraulic evaluations
- **Results:** indicate **doubling** the normal CANDU discharge burnup using less than 3% enrichment in Lightbridge Fuel

RATEN ICN PITEŞTI
INSTITUTUL DE CERCETĂRI NUCLEARE

SIGNING CEREMONY
Dr. Constantin Paunoiu, Director of Institutul de Cercetări Nucleare Pitești, and Dr. Andrey Mushakov, Lightbridge Executive Vice President, Nuclear Operations

BREAKTHROUGH LONG-TERM STRATEGIC PARTNERSHIP PROJECT WITH IDAHO NATIONAL LAB (INL)

RESTON, Va., Dec. 12, 2022 (GLOBE NEWSWIRE) -- Lightbridge Corporation (Nasdaq: LTBR), an advanced nuclear fuel technology company, has entered into landmark agreements with Idaho National Laboratory (INL), in collaboration with the U.S. Department of Energy (DOE), to support the development of Lightbridge Fuel™. The framework agreements use an innovative structure and consist of an "umbrella" **Strategic Partnership Project Agreement (SPP)** and an "umbrella" **Cooperative Research and Development Agreement (CRADA)**, each with Battelle Energy Alliance, LLC (BEA), DOE's operating contractor for INL, with an initial duration of seven years.

Lightbridge®

Idaho National Laboratory

INL'S ADVANCED TEST REACTOR

PARTNERSHIP SUMMARY

- **Seven-year** agreement
- **INL to manufacture and irradiate** in the **Advanced Test Reactor** coupon material samples consisting of enriched uranium
- Data will **support fuel performance modeling and regulatory licensing** efforts for commercial deployment of Lightbridge Fuel.

POTENTIAL COMMERCIAL PATHWAYS:
From Research Reactors to Commercial Reactors

SMALL MODULAR REACTORS (PWRs & BWRs)

- Uses fuel rods up to 6 feet in length
- Half the length of large PWRs & BWRs

LARGE LIGHT WATER REACTORS (PWRs & BWRs)

- Virtually all currently operating power reactors in the world other than PHWRs are large LWRs (PWRs include Russian-designed VVERs)

PRESSURIZED HEAVY WATER REACTORS (CANDU)

- ~40 PHWRs in the world
- Uses fuel with uranium enrichment levels below 10%
- Uses fuel rods up to 20 inches in length

COLLABORATION W/ MIT IN DoE FUNDED STUDY

Accident Tolerant Fuels in SMRs

$800,000

Massachusetts Institute of Technology

NUSCALE Power for all humankind

Lightbridge

NEUP Nuclear Energy University Program

U.S. Department of Energy

ATF Solutions to Light Water-Cooled SMRs

PI: Koroush Shirvan, Massachusetts Institute of Technology

Program: Fuel Cycle 2.1

Collaborators: Michael Corradini, University of Wisconsin-Madison; Guillaume Giudicelli, Idaho National Laboratory; Kenny Anderson, NuScale Power; Faisal Odeh, Holtec; Russ Fawcett, Global Nuclear Fuel; Aaron Totemeier, Lightbridge Corporation; Eugene Shwageraus, University of Cambridge, UK; Michael Bluck, Imperial College, UK; Oliver Max Hannant, Rolls-Royce, UK;

ABSTRACT:

Fuel is the heart of all the nuclear reactor systems where the defense-in-depth principles and safety systems are designed around it. While traditionally treated as a low-cost item as part of the nuclear power plant total cost, nuclear fuel dictates the reactor power density and the nuclear island construction requirements (e.g. containment size to prevent radioactivity release from fuel). The increasing of the power density of SMRs could be critical to its economic viability to overcome the lack of economy of scale. Indeed, a logical area of economic opportunity for ATFs is increase in core power density (e.g. power uprates) given their high temperature capability.

The objective of the proposed work is to: (1) Investigate near term opportunities of accident tolerant fuels for light water cooled small modular reactors (LWR-SMR) design spaces with Holtec's SMR-160 as the reference plant for the US university partners and Rolls-Royce's UK-SMR as the reference plant for UK university partners (2) Simulate the fuel and safety performance of Lightbridge concept for the NuScale SMR (3) Provide scoping analysis of

PARTNERSHIP OBJECTIVES

- Investigate near term opportunities of accident tolerant fuels for light water cooled small modular reactors (LWR-SMR) design spaces
- Simulate the fuel and safety performance of Lightbridge Fuel for the NuScale SMR
- Provide scoping analysis of promising longer term advanced fuel forms to improve the safety and economics of LWR-SMRs

COLLABORATION W/ TEXAS A&M IN DoE FUNDED STUDY

Advanced Nuclear Fuels in SMRs

$1,000,000

NUSCALE Power for all humankind

Lightbridge

NEUP Nuclear Energy University Program

U.S. Department of Energy

A Pathway for Implementation of Advanced Fuel Technologies in Light Water Small Modular Reactors

PI: Yassin Hassan (Texas A&M University)

Co-PI: Joseph Seo (Texas A&M University)

Program: Other Reactor Development and Plant Optimization (RDO-6)

Collaborators:
James Fornof – Lightbridge
William Lyon – Structural Integrity Associate Inc.
Deena Jaber – Structural Integrity Associate Inc.
Wenfeng Liu – Structural Integrity Associate Inc.
Steven Mirsky – NuScale Power

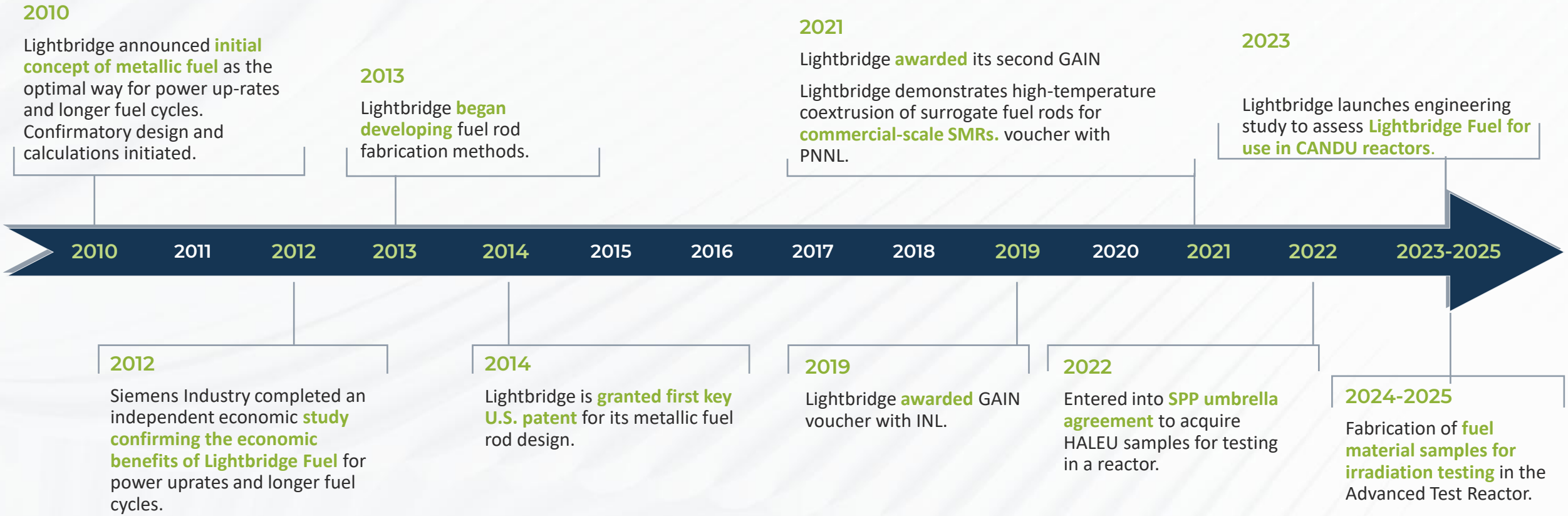
ABSTRACT: The success of Small Modular Reactors relies on their flexibility and adaptability to customers' needs while maintaining safer and reliable operations and cost efficiency when compared to other sources of energy. These goals can be achieved by employing well-established nuclear technologies, implement simpler designs and operational schemes, and include the use of passive systems. This is the approach of the Light Water SMR (LW-SMR) which benefit from well-established technologies and operational experience. In order to accelerate the deployment of their reactor design, most LW-SMR vendors have adopted existing LWR fuel technologies with minor adaptations in the assembly design. This is the case of the NuScale SMR core design, currently employing typical PWR fuel assemblies with minor modifications. However, the use of advanced fuel design developed with the introduction of innovative shapes and materials, such as the one proposed by Lightbridge, can provide enormous benefits to the operation of the LW-SMR. The use of such designs may allow power uprates, improved economics, longer fuel cycle lengths, and decreased fuel operating temperatures with subsequent increased margin to safety. By removing the need for spacer grids, the Lightbridge fuel design promotes lower core pressure drops, a very important parameter to consider for power upgrades especially when the core flow is based on natural circulation. NuScale Power is currently looking at the Lightbridge design as a valid alternative to the current fuel in order to increase operational flexibility, safety margins, and the overall competitiveness of their SMR design.

Project Objectives: We will perform a comprehensive thermal-hydraulic characterization of the Lightbridge Helical Cruciform advanced fuel design, creating unique sets of experimental data

PARTNERSHIP OBJECTIVES

- Develop pressure drop correlations for Lightbridge fuel in NuScale LW-SMR conditions
- Increase the understanding of the overall performance of the fuel under simulated NuScale's SMR normal and off-normal conditions
- Train the next generation of engineering students to use advanced, multi-scale, multi-physics simulation tools
- Identify any critical parameters for further evaluation and design

TIMELINE OF LIGHTBRIDGE FUEL EVENTS & MILESTONES



UPCOMING FUEL DEVELOPMENT MILESTONES

Anticipated to be completed over the next 2-3 years

Advancing Research and Testing at INL

Producing test materials (samples, coupons, and rodlets) to fulfill INL agreements. Continuing SPP/CRADA collaboration at INL to cast and extrude enriched uranium fuel materials for irradiation testing in the Advanced Test Reactor.

Developing a Fuel Qualification Plan

Developing a comprehensive plan that outlines our methodology for characterizing and validating the performance of Lightbridge Fuel rods, assemblies, and assembly components under relevant operational scenarios, and validating the modeling tools that accurately predict fuel performance under applicable conditions.

Regulatory Strategy & Compliance Roadmap

Prepare and submit the NRC Engagement Plan that outlines how and when Lightbridge will engage the NRC regarding submission of relevant information and supporting documentation for license applications.

Computational Modeling & Performance Prediction

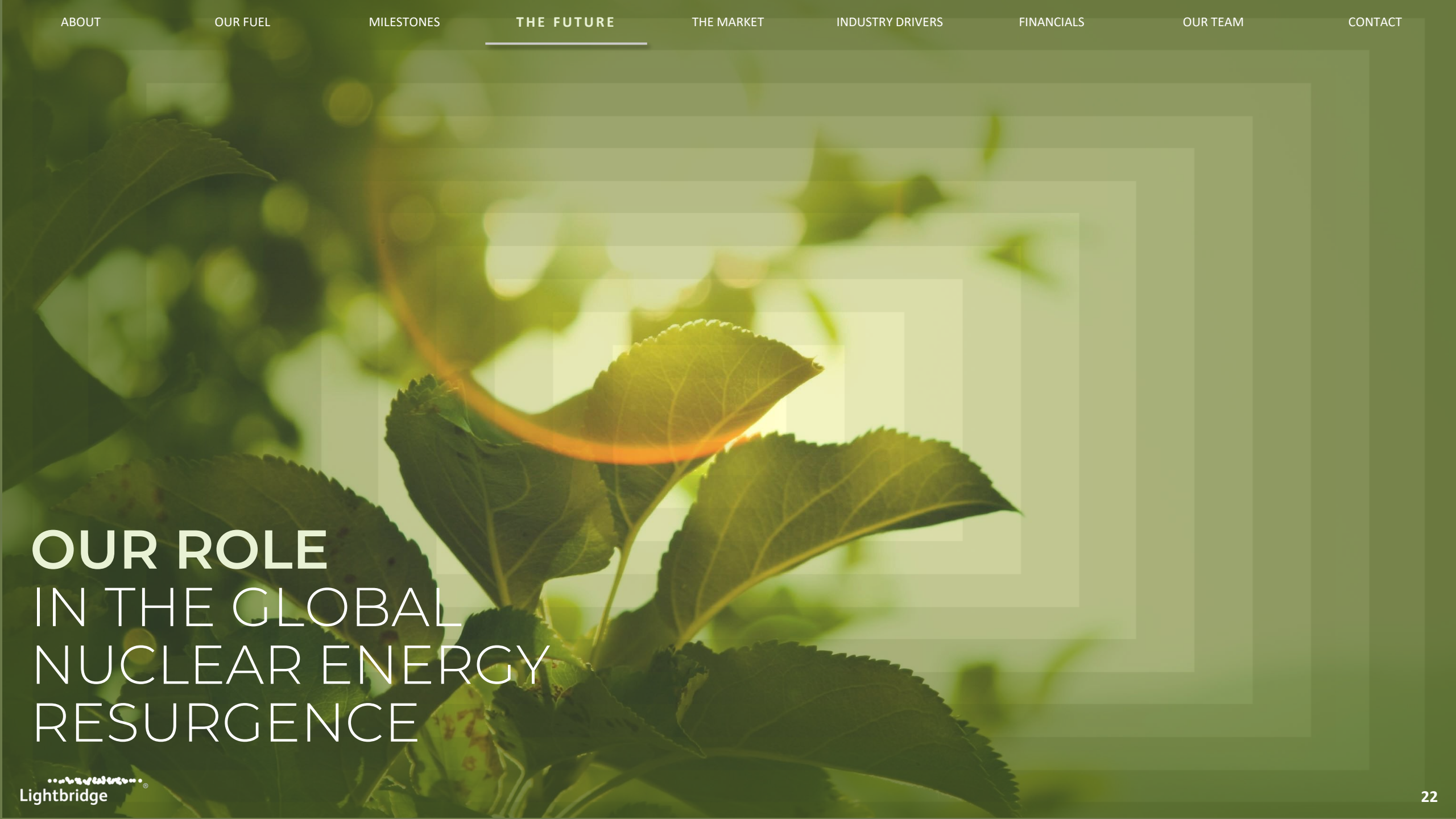
Continuing development and validation benchmarking of Lightbridge-specific methodologies and modifications to existing modeling codes to accurately predict Lightbridge Fuel performance across all operating conditions required for licensing.

Thermal-Hydraulic Analysis and Experiments

Conducting thermal-hydraulic modeling of Lightbridge Fuel™ in preparation for thermal-hydraulic experiments to verify pressure drop, critical heat flux performance, and other thermal-hydraulic parameters under various operating conditions across different reactor types.

Advanced Manufacturing & Fuel Production Infrastructure

Continued initiatives to establish a co-extrusion process for cladded rodlets for loop irradiation testing and other fuel testing applications. Additionally, we will complete site selection and begin deploying a Lightbridge Pilot Fuel Fabrication Facility (LPFFF) capable of producing fuel samples, coupons, rodlets, and full-length fuel rods for lead test rods and assemblies to demonstrate our fuel in commercial reactors.



OUR ROLE IN THE GLOBAL NUCLEAR ENERGY RESURGENCE

UPCOMING FUEL DEVELOPMENT MILESTONES

We expect the significant government funding for nuclear energy in the coming years may help accelerate our fuel development for existing nuclear power plants and future SMR applications.

BENEFITS TO EXISTING LIGHT WATER REACTORS

- Our work today is applicable for fuel in large reactors as well as shorter length version of fuels for SMRs.
- Lightbridge Fuel is expected to provide significant safety and economic benefits to utilities

Our fuel is expected to provide SMRs the **same benefits** afforded to **large reactors,** but the benefits may be **more meaningful** to the economic case for **deploying SMRs.**

Our **ongoing R&D initiatives** are entirely compatible with Lightbridge Fuel **powering SMRs for multiple purposes.**

BENEFITS TO SMALL MODULAR REACTORS

- Generate more power, reducing the cost per unit of electricity generated by the SMR
- Enhance ability of SMRs to ramp up and down in power quickly, to pair with renew-ables on a zero-carbon electric grid

SMALL MODULAR REACTORS: Nimble Nuclear

SMRs under development vary in size from tens to hundreds of megawatts, offering diverse technology options, capabilities, and deployment scenarios for power generation, process heat, desalination, and other industrial uses.

*ARTIST RENDERING OF AN SMR WITHIN AN INDUSTRIAL HUB

STRATEGIC ADVANTAGES

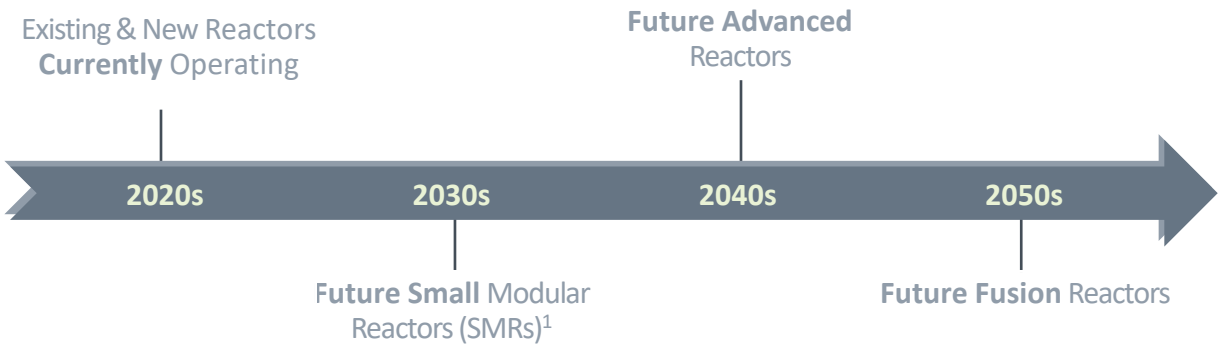
- ✓ Relatively small physical footprints
- ✓ Reduced capital investment vs large reactors
- ✓ Ability to be sited in locations not possible for larger nuclear plants
- ✓ Provisions for incremental power additions
- ✓ Security and nonproliferation advantages.

*From Third Way Think Tank – Artwork by GENSLER

LIGHTBRIDGE FUEL IN SMRs OF THE FUTURE

Lightbridge Fuel is expected to **significantly improve the economics, safety, and operational flexibility** for water-cooled SMRs. An SMR can replace coal power plants and utilize the existing electrical switchyard already on the site, supporting employment in the region. The US can support the manufacturing of SMRs and fuel for domestic and export markets.

REACTOR TIMELINE



SMR ADVANTAGES

- ✓ Emergency planning zone limited to site boundary (rather than paying for emergency services for a much larger radius)
- ✓ Fewer personnel in the control room
- ✓ Fewer security personnel

[1]*Pressurized water reactors & boiling water reactors*

DESIGNED FOR SUPERIOR RAMP RATE FOR LOAD FOLLOWING IN SMRs

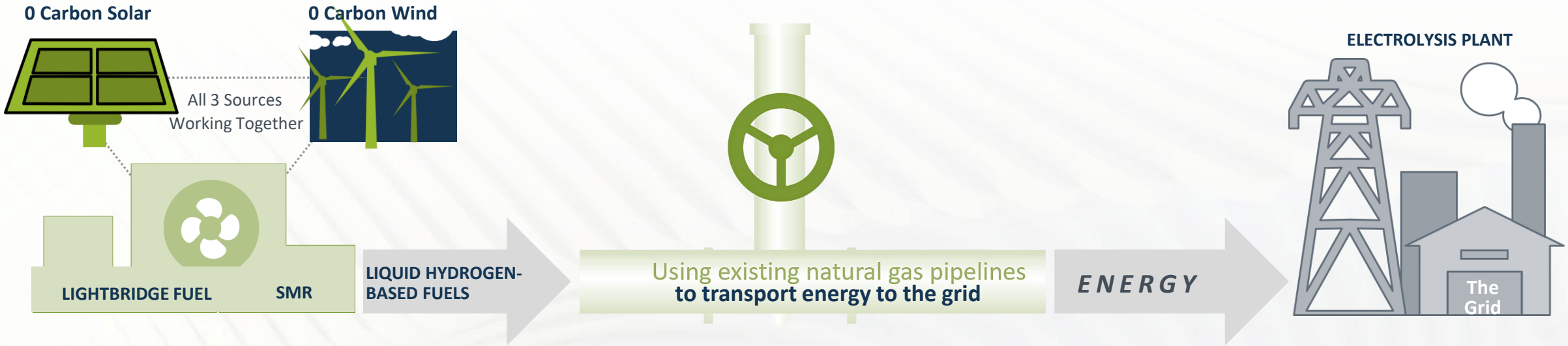
Facilitates the versatile & efficient use of carbon-free energy at a greater scale

SMRs powered with Lightbridge Fuel are **expected to have a vastly improved load following capability** compared to traditional reactors.

May allow SMRs to **work more efficiently in different missions, including replacing natural gas plants** to back-up renewables.

An SMR designed to produce 30% more power with Lightbridge Fuel **may be used to produce liquid hydrogen-based fuels** and utilize existing oilfield pipeline infrastructure.

Can be **used in hard-to-decarbonize sectors,** including aviation, shipping, cement and steel production, heavy trucks, and trains.



THE COAL TO NUCLEAR TRANSITION

In September 2022, the DOE published a **study*** that explored converting retiring **coal plants into nuclear plants** throughout the United States:

- It is estimated that **80% of retired and operating coal power plant sites** have the basic characteristics to be considered amenable to host an SMR.
  - **190 sites** throughout the U.S.
  - **198.5 GWe** capacity potential (approximately double total current U.S. nuclear generation)
- Repurposing coal plant infrastructure may lead to **savings on capital costs** that range from **15% to 35%.**
- Depending on the nuclear design under consideration, **job growth could increase by over 650 new, permanent jobs,** leading to nearly **$270 million** in new economic activity, with GHG emissions in a community **falling by as much as 86%.**

*U.S. DOE, "Investigating Benefits and Challenges of Converting Retiring Coal Plants into Nuclear Plants
2022 H.R.5376 - 117th Congress (2021-2022): Inflation Reduction Act of 2022

GLOBAL **ENERGY DEMAND** IS GROWING

COMPELLING ECONOMICS:

Large Water-Cooled Reactor Market

(PWR, BWR, PHWR)

Nuclear fuel supply agreements are expected to generate long-term, high margin recurring revenue.

100
U.S. WATER-COOLED REACTORS

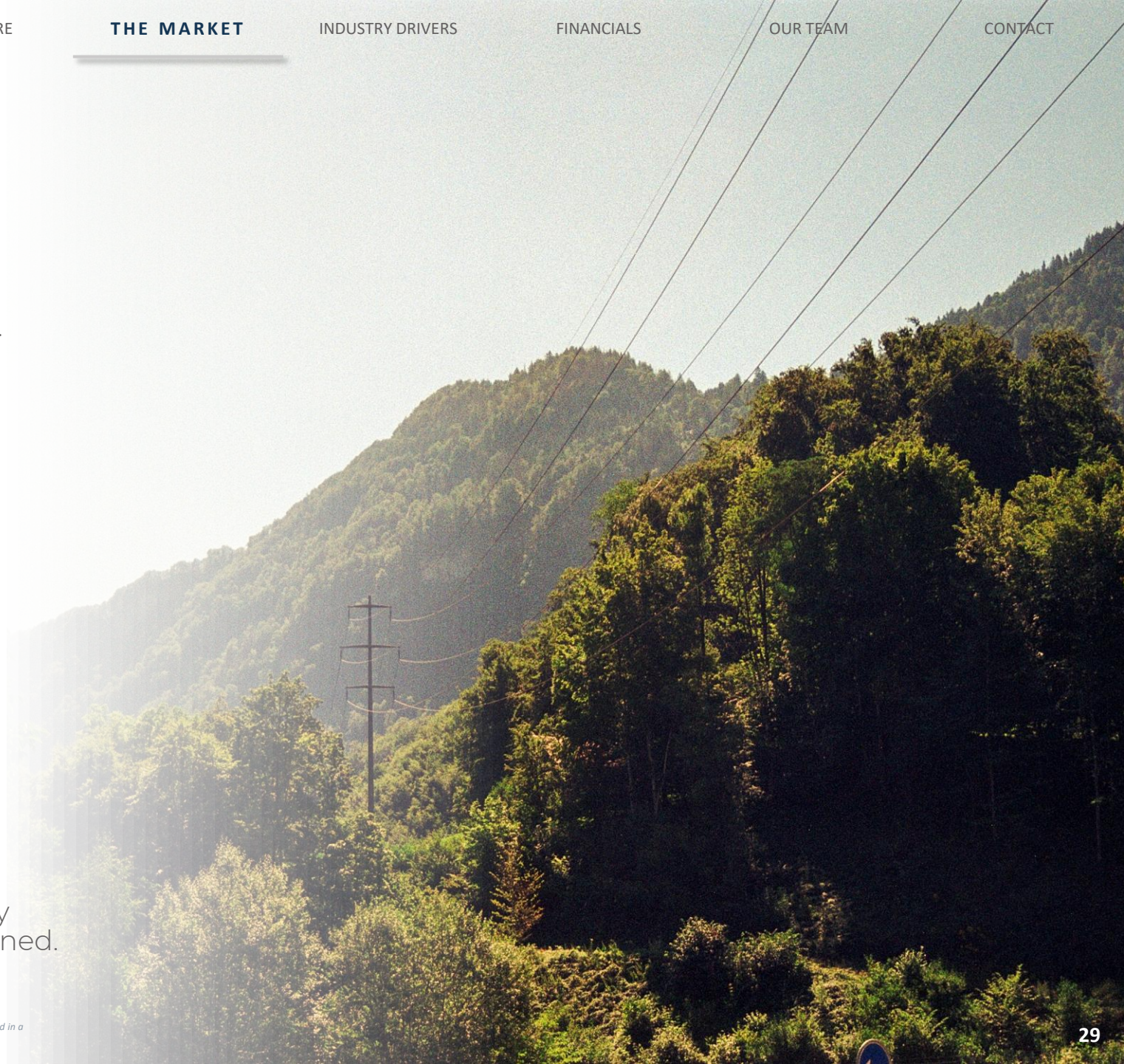
$40M
AVG. ANNUAL FUEL SPEND PER REACTOR, PER YEAR*

419
WATER-COOLED REACTORS WORLDWIDE

$4B
TOTAL ADDRESSABLE MARKET (U.S.)

$16.7B
TOTAL ADDRESSABLE MARKET (GLOBAL)

Lightbridge Fuel™ is designed to power nearly every reactor in the world, both under construction & planned.

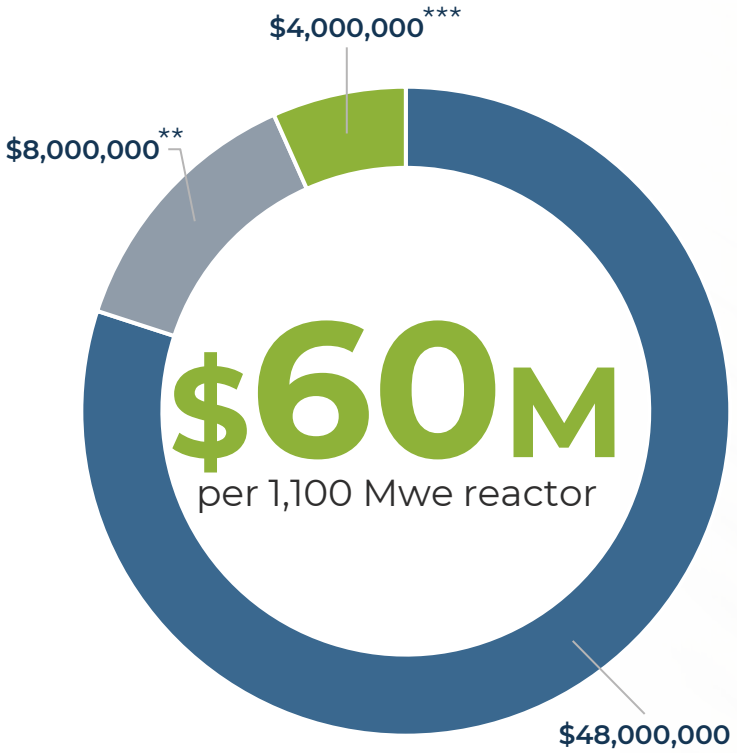


*World Nuclear Association data based on fuel costs of $1,663 per kg of UO2, 35-40 metric tons of UO2 in an 18-month batch reload in a 1,100-Mwe, resulting in approx. $60-65M fuel costs per 18 months or $40-45M/year.

ENHANCED REACTOR MARGINS

$60 million projected annual gross revenue increase to utility per large pressurized water reactor

- Increase in Electricity Production (10%)
- Increase in Reactor Operating Cycle from 18 to 24 mos.
- Reduction in Downtime



ASSUMPTIONS:

- Projected incremental annual revenue to utility with Lightbridge 10% power uprate
- Does not include the added economic benefits of carbon credits or cost to utility of buying replacement power during an outage
- Assumes wholesale power price of $55/MWh, which is the average wholesale power price in the U.S. over the past decade. Utilities are now exploring with the US Nuclear Regulatory Commission extending operating licenses to 100 years.

***The plant sells electricity on days it otherwise would have been shut down ***Avoid paying for as many outages, including temporary workers*

ENHANCED REACTOR MARGINS

CONTRIBUTORS TO INCREASED DEMAND:

Electrified transportation
Personal and industrial electric vehicles.

Increased digitalization of our world
Digital technologies, IoT devices, AI, crypto, data centers

Government regulations & incentives
Tax breaks for EVs, heat pumps, solar panels and more.

US ELECTRICITY DEMAND (TWH)[1]

[1]U.S. Energy Information Administration

THE FUTURE OF NUCLEAR POWER: AMBITION & REALITY

NUCLEAR POWER TODAY

- Total Capacity: **~400** GWe / No. of Reactors: **~420** / Avg. Reactor Size: **0.95** GWe

INDUSTRY PERSPECTIVE

- **COP28 Goal:** Tripling of nuclear to 1,200 GWe by 2050
- Impact on companies like Lightbridge: **Positive**

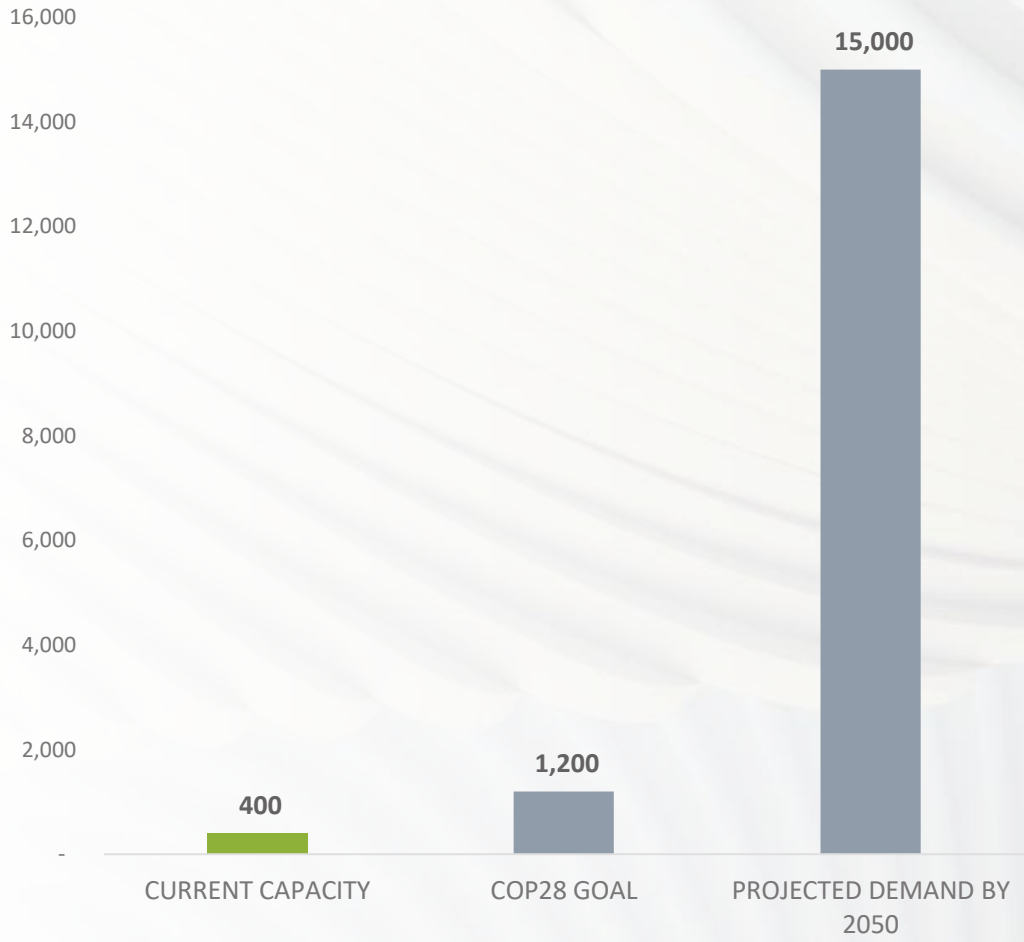
OUR PERSPECTIVE

- 1,200 GWe from nuclear is **beneficial but insufficient** for global challenges.
  - **Mass production potential** similar to Boeing 737s & Airbus A320s
  - **A balance** between tripling nuclear power & unlocking much larger potentials

SCIENTIFIC AMERICAN

> **By the year 2030** the electric power requirement will be 10 times the present capacity. Because of the expected decline in fossil-fuel resources, and **in the absence of any other large source of energy at reasonable cost, fission power** would be counted on to **supply about 85 percent of this need."**
>
> *- Scientific American Magazine, May 1967*[1]

ENERGY DEMAND & CURRENT CAPACITY (GWe)



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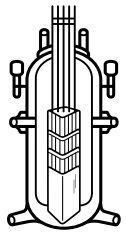
[1]Scientific American

MASS PRODUCING NUCLEAR?

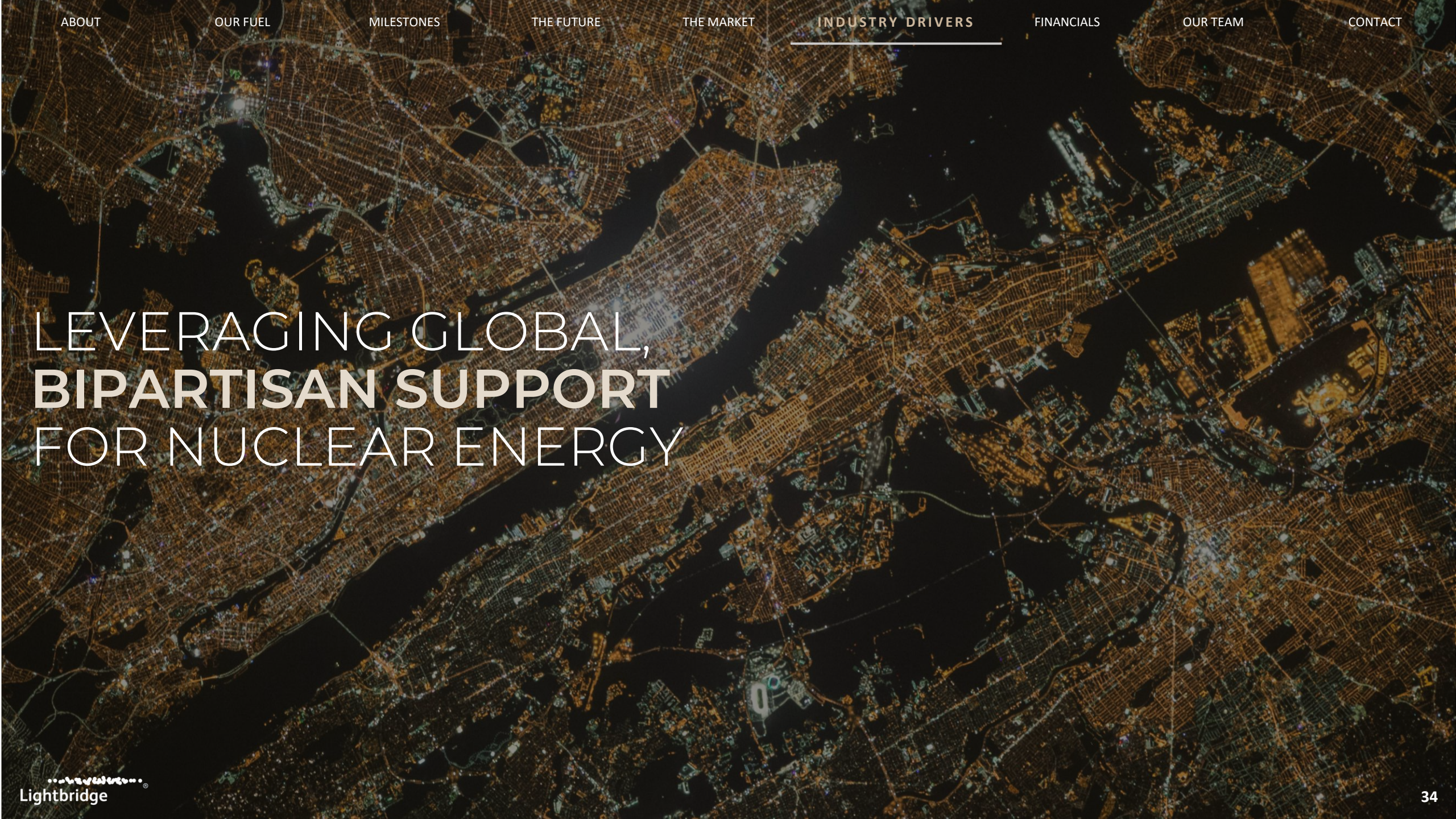
In 1939, the U.S. produced fewer than 3,000 military aircraft. In 1944, total output was over 96,000. Total production during WWII was over 300,000.

SMR designers are currently in the phase of developing bespoke prototypes, with some having the capacity to become mass-produced solutions to the world's energy needs.

The industry transformed from craftsmen producing airplanes to assembly-line efficiency.

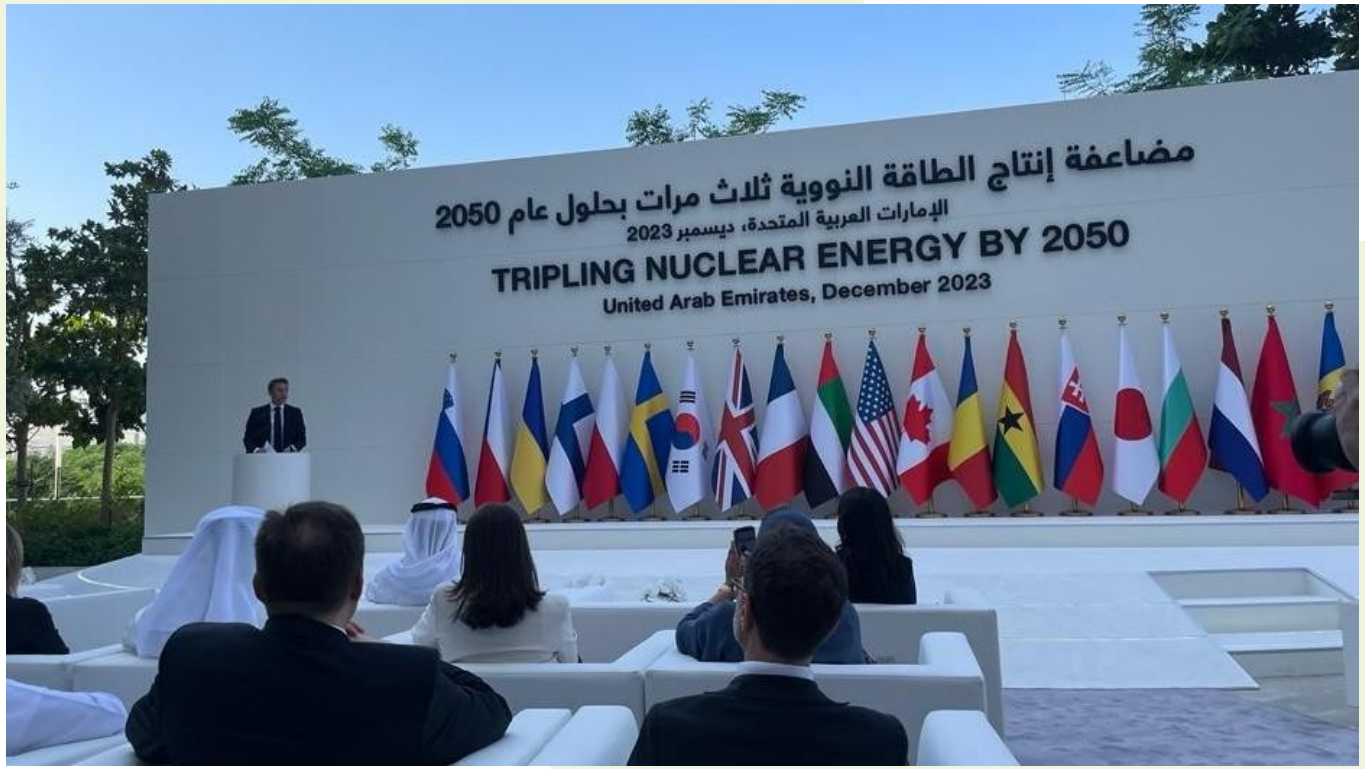


Interestingly, an SMR nuclear reactor module is about the same size as a WWII airplane.



LEVERAGING GLOBAL, **BIPARTISAN SUPPORT** FOR NUCLEAR ENERGY

THE WORLD DEMANDS TRIPLING NUCLEAR ENERGY CAPACITY AT COP28



For the first time, the 198 signatory countries to the UN Framework Convention on Climate Change (UNFCCC) officially called for accelerating the deployment of low-emission technologies, **including nuclear energy,** at the United Nations Climate Change Conference (COP28) in Dubai.

THE POLITICAL LANDSCAPE IS SHIFTING

Operating License Extensions

- Nuclear power plants soon to be decommissioned are having their operating licenses extended.

Energy Security Concerns

- Russia's invasion of Ukraine highlighted energy vulnerabilities
- Nations are seeking greater energy independence & security

Green Energy Commitments

- COP28 saw over 20 countries commit to 3x nuclear capacity by 2050
- The European Union has designated nuclear as a “green” energy source.

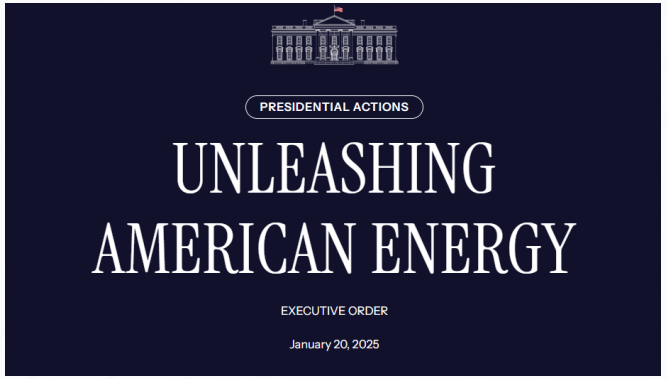
Major Powers Reversing Course

- Countries that were moving away from nuclear, such as Japan, are now reversing course, showing renewed interest.

U.S. Inflation Reduction Act

- Provides nuclear production tax credits to help preserve the existing fleet of U.S. nuclear plants and significant money for advanced nuclear tech.

AMERICAN NUCLEAR RESURGENCE



WHITE HOUSE MEETINGS[1] & THE NUCLEAR FUEL WORKING GROUP REPORT[2]

1 Photo of President Trump meeting with leaders of US nuclear companies, including Lightbridge CEO Seth Grae.
2 The Nuclear Fuel Working Group report was issued on April 23, 2020.
3 Lightbridge CEO Seth Grae is a member.

ROBUST BIPARTISAN FEDERAL LEGISLATION FOR NUCLEAR

The Infrastructure Investment and Jobs Act of 2021 and the Inflation Reduction Act of 2022 included key federal government commitments for the nuclear industry.

BIPARTISAN INFRASTRUCTURE BILL

Civil Nuclear Credit Program
$6B to support financially challenged plants

Advanced Reactor Demonstration Program (ARDP) Funding
$2.5B funding for two projects

Nuclear Hydrogen Hub
$8B total in the bill

INFLATION REDUCTION ACT

Production Tax Credit (PTC) for Operating Plants
Up to $15 per MWh

Technology-Inclusive PTC for Clean Electricity
$30 per MWh

Technology-Inclusive Investment Tax Credit (ITC) for Clean Electricity
30% + 10% in energy communities + 10% using U.S. components

Clean Hydrogen Credit
$3 per kilogram

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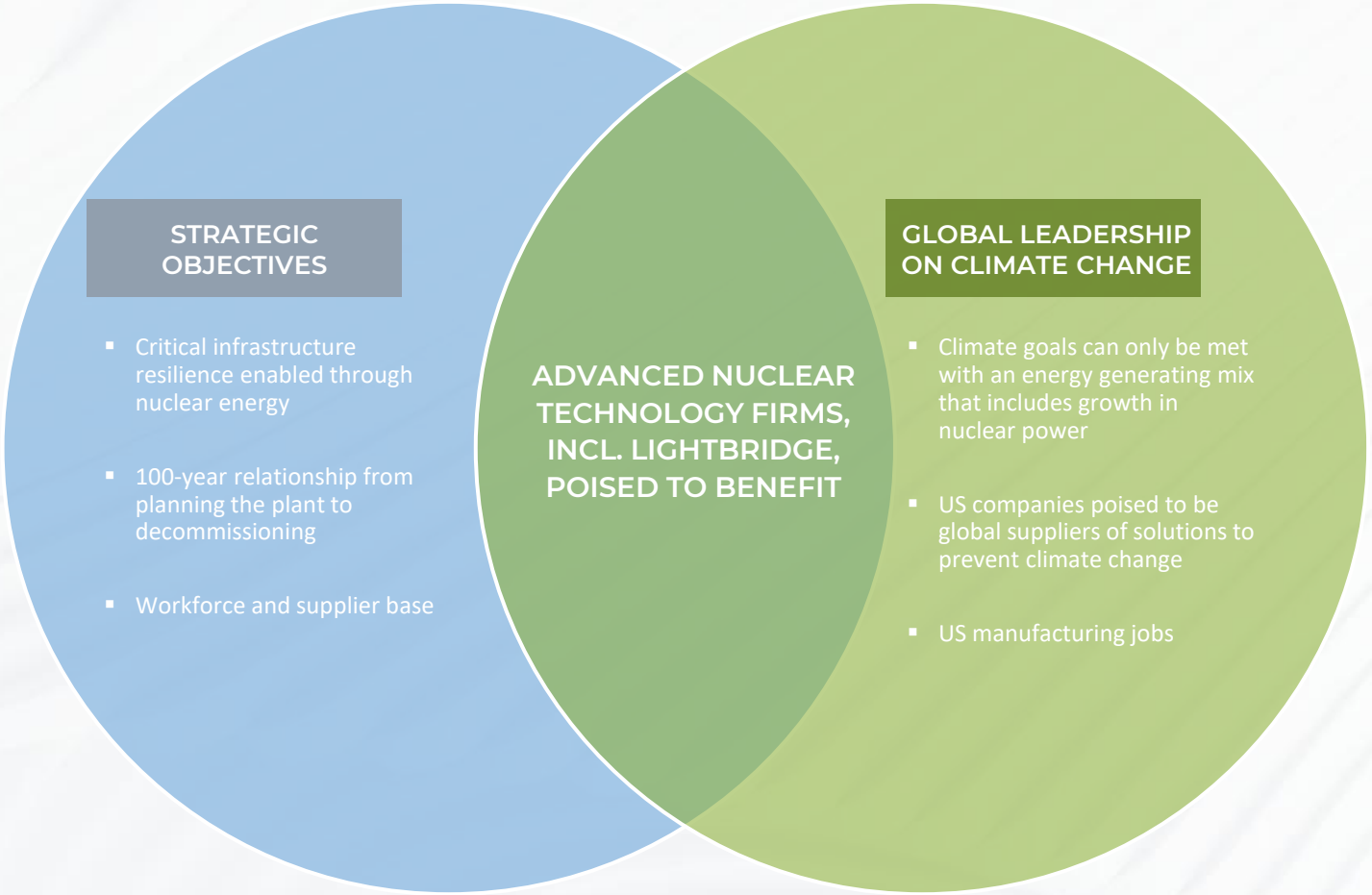
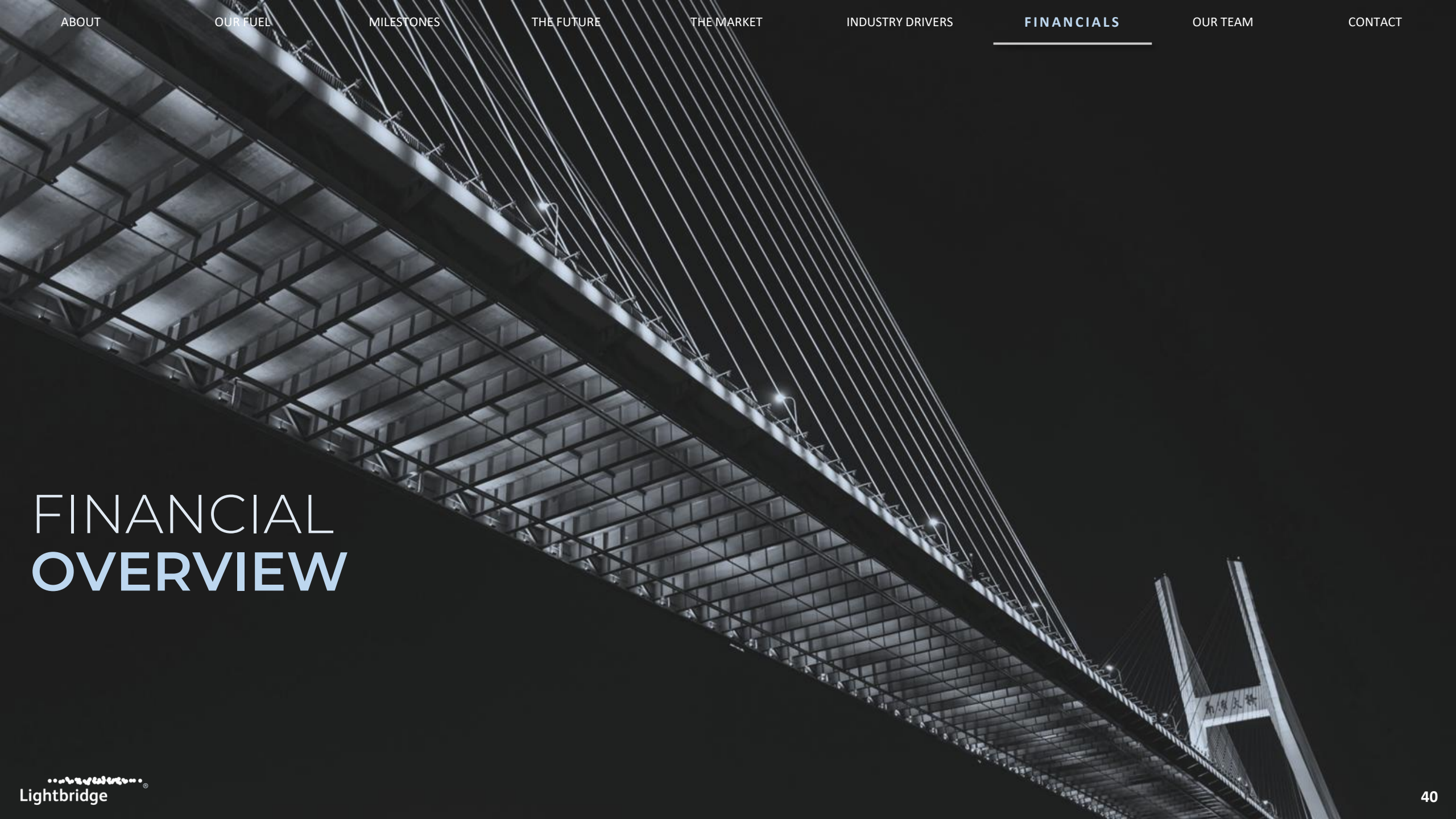
Lightbridge's technology is aligned with US government goals, enabling policies outlined in the report because of the design of Lightbridge Fuel.

ADVANCED NUCLEAR RACE POSES UNIQUE OPPORTUNITIES FOR LIGHTBRIDGE

Government support, financial investment and policy change has spurred **a race for nuclear innovation.**



According to the **Nuclear Fuel Working Group report,** "The United States is missing out on a nuclear reactor market that the US Department of Commerce (DOC) estimates is valued at **$500-740 billion** over the next 10 years."



FINANCIAL **OVERVIEW**

FORTIFIED FINANCIAL POSITIONING

$153M
CASH POSITION
@ SEP 30, 2025

$0
DEBT ON
BALANCE SHEET

ASSETS	30-Sep-25	31-Dec-24
Current Assets		
Cash and cash equivalents	$153,330,134	$39,990,827
Prepaid expenses & other current assets	1,293,501	324,378
Total Current Assets	154,623,635	40,315,205
Other Assets		
Prepaid project costs & other long-term assets	327,148	528,805
Trademarks	114,982	108,865
Total Assets	$155,065,765	$40,952,875
LIABILITIES & STOCKHOLDERS' EQUITY		
Current Liabilities		
Accounts payable & accrued liabilities	$1,560,097	$424,585
Total Current Liabilities	1,560,097	424,585
Stockholders' Equity		
Common stock	30,385	18,784
Additional paid-in capital	330,050,816	204,694,348
Accumulated deficit	(176,575,533)	(164,184,842)
Total Stockholders' Equity	153,505,668	40,528,290
Total Liabilities and Stockholders' Equity	$155,065,765	$40,952,875

OUR TEAM

SEASONED LEADERSHIP TEAM

DARLA M. BOND
Human Resources Manager

Darla brings 30+ years of HR leadership across corporate and small business sectors. Since 2011, has provided HR consulting in all facets of human resources. National member of the Society for Human Resource Management (SHRM), holds a Professional in Human Resources Certification (PHR) from the HR Certification Institute.

SCOTT HOLCOMBE, Ph.D.
VP, Engineering

Oversees R&D and demonstration efforts to commercialize proprietary nuclear fuel technologies. Brings 20+ years of experience from industry and research labs. Expertise in nuclear fuel performance, manufacturing, inspections, and licensing. Held management roles at the Halden Reactor, INL, and the OECD Halden Reactor Project.

LARRY GOLDMAN, CPA
Chief Financial Officer

Larry is a seasoned executive with 40+ years in financial, assurance, tax, and advisory services. With Lightbridge since 2006, serving as Chief Accounting Officer since 2008 and CFO since 2018. Member of the AICPA and NYSSCPA CFO Committee, previously serving on the SEC Practice and Management Consulting Committees.

SHERRIE HOLLOWAY
Controller

Sherri bring 30+ years in corporate accounting for public and private companies,. Background includes 'Big 4' public accounting, energy, natural gas, transportation, and international business. Member of U.S. Women in Nuclear, supporting the advancement of women in nuclear energy and technology.

SETH GRAE
Chairman and Chief Executive Officer

Member of Civil Nuclear Trade Advisory Committee (CINTAC) to the U.S. Secretary of Commerce, Nuclear Energy Institute's Board of Directors, Nuclear Energy and National Security Coalition, Working Group on Climate, Nuclear,& Security Affairs of the Council on Strategic Risks, Virginia Nuclear Energy Consortium Board of Directors.

ANDREY MUSHAKOV, Ph.D.
Executive VP, Nuclear Operations

Leads the Fuel Technology Division and strategic initiatives at Lightbridge, securing key collaborations and joint development projects. Instrumental in securing two DOE GAIN voucher awards for fuel development, as well as two 7-year framework agreements with Battelle Energy Alliance, DOE's operating contractor for INL.

INDEPENDENT BOARD OF DIRECTORS

SETH GRAE
Chairman and Chief Executive Officer

Member of Civil Nuclear Trade Advisory Committee (CINTAC) to the U.S. Secretary of Commerce, Nuclear Energy Institute's Board of Directors, Nuclear Energy and National Security Coalition, Working Group on Climate, Nuclear,& Security Affairs of the Council on Strategic Risks, Virginia Nuclear Energy Consortium Board of Directors.

SWETA CHAKRABORTY, Ph.D.
Director

Globally recognized risk and behavioral scientist specializing in risks from climate change to COVID-19. Advises government agencies on integrating behavioral science into policy, programs & communication. Developed science-based communication strategies with Fortune 100 companies, including Mars Inc., Novartis, and PVH Corp.

JESSE FUNCHES
Director

Former CFO of the U.S. Nuclear Regulatory Commission (NRC) and Operations Research Analyst at the Pentagon. Recipient of the 2004 Donald L. Scantlebury Memorial Award for excellence in financial management. Three-time Presidential Rank Award honoree and two-time NRC Distinguished Service Award winner.

SHERRI GOODMAN
Director

Vice-Chair of the U.S. Secretary of State's ISAB and a member of EXIM Bank's Climate Council. Secretary General of IMCCS. Chairs the Council on Strategic Risks Board and Sandia Labs' Advisory Board on Energy & Homeland Security. Also serves on the National Academies Advisory Board for the U.S. Global Change Research Program.

DANIEL MAGRAW JR.
Director

President Emeritus of the Center for International Environmental Law, Senior Fellow at Johns Hopkins SAIS, and former Director of the EPA's International Environmental Law Office. Member of the Trade and Environment Policy Advisory Committee to the U.S. Trade Representative.

MARK TOBIN
Director

Over 24 years in international investment banking and public company leadership. CFO of National Underground Group and board member at Qualstar Corporation. Former CFO of Printronix and Nanoflex Power, and audit chair at Innovation Pharmaceuticals. Previously Director of Research and Senior Analyst at Roth Capital.

Lightbridge

ADVANCED NUCLEAR FUEL TECHNOLOGIES

for clean power and energy security

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