

### Terrestrial Energy

Terrestrial Energy has operations in Canada, the US and the UK. Its Design Centre is in Oakville, Ontario at the hub of the Canadian nuclear power industry. The Company consists of widely recognized voices of expertise in nuclear technology, utility power generation and environmental policy. The Company has secured financing from private investors, industry and G7 governments since inception in 2013, including a grant from the Canadian Government's Sustainable Technology Development Canada (SDTC) program, and a grant from the United States' Department of Energy. Sovereign and industrial participants in the Company are engaged to help realize the potential of Terrestrial Energy's Integral Molten Salt Reactor ("IMSR") in global energy markets; the IMSR is a nuclear reactor system that can compete with fossil fuels, that can be brought to market in the 2020s and can satisfy a growing market and policy need for clean industrial energy provision. The Company is supported by the environmental community, which recognizes the potential of the IMSR to facilitate the rapid decarbonization of the global primary energy system, and in so doing, end the use of coal, starting next decade.

### IMSR Design

The central design challenge for all nuclear reactor systems is to facilitate heat dissipation to achieve safety and operational objectives. Virtually all existing commercial reactors use solid fuel with an uninterrupted flow of water as the coolant and heat transfer medium. Terrestrial Energy's IMSR design approaches this central challenge in a very different way – the nuclear fuel is dissolved in the coolant, a molten salt, to create a liquid fueled reactor system. This fundamentally different system has superior thermodynamic properties – it has the ability to dissipate heat through the natural mechanism of convection – unachievable with a solid fuel reactor. This key innovation is the heart of the IMSR's many virtues.

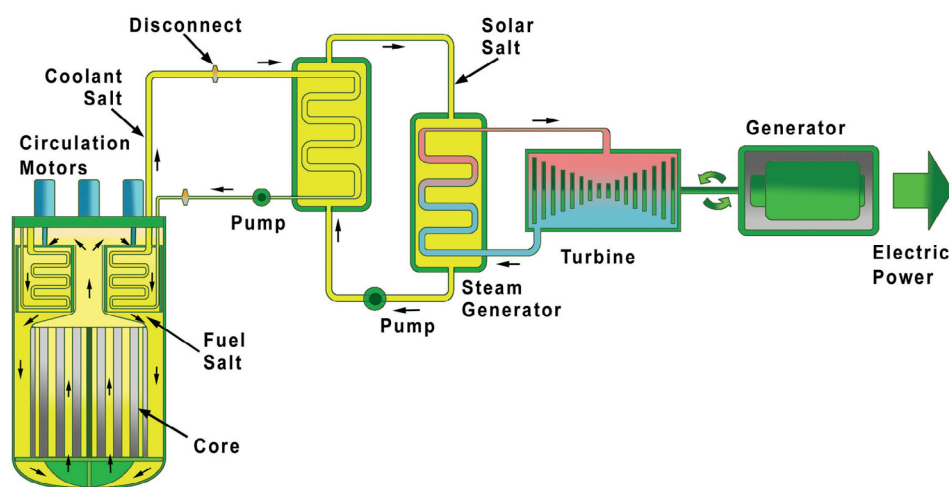
### Technology Readiness

The IMSR is a thermal spectrum, graphite moderated, molten fluoride salt reactor system, fueled by low enriched uranium. This has been successfully demonstrated at Oak Ridge National Laboratory, Tennessee, during its MSRE (Molten Salt Reactor Experiment) program. The IMSR is hence a proven reactor technology. However, an industrial reactor must be simple and safe to maintain and operate, and must have a high capacity factor. These additional requirements have historically created technology challenges to the commercialization of a Molten Salt Reactor. The IMSR addresses these remaining technology challenges, including the materials' lifetimes challenges, through the IMSR's innovative "integral" core architecture. Central to this is a replaceable reactor core, the "Core-unit", which has a 7-year operating life. Today there are no fundamental technical challenges that the IMSR must overcome. The IMSR project is on a track of increasingly detailed nuclear engineering work to advance it through licensing and construction. With this profile of technology readiness, Terrestrial Energy expects to have the first IMSR commercial plant operational by the 2020s.

### Commercial Advantages

There is a fundamental relationship in reactor design between the reactor's regulatory "Safety Case" and its economics. Solid fuel reactors cannot escape the economic consequences caused by the thermodynamic and material limitations of a solid fuel reactor system. The IMSR does not have these limitations and so has the potential to have superior economics, estimated at a LCOE of 4 to 5 cents (USD) per kWh for a Small Modular IMSR power plant, with an instant overnight capital cost of \$2 to \$3 (USD) per Watt. The IMSR represents industrial heat that can compete with fossil fuel combustion for industrial heat and power generation in global markets.

### Schematic of IMSR Power Plant



### IMSR Core-unit



### Market Opportunity

The IMSR is an energy technology that can support 24/7/365 industrial heat and power, and has strong load-following characteristics. The IMSR can match the industrial convenience of fossil fuel use and can also back-up the intermittent supply of wind and solar power provision. As a Small Modular Reactor with truck shippable components, the IMSR has an extremely broad industrial market footprint: heat for on- and off-grid power generation; for chemical and petrochemical production, including ammonia, hydrogen, syn-fuel production; and for natural resource extraction. Terrestrial Energy estimates the IMSR market to be \$5Tn per year by revenues, 10 times larger than the defense and aerospace sector. This defines the market opportunity for the IMSR and for Terrestrial Energy's industrial development partners.

## IMSR Development

Terrestrial Energy plans to build and commission, with industrial partners, the first commercial IMSR power plant in the 2020s. This plant, a 400 MWth (190MWe) Small Modular Reactor will be built at a site in Canada and operated under license from the CNSC (Canadian Nuclear Safety Commission). The CNSC, a nuclear regulator of international standing, is known for its graduated, principles-based and risk-informed regulatory program. The Company is executing a four-phase business plan to achieve its 2020s deployment objective. It has completed Phase I and has commenced Phase II, a two-year phase that concludes in 2017 with the completion of IMSR basic engineering and of the first stage of the CNSC's Vendor Design Review process. These milestones are expected to support further strategic industrial engagement and an advance to Phase III, the IMSR detailed engineering, licensing and construction stage. In February 2016 the Company began the CNSC's Vendor Design Review and has formally commenced regulatory engagement, the first step of a clear regulatory pathway to deployment.

## Board of Directors

### Simon Irish – Director, CEO, Co-Founder:

20 years investment banking and asset management experience in London and New York. MA Cambridge University. MSc London Business School

### David LeBlanc, PhD – Director, President, CTO, Co-Founder:

Globally recognized expert scientist in field of MSR technologies. PhD in Physics from University of Ottawa

### Canon Bryan – Director, CFO, Co-Founder:

Held multiple executive positions and served on boards of private and public companies in Canada and the US

### David Hill, PhD – Director:

Held executive management positions at Argonne, Oak Ridge and Idaho National Laboratories. PhD in Mathematical Physics from Imperial College, and MBA from University of Chicago

### Hugh MacDiarmid – Director, Chairman:

Former president and CEO of Atomic Energy of Canada Limited. MBA Stanford University. Former partner with McKinsey & Company

### Louis Plowden-Wardlaw – Secretary:

Previously Legal Counsel and Head of Legal, Royal Bank of Canada, London LLB (Law) University of Birmingham. MSc London Business School

## Advisory Board

### Technical

- **Paul Blanchard, PhD** – Strategic Communications Consultant
- **J. R. (Dick) Engel** – Chief Engineer of ORNL's MSRE during its MSR Program
- **Ray O. Johnson, PhD** – former CTO of Lockheed Martin Corporation

### Industrial

- **Thomas Drolet** – Former CEO and President of Ontario Hydro International
- **E. James Reinsch** – Former President Bechtel Nuclear. Director of Ontario Power Generation and ENEC (Emirates Nuclear Energy Corporation)

### Regulatory

- **Julian Kelly, PhD** – Nuclear fuel technology expert and previously Australian nuclear attaché to the IAEA (International Atomic Energy Agency)
- **Jeffrey Merrifield** – Former two-term NRC Commissioner. Former Senior Vice President of Shaw Group and Chicago Bridge & Iron. Legal Counsel to International Advisory Board

### Environmental

- **Travis Bradford** – Professor (energy and natural resource markets, and innovation) SIPA, Columbia University.
- **James Cameron** – Advisor to governments, heads of states and sovereigns on climate change and sustainability matters
- **Ben Heard** – Climate change and sustainability consultant, executive director of Think Climate Consulting
- **Christine Todd Whitman** – Former Head of the US EPA and former governor of New Jersey. Director of United Technologies and Texas Instruments

### Financial

- **Robert Litterman, PhD** – Former head of risk at Goldman, Sachs & Co. prominent in global institutional investment management community

## Corporate Industrial Advisory Board

### Power Utilities



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**Mark Reddemann**  
Chief Executive Officer



Represented by:  
**Jeffrey Lyash**  
President &  
Chief Executive Officer



Represented by:  
**William Levis**  
President &  
Chief Operating Officer



Represented by:  
**Stephen Kuczynski**  
Chairman, President &  
Chief Executive Officer



Represented by:  
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Director of Research and  
Advanced Engineering

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