

TERRESTRIAL
ENERGY

POWERPOINT 1

TERRESTRIAL
ENERGY

“High impact, transformative technology”

August 2017

- Private and Confidential -

THE INTEGRAL MOLTEN SALT REACTOR – IMSR®

An Advanced Reactor

- Liquid-fueled reactor system - fundamentally different

Proven and demonstrated technology

- Ran successfully for over 4 years at Oak Ridge National Laboratory

Canadian and US government support

- First and only Advanced Reactor to reach the ‘invitation only’ second stage of US Department of Energy loan guarantee program (\$1 Bn)
- First Advanced Reactor awarded Canadian government grant (C\$6 Mn) from Sustainable Development Technology Canada program
- Two US government “Gateway for Accelerated Innovation in Nuclear” (GAIN) grant awards (\$500k) - US Department of Energy

Patents on IMSR® technology in nationalization phase and part of Company’s broader portfolio of IP rights

Terrestrial Energy’s key commercial claim:

IMSR® power plants are a low cost clean energy alternative to fossil fuel combustion and they can be deployed in the 2020s



OFFICERS AND DIRECTORS



Simon Irish – CEO, Director

- 20 years investment banking and investment management experience in London and New York.
- Former head of Man Global Strategies in North America, a division of Man Group Plc.
- MA Cambridge University. MSc London Business School



David LeBlanc, PhD – CTO, Director, President

- Globally recognized expert scientist in field of MSR technologies
- PhD in Physics from University of Ottawa
- Over a decade of post-doctoral research focused on design improvements to facilitate the commercial development of MSR technologies in the modern economy



Canon Bryan – CFO, Director

- Held multiple executive positions and served on boards of private and public companies in Canada and the US
- Business experience principally in the nuclear fuel and exotic metals sectors and has extensive corporate development databases in these industries



David Hill, PhD – Director

- Extensive nuclear project, research and laboratory management experience
- Held executive management positions in the foremost national nuclear laboratories in the US from 1984 to 2012, including Argonne, Oak Ridge and Idaho National Laboratories
- PhD in Mathematical Physics from Imperial College, and MBA from University of Chicago



Hugh MacDiarmid – Chairman, Director

- Former president and CEO of Atomic Energy of Canada Limited
- Over a 35+ year career held numerous executive management positions in technology-intensive businesses and transportation-related industries
- Former partner with McKinsey & Company, a leading international management-consulting firm. MBA Stanford University.



Louis Plowden-Wardlaw – Secretary and General Counsel

- Experienced lawyer and executive with more than 20 years' experience in private practice, and in-house in public and private companies
- Has handled numerous debt and equity capital raisings and has managed both transactional and litigious relationships, interfacing with regulatory authorities as required
- LLB University of Birmingham. MSc (Finance) from London Business School

MANAGEMENT

William Smith, P.Eng. – Senior Vice President of Operations and Engineering

- 35+ years experience in nuclear power industry in Canada, with Ontario Hydro and Ontario Power Generation
- Former Senior Vice President of Siemens Canada, a \$3.2 Billion annual turnover organization with 4,800 personnel
- BEng from Carleton University and MBA from Schulich School of Business at York University

Rob Bodner, P.Eng. – Engineering Director

- Experienced advanced nuclear development specialist
- 25+ years of nuclear industry leadership in product development, testing, qualification, design, commissioning and operation of research and power reactors
- Represented Canada in the Generation IV International Forum while with AECL, following which developed a specialized focus on the MSR

Robert Ion, PhD – Licensing Manager

- 25+ years experience in the nuclear industry
- Experience in projects including pre-licensing support for AECL's new build initiatives in Canada, UK and US, as well as project management on the Embalse nuclear power plant life extension project.
- Masters and PhD in Nuclear Engineering from the University of Missouri-Columbia and a Project Management certificate from PMI

Victor Snell, PhD – Safety Manager

- 42 years of nuclear experience.
- Formerly Director of Safety and Licensing at AECL-CANDU, and Program Director of the University Network of Excellence in Nuclear Engineering (UNENE) from 2008-2016, and has eighty publications on Reactor Safety and Licensing
- BSc in Physics from University of Manitoba, MSc and PhD in Theoretical Physics from University of Toronto, and Post Doctoral Fellow in Theoretical Physics at University of Cambridge.

Robin Rickman – VP Business Development

- 42 years' nuclear experience including US Department of Defense, Department of Energy, and the civil nuclear power industry
- Former director of the Westinghouse Small Modular Reactor Program
- Bachelor of Science in Business Management from the University of Phoenix

ADVISORY BOARD

Technical

- J. R. (Dick) Engel – Chief Engineer of the first operating Molten Salt Reactor at Oak Ridge National Laboratory, TN
- Ray O Johnson, PhD – Former CTO of Lockheed Martin Corporation
- Regis Matzie, PhD – Former CTO of Westinghouse

Power Utility and Industrial

- Fred Buckman, PhD – Utility executive. Former President/CEO of the Shaw Group and PacifiCorp
- Thomas Drolet – Former President, CEO of Ontario Hydro International
- James Reinsch – Director of ENEC and OPG. Former President of Bechtel Nuclear

Regulatory

- Julian Kelly, PhD – CTO, Thor Energy. Former Australian Nuclear Attaché to IAEA.
- Jeffrey Merrifield, JD – Former NRC Commissioner and former SVP of the Shaw Group
 - Legal Counsel to Advisory Board
- Christine Todd Whitman – Former Governor of New Jersey and former head of the US EPA

Environmental

- James Cameron – Former Chairman of Climate Change Capital
- Travis Bradford – Professor (energy and natural resource markets, and innovation), SIPA, Columbia University
- Ben Heard – Professor, Clean Energy Systems, University of Adelaide

Financial

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

CORPORATE INDUSTRIAL ADVISORY BOARD



Power Utilities

- Duke Energy owns and operates six nuclear power stations in North Carolina and South Carolina, USA.
 - Represented by John W. (Bill) Pitesa, Chief Nuclear Officer
- Energy Northwest operates the Columbia Generating Station, located in Richland, Washington, USA.
 - Represented by Mark Reddemann, Chief Executive Officer
- NB Power owns and operates the Point Lepreau Nuclear Generating Station, New Brunswick, Canada.
 - Represented by Gaëtan Thomas, President and Chief Executive Officer
- Ontario Power Generation owns and operates the Pickering and Darlington Nuclear Power Stations in Ontario, Canada.
 - Represented by Jeff Lyash, President and Chief Executive Officer
- PSEG Nuclear operates the Salem and Hope Creek Nuclear Generating Stations in Lower Alloways Creek, New Jersey, USA, and is a part owner of the Peach Bottom Nuclear Generating Station in Delta, Pennsylvania, USA.
 - Represented by William Levis, PSEG Power, President and Chief Operating Officer
- Southern Nuclear Operating Company operates the Alvin W. Vogtle Electric Generating Plant near Waynesboro, Georgia, USA, and the Edwin I. Hatch Nuclear Plant near Baxley, Georgia, USA, and the Joseph M. Farley Nuclear Plant near Dothan, Alabama, USA.
 - Represented by Stephen Kuczynski, Chairman, President and Chief Executive Officer
- Tennessee Valley Authority operates seven reactors at three sites: Browns Ferry, Sequoyah, and Watts Bar. It also owns a number of sites of partially completed nuclear power plants, including the Clinch River in Oak Ridge, Tennessee.
 - Represented by Joseph (Joe) Grimes Executive Vice President for all TVA generation



Énergie NB Power



Industrial

- Caterpillar is the leading manufacturer of construction and mining equipment, diesel and natural gas engines, industrial gas turbines and diesel-electric locomotives.
 - Represented by Dan Henderson – Director of Research and Advanced Engineering

RECENT DEVELOPMENTS

| | | |
|-----------|------|---|
| December | 2015 | ✓ Closed C\$10mn Preferred Investment Round |
| 1Q | 2016 | <ul style="list-style-type: none"> ✓ Commenced regulatory engagement - signed CNSC Service Agreement for IMSR® Vendor Design Review ✓ Awarded C\$5.7 Mn Cleantech grant by SDTC Canadian Federal Government |
| April | 2016 | ✓ Formed Corporate Industrial Advisory Board with senior executives from ENW, OPG, PSEG, Southern Company |
| June | 2016 | ✓ Terrestrial Energy USA Ltd (TEUSA) awarded first grant from United States Department of Energy (USDOE), a small but significant award from DOE GAIN program |
| August | 2016 | <ul style="list-style-type: none"> ✓ C\$22.5 Mn funding milestone reached on completion of C\$5.3 Mn Preferred Round ✓ Duke Energy joins Corporate Industrial Advisory Board |
| September | 2016 | <ul style="list-style-type: none"> ✓ TEUSA receives invitation to submit Part II application for USDOE \$1 Bn loan guarantee ✓ NB Power joins Corporate Industrial Advisory Board |
| November | 2016 | <ul style="list-style-type: none"> ✓ TEUSA submits Part II loan guarantee application to USDOE ✓ Innovation Award by the Organization of Canadian Nuclear Industries (OCNI) |
| February | 2017 | <ul style="list-style-type: none"> ✓ Regis Matzie, former CTO of Westinghouse, joins Advisory Board ✓ TEUSA moves into due diligence with the USDOE for \$1 Bn loan guarantee |
| March | 2017 | ✓ TVA joins Corporate Industrial Advisory Board |
| June | 2017 | <ul style="list-style-type: none"> ✓ Commenced work for siting IMSR® power plant at Canadian Nuclear Laboratories ✓ TEUSA awarded second grant from DOE GAIN program |

Recent developments demonstrate strong business momentum

THE INTEGRAL MOLTEN SALT REACTOR (IMSR®)

IMSR® size:

3.6 m x 8 m
(12 ft x 26.7 ft)



Key innovation is the integration of primary reactor components

- Reactor core
- Primary heat exchanger
- Pumps

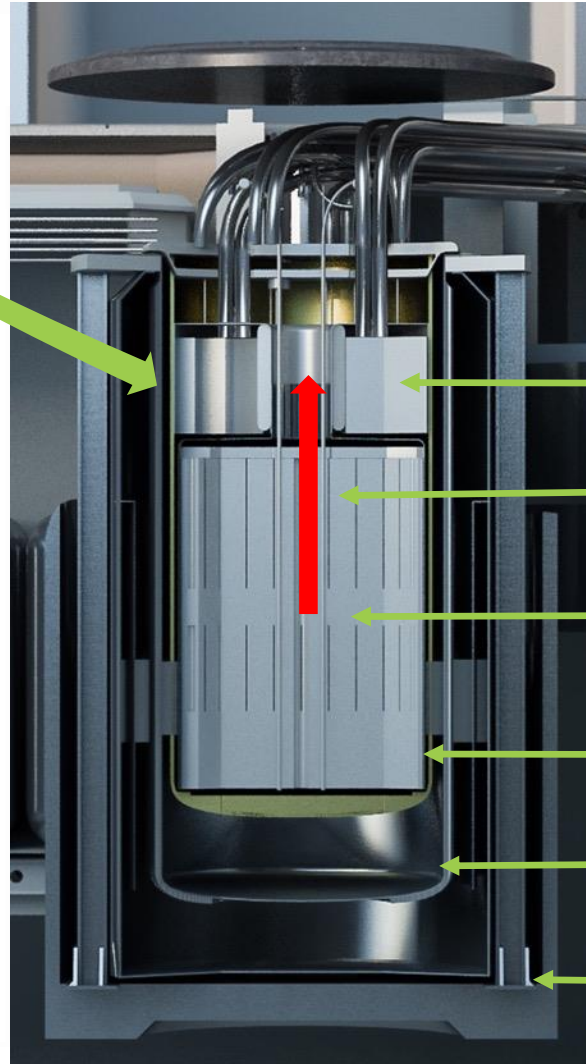
..into a sealed reactor vessel within a compact and replaceable unit

- For a 7-year operational life

This integral design promises high industrial value through

- Inherent safety
- Operational simplicity
- High capital recovery

Patent applications filed



IMSR® Core-unit in Containment and Silo

Primary Heat Exchanger

Flow of salt

Graphite Moderator

400 MWth Core-unit

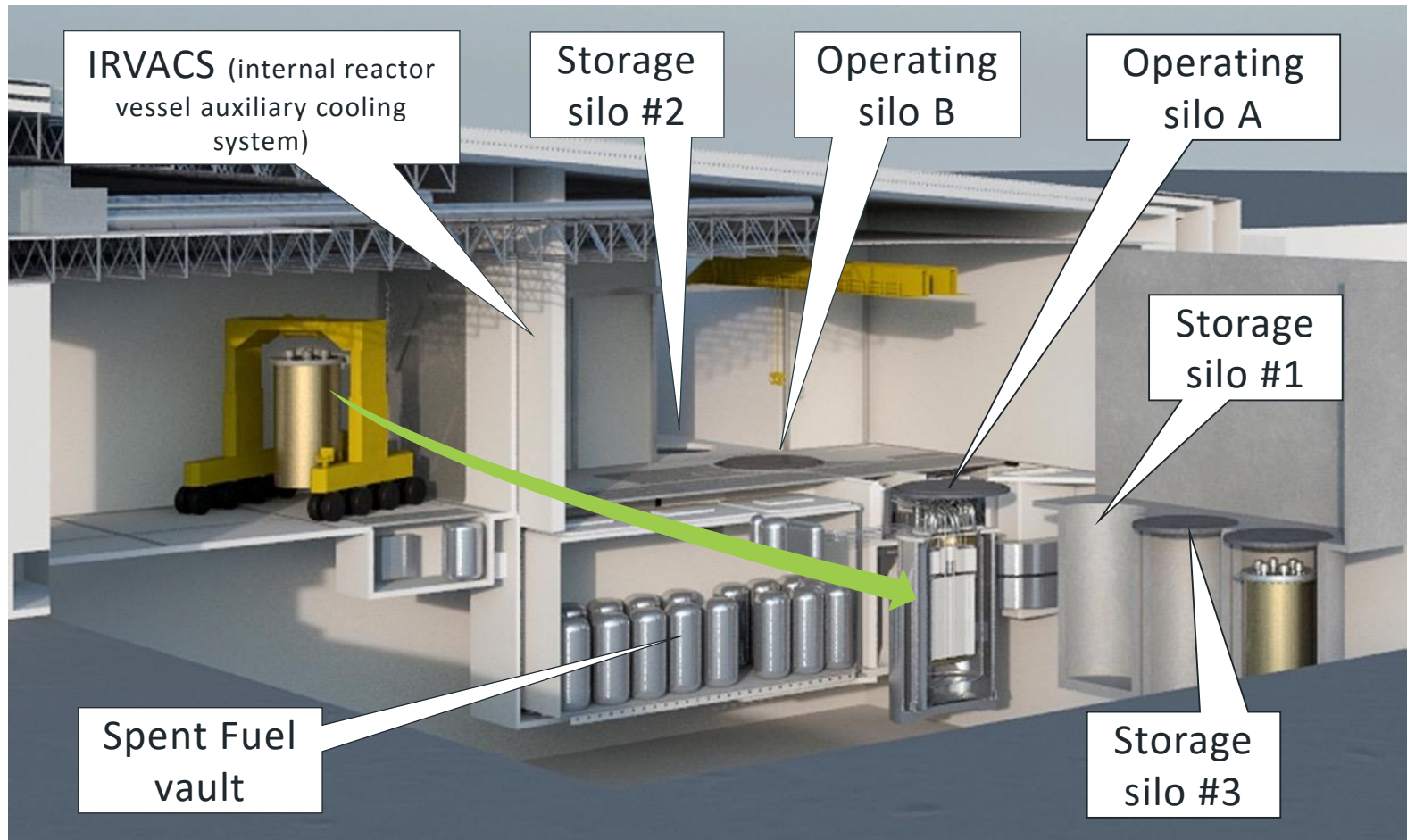
Guard Vessel and Containment

Operating Silo

IMSR400 PLANT PARAMETER SUMMARY

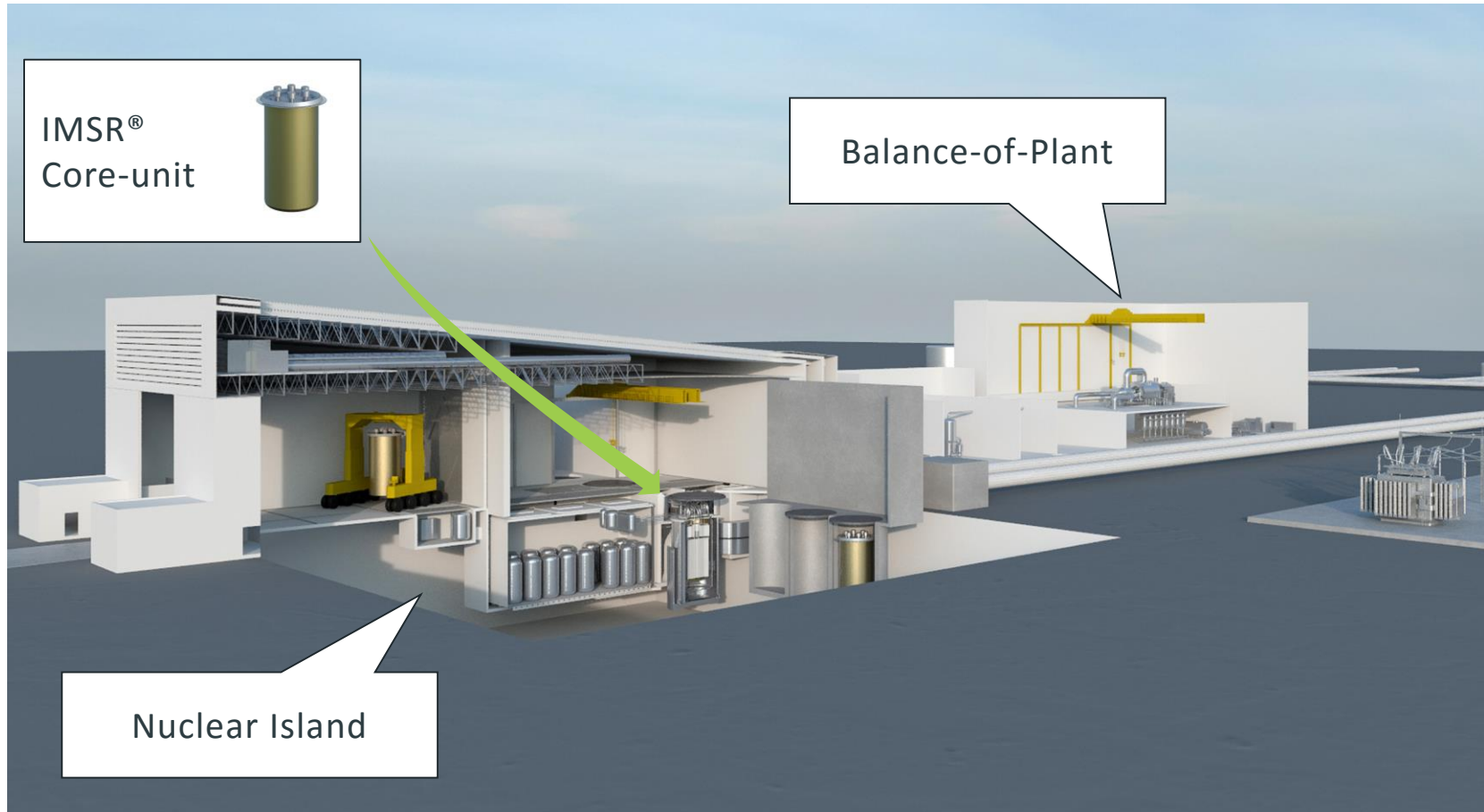
| IMSR400 Specifications | |
|---|---|
| Reactor Type | Liquid fueled molten salt |
| Neutron Spectrum | Thermal |
| Reactor Thermal Output | 400 MWth |
| Power Plant Electrical Output, gross | 192 MWe |
| Moderator | Graphite |
| Thermal Efficiency | 48% |
| Reactor Outlet Temperature | 704 °C / 1,299 °F |
| Solar Salt Delivery Temperature | 600 °C / 1,112 °F |
| Operating Pressure | Atmospheric |
| Fuel Salt | Common Fluoride Salts with UF ₄ (no Lithium and no Beryllium) |
| Fuel Enrichment | 4.95% |
| Make-up Fuel Enrichment | 2.03% |
| Reactor Vessel Diameter (Core-unit) | 3.5 m / 12 ft. |
| Reactor Vessel Height (Core-unit) | 8 m / 26.7 ft. |
| Core-Unit Weight (without Fuel) | 154 tonnes / 170 tons |
| Core-Unit Lifetime | Replaced every 7 years |
| Fuel-cycle Length | 84 months |
| Power Block Land Area | 3.6 hectares / 9 acres |
| Power Block plus Support Facilities Land Area | 6.8 hectares / 17 acres |
| Balance of Plant Open-cycle Cooling | 4.7 m ³ /sec / 75,000 gpm |
| Initial Uranium Load | 35 tonnes / 38.6 tons |

THE IMSR® CORE-UNIT IS A SEALED AND REPLACEABLE REACTOR CORE



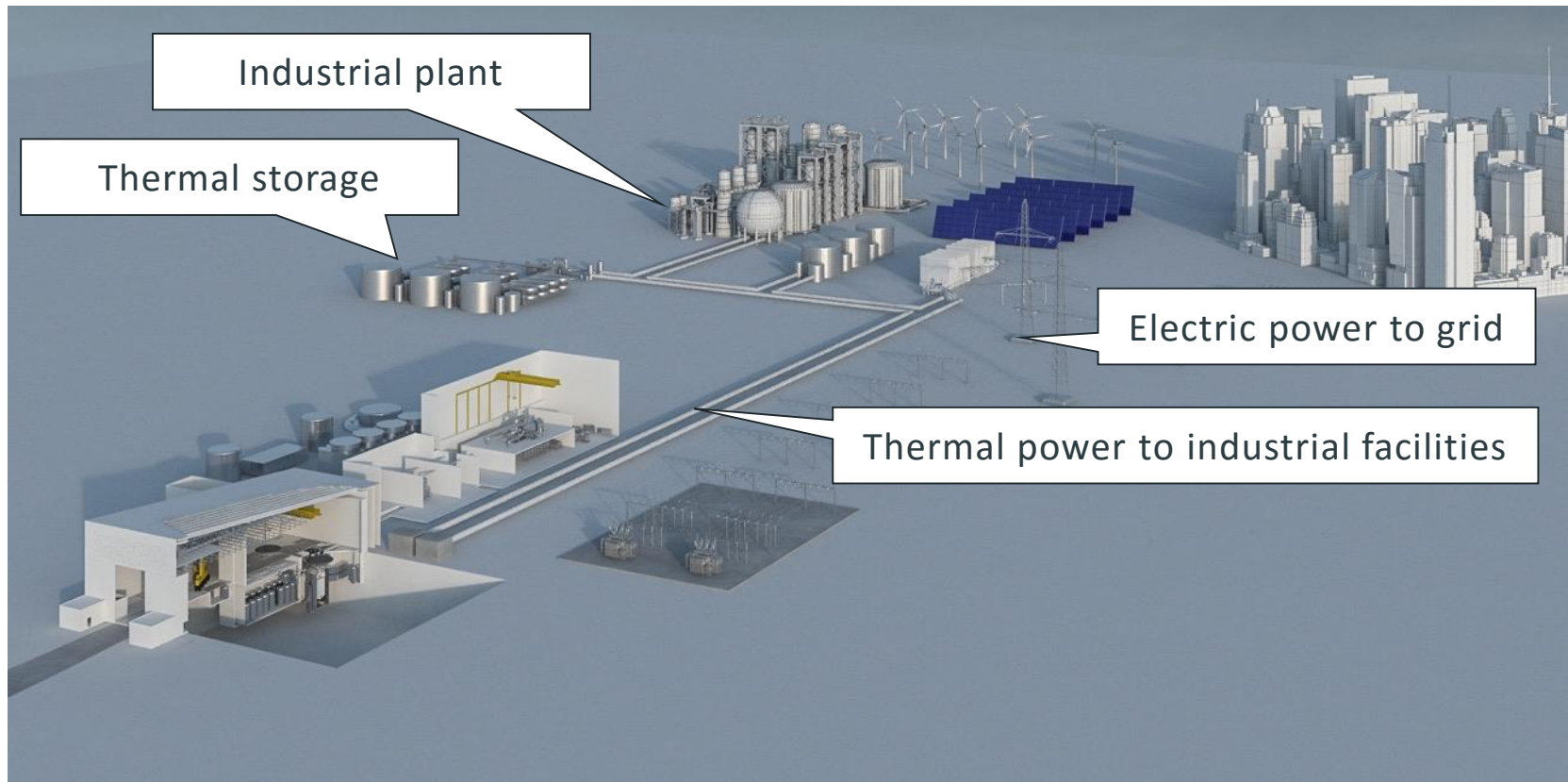
For simple and safe industrial operation

IMSR® PLANT CONSISTS OF NUCLEAR ISLAND & BALANCE-OF-PLANT



IMSR® Nuclear Island produces 600 °C industrial heat. Balance-of-Plant can be a broad range of industrial applications – not just power provision

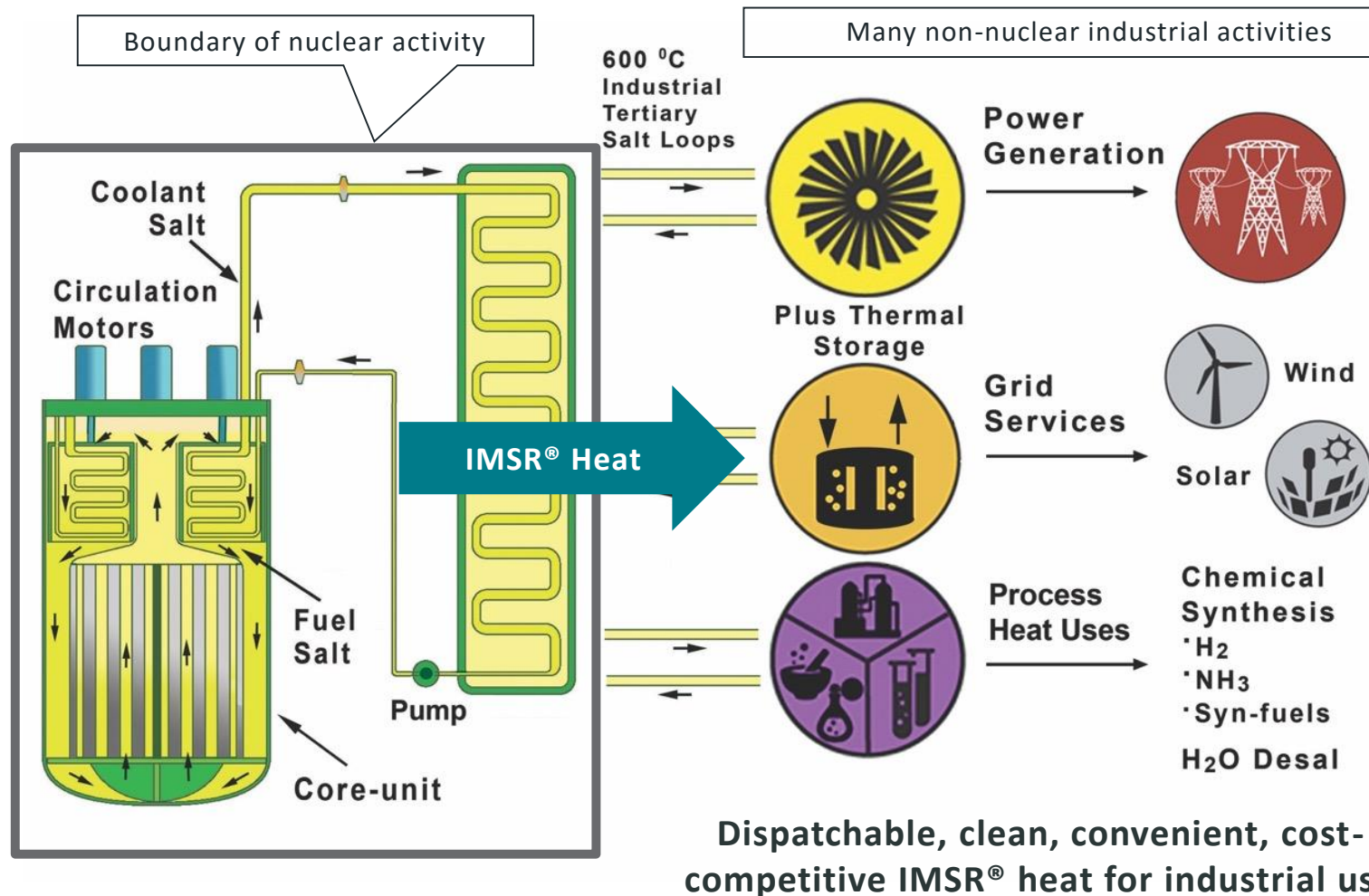
IMSR® IS FOR INDUSTRIAL HEAT USE AND ELECTRIC POWER PROVISION



IMSR® Nuclear Island produces 600 °C industrial heat

Balance-of-Plant can be a broad range of industrial applications – not just power provision

IMSR® IS FOR INDUSTRIAL HEAT USE AND ELECTRIC POWER PROVISION



IMSR® heat can couple conveniently with industrial users

IMSR® HAS MANY ADVANTAGES OVER THE CURRENT PRODUCT

| ADVANTAGE | IMSR® | PWR |
|--------------------------------------|--|--|
| Smaller reactor | 400 MWth | 3,000 MWth |
| Lower total CAPEX | \$700 Mn to \$800 Mn | \$8,000+ Mn |
| Lower pressure operation | 1 Atm with many cost, engineering and safety benefits | 172 Atms leading to increased complexity and economic penalty |
| Highly modular design | Standardization of components for factory production | Non standard and bespoke components |
| High temperature output | 600 °C | 290 °C |
| High thermal efficiency | 48% thermal efficiency and 40%+ greater revenues for electric power provision | 33% thermal efficiency resulting in low capital efficiency |
| Load following | Dynamic core and turbine for fast load response | Un-dynamic core and turbine limits use to grid baseload only |
| Inherent reactor control | Passive power management with many cost, engineering and safety benefits | Active engineered reactor control leading to increased complexity and economic penalty |
| Passive decay heat management | Passive decay heat management with many cost, engineering and safety benefits | Active decay heat management leading to increased complexity and economic penalty |
| Broader industrial utility | Heat for many industrial processes and for power generation | Grid baseload power generation only |
| Higher value product | High-grade heat delivered in the form of a common industrial salt circulating in a low pressure system | Low grade heat circulating in a high pressure system |

COMMERCIAL VALUE OF IMSR® POWER PLANTS

Cost competitive

- Compared to Conventional Reactor power plants, IMSR® power plants:
 - Take half the time to build
 - Require <1/7th of the absolute CAPEX
 - Provide electric power at half the cost
 - Provide heat that is cost competitive with a natural gas fueled boiler package
- Power and heat that is cost competitive with fossil fuel combustion

Versatile

- Dispatchable heat and power
- Coupled simply to industrial processes
 - Heat delivered by common industrial salt
- Small land footprint
- Low water requirement

Clean

- No NOX, SOX or CO2 emissions

Deployable

- First deployments in Canada and US in 2020s
- Technology proven and demonstrated

Scalable

- Modular design for factory production of modular components
- Uses fuels and materials from current supply chain
- Ordinarily financeable with much lower project risks
 - <4 year construction time

Credible

- Commenced regulatory actions
- Secured Canadian and US government funding
- Engaged with power utilities

We are deploying IMSR® power plants at a time of escalating global market and policy need for clean and cost-competitive energy

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