Leading the Way to
A Bright Energy Future

Council for Clean & Reliable Energy
April 11, 2019

Terrestrial Energy

- Terrestrial Energy is an Advanced Reactor (GENIV) global leader, located in Canada
- Terrestrial Energy is on a clear path to market with its IMSR® Advanced Reactor
  - *195 MWe, liquid-fueled (molten salt), graphite moderated, thermal spectrum*
- In 2015, Terrestrial Energy commenced the nuclear regulatory process
  - *Completed CNSC VDR Phase 1 in November, 2017*
  - *Commenced CNSC VDR Phase 2 in December, 2018*
- IMSR® development is backed by industry policy and with multiple grant awards from US and Canadian governments
- IMSR® deployments supported by leading nuclear utilities
  - *Targeting first sites in Ontario*
  - *Passed Stage 1 of AECL/CNL Site Application Process*

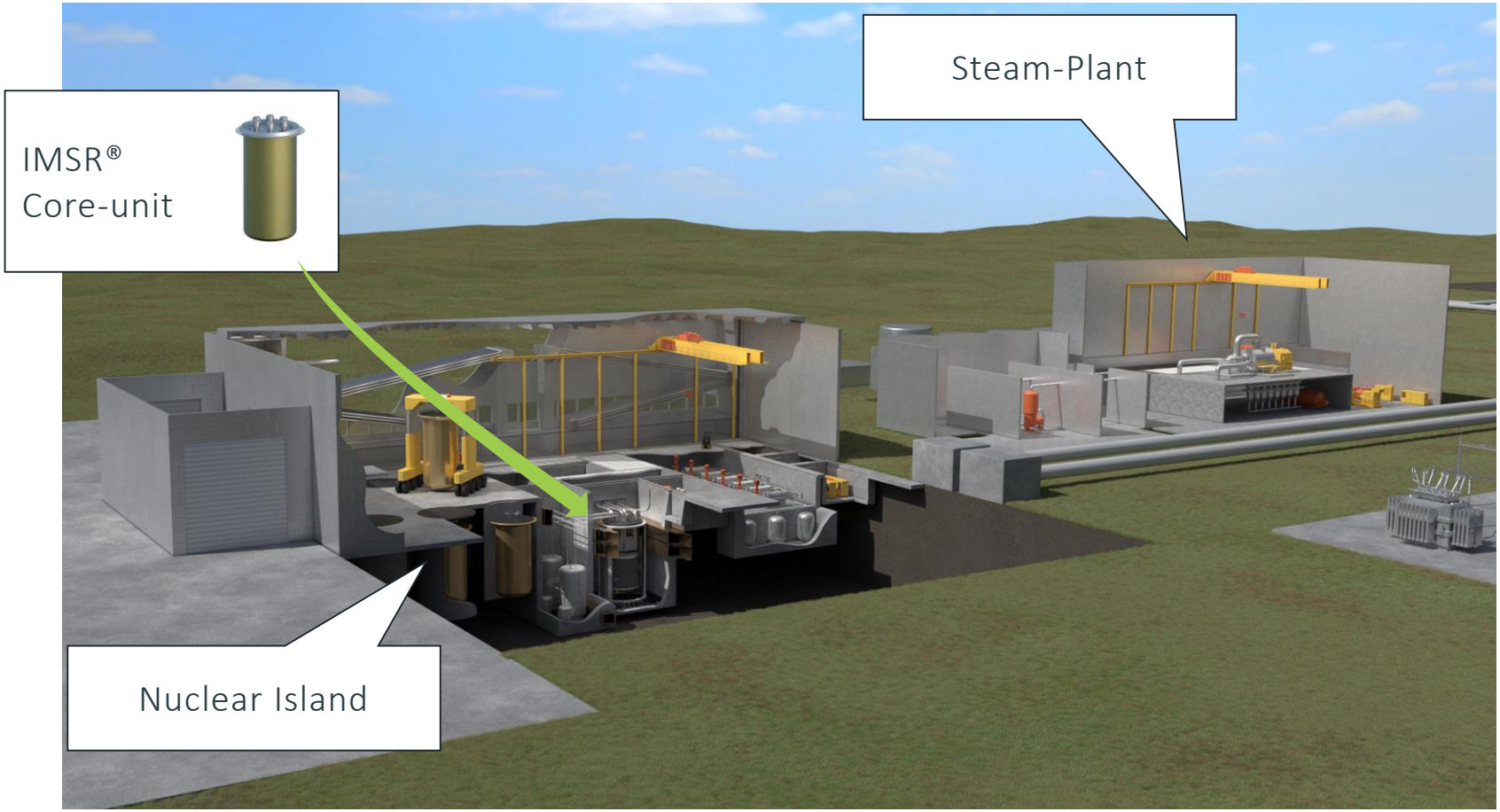
IMSR® technology will transform global energy markets

Generation IV Nuclear Energy Systems

System	Goal
Sustainability-1	Generation IV nuclear energy systems will provide sustainable energy generation that meets clean air objectives and provides long-term availability of systems and effective fuel utilization for worldwide energy production.
Sustainability-2	Generation IV nuclear energy systems will minimize and manage their nuclear waste and notably reduce the long-term stewardship burden, thereby improving protection for the public health and the environment.
Economics-1	Generation IV nuclear energy systems will have a clear life-cycle cost advantage over other energy sources.
Economics-2	Generation IV nuclear energy systems will have a level of financial risk comparable to other energy projects.
Safety and Reliability-1	Generation IV nuclear energy systems operations will excel in safety and reliability.
Safety and Reliability-2	Generation IV nuclear energy systems will have a very low likelihood and degree of reactor core damage.
Safety and Reliability-3	Generation IV nuclear energy systems will eliminate the need for offsite emergency response.
Proliferation Resistance and Physical Protection	Generation IV nuclear energy systems will increase the assurance that the fuel is unattractive and the least desirable route for diversion or theft of weapons-usable materials and provide increased physical protection against acts of terrorism.

GEN IV International Forum℠

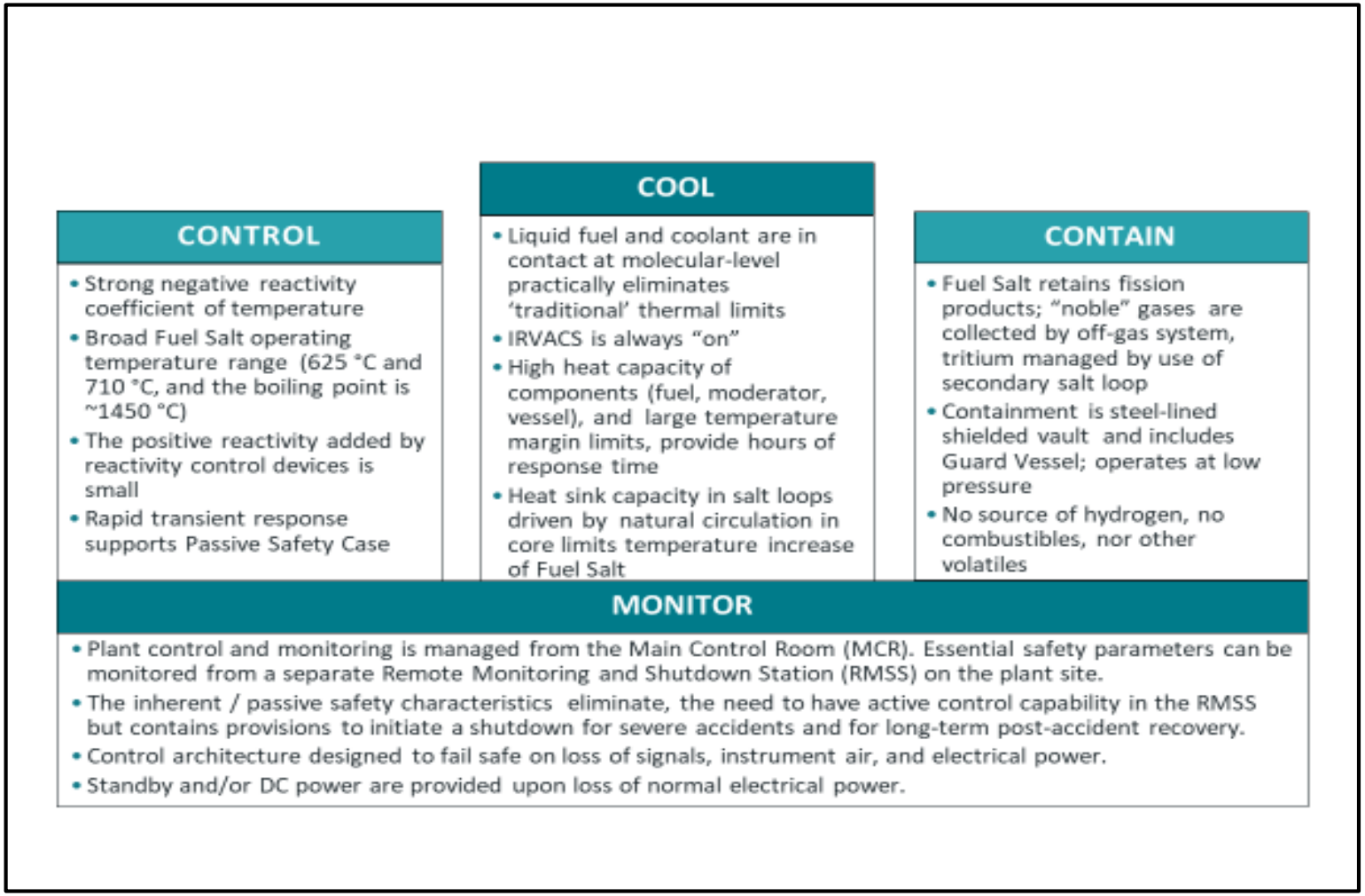
IMSR® plant consists of nuclear island and balance-of-plant



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

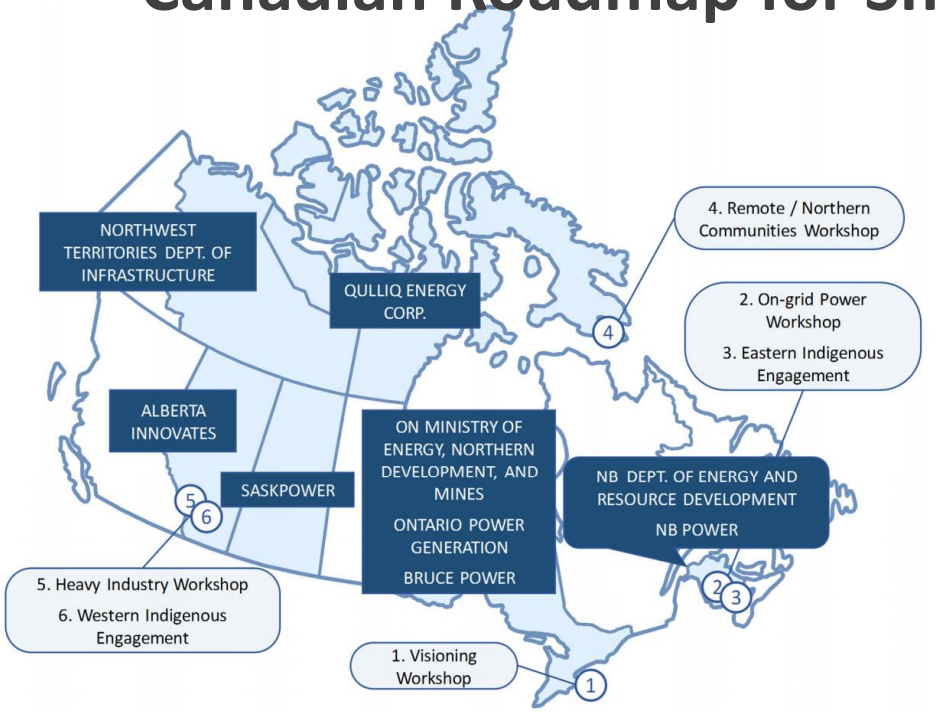
IMSR Safety Characteristics

Passively and Inherently Safe



Safety Case and Cost Innovation are Strategic Cornerstones

Canadian Roadmap for Small Modular Reactors



Voting Members

Non-voting Members

Natural Resources Canada

Ressources naturelles Canada

Four Main Themes

Demonstration and Deployment

- *Demonstration Projects and Risk Sharing*

Policy, Legislation, Regulation

- *Assessments, Nuclear Liability and Regulatory efficiency, Nuclear Secruity and Waste Management*

Capacity, Engagement and Public Confidence

- *Indigenous Engagement*

International Partnerships and Markets

- *International Enabling Frameworks*

Visit: https://smrroadmap.ca/

Towards Commercialization

Engineering and R&D

- Nuclear Systems Design and Safety Analysis
- R&D testing
  - Fuel & Chemistry
  - Physics
  - Thermalhydraulics
  - Materials
- Environmental Assessment
- Cost estimates CAPEX, OPEX and LCOE modeling
- CNSC VDR Phase 2
- Systems Engineering Program & Digital Platform

Financing Operations

- Leverage government funding in Canada, US and UK through both established and special purpose programs
- Leverage private capital investments across the international finance community
- Manage Engineering and R&D work programs on the basis of the value for money principle

Business Development

- Focus on Ontario sites with target to initiate 4-step process
- Sustain progress in US and UK
- Cultivate supply chain partners with focus in Canada, US and UK
- Explore emerging markets
- Business development and government relations capabilities in target markets

THANK YOU!