

SMR - Projetos em andamento e desafios futuros

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Innovative Solutions Portfolio

Meeting customers' **flexible energy** demands by shaping today's and tomorrow's energy landscape

AP1000® PWR
~1200 MWe



AP300™ SMR
300 MWe



eVinci™ Microreactor
5 MWe



AP-300 Small Modular Reactor



Leveraging AP1000 technology with demonstrated industry leading reliability



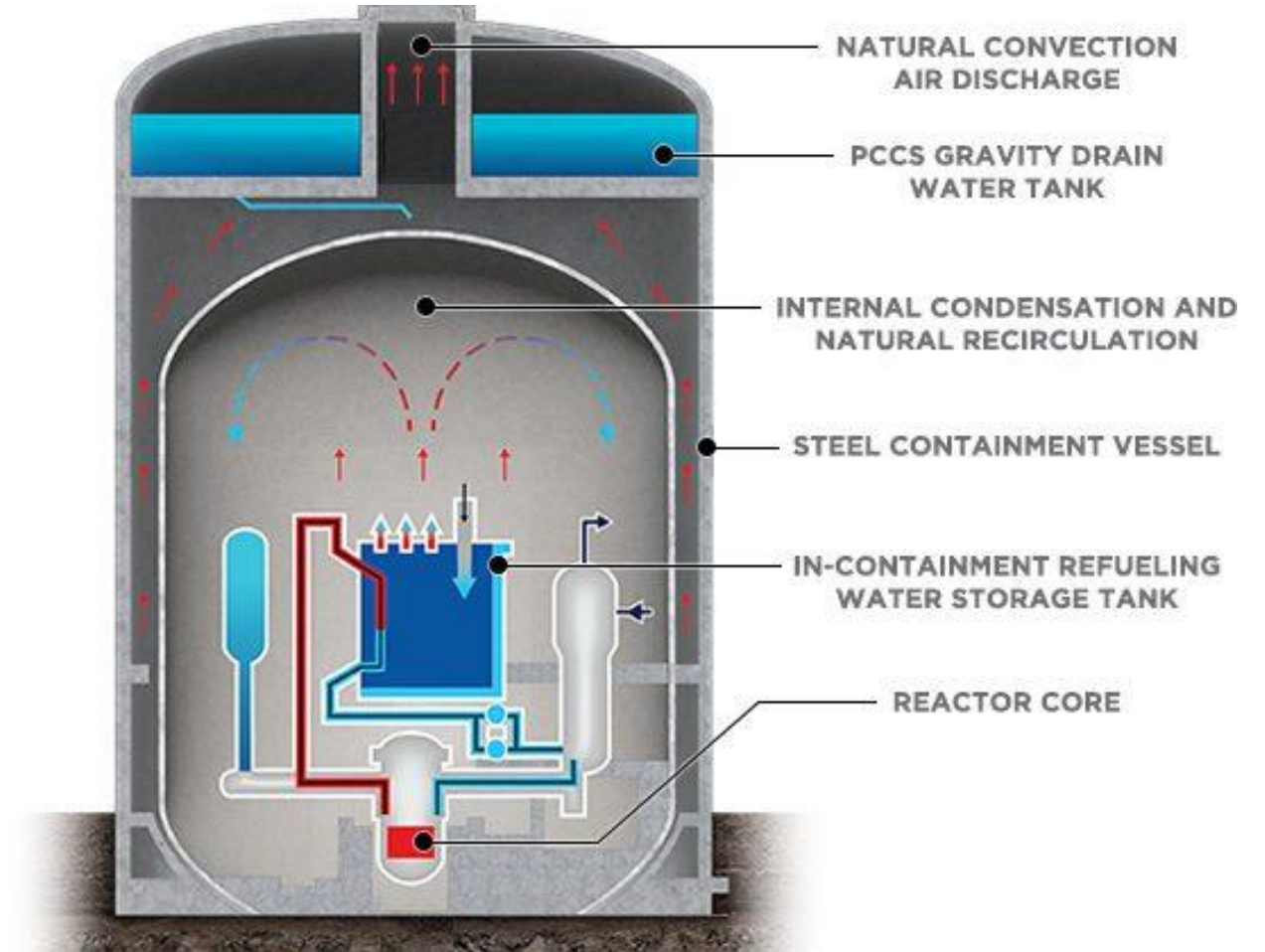
300MWe (900MWth) 1-loop PWR with demonstrated reliability



Westinghouse AP1000 reactor passive safety technology



Reduces overall components creating a simpler plant compared to other SMRs



AP-300 Small Modular Reactor



Leveraging AP1000 technology with demonstrated industry leading reliability



Identical Technology as AP1000 including:

- Design & licensing methodologies
- Major equipment & components
- Passive safety systems
- Proven Fuel
- I&C systems
- Proven Supply Chain
- Constructability lessons learned
- Steel-Composite structural modules
- O&M procedures & practices
- Fast load follow capabilities



Readily Deployable by 2030's

Proven pedigree throughout the plant lifecycle ensures deployment & operations success



Technology Readiness

Tens of millions of hours dedicated to AP1000 reactor development
5 AP1000 reactors operating,
1 nearing completion, more pending



Licensing Certainty

Based on licensed & operating AP1000 technology, the only technology to be fully licensed by the U.S NRC



Established Supply Chain

Incumbent AP1000 suppliers can deliver major equipment
Demonstrated capability to localize supply chain



Modular Construction

Simplified, modular, ultra compact nuclear island (costliest portion of any reactor) reduces construction costs/schedule



Reliable O&M

Record setting AP1000 operational & outage performance
Targeting +80-year life cycle



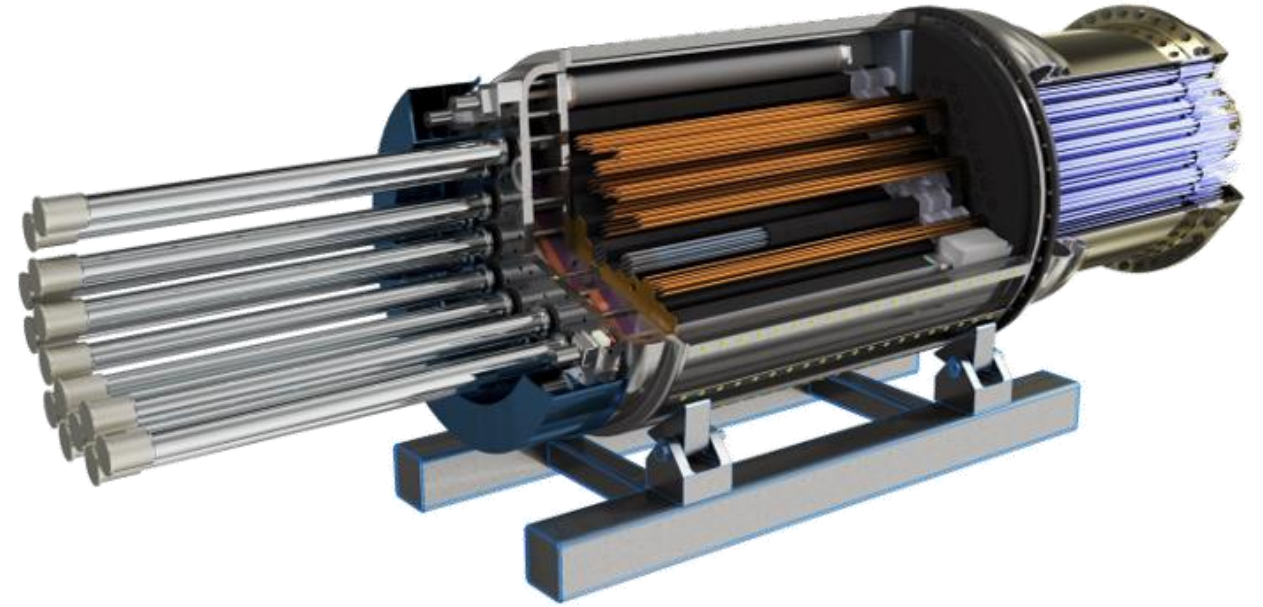
eVinci: Capable and Simplicity by Design



Nuclear battery designed for safe and reliable electricity and heat generation

Technical Capabilities

- 5 MWe with ~7MWth @ 170° C usable heat // 13.5MWth @ > 700° C heat only
- Scalable
- Minimum 8 year refueling cycle
- Eliminates spent fuel storage on site
- High speed load-following capability
- Transportable
- Minimal onsite personnel
- Mature technology, manufacturing, and regulatory readiness



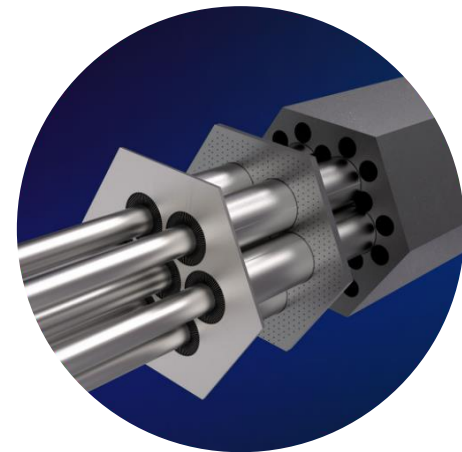
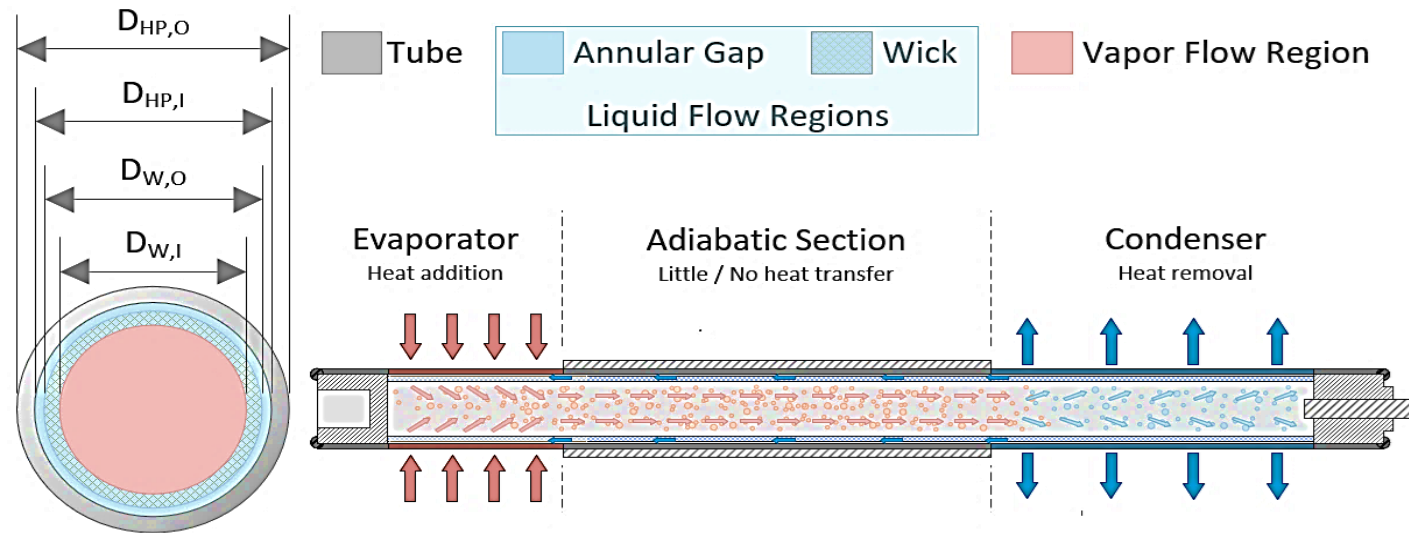
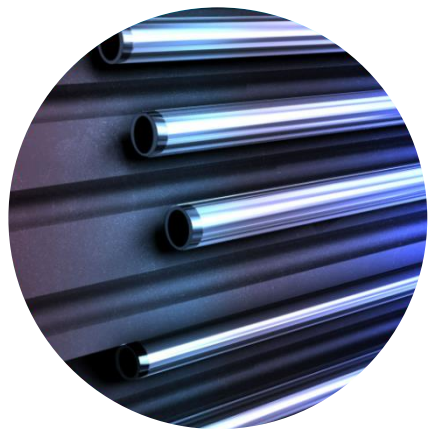
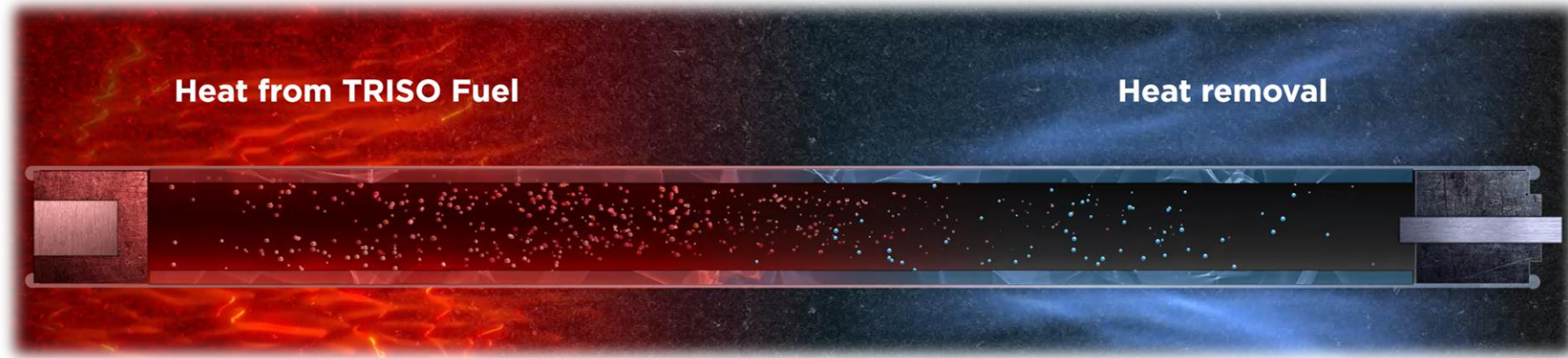
**Learn more
about eVinci**

**Minimal moving parts due to passive cooling
through heat pipe technology**

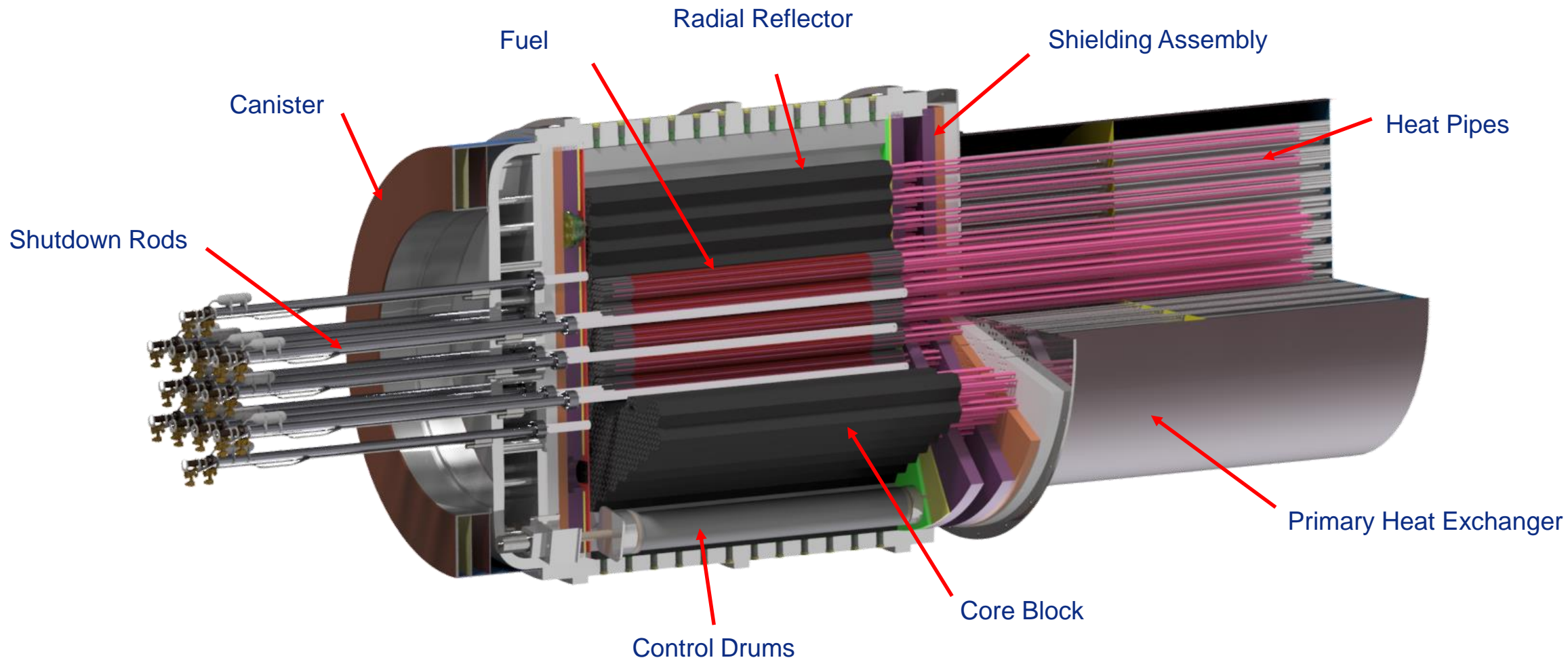
Heat Pipes Enable the Fission Battery Model



Very Low Pressure • Passive • Mature technology



eVinci main components view



eVinci Site



60x60m building

Modular systems delivered in containers

Security Barriers

Microreactor Replacement Enclosure Bay

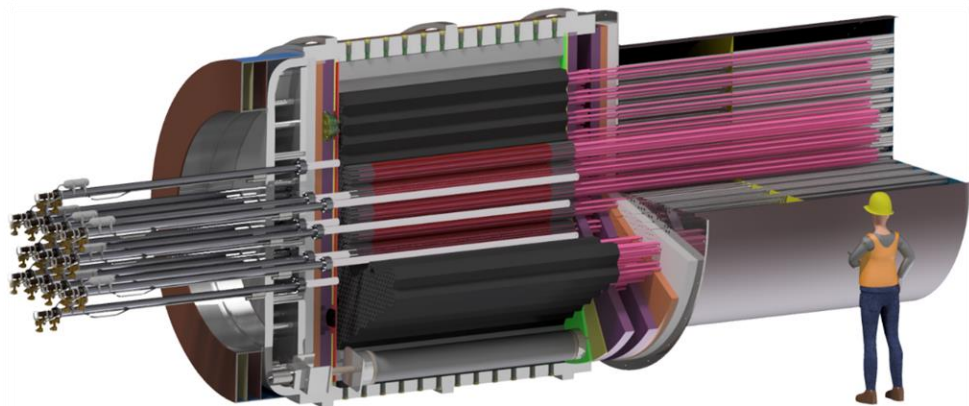
Primary Microreactor Unit Enclosure Bay

Power Conversion System

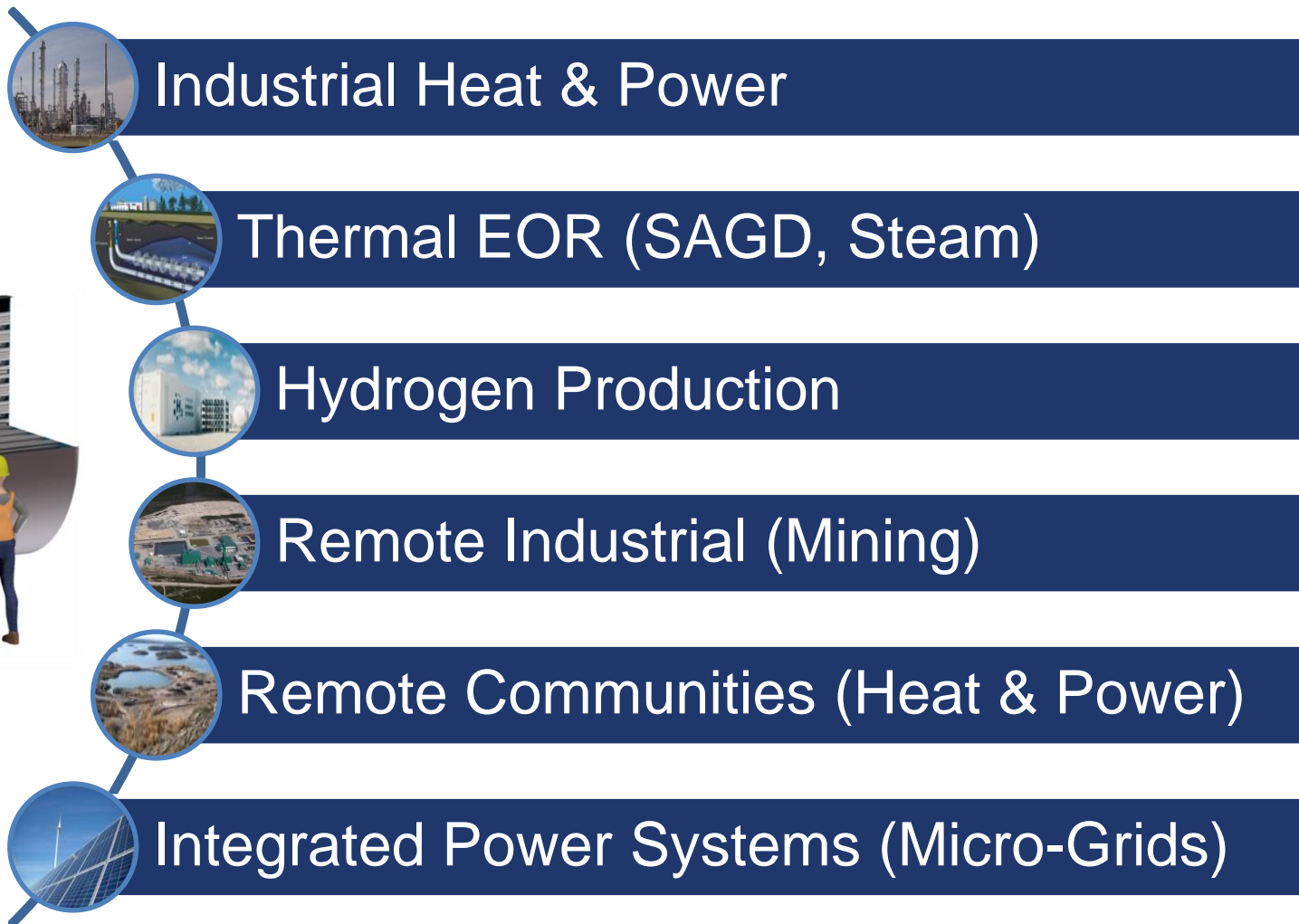
eVinci Microreactor

Instrumentation and Control

eVinci distributed energy wherever it's needed



Power & Heat via eVinci™ Microreactor

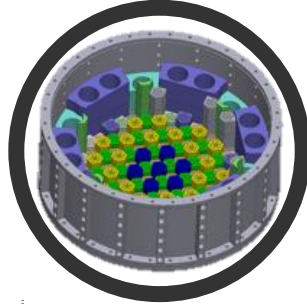


Technology Development and Timeline



2021-2022

- Conceptual design complete
- Electrical demonstration unit operational
- Initiated licensing engagement with US and Canadian regulators



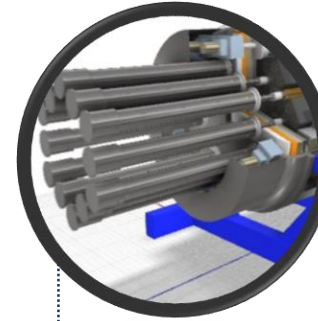
2023

- NTR design for procurement
- Integrated manufacturing demonstrations and prototyping
- Separate effect and component testing



2024-2025

- NTR component fabrication
- Criticality, transient, and irradiation testing
- eVinci design for manufacturing



2026-2027

- NTR installation and operation
- Initiate eVinci manufacturing
- Power conversion system testing



2027+

- Analysis code validation
- eVinci design complete
- Receive regulatory licensing approvals

US NRC pre-licensing engagement
(Technical papers & Topical report submittals)

Prepare & submit design license to NRC

NRC review & approve design certification

Canadian Nuclear Safety Commission (CNSC) vendor design review

Other countries' licensing activities

Thank You



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