NUCLEAR POWER FROM

SMALL MODULAR REACTORS (SMRs)

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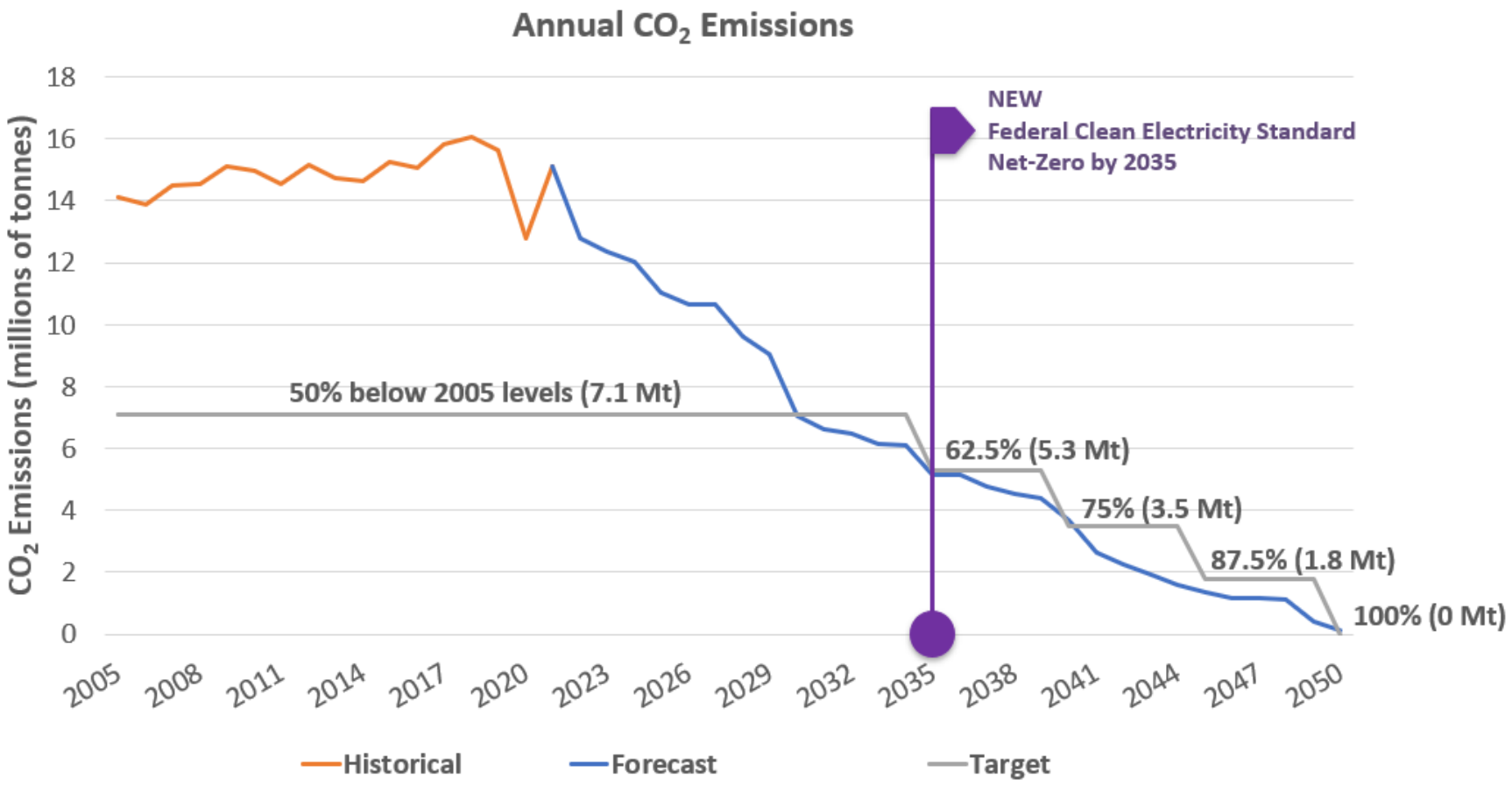
WHY NUCLEAR POWER? WHY NOW?

- Large reactors not feasible
- Today: SMRs advancing, better fit for small grids like Saskatchewan's
- Climate change driving the need to decarbonize energy systems
- Mandated phase out of conventional coal; increasing carbon price on natural gas
- **All low and no emissions power sources needed to achieve net zero emissions as quickly as possible**

FORECASTED EMISSIONS PERFORMANCE



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AVAILABLE LOW EMISSIONS OPTIONS TO 2035

- SASKATCHEWAN HYDRO
- NATURAL GAS GENERATION
- EXPANDED INTERCONNECTIONS
- RENEWABLES AND STORAGE
- GAS/COAL WITH CCS
- DISTRIBUTED ENERGY RESOURCES
- SMALL MODULAR REACTORS

Natural gas-fired generation is currently the only baseload supply option that can be developed at the scale needed to meet Saskatchewan's needs.

POSSIBLE GENERATION ADDITIONS TO 2035

- 3,000 MW of wind and solar generation
- 1,500 MW of natural gas generation
- 750 MW of transmission intertie capacity
- 300 MW of nuclear SMR generation
- 60 MW of hydro generation
- Non-emitting baseload: TBD
- Battery and other storage: TBD
- Coal to gas conversion: TBD

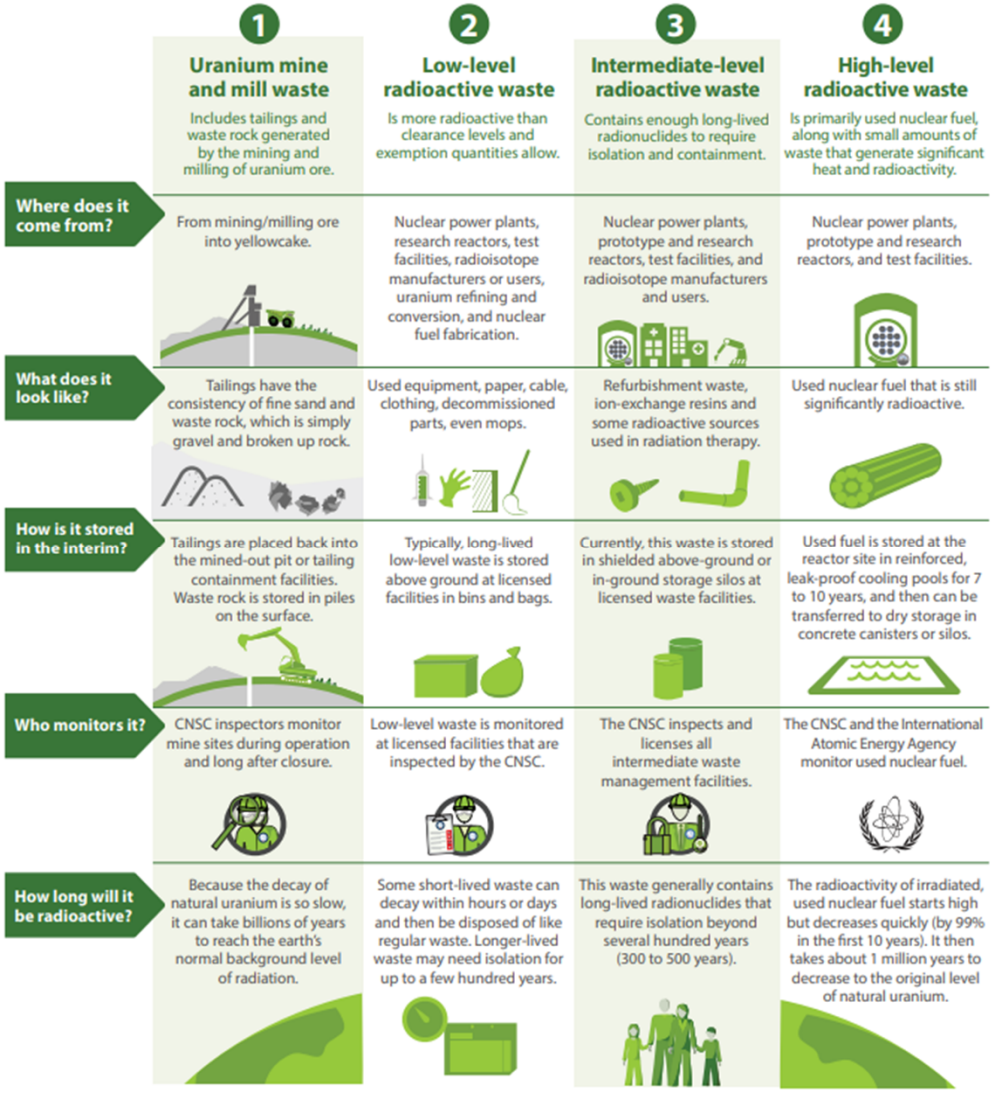
Nuclear Power in Canada Today

FOOTPRINT OF A LARGE REACTOR FACILITY

REGULATORY RIGOR FOR SAFE, LONG-TERM USED FUEL & WASTE MANAGEMENT

Radioactive Waste Definitions in Canada Today

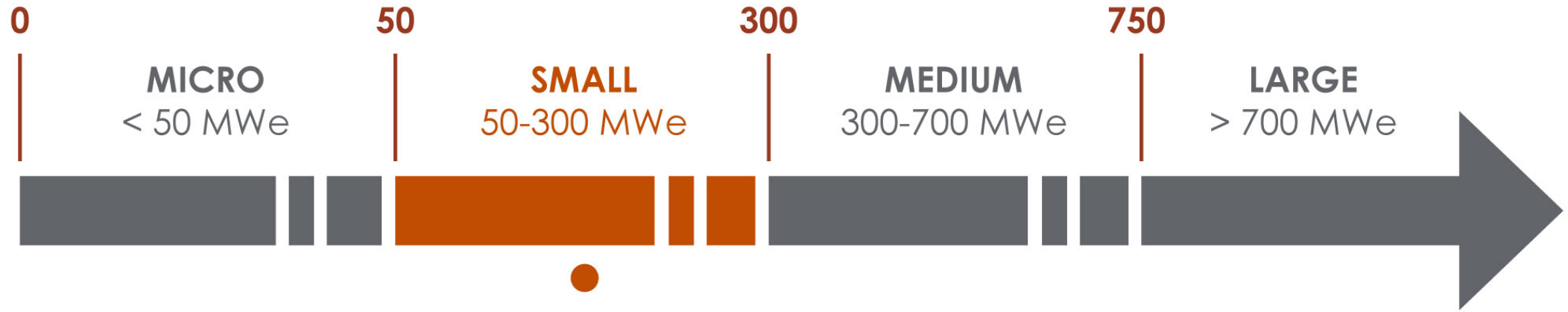
From CNSC:
https://nuclearsafety.gc.ca/eng/pdfs/infographics/infographic-waste-eng.pdf



SMR Technology

SMRs ARE A GOOD FIT FOR SMALLER GRIDS

Small = 50-300 MWe per unit	• Better fit for smaller grids/ serve incremental load
Lower capital cost	• Reduces financial risk
Modular construction	• Should result in less risk to project cost/schedule
Strong safety case	• Emerging designs, enhanced safety features



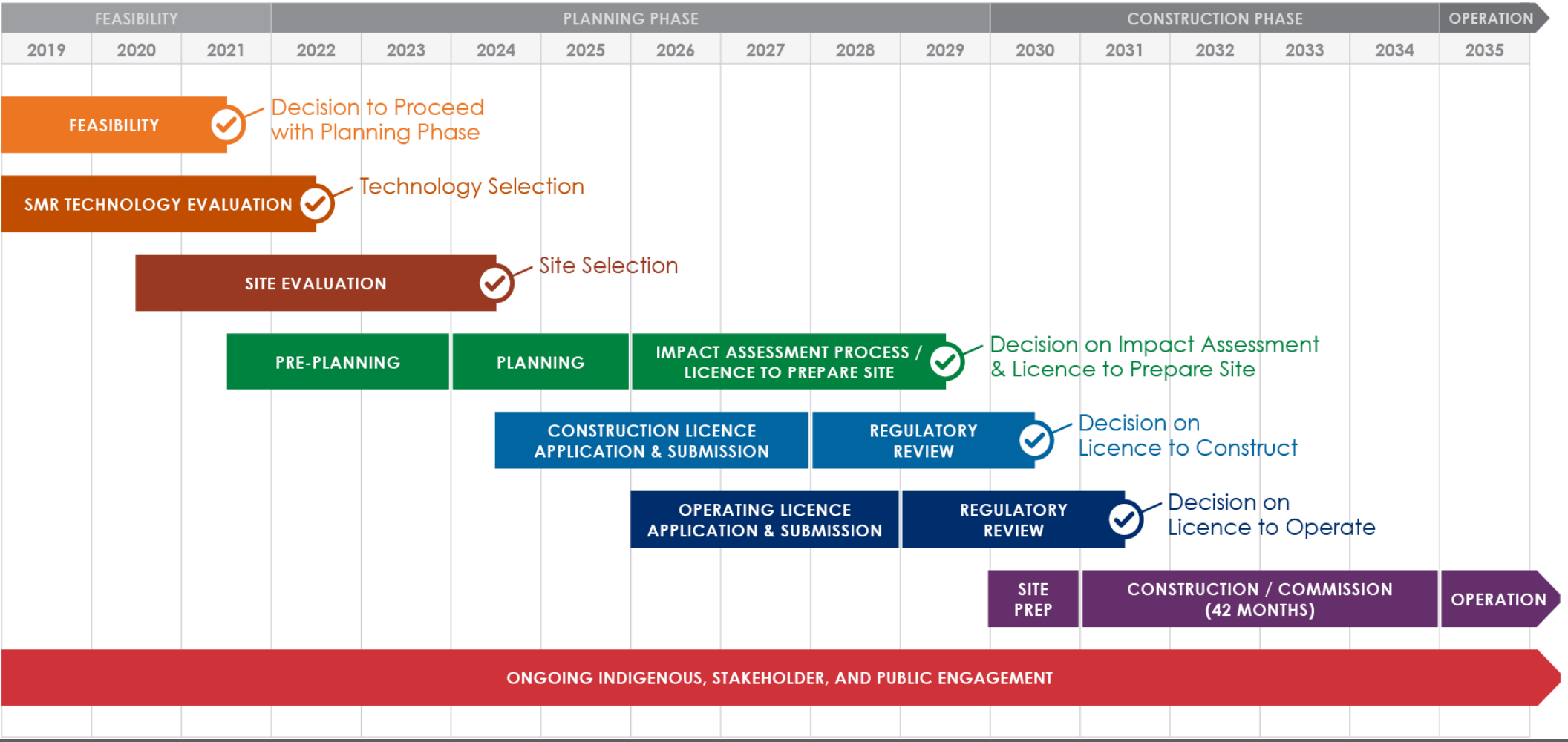
GE Hitachi Nuclear Energy
BWRX-300 Small Modular Reactor

KEY REQUIREMENTS FOR SMR DEVELOPMENT IN SASKATCHEWAN

- Fleet-based deployment in Canada
- Utility partnerships
- Successful first-of-a-kind deployment in Canada
- Indigenous participation
- Federal risk sharing
- Competitive supply option

SaskPower SMR Development Project

SASKPOWER SMR PROJECT SCHEDULE, MILESTONES AND KEY DECISIONS



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SMR SITE SELECTION – KEY CRITERIA

- Availability of cooling water
- Proximity to electrical infrastructure & regional demand for power
- Access to emergency services and road infrastructure
- Workforce availability
- Land use, proximately to airports, major populations
- Indigenous Knowledge & Public feedback

SASKPOWER'S SMR TECHNOLOGY EVALUATION CRITERIA:

- Safety Performance & Features
- Fuel Supply Chain Security
- Plant Physical Parameters
- Timelines (Technology Readiness)
- Waste Management
- Modes of Operation & Services beyond Electricity Production
- Financial – LCOE, Owner's Cost
- Economic Impact to Saskatchewan

QUESTIONS

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