

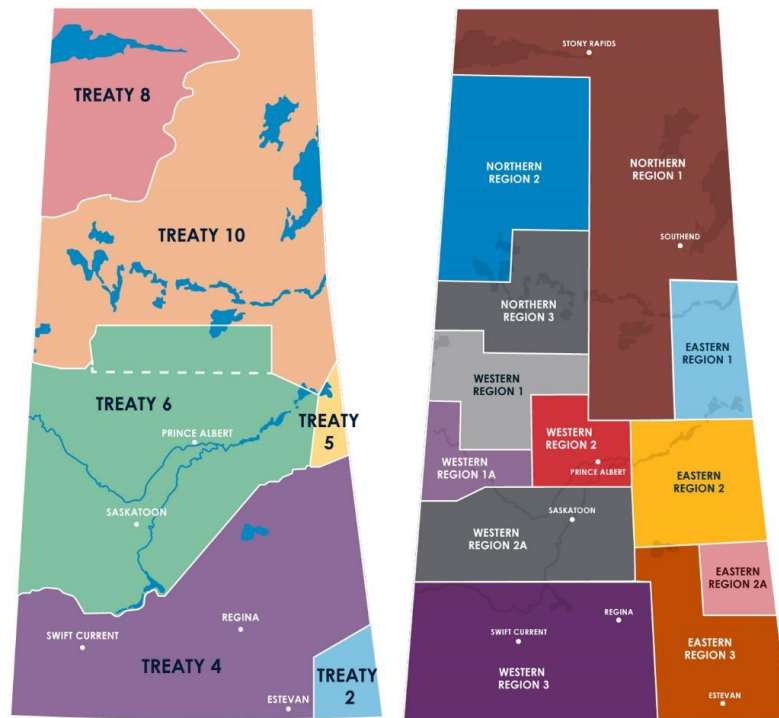
SUPPLIER INFORMATION SESSION

May 25 & 26, 2022

SASKATCHEWAN INDIGENOUS LAND ACKNOWLEDGEMENT

I would like to acknowledge that we are coming together in the territorial lands of Treaty *(insert appropriate Treaty number(s) based on your location)* and the homeland of the Métis.

We respect and honor the ancestral homes of Saskatchewan's Indigenous peoples and are committed to moving forward in the spirit of reconciliation and collaboration.



NUMBERED TREATIES & MÉTIS LOCAL MAPS OF SASKATCHEWAN

Cellphone Walking Safety

In 2019 an estimated 6,205 pedestrians died in traffic related incidents. Distracted walking while on cellphones is a huge problem and we are extra vulnerable when crossing streets and navigating traffic.



Head Up, Phone Down

- Walk on sidewalks wherever possible, if no sidewalk, walk facing traffic
- Cross streets at crosswalks
- Look left, right and left again
- Stay alert – avoid cell phones and ear buds
- Wear bright clothing
- Watch for cars entering or exiting driveways, alleyways, or parking lots



Housekeeping

- Emergency Exits
- Washrooms
- Slide deck will be available
- Cell Phones
- Breaks, Networking, Questions
- SaskPower Representatives



Agenda

Opening Remarks	Connor Wright, Manager Supplier Relationship Management
Welcome	Shawn Schmidt, VP Distribution & Customer Services
Procurement Update	Rhea Brown, Director Procurement & Contracts Management
Supplier Diversity Program	Alison O'Reilly, Specialist Supplier Relationship Management
Properties Project Update	Scott Campbell, Director Properties & Shared Services Yasir Elawad, Managers Properties Project Management
Questions	Question Period
Break	Break/Networking
Electrification Strategy Overview	Mark Wagner, Manager Fleet Services
Electric Vehicles	James Fick, Consultant Customer Solutions Pat Parrott, Consultant Customer Solutions
Power Production Project Update	Justin Lacelle, Director Field Services
SMR's	Doug Opseth, Director Asset Management & Planning
Questions	Questions/Networking



STRATEGIC DIRECTION: TOWARD 2030

Powering Saskatchewan to a cleaner energy future
through innovation, performance and service.

Shawn Schmidt, VP Distribution & Customer Care

ADVERSE WEATHER CONDITIONS

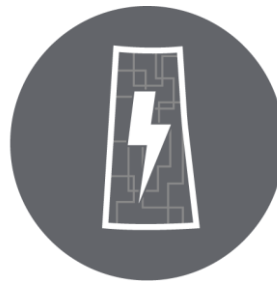


EXTENSIVE DAMAGE



A PROUD HISTORY OF ENERGIZING OUR PROVINCE

- Decades-long journey of creating an integrated electricity system
- One of the largest service areas in Canada
- Low customer density
- Historic reliance on fossil fuels
- Increasing renewable portfolio
- One of largest transmission and distribution networks in Canada



Serving Saskatchewan
since 1929.



More than 545,000
customer accounts.



A diverse generation
mix that includes a
growing renewable
portfolio.



Enough wires to
circle the earth
nearly four times.

OUR OPERATING ENVIRONMENT



**Our customers,
employees and province
are at the center of the
energy transition**



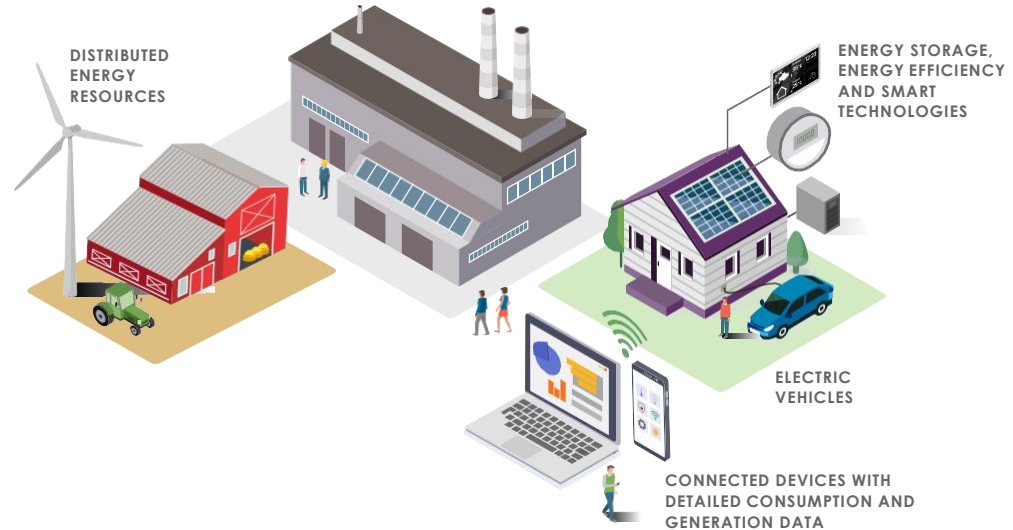
**Customer expectations
are growing, and
behaviours are shifting**



**Electrification is on
the horizon**

GOAL: A CUSTOMER-CENTRIC ORGANIZATION

- Earning our customers' business everyday
- Partnering in creating tomorrow's electricity system
- Electrification and the low-carbon economy
- Affordability, managed energy use, and choice



OUR OPERATING ENVIRONMENT



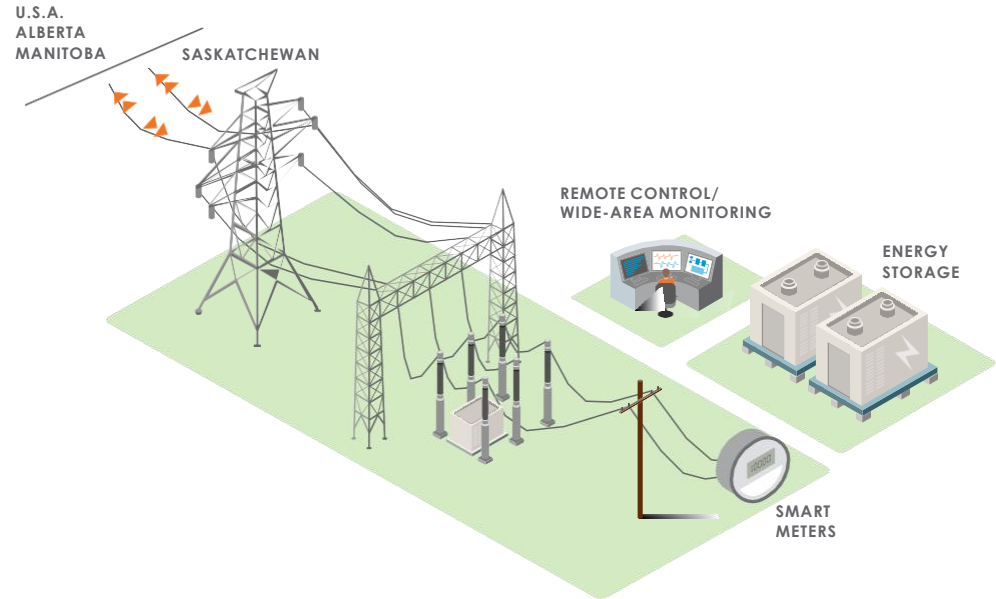
**Power systems are
becoming cleaner and
more decentralized**



**Our grid is becoming
modernized and
digitalized**

GOAL: MODERNIZED GRID AND EXPANDED INTERCONNECTIONS

- Improving service and quality
- Supporting customer choice, control and convenience
- Increasing system reliability, flexibility and resiliency
- Supporting a low-carbon and low-cost future



OUR OPERATING ENVIRONMENT



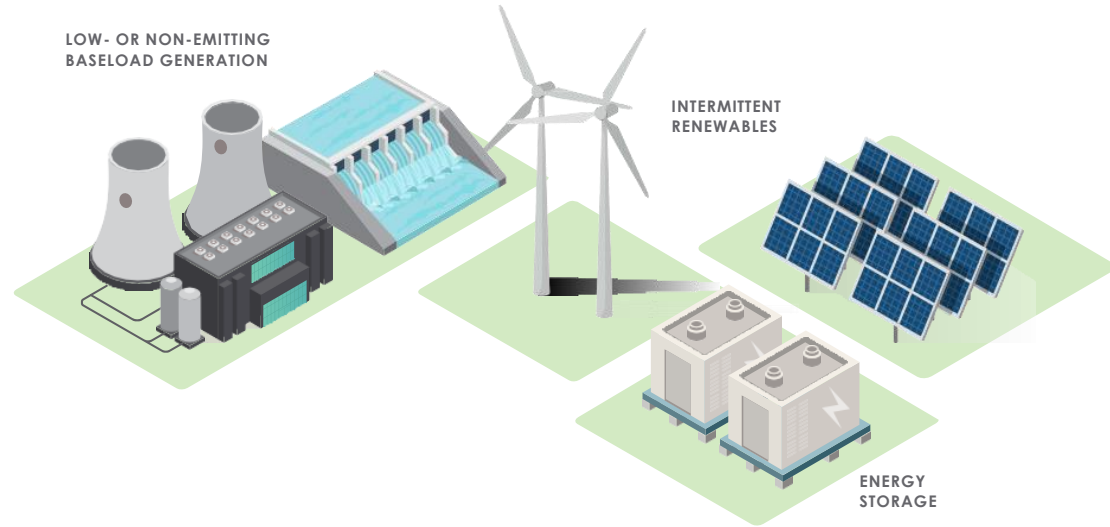
Affordable electricity is
key for economic growth
and quality of life



Carbon pricing and
regulatory uncertainty
are here to stay

GOAL: INCREASED LOW/ZERO CARBON ELECTRICITY SOURCES

- The conventional coal transition
- Planning for and uncertain future
- Expanding and integrating renewables
- Enabling a net-zero GHG future



Saskatchewan's economic strength and quality of life will rely on a future electricity system that is competitive, reliable and clean.



PROCUREMENT UPDATE

Overview

- Procurement Investment
- Supplier Engagement
- Supply Chain Challenges
- Continuity Plan



Procurement Investment

- 2020/21 Procurement Spend: **\$1.2Billion**
- Increased Investment: **+\$400M**
- Indigenous Procurement: **12.1% (\$95M)**
- Saskatchewan Procurement: **65.2% (\$782M)**



Supplier Engagement

Events

- Facility tours and training

Supplier Survey

- New Record 4.17 / 5.00
- 78 % consider SaskPower an industry partner

Sustainability

- Environmental Awareness
- Promoting Supplier Diversity



Supply Chain Challenges

Challenges/Risks

- COVID-19 / Russia-Ukraine War
- Labor Shortages
- Commodity Prices Increasing

Expectations

- Longer Lead Times
- Reduced Inventory
- Higher Expenses
- Volatility



Continuity Plan

- Risk Sharing
- Source Diversification
- Trusted Supplier Network
- Buffering Inventory and Capacity
- Consolidating Purchase Volumes



SUPPLIER DIVERSITY

Supplier Diversity

- Commitment to building a diverse supply chain
- Key to our procurement strategy
- Inclusion of women owned businesses
 - 51% women ownership required



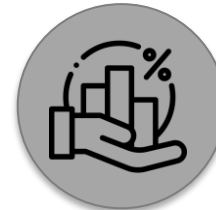
Program Objectives



**Meet
Expectations**



**Promote
Innovation**



**Improve
Competition**



**Cultivate
Relationships**

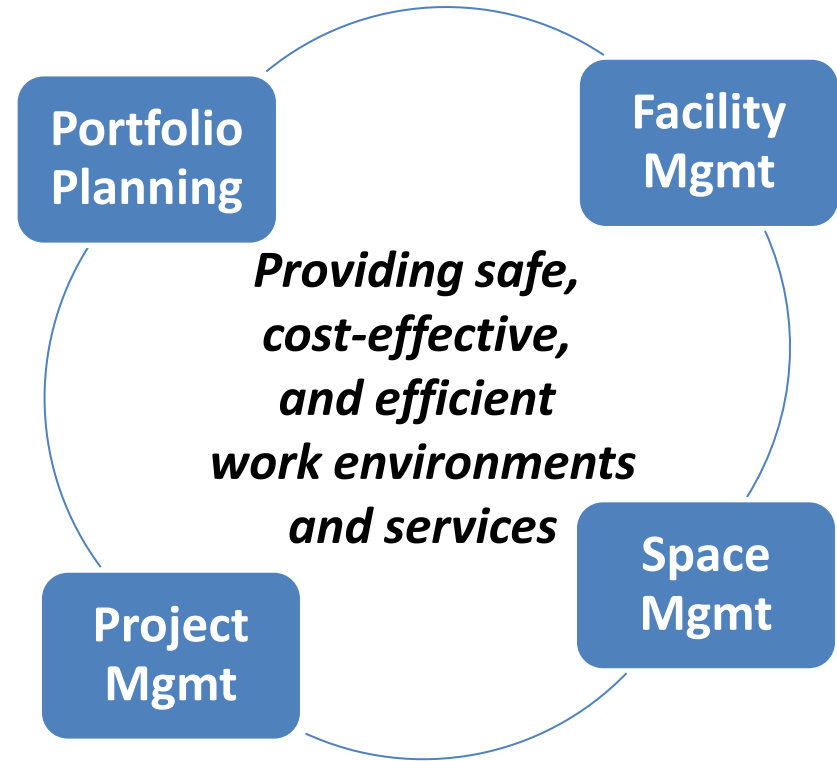
2022 Strategy Overview

- **Engagement**
 - Events
 - Training
- **Identification & Development**
- **Compliance**
 - 3rd party verification process
- **Metrics**



PROPERTIES UPDATE

Overview



Upcoming Work: Nipawin



Upcoming Work: Hudson Bay



Upcoming Work: Equipment & Furniture



Phase 2: Logistics Warehouse Complex



Upcoming Work: Refurbishment



Upcoming Work: Refurbishment



Upcoming Work: New Facilities



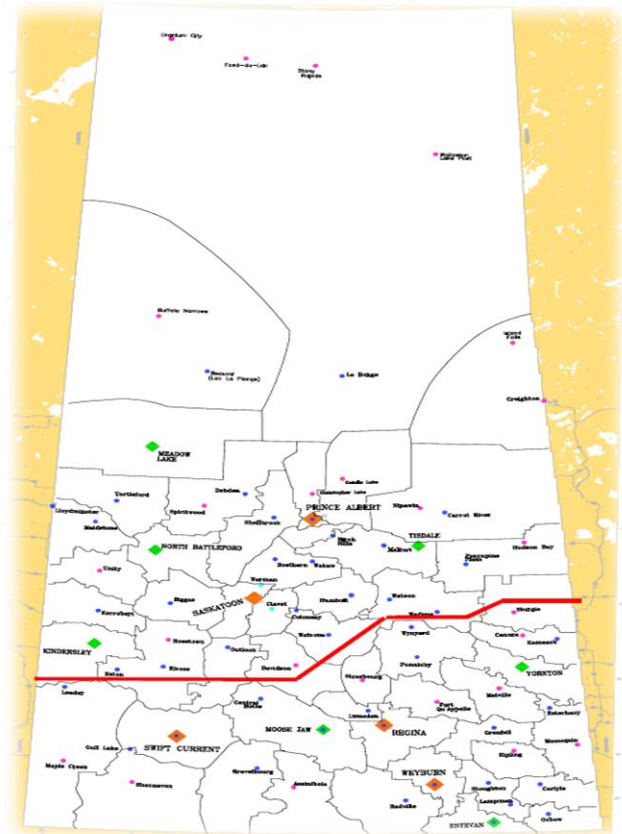
Lessons & Opportunities

- Industry Expertise
- Consultation
- Sequencing and Scheduling



Lessons & Opportunities

- Contracts = Partnerships
- Emergency Help



Lessons & Opportunities

- Communication
- Safety Trends



QUESTIONS

ELECTRIFICATION STRATEGY OVERVIEW

Topics For Discussion

- SaskPower Fleet Overview
- Transitioning to Zero Emissions
- The Industry and Marketplace
- The Path to Green



SaskPower Fleet Overview



900
Medium/
Heavy Duty
Units

300
Medium/
Heavy Duty
Units

1100
Specialty
and Support
Equipment

\$7-8M
External
Repairs &
Maintenance

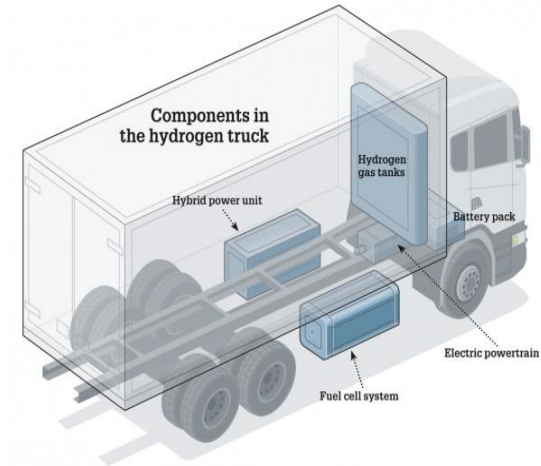
Transitioning to Zero Emissions

- Understanding and Defining Needs
- Research & Market Availability
- Facility and Infrastructure
- Financial Strategy
- Evaluation



Fewer Wires Equal Less Weight and Longer Range

GM will be the first automaker to use an almost completely wireless battery management system for EVs. The system will power multiple types of EVs from a common set of battery components and make our batteries easier to reuse for second-life applications.



Industry and Marketplace

Cars / SUV



All Terrain Vehicles



Light Duty Trucks



Construction Equipment



Heavy Duty Trucks



Bucket Trucks



The Path to Green



EV Strategy/ Roadmap

Ensure strategic alignment around EV goals and objectives. What programs and initiatives need to be developed to achieve program goals?

Charging Infrastructure

Charging infrastructure is critical to supporting the growth of EVs and the resulting demand for electricity. What are the challenges and opportunities?

Fleet Electrification

Fleet electrification will present significant challenges to electrification. How should fleets and utilities work together to plan for this transition?

Outreach & Education

Low awareness is a barrier to EV adoption. What role should companies play in engaging customers to drive transportation electrification?

People & Processes

EVs represent a new way of doing business for most organizations. What new processes, teams, and training will be needed to meet electrification goals?

← **RATES AND REGULATORY** →

ELECTRIC VEHICLES

Topics For Discussion

- Introductions
- EVs in Saskatchewan
- Charging
- What are we hearing?
- Customer Solutions' EV Strategy



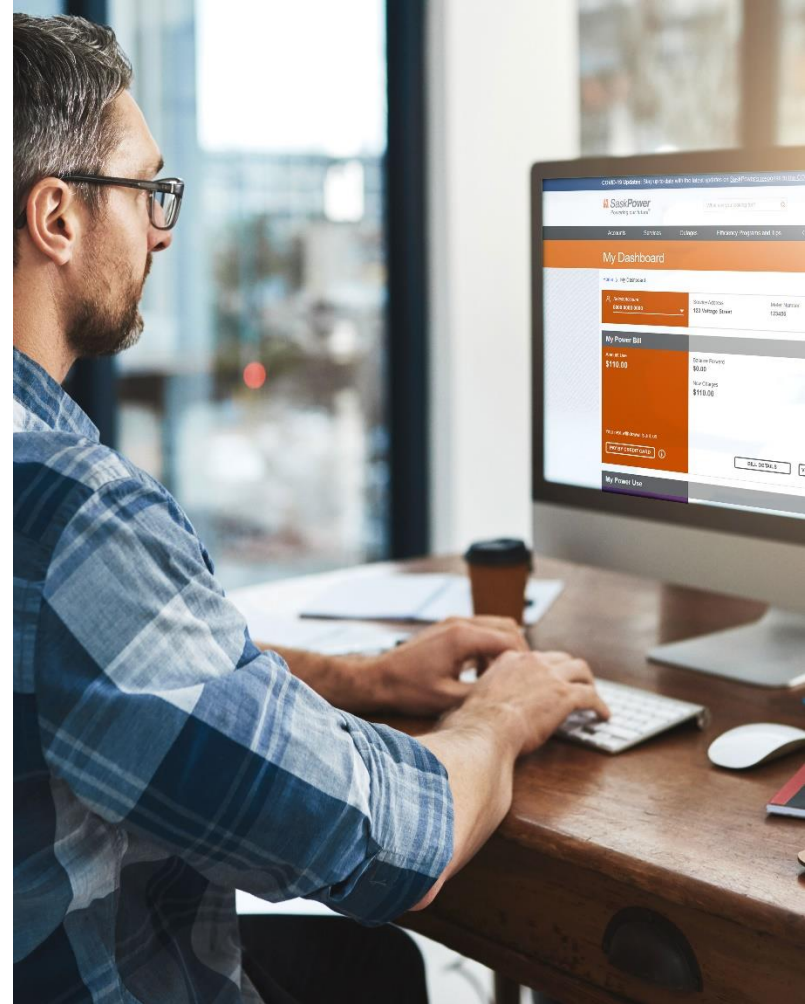
EVs in Saskatchewan

Rapidly increasing population:

- 334 EVs as of December 2019
- 1240 EVs as of December 2021 (370% ↑)

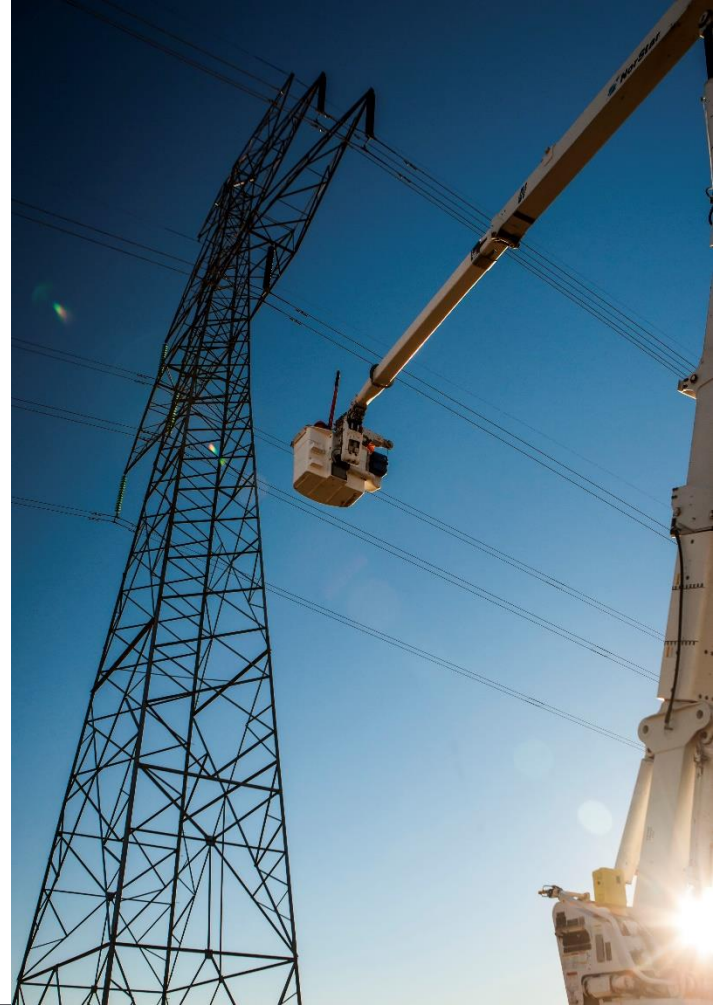
More charging:

- 90+ fast charging ports across 30+ locations
- Electric Vehicle Infrastructure Program



Charging an EV

- Most charging will happen at home
- Public charging is available when travelling or on-the-go
- Workplace charging is likely to become more popular



Levels of Charging

Level 1 – 120-volt AC

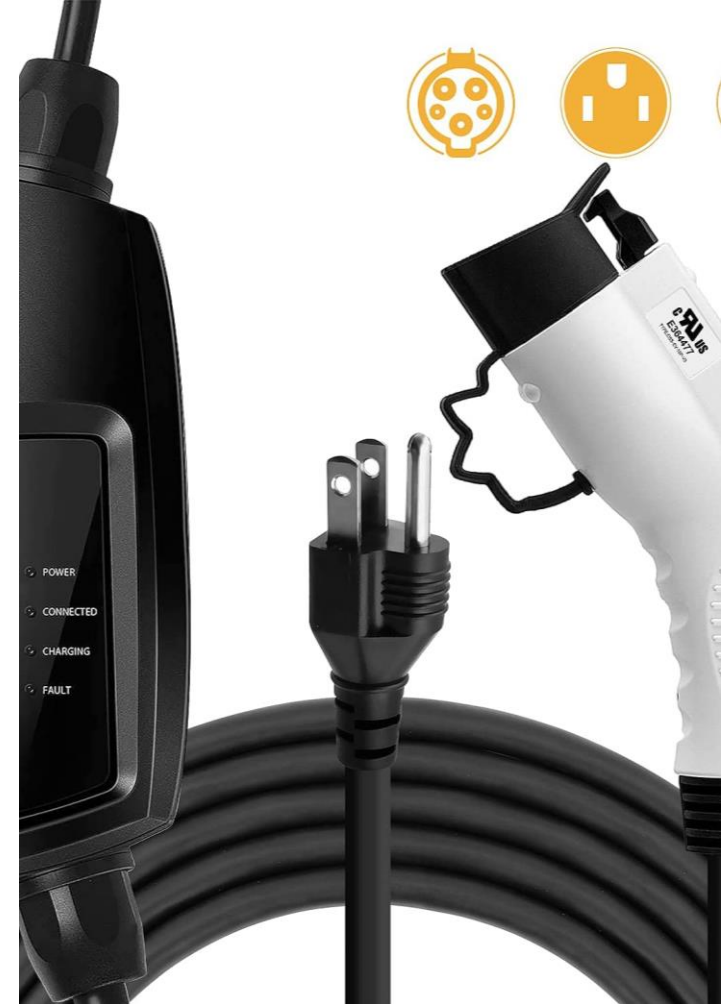
- More than 24 hours to get a full charge

Level 2 – 240-V AC

- Approx. 4 – 8 hours to get a full charge
- Very common for residential and public charging
- Likely to be the most widely used

Level 3 – Direct current fast charging (“DCFC”)

- 30 to 60 minutes to 80% battery capacity
- Critical to support highway travel
- Higher power – 50 kW to 350 kW



“How do I charge my vehicle at home?”

- Level 1 – access to 120V plug and a charging cable for your vehicle
- Level 2 – Level 2 charger connected to a 240V circuit
 - Work with certified electrician for installation and verification of your home’s panel capacity.
 - In some cases, a panel upgrade may be required.
- Level 3 – not for home charging



What are we seeing and hearing?

- Majority of EVs are Battery Electric (BEVs)
- Most residential charging is Level 2
- Majority of charging is happening at home
- Expectations for charging speeds are increasing



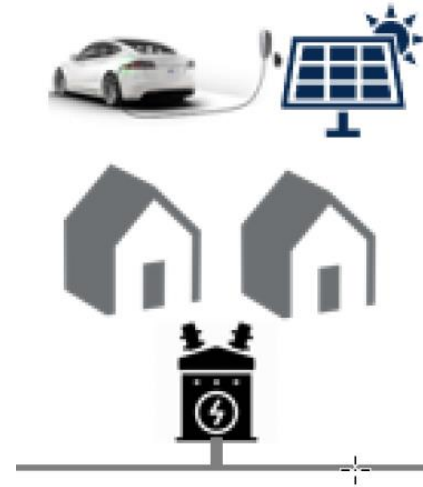
- Diversification of market segments – fleet, workplace, multi-unit residential
- More public charging is needed – specifically fast charging
- Support for residential charging

Customer Solutions' EV Strategy

✓ Education and Outreach

✓ Load Management

✓ Charging Infrastructure



Education and Outreach

- Customer expectations – “trusted advisor”
- Collaboration with SaskEV and SEVA
- Public events and engagement
- www.saskpower.com/EV



Load Management

- SmartCharge Saskatchewan
- Use data and analysis to plan for the future
 - Infrastructure
 - Customer programs, incentives



Charging Infrastructure

- Electric Vehicle Infrastructure Program
 - Currently selecting projects
- Considering options to support residential/home charging
 - Single family homes
 - Multi unit buildings



More Information

www.saskpower.com/EV

electrification@saskpower.com



Charging



Performance



Costs and Benefits



FAQs



Electric Vehicle Infrastructure
Program

POWER PRODUCTION UPDATE

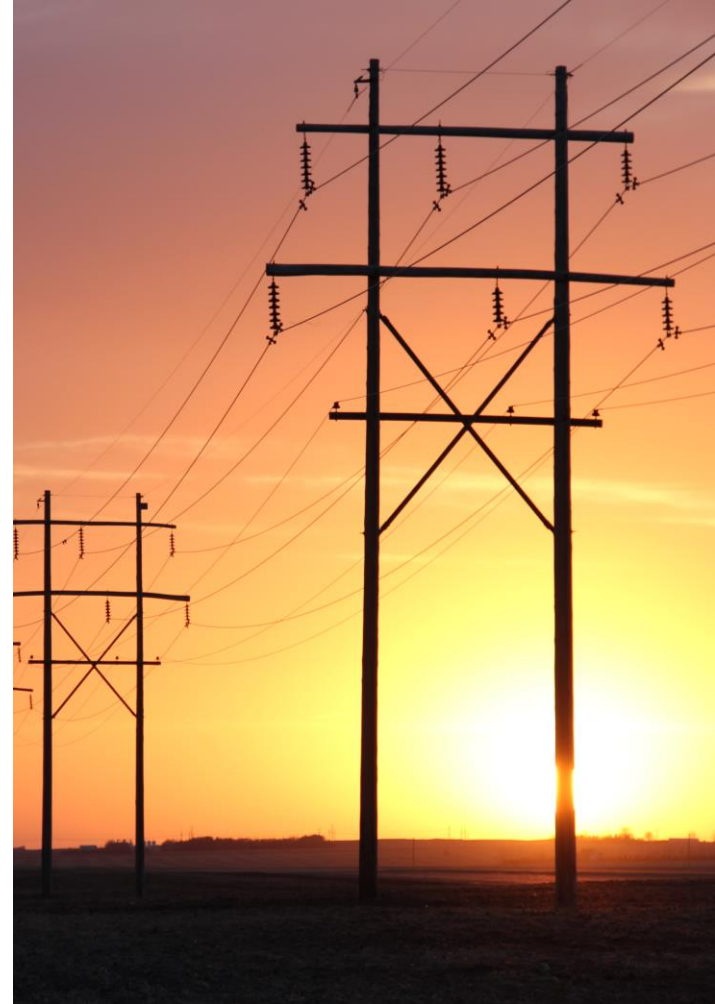
Power Production Transition

- Goal – Reducing GHG emissions by 50% from 2005 levels by 2030
- Goal – Continued reliability
- Goal – Financially prudent



Key Challenges

- Changing demand for power
- Build and maintain
- Integration of renewable generation
- Managing costs – minimizing rate impacts
- Emerging technologies and a competitive electricity market
- Supply Chain, Logistics, Labour – 2024-2027



Safety

- Standard Protection Code



Success Elements

- Schedules – Providing, updating, meeting
- Safety Documentation up front – D&A records, certifications
- A strong safety culture – safety toolbox meetings, work observations
- Flexibility with working with other contractors
- Timely red-line submissions
- Regular communication with construction staff
- Understanding SaskPower's Standard Protection Code

Hydro-electric Life Extension, 2022-2027

- EB Campbell 1-6, 2019 - 2025
 - Turbine, generator, eBOP, mBOP
 - Roof, Concrete, foundation
- Coteau Creek, 2023-2025
 - Significant eBOP, mBOP, Site Infrastructure, storage buildings
- Next
 - EB7&8, eBOP, mBOP
 - Island Falls A/B, Gate Replacement



Hydro & Renewables, 2022 - 2025

- CC GSU Replacement
- WE - Surge tank, AVR, DC System
- WA/IF - Stop Logs/Hoist
- IF/EBC - HMI Replacement
- EBC Intake Gate, Tail Race Pier Repair, eBOP, mBOP, Power Canal Slumping Remediation
- EBC/NIP - Pressure Relief Wells
- NIP – Access Road, HVAC, Governor, eBOP, Exciter, Protection & Controls
- NH Public Safety



Western Plants/Queen Elizabeth, 2022-2025

- Roof Replacements
- Cory Cogen – Uprate/Life Extension
 - CT Uprate, Inlet Filter Housing
 - BOP, Cooling Tower
 - DCS/HMI Controls, Breaker Upgrades
- Landis Life Extension
 - CT Major, BOP, Protection & Controls
- QE Life Extension – In Definition
- ER/YH CT Air Inlet Pre-heating
- ER/YH Repowering



Boundary Dam Power Station, 2022-2025

- CCS Process Modifications
 - Debottlenecking, heat exchangers, vessel, and absorber packing upgrades/replacements
 - Acid Load out
- HVAC/Plant Heating & Fire System
- BD3 & CCS DCS/HMI Upgrades
- Unit Lay Up Infrastructure
- Boiler Shielding
- Aquistore Well Remediation



Shand Power Station, 2021-2023

- Shand Life Extension 2022(*)
 - eBOP, mBOP, Controls, Generator
- Roof Replacements
- Coal to Gas Conversion



Poplar River Power Station, 2022-2025

- DCS HMI Control Upgrades
- Flexible Operation
- Coronach – Water Supply Study
- Supplementary Well Study/Evaluation
- Morrison Dam (*)
- Ash Lagoon 4W (*)



Great Plains Power Station, Moose jaw

- 350MW combined cycle facility
- Supports base load & integration of renewables
- Great Plains Power Station, Moose Jaw:
 - Burns & McDonnell – EPC Partner
 - Local & Indigenous Targets
 - 2022 – Powerhouse & Administration Buildings, Heat Recovery Steam Generator, Major Centerline Equipment, Mechanical & Electrical Installation
 - In-Service 2024



Supply Plan, Next Steps

- Plant Siting, Interconnections
 - Natural gas, small modular reactors
 - 500kV Transmission Interconnection
- 2025-2027, Simple Cycle Generation
 - Ermine, Yellow SCGT Expansions, 2024/25
 - Landis SCGT, Q3 TBD
- 2027-2030 Generation
 - SCGT/CCGT (Wolverine), Coal to Gas
 - Siting, Federal Environmental Submissions
- Chinook & Cory CTG Uprate/BOP
- Coteau Creek Unit 4 Pre-Feasibility Study
- Support Integration of renewables
 - Blue Hills 175MW, Golden South 200MW
 - Additional IPP Wind & Solar RFP



Key Global Risks (GPPS, Wolverine, ER/YH, etc.)

Manufacturing – Globalization/Consolidation (3-6 mo. + impacts)

- Europe, US, China, Vietnam
- Turbines, Electrical Equipment, Motors, Cabling, Valves, etc.

Logistics/Shipping/Delivery (Global Shipping & Port Delays)

- 2-3 Months +, port congestion/arrival delays, Air Freight

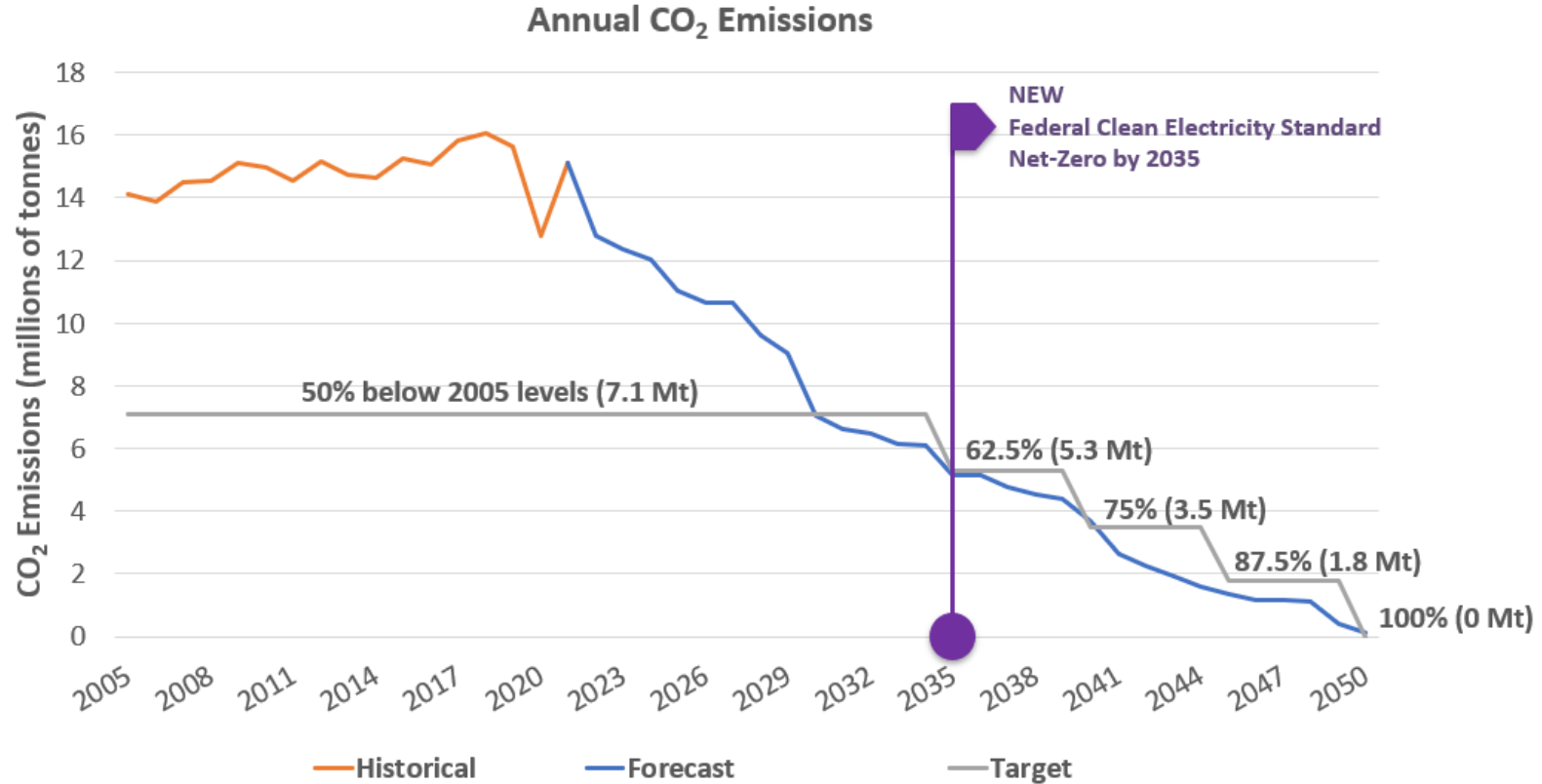
Commodity Pricing/Procurement Lead Times/Material Availability

- Combustion/steam turbines, pipe, bolting, electrical switchgear/MCC

Craft Labour Availability

NET-ZERO FUTURE SUPPLY PLAN & SMR UPDATE

FORECASTED EMISSIONS PERFORMANCE



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.

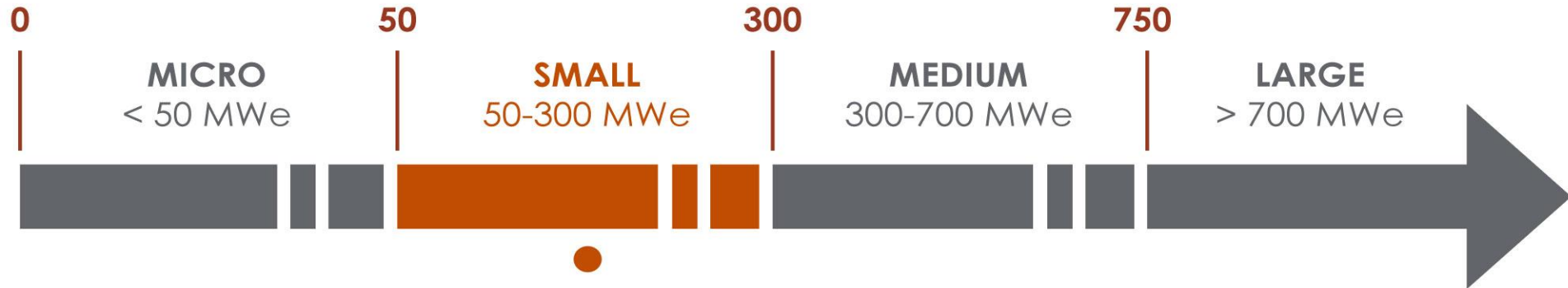
WHY NUCLEAR POWER? WHY NOW?

- 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**



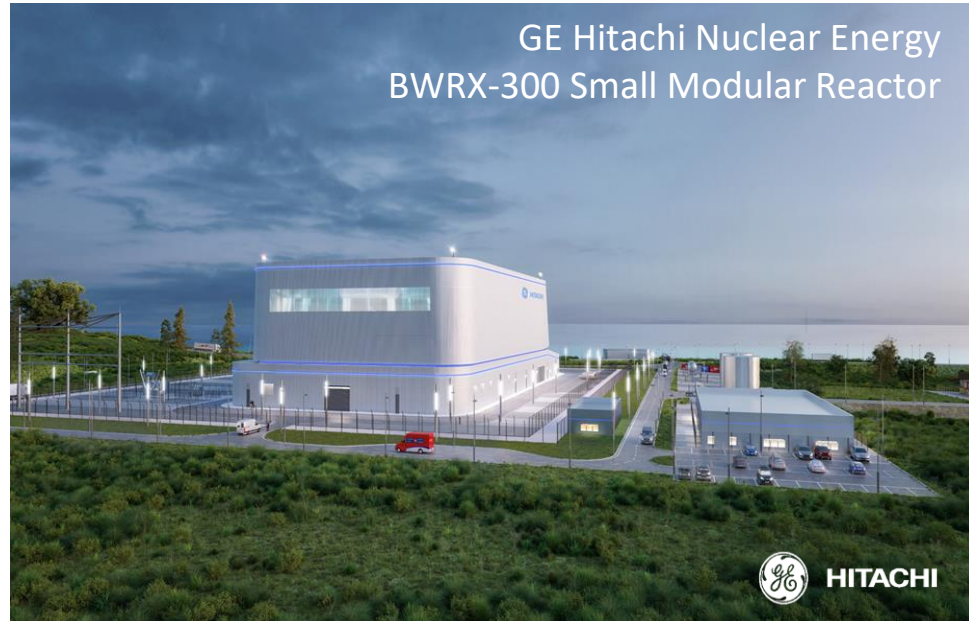
SMRs ARE A GOOD FIT FOR SMALLER GRIDS

Small = 50-300 MWe per unit	<ul style="list-style-type: none">• Better fit for smaller grids/ serve incremental load
Lower capital cost	<ul style="list-style-type: none">• Reduces financial risk
Modular construction	<ul style="list-style-type: none">• Should result in less risk to project cost/schedule
Strong safety case	<ul style="list-style-type: none">• Emerging designs, enhanced safety features

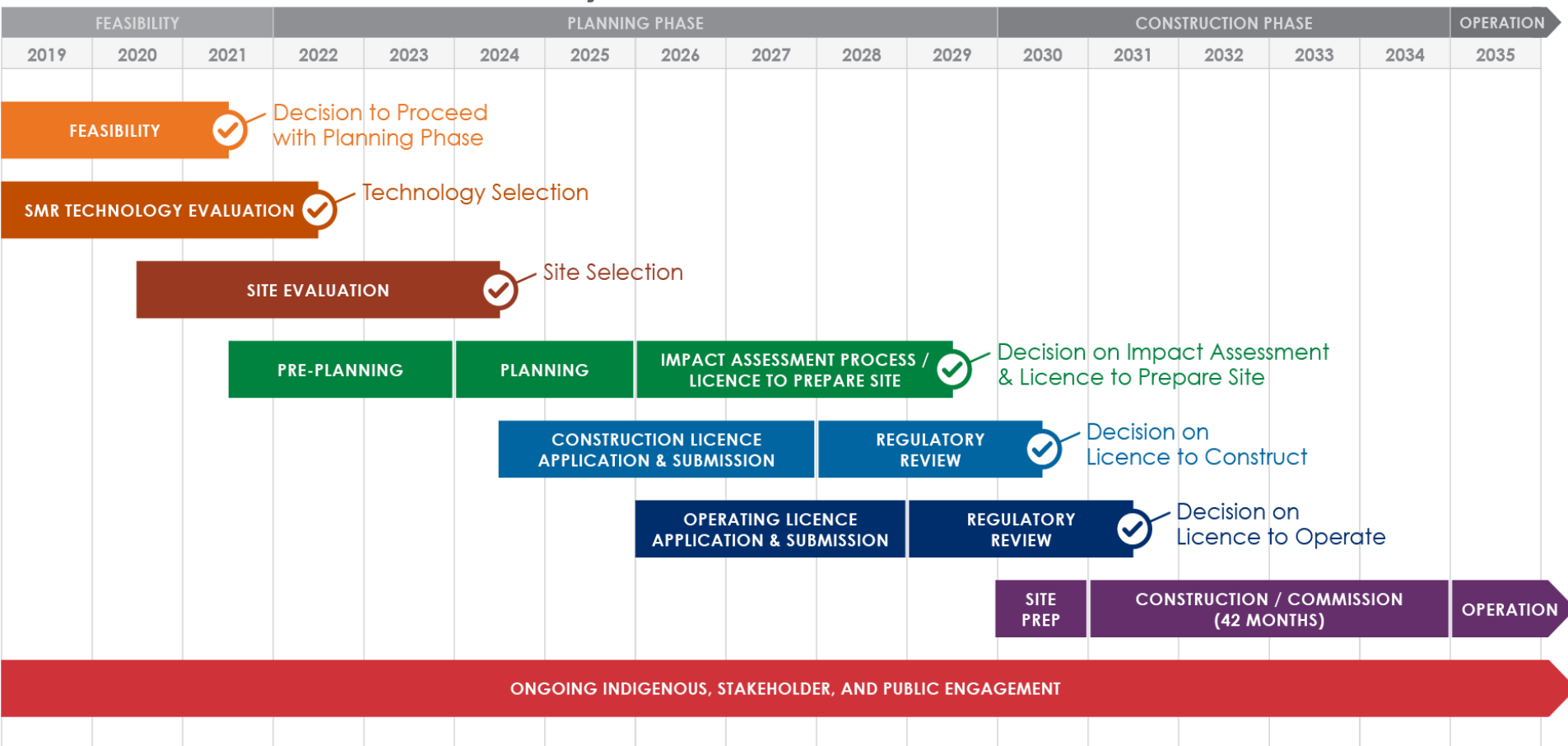


KEY REQUIREMENTS FOR SMR DEVELOPMENT IN SASKATCHEWAN

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



PROJECT SCHEDULE, MILESTONES AND KEY DECISIONS



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, proximity to airports, major populations
- Indigenous Knowledge & Public feedback



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



SMR TECHNOLOGY SELECTION

STREAM 1

OPG
SaskPower



ON-GRID (NEAR-TERM)

- GE-HITACHI – Boiling Water Reactor
- X-ENERGY – High Temperature Gas Reactor
- TERRESTRIAL ENERGY – Molten Salt Reactor

STREAM 2

NB Power



ON-GRID (NEXT GENERATION)

- ARC CANADA – Sodium Cooled Fast Reactor
- MOLTEX ENERGY – Stable Salt Reactor

STREAM 3

OPG
Bruce Power
SRC



OFF-GRID (REMOTE)

- GLOBAL FIRST POWER – 5 MW Very Small Modular Reactor (vSMR)
- WESTINGHOUSE – 5 MW Very Small Modular Reactor (vSMR)

INDIGENOUS SMR PARTICIPATION PLAN

- Currently being developed within SaskPower
- Opportunities for involvement include:
 - Business Model
 - Supply Chain
 - Operations & Maintenance – Workforce Training, R&D
 - Community Relationships

How Can Saskatchewan Suppliers Get Involved?

- PrairiesCan Supply Chain Assessment: identify Prairie companies with potential and interest to become qualified nuclear suppliers
 - Contact: Matthew Dalzell, matthew.dalzell2@prairiescan.gc.ca
Tel: 306-914-2521
- Organization of Canadian Nuclear Industries (OCNI) Ready4SMR Program
 - “How to” become a nuclear supplier
 - Pilot in New Brunswick, Saskatchewan will be the next focus
 - MOU Announced with SIMSA: [SIMSA signs MOU with Organization of Canadian Nuclear Industries – Saskatchewan Industrial & Mining Suppliers Association](#)

QUESTIONS
