IRP Power-up

Background Refresher
Integrated Resource Plan
April 2023

Available in accessible formats upon request

Manitoba Hydro
energy for life

Our energy planning is evolving

The energy landscape is changing. The 3Ds are drivers of change and are already impacting utilities. The Integrated Resource Plan will help prepare for the evolving energy landscape.

Decarbonization

- The reduction in use of energy sources that result in greenhouse gas emissions (GHG) related to energy use.
- The focus on reducing GHG emissions is increasing demand for electricity.

Decentralization

- There will be more energy alternatives, such as customers providing their own generation.
- Manitoba Hydro needs to prepare for this reality and ensure we maintain reliability of the grid so energy is there when customers need it, while allowing a two-way flow of power.

Digitalization

- Will define the way we use energy, interact and share information.
- Manitoba Hydro needs to adapt to changes in technologies to support and serve our customers.

For further details, refer to material presented in round 2: https://www.hydro.mb.ca/corporate/planning/inputs_and_scenarios/

What is Integrated Resource Planning?

- A roadmap for meeting future customer needs
- Considers all energy infrastructure and other factors, like government policy, standards, and mandates
- Planning that allows us to remain flexible and adapt
- Identifies potential future scenarios
- Informed by engagement
- Repeatable process

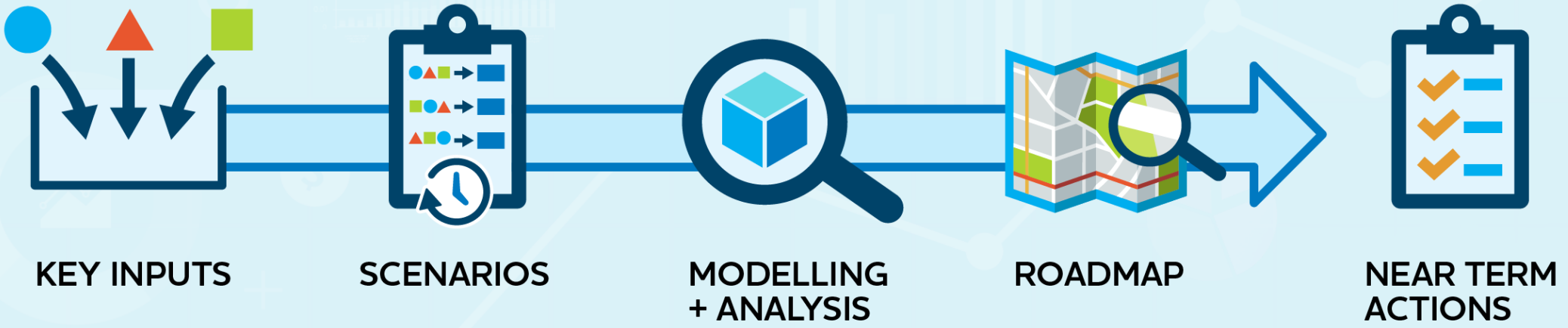
IRP provides insight to meet future needs

The 2023 IRP provides direction on how to meet future energy needs and informs decision-making.

The 2023 IRP is not a development plan to follow over next 20 years.

For further details, refer to material presented in round 2: https://www.hydro.mb.ca/corporate/planning/inputs_and_scenarios/

Steps in the IRP development process



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Our conversations inform the IRP

For further details, refer to material presented in round 2: https://www.hydro.mb.ca/corporate/planning/inputs_and_scenarios/

Round 1 Engagement

Nearly 15,000 survey participants!

INITIAL CONVERSATION

WHAT WE HEARD

- Strongly motivated by cost and affordability.
- Reliability and environmental concerns important.
- Engaged and interested in how rates are structured.
- Electric vehicles increasingly in near-term plans.
- Not looking to electrify their natural gas uses.
- Quick adoption of self-generation not expected.

WHAT WE DID

- Proposed key inputs reflecting feedback on where there is most uncertainty and impact.
- Proposed scenarios reflected feedback about rate of change for decarbonization and decentralization.
- Focused modelling and analysis on minimizing cost.

For further details, please see our website: https://www.hydro.mb.ca/corporate/planning/what_we_heard_round_1/

Round 2 Engagement

KEY INPUTS & SCENARIOS

WHAT WE HEARD

- Confirmed key inputs creating the most uncertainty and the biggest influence in Manitoba.
- Scenarios are appropriate bookends for the evolving energy landscape, so long as there is a pathway towards net-zero GHG emissions.

WHAT WE DID

- Confirmed scenario 4 allows for a pathway to net-zero GHG emissions.
- Used feedback to refine input details and assumptions.

Key inputs influence Manitoba's energy future

- Economic growth
- Decarbonization policy
- Electric vehicles
- Natural gas changes
- Customer self-generation

KEY INPUTS

- Have ***significant*** uncertainty and potential for biggest influence on energy future.
- Not an exhaustive list of all inputs required for modelling and analysis.
- Confirmed through engagement.

For further details, refer to material presented in round 2: https://www.hydro.mb.ca/corporate/planning/inputs_and_scenarios/

Scenarios
A reasonable range of futures based on the Key Inputs

- The four scenarios are based on drivers in the energy landscape: Decarbonization and Decentralization.
- The scenarios also consider potential rates of change: slow, modest, steady and accelerated.
- Scenarios 1 and 4 are bookends. Scenarios in between represent an incremental difference in the amount of change happening in the landscape.
- The key inputs and scenarios fit together. Each scenario considers each of the 5 key inputs and how much change is happening for each of those inputs, for each scenario.

For further details, refer to material presented in round 2: https://www.hydro.mb.ca/corporate/planning/inputs_and_scenarios/

Scenarios
A reasonable range of futures based on the Key Inputs

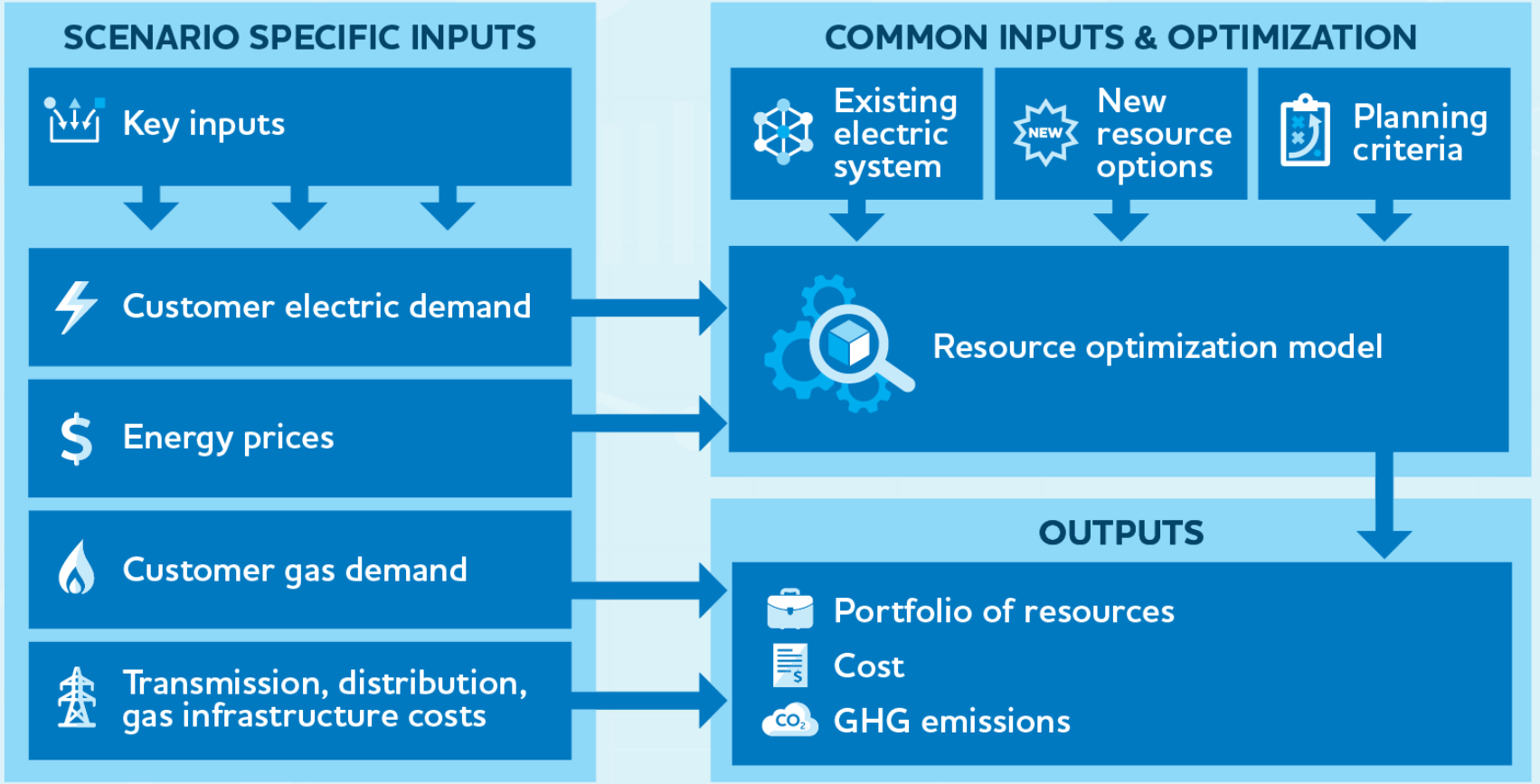
	Scenario 1: Slow decarbonization & slow decentralization	Scenario 2: Modest decarbonization & modest decentralization	Scenario 3: Steady decarbonization & modest decentralization	Scenario 4: Accelerated decarbonization & steady decentralization
Economic growth	●	●●	●●	●●●
Decarbonization policy	●	●●	●●●	●●●●
Electric vehicles	●	●●	●●●	●●●●
Natural gas changes	●	●●	●●●	●●●●
Customer self-generation	●	●●	●●	●●●

● represents amount of change

For further details, refer to material presented in round 2: https://www.hydro.mb.ca/corporate/planning/inputs_and_scenarios/

Summary of the IRP Modelling Process

- Simulates the electrical system to explore how best to meet our customers' future energy needs.
- Mainly focused on the electrical system.
- Assumptions for natural gas have been factored in.



For further details, refer to material presented in round 3: https://www.hydro.mb.ca/corporate/planning/modelling/

Initial Modelling & Analysis Results Summary

As presented in Round 3 Engagement Conversations

Electrification as a means of decarbonization results in our customers needing significantly more electricity.

All scenarios result in increased winter peak demand, new generation capacity resources, and impacts on transmission and distribution requirements.

There are many options to reliably meet long term needs and future choices will have significant impact on cost.

Strategic use of natural gas can reduce overall greenhouse gas emissions and mitigate cost impacts.

Do you have questions or want to learn more?

Visit www.hydro.mb.ca/corporate/planning

Email us at IRP@hydro.mb.ca

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