Appendix 8

Evaluation

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1 Introduction

This appendix outlines the process and results of potential development plan evaluation for the 2025 IRP. Potential development plans were evaluated using evaluation metrics and measured against the build out target to select a short list that would be further considered using risk and financial analyses, the next stage of the IRP development process. These evaluation steps are represented by the second blue box of the 2025 IRP modelling, analysis and evaluation process as shown in Figure A8.1. Full details of the 2025 IRP Development Process can be seen in Appendix 2 - 2025 IRP Development Process.

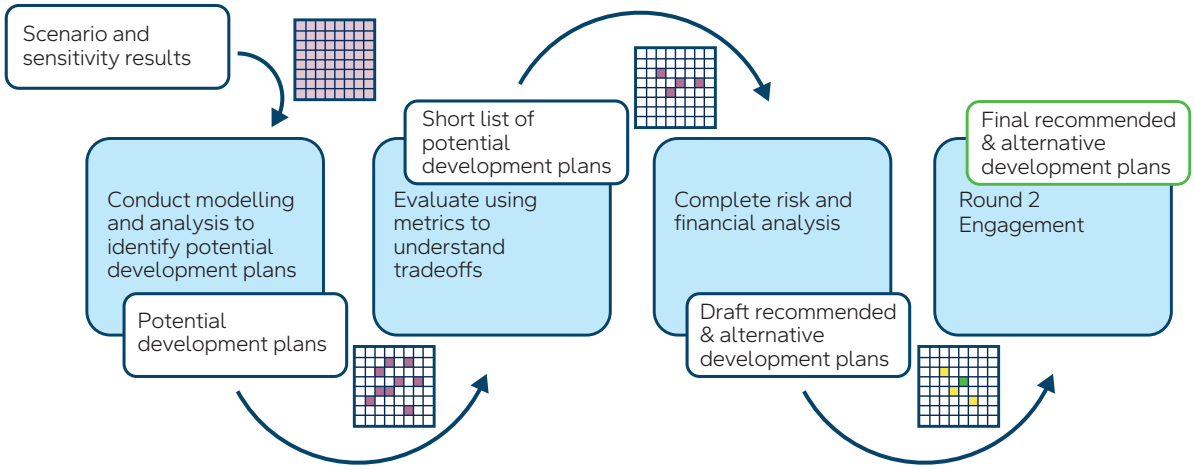

Figure A8.1 - 2025 IRP Modelling, Analysis and Evaluation Process

Manitoba Hydro developed metrics to evaluate the impacts of potential development plans beyond the planning criteria and typical modelling and analysis results. The nine metrics used in the 2025 IRP span four themes and reflect input from a broad sampling of the energy planning community. The metrics and themes are shown below in Figure A8.2.

Figure A8.2 - 2025 IRP Evaluation Themes and Metrics

The potential development plans that undergo evaluation are the result of the modelling and analysis stage, which identifies investments within a portfolio to be included in a plan showing promise for balancing net system costs, GHG emission impacts, and reliability when considering uncertainty in future load growth. This evaluation is used to understand the trade-offs between potential development plans across the four themes for the horizon of the planning period (to 2050) before advancing any plans for risk and financial analysis.

Three considerations, including the evaluation metrics discussed in this Appendix, are used to qualify a potential development plan for shortlisting:

1. performance against the evaluation metrics and themes;
2. meeting a minimum build-out target; and,
3. ensuring the existence of meaningfully different potential development plans.

2 Evaluation Overview

Each potential development plan is evaluated using a set of metrics grouped into four themes. This evaluation framework is designed to assess how well each plan performs across a range of considerations identified as important to Manitobans and that go beyond planning criteria and modelling and analysis outputs (i.e. reliability, net system cost, and GHG emissions). The following section describes the scoring methodology, defines each evaluation metric and theme, and explains how metric results are consolidated into overall theme scoring.

Evaluations in the 2025 IRP are based on utility planning experience and are not intended to represent probabilistic forecasts. Instead, they provide a structured way to test how each plan may perform under a range of plausible future conditions, helping to identify strengths, weaknesses, and trade-offs.

Scores are given by comparing the overall impacts of the plan's investments and actions to a set definition. Each potential development plan will involve a number of individual projects related to implementation of resources or other work. Projects in the plan will be required to go through a more detailed analysis, including further justifications and business cases, based on the results of the IRP and data specific to each independent project.

2.1. Evaluation Metric Scoring

Each metric in each plan is assigned one of the following qualifications:

- More Favourable,
- Neutral, or
- Less Favourable.

Each evaluation metric has its own criteria, and the metric being evaluated in that plan is assigned its qualification relative to the evaluation metric definition—not relative to the other plans. Doing this ensures that material differences between the plans can be assessed.

A potential development plan that receives a "less favourable" qualification under one or more evaluation metrics is not automatically excluded from consideration. Rather, this designation indicates that the plan may offer fewer benefits or carry additional risks in specific areas. The "less favourable" result serves as a signal to investigate those aspects of the plan more closely.

2.2. Evaluation Metrics and Themes Definitions

2.2.1. Reliability Theme

This theme classifies the possible impacts a potential development plan may have on the ability for Manitoba Hydro to reliably serve customers. The reliability theme is composed of three metrics:

- Adequate Supply
- Resource Diversity
- Technology Maturity

Each of these metrics capture aspects that may influence Manitoba Hydro's ability to deliver energy to customers.

Adequate Supply Metric

Adequate Supply: Ability for energy supply to meet future demand.

This metric considers, with the information available at the time of evaluation, if the needed transmission, distribution, generation, and natural gas infrastructure will be in place to meet future firm capacity and energy needs at peak demand and ensure reliable operations during extreme circumstances.

This metric is evaluated based on the feasibility of ensuring the Transmission, Distribution, Generation, and Natural Gas infrastructure is in place.

Table A8.1 - Evaluation qualification criteria for Adequate Supply metric

More Favourable	Neutral	Less Favourable
Firm capacity and energy demands are met with selected resource options and adequate delivery infrastructure.	Firm capacity and energy deficits in some years. No firm capacity and energy deficits occurring post-2030.	Sustained firm capacity and energy deficits occur in multiple years and post-2030.

Resource Diversity Metric

Resource Diversity: Potential to enhance supply resource diversity.

This metric considers how the diversity of resources in a potential development plan would affect system reliability, including factors such as water supply variability, fuel availability, and changes in policy.

This metric is evaluated compared to the existing system, including transmission, distribution, generation, and natural gas.

Table A8.2 - Evaluation qualification criteria for Resource Diversity metric

More Favourable	Neutral	Less Favourable
System becomes less reliant on a single energy resource.	System becomes less reliant on a single energy resource but introduces risk of limits of other resource options in later years	System continues to be reliant on a single energy resource and exceeds limits for other resource options.

Technology Maturity Metric

Technology Maturity: Ability of resource options to be commercially available when needed.

This metric considers the maturity and risks of emerging technologies in a potential development plan including generation, transmission, distribution, and natural gas resources.[1]

Table A8.3 - Evaluation qualification criteria for Technology Maturity metric

More Favourable	Neutral	Less Favourable
Solutions are commercially available to Manitoba Hydro for projected in-service date.	Some solutions selected are expected, but not known, to be commercially available to Manitoba Hydro for projected in-service date.	Many solutions selected are expected, but not known, to be commercially available to Manitoba Hydro for projected in-service date.

[1] Appendix 6 - Resource Options has more information on maturity assumptions.

2.2.2. Costs Theme

The costs theme demonstrates the potential financial impact of a potential development plan. The costs theme is composed of two metrics:

- Net System Costs
- Customer Direct Costs

This theme considers the potential costs to Manitoba Hydro to deliver the energy to customers, as well as the potential costs incurred by Manitoba Hydro customers over the study period related to the potential development plan.

Net System Costs Metric

Net System Costs: An estimate of the total incremental electricity and natural gas costs to implement the potential development plan, including generation, transmission, and distribution.

Table A8.4 - Evaluation qualification criteria for Net System Cost metric

More Favourable	Neutral	Less Favourable
Potential development plan costs are less than a $275M net present value increase over the lowest potential development plan cost for each load projection.	Potential development plan costs are between a $275M - $700M net present value increase over the lowest potential development plan cost for each load projection.	Potential development plan costs are greater than a $700M net present value increase over the lowest potential development plan cost for each load projection.

Customer Direct Costs Metric

Customer Direct Costs: An estimate of direct customer cost impacts.

This metric considers the incremental costs natural gas and electric customers incur in a potential development plan, such as costs of distributed electricity generation or upgraded efficiency electric heating systems. This metric does not include impacts on customers' utility bills.

Table A8.5 - Evaluation qualification criteria for Customer Direct Cost metric

More Favourable	Neutral	Less Favourable
Costs to customers (excluding customer rates) remain relatively stable and are not impacted by the potential development plan.	Costs to customers (excluding customer rates) are expected to increase marginally as a result of the potential development plan.	Costs to customers (excluding customer rates) are expected to increase significantly as a result of the potential development plan.

2.2.3. Environmental Theme

This theme refers to the potential environmental impacts of a potential development plan. The environmental theme is composed of two metrics:

- GHG Emissions
- Environmental Risk Considerations (non-GHG)

These two metrics capture a range of environmental impacts that could be expected. Each metric has a different geographical frame dependent on the type of impact expected.

GHG Emissions Metric

GHG Emissions: Potential greenhouse gas emission effects.

This metric considers the potential impact of a potential development plan on Manitoba Hydro's GHG emissions from electricity generation as well as on regional electricity generation GHG emissions.[2]

Table A8.6 - Evaluation qualification criteria for GHG Emissions metric

More Favourable	Neutral	Less Favourable
Achieves a net-zero grid by 2035 through 2050. GHG emissions reductions are achieved regardless of whether Manitoba Hydro is a net importer or exporter of energy.	Achieves a net-zero grid by 2050. GHG emissions reductions are achieved regardless of whether Manitoba Hydro is a net importer or exporter of energy.	Does not meet criteria for achieving a net-zero grid by 2050.

[2] For further discussion on incremental regional (non-Manitoba) electricity generation GHG emissions (more details are provided in Appendix 7.1 - Modelling & Analysis Approach, Section 10.1).

Environmental Risk Considerations (Non-GHG) Metric

Environmental Risk Considerations (Non-GHG): Potential effects on the environment.

This metric considers the risk of potential impacts to land, air, water, and people that could result from the resource options included within the potential development plan. Risks are based on the probable geographic extent, severity, duration, and likelihood of potential direct impacts after the application of standard mitigation measures.

Overall Environment Risk Considerations (non-GHG) for each potential development plan have been determined based on the proportional contribution to land, air, water, and people environmental impacts of each resource option within a particular plan.

Table A8.7 - Evaluation qualification criteria for Environmental Risk Considerations (Non-GHG) metric

More Favourable	Neutral	Less Favourable
Lower risk of potential impacts (limited scale, severity, and duration of impacts).	Moderate risk of potential impacts (moderate scale and severity of impact, intermittent impacts).	Higher risk of potential impacts (broad scale, higher severity, continuous impacts).

2.2.4. Socio-Economic Theme

This theme demonstrates the potential socio-economic impacts of a potential development plan. The socio-economic theme is composed of two metrics:

- Economic Reconciliation
- Economic Opportunity

These two metrics demonstrate the potential for communities in Manitoba to observe benefits from a potential development plan.

Economic Reconciliation Metric

Economic Reconciliation: Potential to promote economic reconciliation with Indigenous peoples, Nations, businesses, and governments.

This metric considers the potential of a development plan to promote economic benefits for Indigenous peoples, Nations, businesses, and governments, such as employment and training opportunities, investment options (including ownership), opportunities for early project engagement, and participation in procurement.

Table A8.8 - Evaluation qualification criteria for Economic Reconciliation metric

More Favourable	Neutral	Less Favourable
Strong potential to support economic reconciliation, such as majority Indigenous ownership potential, opportunities for investment, employment and training, participation in project development, and Indigenous contractor or supplier participation.	Some potential to support economic reconciliation, but potential benefits are unclear or unknown at this time.	Limited potential to support economic reconciliation.

Economic Opportunity Metric

Economic Opportunity: Potential benefits to the Manitoba economy and community well-being.

This metric considers potential benefits to the Manitoba economy and community well-being, such as economic development and job creation associated with the construction and operation of a potential development plan, as well as any surplus energy and capacity with the necessary grid infrastructure to transmit and distribute the power.

Table A8.9 - Evaluation qualification criteria for Economic Opportunity metric

More Favourable	Neutral	Less Favourable
Majority of capital is invested in Manitoba. Benefits to local supply chain, installation, or operational workforce. Capacity is added to accommodate Economic Development.	Approximately half of the capital is invested in Manitoba. Limited Manitoba-based installation and operational workforce. Some additional capacity developed to accommodate Economic Development.	Majority of capital is invested outside of Manitoba. Limited or no supply chain benefits, and non-Manitoba based installation and operational workforce. Capacity build meeting only local load growth requirements.

2.3. Evaluation Theme Scoring

The qualification for each evaluation theme is a function of the underlying evaluation metrics. Each evaluation theme will result in a score classified as:

- More Favourable,
- Neutral, or
- Less Favourable.

The theme is primarily determined by the lowest qualification of any of the metrics. If the lowest qualification of any metric is not truly representative for the overall evaluation of the theme, utility planning experience is employed such that the qualification does not understate, or overstate, the value provided by the potential development plan. The example shown below in Figure A8.3 demonstrates how the theme score is generated from the evaluation metric scores. In this example, despite there being two metrics that score "More Favourable", the theme is scored as "Neutral" due to the score of the resource diversity metric. For the results in this example to deviate from the typical framework and have a "more favourable" theme result, a strong rationale would need to be provided.

As with evaluation metrics, potential development plans with evaluation themes classified as "less favourable" can still be considered for proceeding. A potential development plan that has a theme classified as "less favourable" may have fewer benefits or additional risks. "Less favourable" helps identify aspects of a plan that should be investigated more closely.

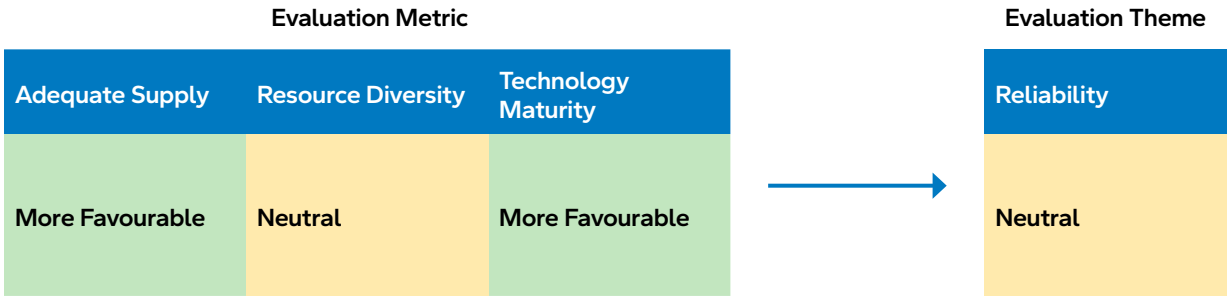

Figure A8.3 - Illustrative Example of Theme Scoring Method

3 Evaluation Metric and Theme Results

3.1. Potential Development Plans Evaluated

The potential development plans evaluated were plans that underwent the Least Regrets Analysis in the modelling and analysis stage (as detailed in Appendix 7.2 - Modelling & Analysis Results). These plans were characterized as belonging to three different groups:

- Lower Cost Plans,
- Diversified Capacity Plans, and
- Maximized Alternatives Plans.

The potential development plans were evaluated at each of the load projections, and the results at each load were considered when comparing between the plans to develop the short list of potential development plans.

3.2. Evaluation Scorecards

The summarized results of the evaluations are shown in the following tables. Results are separated by the load projection assumptions incorporated into that potential development plan evaluation.

Table A8.10 - Potential Development Plan (PDP) Evaluations to 2050 - 1-Baseline Load Projection

Lower Cost Plans

PDP	Reliability	Costs	Environmental	Socio-Economic
P1	More Favourable	More Favourable	Neutral	Less Favourable
P2	More Favourable	More Favourable	Neutral	Less Favourable
P3	More Favourable	Neutral	Neutral	Less Favourable
P4	More Favourable	Less Favourable	Neutral	Neutral

Diversified Capacity Plans

PDP	Reliability	Costs	Environmental	Socio-Economic
P5A	Neutral	Neutral	Neutral	Neutral
P5	Neutral	Less Favourable	Neutral	More Favourable
P5B	Neutral	Less Favourable	Neutral	Neutral

Maximized Alternative Plans

PDP	Reliability	Costs	Environmental	Socio-Economic
P6	More Favourable	Less Favourable	Neutral	Neutral
P7	More Favourable	Less Favourable	Neutral	Neutral
P8	Neutral	Less Favourable	Neutral	Neutral

Table A8.11 - Potential Development Plan (PDP) Evaluations to 2050 - 2-Medium load projection

Lower Cost Plans

PDP	Reliability	Costs	Environmental	Socio-Economic
P1	Less Favourable	More Favourable	Neutral	Neutral
P2	Less Favourable	More Favourable	Neutral	More Favourable
P3	Neutral	More Favourable	Neutral	More Favourable
P4	Neutral	Neutral	Neutral	Neutral

Diversified Capacity Plans

PDP	Reliability	Costs	Environmental	Socio-Economic
P5A	Neutral	More Favourable	Neutral	More Favourable
P5	Neutral	More Favourable	Neutral	More Favourable
P5B	Neutral	More Favourable	Neutral	More Favourable

Maximized Alternative Plans

PDP	Reliability	Costs	Environmental	Socio-Economic
P6	Less Favourable	Neutral	Neutral	Neutral
P7	Less Favourable	Neutral	Neutral	More Favourable
P8	Less Favourable	Neutral	Neutral	Neutral

Table A8.12 - Potential Development Plan (PDP) Evaluations to 2050 - 3-High load projection

Lower Cost Plans

PDP	Reliability	Costs	Environmental	Socio-Economic
P1	Less Favourable	More Favourable	Neutral	Neutral
P2	Less Favourable	More Favourable	Neutral	More Favourable
P3	Less Favourable	More Favourable	Neutral	More Favourable
P4	Less Favourable	Neutral	Neutral	More Favourable

Diversified Capacity Plans

PDP	Reliability	Costs	Environmental	Socio-Economic
P5A	Less Favourable	Neutral	Neutral	More Favourable
P5	Less Favourable	Neutral	Neutral	More Favourable
P5B	Less Favourable	Neutral	Neutral	More Favourable

Maximized Alternative Plans

PDP	Reliability	Costs	Environmental	Socio-Economic
P6	Less Favourable	Less Favourable	Neutral	More Favourable
P7	Less Favourable	Neutral	Neutral	More Favourable
P8	Less Favourable	Less Favourable	Neutral	More Favourable

3.3. Evaluation Metric Results

Table A8.13 - Potential Development Plan (PDP) Evaluations Metrics to 2050 - 1-Baseline load projection

Lower Cost Plans: Reliability

PDP	Adequate Supply	Resource Diversity	Technology Maturity
P1	More Favourable	More Favourable	More Favourable
P2	More Favourable	More Favourable	More Favourable
P3	More Favourable	More Favourable	More Favourable
P4	More Favourable	More Favourable	More Favourable

Lower Cost Plans: Cost

PDP	Net System Costs	Customer Direct Costs
P1	More Favourable	More Favourable
P2	More Favourable	More Favourable
P3	Neutral	More Favourable
P4	Less Favourable	More Favourable

Lower Cost Plans: Environmental

PDP	GHG Emissions	Environmental Risk Considerations (non-GHG)
P1	More Favourable	Neutral
P2	More Favourable	Neutral
P3	More Favourable	Neutral
P4	More Favourable	Neutral

Lower Cost Plans: Socio-Economic

PDP	Economic Reconciliation	Economic Opportunity
P1	Less Favourable	Less Favourable
P2	Less Favourable	Less Favourable
P3	Less Favourable	Less Favourable
P4	Neutral	Less Favourable

Diversified Capacity Plans: Reliability

PDP	Adequate Supply	Resource Diversity	Technology Maturity
P5A	More Favourable	Neutral	More Favourable
P5	More Favourable	Neutral	More Favourable
P5B	More Favourable	Neutral	More Favourable

Diversified Capacity Plans: Cost

PDP	Net System Costs	Customer Direct Costs
P5A	Neutral	Less Favourable
P5	Less Favourable	Less Favourable
P5B	Less Favourable	Less Favourable

Diversified Capacity Plans: Environmental

PDP	GHG Emissions	Environmental Risk Considerations (non-GHG)
P5A	More Favourable	Neutral
P5	More Favourable	Neutral
P5B	More Favourable	Neutral

Diversified Capacity Plans: Socio-Economic

PDP	Economic Reconciliation	Economic Opportunity
P5A	Neutral	Neutral
P5	More Favourable	More Favourable
P5B	Neutral	Neutral

Maximized Alternatives Plans: Reliability

PDP	Adequate Supply	Resource Diversity	Technology Maturity
P6	More Favourable	More Favourable	More Favourable
P7	More Favourable	More Favourable	More Favourable
P8	More Favourable	Neutral	More Favourable

Maximized Alternatives Plans: Cost

PDP	Net System Costs	Customer Direct Costs
P6	Less Favourable	Less Favourable
P7	Less Favourable	Less Favourable
P8	Less Favourable	Less Favourable

Maximized Alternatives Plans: Environmental

PDP	GHG Emissions	Environmental Risk Considerations (non-GHG)
P6	More Favourable	Neutral
P7	More Favourable	Neutral
P8	More Favourable	Neutral

Maximized Alternatives Plans: Socio-Economic

PDP	Economic Reconciliation	Economic Opportunity
P6	Neutral	Less Favourable
P7	Neutral	Neutral
P8	Neutral	Less Favourable

Table A8.14 - Potential Development Plan (PDP) Evaluations Metrics to 2050 - 2-Medium load projection

Lower Cost Plans: Reliability

PDP	Adequate Supply	Resource Diversity	Technology Maturity
P1	Less Favourable	Neutral	Neutral
P2	Less Favourable	Neutral	Neutral
P3	Neutral	Neutral	More Favourable
P4	Neutral	Neutral	Neutral

Lower Cost Plans: Cost

PDP	Net System Costs	Customer Direct Costs
P1	More Favourable	Neutral
P2	More Favourable	Less Favourable
P3	More Favourable	Less Favourable
P4	Neutral	Neutral

Lower Cost Plans: Environmental

PDP	GHG Emissions	Environmental Risk Considerations (non-GHG)
P1	More Favourable	Neutral
P2	More Favourable	Neutral
P3	More Favourable	Neutral
P4	More Favourable	Neutral

Lower Cost Plans: Socio-Economic

PDP	Economic Reconciliation	Economic Opportunity
P1	Neutral	More Favourable
P2	More Favourable	More Favourable
P3	More Favourable	More Favourable
P4	Neutral	More Favourable

Diversified Capacity Plans: Reliability

PDP	Adequate Supply	Resource Diversity	Technology Maturity
P5A	Neutral	Neutral	More Favourable
P5	Neutral	Neutral	More Favourable
P5B	Neutral	Neutral	More Favourable

Diversified Capacity Plans: Cost

PDP	Net System Costs	Customer Direct Costs
P5A	More Favourable	Less Favourable
P5	More Favourable	Less Favourable
P5B	More Favourable	Less Favourable

Diversified Capacity Plans: Environmental

PDP	GHG Emissions	Environmental Risk Considerations (non-GHG)
P5A	More Favourable	Neutral
P5	More Favourable	Neutral
P5B	More Favourable	Neutral

Diversified Capacity Plans: Socio-Economic

PDP	Economic Reconciliation	Economic Opportunity
P5A	More Favourable	More Favourable
P5	More Favourable	More Favourable
P5B	More Favourable	More Favourable

Maximized Alternatives Plans: Reliability

PDP	Adequate Supply	Resource Diversity	Technology Maturity
P6	Less Favourable	Neutral	Neutral
P7	Less Favourable	Neutral	Neutral
P8	Less Favourable	Neutral	Neutral

Maximized Alternatives Plans: Cost

PDP	Net System Costs	Customer Direct Costs
P6	Neutral	Less Favourable
P7	Neutral	Less Favourable
P8	Neutral	Less Favourable

Maximized Alternatives Plans: Environmental

PDP	GHG Emissions	Environmental Risk Considerations (non-GHG)
P6	More Favourable	Neutral
P7	More Favourable	Neutral
P8	More Favourable	Neutral

Maximized Alternatives Plans: Socio-Economic

PDP	Economic Reconciliation	Economic Opportunity
P6	Neutral	More Favourable
P7	Neutral	More Favourable
P8	Neutral	More Favourable

Table A8.15 - Potential Development Plan (PDP) Evaluations Metrics to 2050 - 3-High load projection

Lower Cost Plans: Reliability

PDP	Adequate Supply	Resource Diversity	Technology Maturity
P1	Less Favourable	Less Favourable	Neutral
P2	Less Favourable	Less Favourable	Neutral
P3	Less Favourable	Less Favourable	Neutral
P4	Neutral	Less Favourable	Neutral

Lower Cost Plans: Cost

PDP	Net System Costs	Customer Direct Costs
P1	More Favourable	Less Favourable
P2	More Favourable	Less Favourable
P3	More Favourable	Less Favourable
P4	Neutral	Less Favourable

Lower Cost Plans: Environmental

PDP	GHG Emissions	Environmental Risk Considerations (non-GHG)
P1	More Favourable	Neutral
P2	More Favourable	Neutral
P3	More Favourable	Neutral
P4	More Favourable	Neutral

Lower Cost Plans: Socio-Economic

PDP	Economic Reconciliation	Economic Opportunity
P1	Neutral	More Favourable
P2	More Favourable	More Favourable
P3	More Favourable	More Favourable
P4	More Favourable	More Favourable

Diversified Capacity Plans: Reliability

PDP	Adequate Supply	Resource Diversity	Technology Maturity
P5A	Less Favourable	Less Favourable	Less Favourable
P5	Less Favourable	Less Favourable	Less Favourable
P5B	Less Favourable	Less Favourable	Less Favourable

Diversified Capacity Plans: Cost

PDP	Net System Costs	Customer Direct Costs
P5A	Neutral	Less Favourable
P5	Neutral	Less Favourable
P5B	Neutral	Less Favourable

Diversified Capacity Plans: Environmental

PDP	GHG Emissions	Environmental Risk Considerations (non-GHG)
P5A	More Favourable	Neutral
P5	More Favourable	Neutral
P5B	More Favourable	Neutral

Diversified Capacity Plans: Socio-Economic

PDP	Economic Reconciliation	Economic Opportunity
P5A	More Favourable	More Favourable
P5	More Favourable	More Favourable
P5B	More Favourable	More Favourable

Maximized Alternatives Plans: Reliability

PDP	Adequate Supply	Resource Diversity	Technology Maturity
P6	Less Favourable	Less Favourable	Neutral
P7	Less Favourable	Less Favourable	More Favourable
P8	Less Favourable	Less Favourable	Neutral

Maximized Alternatives Plans: Cost

PDP	Net System Costs	Customer Direct Costs
P6	Less Favourable	Less Favourable
P7	Neutral	Less Favourable
P8	Less Favourable	Less Favourable

Maximized Alternatives Plans: Environmental

PDP	GHG Emissions	Environmental Risk Considerations (non-GHG)
P6	More Favourable	Neutral
P7	More Favourable	Neutral
P8	More Favourable	Neutral

Maximized Alternatives Plans: Socio-Economic

PDP	Economic Reconciliation	Economic Opportunity
P6	More Favourable	More Favourable
P7	More Favourable	More Favourable
P8	More Favourable	More Favourable

3.4. Observations from the Evaluation

For each of the evaluation themes, there were trends observed across the potential development plans. These offered insights into the possible impacts across the potential development plans.

3.4.1. Reliability

The reliability of a potential development plan tended to decrease at higher load projections. For plans under 2-Medium load projection, the reliability theme scores tended to be driven by the adequate supply metric. At 3-High load projection, both adequate supply and resource diversity tended to have less favourable results. For the adequate supply metric, only P4 had a score that was not less favourable at 3-High load projection.

For 3-High load projection no plans achieved a "more favourable" result for the resource diversity metric. There was no material differentiation between plans meaning additional risks will be introduced in a future that necessitates building out a significant amount of new resources.

At 1-Baseline load projection, four plans had a neutral theme score. This score was driven by the resource diversity metric in all cases. So, while the resources planned would serve that load, there may be additional considerations to explore with those plans even at the lowest load studied.

3.4.2. Costs

The qualification of the costs of a potential development plan were the most varied across the potential development plans compared to the other themes. P6 and P8 had less favourable results across all load projections for the costs theme. P1 and P2 were the only plans to have more favourable cost results across all load projections. Potential development plans at 2-Medium load projection tended to have more favourable cost evaluations than at either of the other two load projections.

3.4.3. Environmental

The environment theme results did not differ between potential development plans. All potential development plans impact the environment, but evaluation showed that there were no material differences in the expected environmental impact mitigations between potential development plans.

Most potential development plans were composed of resources that were collectively neutral for the environmental risk considerations (non-GHG) metric. While some resources selected were more favourable or less favourable on their own, they would not have a large enough impact on the entire system to affect the metric.

The GHG emissions metric was qualified as "more favourable" for all load projections. All potential development plans achieve a net-zero grid by 2035 under all load projections. The 2-Medium and 3-High load projections support pathways to a net-zero economy and demonstrated economy-wide decreases in GHG emissions. The evaluation revealed that a large increase in electric load around 2050 to support a net-zero economy could make it more challenging to continue to support electricity generation GHG emission reductions outside of Manitoba.

3.4.4. Socio-Economic

There were a few trends observed in the socio-economic evaluation theme. The socio-economic impacts varied with the load projections. The load projections are a significant driver of the amount of new capacity built, which in turn is a significant driver of the amount of economic development.

Another trend observed was that potential development plans with customer side solutions (energy efficiency, demand response, and curtailable rate programs) scored more favourably. This is because benefits accrue in Manitoba when customers are contracting with local suppliers who have a local workforce and may have a local supply chain as well.

4 Aggregated Evaluation Results

To understand how robust a potential development plan is to an uncertain load future, incorporating the results of all the load projections into on aggregated result provides insight into the value of a potential development plan across the range of futures studied in this IRP. The evaluation scorecard in Table A8.16 demonstrates the results of the potential development plans at each load projection.

To aggregate the results at each load for a potential development plan, the theme score for each load projection was added together to determine an aggregated theme score incorporating all load projections. To achieve an aggregated score of "more favourable", the theme scores needed to either be all more favourable or have more favourable as the scores for two of the three load projections, with neutral the score of the remaining load projection. To achieve an aggregated score of less favourable, the theme scores needed to either be all less favourable or have less favourable as the scores for two of the three load projections, with neutral the score of the remaining load projection. For the other possible combinations, the aggregated score would result in a neutral classification.

Table A8.16 - Aggregated Evaluation Results

Lower Cost Plans

PDP	Reliability	Costs	Environmental	Socio-Economic
P1	Less Favourable	More Favourable	Neutral	Neutral
P2	Less Favourable	More Favourable	Neutral	Neutral
P3	Neutral	More Favourable	Neutral	Neutral
P4	Neutral	Neutral	Neutral	Neutral

Diversified Capacity Plans

PDP	Reliability	Costs	Environmental	Socio-Economic
P5A	Neutral	Neutral	Neutral	More Favourable
P5	Neutral	Neutral	Neutral	More Favourable
P5B	Neutral	Neutral	Neutral	More Favourable

Maximized Alternatives Plans

PDP	Reliability	Costs	Environmental	Socio-Economic
P6	Neutral	Less Favourable	Neutral	Neutral
P7	Neutral	Neutral	Neutral	More Favourable
P8	Less Favourable	Less Favourable	Neutral	Neutral

4.1. Observations from the Aggregated Evaluation Results

4.1.1. Lower Cost Plans

When comparing the range of evaluation results, P3 provides more favourable trade-offs across all the load projections. P1 and P2 were evaluated to have less favourable reliability. P4 was shown to be more costly than P3 even though it delivered similar value on the other evaluation metrics.

4.1.2. Diversified Capacity Plans

The evaluation metrics for each of the diversified capacity plans were observed to have no material difference between them. While there were slight differences between the plans at some load projections, these differences were not significant enough to provide differentiation at the aggregated level.

4.1.3. Maximized Alternatives Plans

The final grouping considered was the Maximized Alternatives Plans. Of this set, P7 demonstrates more value than both P6 and P8. P6 and P8 do not have any themes that are evaluated as more favourable, and both have less favourable costs.