Government of Manitoba's

Response to the Economic Review of Bipole III and Keeyask Generating Station (ERBK)

November 30, 2022

Manitoba

Contents

EXECUTIVE SUMMARY

The Economic Review of Bipole III and the Keeyask Generating station contained a number of significant findings that brought into question the need for these projects at the time, how they were planned, how approvals were achieved, regulatory oversight and ultimately how the projects were managed.

The findings start with the early locked in nature of these projects well before the Needs For and Alternatives To review undertaken by the Public Utilities Board. There was concern that significant pre approval capital expenditures were made as well as both agreements with First Nations and export customers negotiated well before any formal approvals of the projects by Government. Shortly after the Public Utilities Board review of Keeyask, the business case for the project started to deteriorate, yet there was no evidence of any stage gates where project go/no go decisions were considered.

In the end, both projects combined were nearly $4 billion over budget. The Commissioner of the Review questioned the actual need for Keeyask based on domestic demand for additional electricity at the time in contrast to the desire of the Government at the time to export more power out of the province. He found little evidence of Government oversight for these major capital projects even with the Province borrowing billions of dollars on behalf of Manitoba Hydro. He opined as to why the Bipole III project was not part of the Needs For and Alternatives To review given the significant capital cost and significant ties it had to the Keeyask project's economics. He also highlighted issues and cost overruns associated with the management of contracts related to the building of Keeyask.

Given the serious issues the Commissioner had found, he made 51 forward thinking recommendations that would address those concerns and help put Manitoba's most important Crown Corporation on the right track again. This report represents Government's response to those recommendations.

The areas of focus include:

- revising Manitoba Hydro's legislated mandate, leaving no ambiguity of its purpose and no room for direction or activity not core to the corporation's business;

- provincial energy strategy providing a lens which all of Manitoba Hydro's planning activities will be viewed through;

- a framework for Manitoba Hydro's integrated resource planning activities that ensures an objective and comprehensive process and clearly identifies the roles for Government and the Public Utilities Board;

- an examination of new ways to plan, manage and execute major capital projects with an eye on keeping projects on budget and on time;

- how Government and regulatory oversight can be improved given the magnitude of major capital projects;

- a fresh view of considerations for future Indigenous partnerships in electricity projects, and;

- how governance and accountability within and between Government and Manitoba Hydro will be improved.

Each of these actions will be measured against expected outcomes, tracked and made public as they are implemented.

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L’examen économique de la ligne de transmission Bipolaire III et de la centrale de Keeyask contenait un certain nombre de constatations importantes qui remettaient en cause la nécessité de ces projets à l’époque, la façon dont ils ont été planifiés, la façon dont les approbations ont été obtenues, la surveillance réglementaire et la façon dont les projets ont finalement été gérés.

Les premières constatations indiquaient que ces projets étaient déjà fixés bien avant l’examen de leur nécessité et des solutions de rechange par la Régie des services publics. L’on s’inquiétait du fait que d’importantes dépenses d’immobilisation avaient été effectuées et que les accords avec les Premières Nations et les clients à l’exportation avaient été négociés bien avant que le gouvernement n’ait approuvé officiellement les projets. Peu après l’examen du projet de Keeyask par la Régie des services publics, l’analyse de rentabilité du projet a commencé à se dégrader, mais aucune décision de poursuivre ou non le projet ne semble avoir été prise en cours de route.

Au final, les deux projets combinés ont dépassé de 4 milliards de dollars le budget prévu. Le commissaire chargé de l’examen s’est demandé si le projet de Keeyask était vraiment nécessaire compte tenu de la demande intérieure pour de l’électricité supplémentaire à ce moment-là, qui contrastait avec le souhait du gouvernement d’alors d’exporter plus d’énergie à l’extérieur de la province. Le commissaire a trouvé peu d’éléments tendant à indiquer que le gouvernement effectuait une surveillance de ces projets d’immobilisation majeurs, malgré les milliards de dollars que la Province a empruntés pour le compte de Manitoba Hydro. Il a fait part de son opinion quant aux raisons pour lesquelles le projet Bipolaire III n’a pas fait l’objet d’un examen de sa nécessité et des solutions de rechange, étant donné l’importance du coût d’immobilisation et de ses liens significatifs avec les paramètres économiques du projet de Keeyask. Il a également souligné les problèmes et les dépassements de coûts associés à la gestion des contrats liés à la construction de la centrale de Keeyask.

Compte tenu des problèmes importants qu’il a décelés, le commissaire a formulé 51 recommandations tournées vers l’avenir pour répondre à ces préoccupations et pour aider la société d’État la plus importante du Manitoba à se remettre sur ses rails. Ce rapport constitue la réponse du gouvernement à ces recommandations.

L’accent a été placé notamment sur ce qui suit :

- la révision du mandat officiel de Manitoba Hydro, qui ne laissera aucune ambiguïté quant à son objet et aucune place à une orientation ou à une activité non essentielle aux affaires de la société;

- l’adoption d’une stratégie provinciale de l’énergie, de manière à ce que toutes les activités de planification de Manitoba Hydro soient examinées dans la même optique;

- l’établissement d’un cadre s’appliquant à toutes les activités de planification intégrée des ressources de Manitoba Hydro, pour rendre le processus objectif et complet et pour définir clairement les rôles du gouvernement et de la Régie des services publics;

- l’examen de nouvelles façons de planifier, de gérer et de mettre en œuvre des projets d’immobilisation majeurs en veillant à ce que ces projets soient achevés dans les délais et selon le budget prévus;

- la façon dont la surveillance gouvernementale et réglementaire peut être améliorée vu l’ampleur des projets d’immobilisation majeurs;

- une nouvelle façon de voir les choses en établissant de nouveaux partenariats avec les Autochtones liés à des projets d’électricité;

- la façon d’améliorer la gouvernance et la reddition de comptes au sein du gouvernement et de Manitoba Hydro et entre les deux entités.

Chacune de ces mesures sera évaluée en fonction des résultats escomptés, sera suivie et sera rendue publique une fois mise en œuvre.

Purpose of the Economic Review of Bipole III and Keeyask Generating Station (ERBK)

The purpose of the economic review was to examine the planning, decision-making, procurement and project management processes that led to the development of the Bipole III transmission line and the Keeyask generating station.

The ERBK Commissioner (Brad Wall) was asked to assess a variety of pre and post aspects of the two projects including:

- the need for these projects at the time;
- the direction and oversight provided by the government of the day related to these projects;
- whether net benefits and project risks were properly assessed;
- whether the immediate and long-term fiscal implications for the Government of Manitoba, taxpayers, Manitoba Hydro and their ratepayers were properly assessed prior to approval;
- was oversight appropriate given the size of the projects, and
- were the projects effectively tendered and managed after approval.

The Commissioner was asked to make key forward thinking recommendations related to:

- future government oversight and accountability measures for major capital projects;
- appropriate assessment of risks;
- assessment of financial implications;
- whether the Manitoba Hydro mandate needs to be clarified/modernized;
- regulatory oversight; and
- appropriate steps to restore the corporation's financial health.

Recommendations were to help Government make clear informed policy, that supports an objective assessment of when and how to best meet our electricity needs and when that determination is made, ensure the best project procurement and management practices are employed to keep costs and completion dates in line. Most importantly, recommendations were to help find ways to better protect Manitobans by not running the risk of repeating the same mistakes that have been experienced with past decisions around these projects. (See Appendix # 1 for ERBK terms of reference)

On June 18, 2021, Government announced a formal process that included creating a project team to respond to the 51 recommendations from the ERBK report, as well as an external expert panel to provide direction and guidance to the project team. (see Appendix # 2 for summary of recommendations)

Summary of Major Findings from ERBK Report

- The domestic need for Keeyask did not come to fruition, and the real driver for the project appeared to be economic development.
- The previous Government made it clear early in their tenure they wanted to build Keeyask locking that decision in without proper consideration of alternatives or changing market conditions.
- There was no evidence of stage gates that considered “go/no go” decisions at critical stages of the projects.
- Bipole III was not ultimately constructed for reliability purposes but to support the development of Keeyask, which was driven by the lure of electricity exports.
- No evidence of appropriate Government oversight of the projects nor attention to the associated risks to ratepayers.
- The business case for Keeyask began to fall apart shortly after the Public Utilities Board (PUB) completed it’s Needs For and Alternatives To review (NFAT).
- The $1.2 billion early infrastructure expenditures, First Nation partnership agreements and negotiated export contracts, tipped the scales before project approval.
- The projects were over budget by close to $4 billion.

Purpose of the Government's Response

The project team was tasked to respond to the 51 recommendations from the ERBK report, with the assistance of an external expert panel to provide direction and guidance for the project team.

The intent was to create strong and transparent policies and initiatives to ensure future Manitoba Hydro projects are planned, reviewed, approved and built with greater accountability and demonstrate clear value to Manitobans. The external experts were to support the project team on critical recommendations in the areas of procurement and contracting. They also served in an advisory capacity to guide the development of action plans that address these recommendations.

Core project team led by Manitoba Finance (Crown Services) also included representatives from Manitoba Labour, Consumer Protection and Government Services.

The Expert Panel consisted of:

- **Mark Podlasly** - director of economic policy at the First Nations Major Projects Coalition;
- **Tim Stanley** - engineer and president at Stratice Consulting; and
- **Chris Gauer** - engineer and former president, project delivery, Infrastructure Ontario.

(See Appendix # 3 Government ERBK Response News Release)

Actions Addressing the ERBK Recommendations

Since the ERBK report was released and even before, many policy, operational and planning initiatives have already been undertaken by Government and Manitoba Hydro, to make the Corporation and the relationship it has with Government more effective and efficient. These initiatives are in alignment with the recommendations from the Commissioner. There has also been a concentrated focus on improving the financial health of Manitoba Hydro given its significant debt and debt servicing costs it must pay each year.

The following actions focus on Government's response to the ERBK report and include initiatives that have already been implemented or are in progress and those that will be implemented in the near term. It is expected that Manitoba Hydro and the PUB will also have additional actions they will implement to help strengthen the Corporation and the independent regulatory oversight provided by PUB.

The response is comprised of seven action areas that will cover all 51 recommendations from the ERBK Report, as follows:

1. Manitoba Hydro Mandate
2. Provincial Energy Strategy
3. Integrated Resource Planning Framework
4. Major Capital Planning
5. Government/Regulatory Oversight
6. Indigenous Partnerships
7. Accountability

1. Manitoba Hydro Mandate

Background:

Current Mandate from Manitoba Hydro Act:

> ***Purposes and objects of Act***
>
> *2*
>
> *The purposes and objects of this Act are to provide for the continuance of a supply of power adequate for the needs of the province, and to engage in and to promote economy and efficiency in the development, generation, transmission, distribution, supply and end-use of power and, in addition, are*
>
> *(a) to provide and market products, services and expertise related to the development, generation, transmission, distribution, supply and end-use of power, within and outside the province; and*
>
> *(b) to market and supply power to persons outside the province on terms and conditions acceptable to the board.*

ERBK Report Findings:

The existing mandate creates ambiguity in terms of the role for Manitoba Hydro in provincial economic development and other broader societal initiatives such as affordability and environmental policies.

Crown corporations such as Manitoba Hydro are not well-suited to be an instrument for the Province to foster northern economic and socio-economic development, or socio-economic benefits to Manitobans more broadly. While it is hardly surprising that Manitoba Hydro followed the directions of its sole shareholder in these broader matters, expanding Manitoba Hydro's function beyond its statutory mandate erodes the purpose of creating Manitoba Hydro as a Crown corporation in the first place (as a specialized organization with expertise over the matters within its mandate).

Recommended Government Actions:

Manitoba Hydro Mandate

- Government to redraft Manitoba Hydro's mandate in the context of the ERBK report recommendations and new provincial energy and economic development policies. (will require amendment to the Manitoba Hydro Act - Purposes and objects of Act)

- The new mandate should focus on providing the most economic and efficient means of meeting Manitobans' electricity and natural gas needs.
- Mandate amendments should ensure Manitoba Hydro pursues and chooses projects based on lowest cost and greatest technical performance. In particular, preferred project business cases must emerge through the corporation's Integrated Resource Planning process as discussed in this report.
- The mandate should reflect, that if the Government decides that Manitoba Hydro should pursue and choose a generation or transmission project largely based on socio-economic development benefits and/or environmental policies, rather than lowest cost to ratepayers, the Government must be publicly transparent about that decision so that it can be held accountable, and taxpayers should be responsible for the incremental costs of that policy decision, not ratepayers.
- If such risks are realized, it is suggested that a reduction in payments to government (i.e. water power rental, debt guarantee fee, capital tax) would be implemented to mitigate impacts on rate payers.
- Government to assess the payments from Manitoba Hydro to Government in the context of profitability of the corporation and ability to make payments without compromising its financial health.
- The amended mandate should not preclude Manitoba Hydro from exporting power provided it is done in accordance with provincial energy policy which, as recommended in the ERBK report, should provide guidance regarding exports including commercial targets for projects built for exports (regardless of whether they eventually are used to serve domestic demand).
- Once the mandate has been redrafted, direct Manitoba Hydro to look at its various subsidiary elements and determine if those operations are core to its mandate and duty. If these are not core to its mission, then they should be considered for sale or shutdown.

Expected Outcomes From These Actions:

As a Crown corporation, Manitoba Hydro's sole shareholder is the Government of Manitoba, and by extension, the corporation is accountable to all Manitobans. It is that accountability responsibility that obligates Government to ensure Manitoba Hydro's mandate is clear, concise and focused on its core business.

Clarity of Manitoba Hydro's core mandate will ensure there is no ambiguity in terms of its core business, allowing the corporation to operate more effectively and implement its long-term strategic plans efficiently.

Current Status:

Awaiting completion of the Provincial Energy Policy Framework before drafting new mandate. The framework will provide broad energy objectives that will help shape the Manitoba Hydro mandate.

In November 2022, Government completed an assessment of payments made by Manitoba Hydro to Government and has since reduced the water power rental and debt guarantee fees by half. It expected that this action will have a positive impact for ratepayers when future electricity rates are considered by PUB.

Action Lead:

Manitoba Finance - Crown Services

Milestones:

Spring 2023

Recommendations From ERBK Report Addressed:

Recommendation #2.11: Manitoba Hydro's statutory mandate should be amended to provide clarity in terms of its objectives and priorities. In the Commissioner's view, Manitoba Hydro's statutory mandate should not include socio-economic development. Rather, Manitoba Hydro's mandate should be to provide the most economic and efficient electric system within the boundaries of the Province's energy policy (which should not pre-determine projects or resource options). Manitoba Hydro should pursue and choose projects based on lowest cost and technical performance, not based on socioeconomic development benefits.

Recommendation #3.9: As noted in Chapter 2 of this report, the Government should clarify Manitoba Hydro's mandate in selecting projects to meet future energy demand. If Manitoba Hydro's primary focus should be on impacts to ratepayers (as recommended by the Commissioner in Recommendation #2.11), then many "benefits" from the perspective of government should actually be assessed as "costs" from the perspective of ratepayers.

4.10-A - **Recommendation #4.10:** As discussed in Chapters 2 and 3 of this report, the Government should revise Manitoba Hydro's statutory mandate as set out in The Manitoba Hydro Act to make it clear that Manitoba Hydro's mandate is to meet Manitoba's peak domestic load in the most cost-effective manner possible and not to maximize jobs in the north or carry out the Province's environmental policy, unless otherwise directed by the Government through a transparent process.

2. Provincial Energy Strategy

Background:

The Government of Manitoba is responsible for energy policy direction, regulations, and some programming. Its Crown utilities, Manitoba Hydro (managing supply of electricity and natural gas) and Efficiency Manitoba (delivering demand side management for industrial, commercial and residential users) are key players in Manitoba's energy sector.

Governed by the Manitoba Hydro Act, Manitoba Hydro supplies electricity to meet the needs of the province through the development, generation, transmission, distribution, supply, and end-use of electricity.

Governed by the Efficiency Manitoba Act, Efficiency Manitoba is a Crown corporation that is responsible for demand side management of certain types of energy. It primarily delivers energy efficiency programs to meet legislated energy conservation targets.

The PUB is an independent, quasi-judicial administrative tribunal that has a mandate to serve the public interest, protect utility consumers, and set electricity and natural gas rates. PUB authority includes reviewing electricity and natural gas rate applications and setting of rates for utility services, as well as review of energy-related capital expenditures on natural gas.

ERBK Report Findings:

Political desires drove both Bipole III and Keeyask generating stations rather than sound energy policy and objective resource planning. Keeyask was approved and construction on it was commenced for an in-service date of 2019, years before it would be needed to meet the Province's electrical needs, in order to fulfill export contracts. This created a situation in which Keeyask was built for exports (at least for its initial years of service), which is inherently risky and exposes ratepayers to risks around long-term projections for the export market.

If those projections prove optimistic [which the Needs for and Alternatives To (NFAT)] panel believed they would, Keeyask may not break even for a very long time and may prove very costly to ratepayers. The large and long-term investment in hydroelectric power generation requires the Government to provide guidance to Manitoba Hydro with respect to energy policy.

Energy policy should address "merchant plants" if they are to continue being built in the future, including criteria for their commercial evaluation and the extent to which exports (firm and opportunity sales) may drive or advance the development of new generation by Manitoba Hydro.

Recommended Government Actions:

- Government to develop a provincial energy policy framework that includes policy objectives for electricity and natural gas. The Framework will:
    - respond to current and future energy market trends, and economic and environmental challenges facing industrial, commercial, and residential consumers and energy utilities;
    - capitalize on Manitoba's vast renewable electricity resources;
    - support the strategic and operational planning needs of relevant Crown corporations (i.e. broad energy policy objectives under which Manitoba Hydro will plan and operate);
    - combat climate change and successfully achieve a clean and sustainable energy transition to a low carbon future;
    - maximize the use of low-cost electricity and other forms of renewable energy for economic benefits for Manitoba;
    - respond to the Made-in-Manitoba Climate and Green Plan's vision to be Canada's cleanest, greenest, and most resilient province; and
    - stimulate local employment and economic development and increase Indigenous partnerships.
- Government to establish policy for merchant electricity plants for export sales.
- Government, with support from an independent expert, will assess Manitoba Hydro's open access transmission policy and provide recommendations as appropriate.
- Government to establish policy direction for Manitoba Hydro in terms of the execution of related community partnership agreements and power export contracts.
- Government with Manitoba Hydro to assess the value of pursuing power exports vs the domestic use of power in light of a changing energy future.

Expected Outcomes From These Actions:

- The Provincial energy framework will provide clear energy policy expectations for Manitoba Hydro allowing the Corporation to align with Government while it plans for and undertakes its operations.
- Manitoba Hydro's integrated resource planning processes will be carried out through the lens of provincial energy policy objectives.
- Manitoba Hydro's contribution to GHG reductions will continue with its clean renewable generating portfolio.
- Additional policy direction will ensure that non-utility electricity generators have fair access to transmission capacity for exports out of Manitoba.
- That ratepayers are protected from any risks associated with merchant plants owned by Manitoba Hydro that are not needed to meet the domestic electricity demand.
- New opportunities could be created for non-utility generators or private/public partnerships.

Current Status:

Government is currently in the process of developing the new energy policy, including components that will impact Manitoba Hydro. The energy policy framework will support three priority activities. First, the framework will support the effective operation and oversight of Crown corporations. Second, it will foster market transformation to increase the use of low carbon/zero emission energy resources and technologies. Third, it will help facilitate the orderly development of a reliable and efficient energy sector to meet the needs of Manitobans and provide economic development opportunities for the province. It will align with existing laws and regulations, and consider the following:

- Reinforce Manitoba's strong position in the area of renewable energy resources and as one of the lowest electricity rate jurisdictions in North America;
- Ensure that the Province's energy resource planning is done in a more inclusive, transparent, and integrated manner;
- Help the energy sector contribute to Manitoba's GHG reduction targets towards net zero emissions;
- Ensure that Manitoba's energy sector and related energy infrastructures incorporate adaptation and resiliency to climate change as part of their commitment to a secure and reliable energy system;
- Drive the clean energy transition in Manitoba by supporting transitional, new, and emerging clean energy resources and technologies to displace high carbon energy resources; and
- Stimulate local employment and economic development and increase Indigenous partnerships.

Action Lead:

Manitoba Environment, Climate and Parks

Milestones:

Spring 2023

Recommendations From ERBK Report Addressed:

Recommendation #2.5: Limits should be placed on how much advance costs can be spent on a major capital project prior to final approval and sanctioning of that project.

Recommendation #2.6: Manitoba Hydro's ratepayers should not bear the risk associated with new generation projects that will, for an extended period of time, be commercial in nature, used for exports, and not needed to serve domestic demand. Accordingly, if a Government in the future approves a generation project that is, for an extended period of time, primarily for export and not needed for domestic demand, then

the Government should bear the risk if this commercial plant is not successful during that period. If the market plan fails and export revenues do not cover the costs of operating the plant during that period and the proportion of capital costs for that part of the plant's operating life, then the Government should reduce or suspend its collection of transfers from Manitoba Hydro until those cost shortfalls are made up.

Recommendation #2.7: As recommended in Chapter 1 of this report, the Government should develop new policy regarding merchant plants that includes evaluating the commercial merits (i.e., profit potential) of those projects differently than projects built to serve domestic demand. In addition, the Government should develop new policy regarding the extent to which exports should drive or advance the development of new generation by Manitoba Hydro. This policy should address how much of those exports should be supported by firm sales agreements (as opposed to opportunity sales).

Recommendation #1.4: The Government needs to be aware of and transparent about the incremental costs of constraints and additional requirements that its policies impose on Manitoba Hydro with respect to its projects (e.g., route siting).

Recommendation #1.5: The large and long-term investment in hydroelectric power generation requires the Government to provide guidance to Manitoba Hydro with respect to energy policy. This energy policy should address "merchant plants" if they are to continue being built in the future, including criteria for their commercial evaluation and the extent to which exports (firm and opportunity sales) may drive or advance the development of new generation by Manitoba Hydro.

4.10-B - **Recommendation #4.10:** It should not preclude Manitoba Hydro from exporting power provided it is done in accordance with provincial energy policy which, as recommended in this report, should provide guidance regarding exports including commercial targets for projects built for exports (regardless of whether they eventually are used to serve domestic demand).

Recommendation #2.1: The Government should commission an independent review and public report regarding transmission tariffs, access to transmission in the Province, and related government policies to ensure that they are not a barrier to other companies building new generation in Manitoba for export, in accordance with its policy of allowing same.

Recommendation #3.7: While it is reasonable for Manitoba Hydro to negotiate long-term power sales agreements, the contracts should not pre-determine the preferred energy supply option before that option has been approved and sanctioned. To the extent that Manitoba Hydro enters into a power sales agreement that is contingent on a particular project proceeding that has not yet been sanctioned, Manitoba Hydro should ensure that it has the right to terminate the contract without any material penalty if that project is ultimately not sanctioned.

3. Integrated Resource Planning Framework

Background:

The planning, vetting, licensing and construction of large scale electricity generation and transmission projects requires long lead times, often a decade or more. Many variables can change within that period including technology, governments, market conditions, and external risks, causing the decision making process for meeting future electricity needs to be very complex. Adding to the complexity is the long lifecycle of certain generation options, such as a hydro dam, that has a life of 80 - 100 years. Accurately predicting variables affecting the business case for such options is extremely difficult.

An IRP is a long-term roadmap that considers various scenarios for the delivery of safe, reliable electricity and natural gas to a utility's customers. Although it looks to the long-term, it is normally updated regularly to reflect changes in technology, markets and government overarching policies. IRP should be a public process in which energy planners work together with other interested parties to identify and prepare electricity and natural gas options that serve the highest possible public good. In the process, they establish scope, investigate options, prepare and evaluate integrated plans, select preferred plans, and establish mechanisms to monitor, evaluate, and iterate plans as conditions change.

IRP is a process whose elements are designed to improve thoroughness and impartiality of preferred electricity and natural gas development plans, and the openness and transparency of their processes. The process should be a statutory requirement for a utility(s) and government electricity policy development.

ERBK Report Findings:

Manitoba Hydro made its decisions for new generation on the basis of a load forecast, and in this case, the temporal nature of a prospective large industrial load project that did not ultimately occur. The systemic implementation by Manitoba Hydro of a robust IRP will provide the broad based and integrated plan against which prospective projects can be measured. If this is done objectively and transparently it can negate the potential for pre-determined outcomes and reduce the duration of regulatory hearings by encouraging up-front debate and acceptance of Manitoba Hydro's key planning assumptions.

Enshrining the IRP requirement in legislation as identified in The Manitoba Hydro Amendment and Public Utilities Board Amendment Act is an important action by the Government to bring Manitoba Hydro into alignment with modern utility management practice. The Commission notes that IRP was the subject of a study prepared for the Government in 2016. The Commission also notes that Manitoba Hydro has been making great strides to bring this modern planning tool into its internal processes, spurred by the new leadership of the company.

The lack of a robust IRP process precluded Manitoba Hydro from effectively weighing Demand Side Management (DSM) and other energy options equally with hydroelectric generation. The benefits of Bipole III were not determined through an IRP process, either. The NFAT Panel also concluded that Manitoba Hydro's failure to use IRP was contrary to best practices.

Recommended Government Actions:

- Government to identify conditions and expectations for future Manitoba Hydro Integrated Resource Planning processes.
- Government to develop an IRP framework that details Government and PUB's role in reviewing and approving IRPs produced by Manitoba Hydro.
- Framework to consider project stage gates (go/no go project decision points).
- Explore the option of an expert panel as an ongoing component of IRP framework to ensure government objectives are met in Manitoba Hydro's planning processes.
- Panel could also provide technical and financial inputs into IRP process as necessary.
- IRP framework to be enshrined in legislation/regulation.

Expected Outcomes From These Actions:

- The actions will ensure an objective, transparent and inclusive planning process for the provision of electricity and natural gas.
- This will result in more transparent domestic need estimates and a more thorough and objective assessment of the alternatives to meet new demand.
- The Government IRP framework provides guidance and clear expectations to Manitoba Hydro, energy stakeholders and the PUB for future energy planning.
- A more open and transparent process will minimizes the confrontational nature of regulatory reviews of major Manitoba Hydro development plans.

Current Status:

The Manitoba Hydro Amendment and Public Utilities Board Amendment Act, enacted in November 2022, requires Manitoba Hydro prepare and submit an IRP to the Minister responsible. The Minister may refer the IRP to the Public Utilities Board for review and recommendations.

Manitoba Hydro is in the process of developing its first IRP to provide direction on how Manitoba Hydro can best meet the future energy needs of Manitobans in the evolving

energy landscape. The IRP process includes stakeholder engagement to include customers' perspectives and needs in the development of the IRP.

Phase 1 stakeholder engagement was completed in Fall 2021 with a customer survey that received almost 15,000 responses to initiate the energy planning conversation.

Phase 2 stakeholder engagement took place in the Spring 2022. Engagement included workshops with interested parties and more focussed conversations with current and potentially large energy users and representative organizations. Information and engagement for the general public is also in development.

The first Integrated Resource Plan will be completed by Summer 2023 and will support future multi-year PUB rate applications and inform near term and future energy infrastructure related decisions.

Government is currently preparing an IRP framework that contemplates:

- The broad government expectations and oversight for future Manitoba Hydro IRP processes. Considerations will include:

    - what is to be included in the IRP (e.g. energy, capacity, electricity, natural gas, etc.);
    - role of an IRP expert panel;
    - adequacy of Manitoba Hydro's planning process and mechanisms to monitor them;
    - how provincial energy policy will be incorporated;
    - the mechanics of energy efficiency planning integration into IRP;
    - indigenous reconciliation implications;
    - how non-utility electricity generators/marketers and natural gas suppliers will be incorporated;
    - regulatory oversight parameters;
    - role of provincial government;
    - stakeholder engagement;
    - implications of federal policies/regulations;
    - final reporting requirements; and
    - IRP preparation frequency.

- Legislative, regulatory, directive and policy considerations to implement IRP.

Action Lead

Manitoba Finance - Crown Services

Milestones

In Progress

Recommendations From ERBK Report Addressed:

Recommendation #1.1: Transmission and generation should both be considered in an ongoing IRP process.

Recommendation #1.6: Manitoba Hydro, the PUB, and the Government of Manitoba should not respectively pursue, recommend, and approve a multibillion-dollar project based on a need date advanced by multiple years to serve last-minute load forecasted for a small number of customers.

Recommendation #1.7: The Commissioner concurs with the PUB's call for a comprehensive and regularly occurring IRP process in which DSM will be evaluated as a stand-alone resource and placed on an equal footing with other energy resource options. The Commissioner acknowledges that IRP is part of Manitoba Hydro's new management plan, which marks an improvement to the previous resource planning process, and that Bill 35 will mandate IRP.

Recommendation #1.8: The Commissioner agrees that independent expert consultants made useful recommendations during the 2017/18 GRA that Manitoba Hydro should consider implementing into its load forecasting methodology, particularly regarding elasticities, scenario analysis, and use of longer-term data to estimate weather-dependent load.

Recommendation #1.9: Given the inherent unreliability in long-term forecasts, projects and development plans should be evaluated using a study period that is significantly shorter than 78 years (the length of the period used during the NFAT).

Recommendation #3.6: In identifying the preferred option to meet Manitoba's energy needs, alternatives should be assessed based on a "like to like" comparison of their individual merits. Only costs associated with the specific development plan being considered, as well as associated facilities required for that development plan, should be assessed as the costs for that development plan.

Recommendation #3.8: As noted in Chapter 1 of this report, the Commissioner concurs with the PUB's call for a comprehensive and regularly occurring IRP process in which DSM would be evaluated as a stand-alone resource and placed on an equal footing with other energy resources options.

Recommendation #4.1: Manitoba Hydro should assess long-term risks and the compound risks of executing multiple projects together as part of the IRP process.

Recommendation #4.2: The evaluation of risks of executing a project should include the risks associated with any other new project or new facility upon which it is dependent. For example, Keeyask was dependent on the construction of Bipole III.

4. Major Capital Planning

Background:

Major capital infrastructure projects across the globe are at risk of significant cost overruns and missed in-service dates resulting in poor project economics, higher costs and lower returns for shareholders. In Manitoba, Bipole III and the Keeyask generating station were over budget by close to $4 billion, adding to Manitoba Hydro's current debt level of $24 billion.

Several Canadian jurisdictions have implemented centralized major capital (or infrastructure) offices to lead the delivery of large and complex infrastructure projects for public sector clients. They also can coordinate long-term integrated capital planning for executive government and drive public procurement modernization to support the jurisdiction's growth and the quality of life of its people. These entities can also leverage partnerships with the private sector to expand, modernize and replace aging infrastructure. Their project delivery models can drive innovation and quality, help keep projects within budget and on time, while transferring appropriate risks of added costs and delays away from Government.

ERBK Report Findings:

Government cannot avoid its responsibility for major capital projects given their impact on the Government's financial framework and their long-term impact on citizens as the ultimate payer of deficiencies through utility rates and taxes. Government involvement does not end at the approval stage. Ministers are responsible for their portfolios and ministers responsible for Crown corporations are no different. It is not recommended that ministers involve themselves in the operational aspects of Crown corporations, but in the event of major capital expenditure using borrowed money guaranteed by the Province, the Minister on behalf of the Government must be actively aware of the progression of the projects and report regularly to Cabinet and the Legislature on the state of these major endeavours.

Manitoba Hydro did not broadly market-test the general civil contract (GCC) in the usual sense of the term. Meeting with several contractors and asking their preference as to the type of contract, as Manitoba Hydro did with the Keeyask GCC, is not a normal practice. Manitoba Hydro should have taken a harder look at the marketplace and more carefully considered whether a cost reimbursable-target price contract structure was appropriate and brought in external expertise for a contract of this size.

While it is understandable that Manitoba Hydro proceeded with a cost reimbursable payment structure for below-ground work, given the lack of ability to perform a full geotechnical study, it should have used a fixed or unit price structure for above-ground work in order to allocate some of the risk to the contractor. The Commissioner understands that this sort of hybrid structure is regularly used for major hydro-generation stations, whereas a full cost reimbursable contract (like the GCC) is not.

The primary causes of cost overruns on Keeyask were below-target labour productivity and geotechnical issues with the riverbed. The GCC allocated these and other risks (and the costs of their materialization) to Manitoba Hydro while allocating few to the general civil contractor, which introduced significant unpredictability to the outcome of the GCC.

Manitoba Hydro did not have the necessary internal expertise to manage the GCC to avoid cost and schedule overruns. Manitoba Hydro itself stated that the decision to manage the project using an internal team brought risks and that to reduce those risks it retained external expertise. However, it did not retain any independent experts to reduce those risks until 2016 and they did not report to Manitoba Hydro until those risks had already begun to materialize. Manitoba Hydro also failed to heed the advice from Stantec in 2012 regarding cost control.

Recommended Government Actions:

- Investigate creating a major capital projects office that acts a centre of excellence to manage contract and procurement services for all government and reporting entities' major capital projects.
- Consideration will include:
    - Best practices in major project delivery in other Provinces in order to develop options that would be appropriate in the Manitoba context;
    - Assess degree of responsibility including leadership, accountability and expertise needed to deliver major works within the Province;
    - Assess the experience and staff resources that exist within Government and applicable Crown corporations;
    - Consider the advantages and roles for private sector expertise within the project office and how this would be integrated to maximize the benefit to achieve a blend of a government/private sector culture in delivery of major works;
    - Consider the existing and planned volume of major projects for Manitoba when proposing the framework and roles for a Manitoba major project office;
    - Consider project thresholds to define major projects;
    - Assess the structure, responsibility and role of the Major Project Office over time based on the planned volume of work;
    - Review how the responsible departments/crown organizations participate in the development of major projects;

- Assess various project office structures based on level of responsibility in project delivery considering a scope spanning from oversight, project definition, procurement, budget management and accountability, project execution and auditing of project operations;
- Investigate the range of project office responsibilities including approvals, budget management, processes, procurement approaches, scope and schedule development, procurement leadership; commercial management and construction oversight; and
- Explore the stages of transition from the current state to an ultimate project office.

▶ Request the expert panel providing advice on the ERBK response to prepare a high level concept paper that will assist Government in its examination of the major capital projects office described above.

Expected Outcomes From These Actions:

- ▶ Coordination of all major project capital spending by Government and reporting entities.
- ▶ Government will be better informed on the types of contracts, risks and mitigation plans before project decisions are made.
- ▶ Improved alignment with government objectives for contracting and procurement.
- ▶ Improved project budgeting and scheduling (greater likelihood of projects being on time and within budget).
- ▶ Improved capacity to manage major capital projects.

Current Status:

To commence December 2022

Action Lead:

Manitoba Labour, Consumer Protection and Government Services
Manitoba Finance – Crown Services

Milestones:

To be completed by fall 2023

Recommendations From ERBK Report Addressed:

Recommendation #2.10: For any future major capital project like Keeyask or Conawapa, the Government should create a formal management structure to oversee the project, similar to what was put in place for Conawapa in the 1990s.

Recommendation #4.5: The MHEB and Minister Responsible for Manitoba Hydro must have a complete understanding of the kind of contract being recommended by Manitoba Hydro management as to cost overrun risk exposure. This understanding could come from enhanced reporting to the MHEB and the Minister and from a formal management structure to oversee any future major capital project (similar to what was put in place for Conawapa in the 1990s), which is addressed in Recommendation #2.10.

Recommendation #2.2: The Government of Manitoba and Manitoba Hydro should consider P3 arrangements for any future high-value capital projects.

Recommendation #4.6: Manitoba Hydro should use the services of an external consultant for any future major capital projects to help with market-testing high value contracts such as the GCC and to help determine and design the appropriate contract structure, in order to minimize the risks allocated to Manitoba Hydro (and, by extension, its ratepayers) under those contracts.

Recommendation #4.7: Manitoba Hydro should structure its construction contracts for major projects in a manner that incentivizes the contractor to complete the project on time and on budget.

Recommendation #4.12: As discussed in Chapter 5, the Commissioner views Manitoba Hydro's establishment of the MPEC as a good decision and a positive development in terms of project oversight, coordination, and accountability within Manitoba Hydro. The MPEC or a structure with similar, direct executive involvement (including the President and CEO) should be in place at the beginning of any future large-scale capital project at Manitoba Hydro.

Recommendation #5.1: The Commissioner concurs with the recommendation that Manitoba Hydro use the services of an external construction management expert for future high-value capital projects and those with cost reimbursable payment structures, who could help Manitoba Hydro with effective cost controls and risk management.

Recommendation #5.4: To supplement Recommendations #5.1 and #5.2 for Manitoba Hydro to use external expertise for any future high-value capital projects (including potential P3 arrangements), Manitoba Hydro should plan its capital development program where possible so that multiple "mega" projects are not constructed simultaneously.

5. Government/Regulatory Oversight

Background:

As a Crown corporation, Manitoba Hydro's sole shareholder is the Government of Manitoba, and by extension, the corporation is accountable to all Manitobans. It is that accountability responsibility that creates the obligation for Government to ensure proper oversight procedures are in place when major capital projects are in play. This responsibility has been magnified given Manitoba Hydro's borrowing makes up over 40% of the Government's total gross borrowing.

The Public Utilities Board has legislative authority to establish electricity and natural gas rates through Manitoba Hydro's general rate applications and public hearings. When applying for an increase in rates, all utilities under the PUB's jurisdiction must justify the revenue requirements that support a requested rate increase. Those costs are considered and analyzed in detail by the Board, and include but are not limited to:

- The cost to build, operate and maintain the utility's facilities
- The cost to finance debt incurred from building the utility's facilities
- Depreciation and amortization expenses
- The costs of financing general debt incurred by the utility
- The cost of providing affordable and reliable service to utility customers

ERBK Report Findings:

The Commission is not aware of any post-approval oversight process undertaken by the former Government that mitigated the risks associated with Keeyask or Bipole III or that accommodated changing circumstances as they occurred. The Commission did not learn of any such processes during interviews with former Government representatives, nor during the review of the voluminous materials requested from the Government (including a request for documents relevant to any such process).

The Commission heard from a former Manitoba Hydro executive that there was difficulty engaging the former Government in coherent decision making and discussion regarding the Keeyask and Bipole III projects following their approval, and that there was no opening to discuss any change with respect to the projects. The former executive stated that discussions with the former Government were around rates and that they believed that the rate increase sought by Manitoba Hydro at the time was too high, whereas members of the MHEB believed that the increase sought was the minimum possible to satisfy their fiduciary obligation. The impression left with the former executive was that the former Government wanted Manitoba Hydro to spend money to build Keeyask and Bipole III, but did not want it to raise rates to pay for them.

The Commissioner saw no evidence of interest or proactive outreach on the part of the former elected Government of Manitoba to provide oversight, accountability, and overall leadership on the Keeyask and Bipole III projects. The former Government seems to have been largely focused on rate increase issues instead. As the costs of the projects grew and the potential impact on Manitoba Hydro became apparent, there is no evidence that the former Government engaged with the MHEB or provided any direction. While the construction of the projects was a priority and part of the former Government's vision of "Manitoba's oil," oversight of them appeared not to be a priority.

The Commission could find no indication that Manitoba Hydro's plans were presented to Treasury Board or any other government body other than the PUB. Matters such as public debt levels and the Province's credit rating were not examined by government notwithstanding the implications of the huge investment proposed by Manitoba Hydro to be guaranteed by the Government. This lack of oversight moved the Government from the role of shareholder to one of cheerleader, with responsibility for analysis and information left in the hands of Manitoba Hydro to be defended in front of the PUB.

Recommended Government Actions:

- Amend the Manitoba Hydro Act, the Public Utilities Board Act and the Crown Corporations Governance and Accountability Act to ensure greater oversight and accountability related to Manitoba Hydro capital projects, rate setting and overall financial health of the corporation.

Expected Outcomes From These Actions:

- Greater accountability of Manitoba Hydro and government.
- More effective regulatory public reviews with more focused terms of reference, capacity to assess projects etc.
- A better understanding of the financial health of Manitoba Hydro and the impact on broader provincial financial health.
- The Act enhances the oversight of major capital spending by Manitoba Hydro, increases the efficiency and effectiveness of the regulatory process as well as create role clarity for government, Manitoba Hydro and the Public Utilities Board.

Current Status:

The Manitoba Hydro Amendment and Public Utilities Board Amendment Act, was enacted in November 2022. Under the Act:

- PUB remains a strong, independent regulator and is solely responsible for establishing electricity and natural gas rates in Manitoba through their independent and transparent public hearing process.

- PUB's oversight increases as the Government will now be required to refer, any proposed development of any new major facility for generating or transmitting power, any new major power purchase from a Manitoba producer or any new major export contract to PUB for review and recommendations before approval.
- The preliminary budget for a major project must be reviewed by PUB before significant planning and other costs may be incurred.
- In addition, Manitoba Hydro will be required to develop and submit for approval comprehensive Integrated Resource Plans that consider future energy needs and how best to meet those needs.

Action Lead:

Manitoba Finance - Crown Services

Milestones:

The Manitoba Hydro Amendment and Public Utilities Board Amendment Act has been enacted. Regulations to be developed by Spring 2023.

Recommendations From ERBK Report Addressed:

Recommendation #1.2: The Commissioner is supportive of the changes in The Manitoba Hydro Amendment and Public Utilities Board Amendment Act that would require Treasury Board approval for Manitoba Hydro's capital expenditure programs.

Recommendation #1.10: While it may be reasonable for Manitoba Hydro to negotiate agreements for project construction and agreements with impacted Indigenous groups to establish costs of a project, these contracts should not influence a decision to proceed with a project before it is actually needed or approved. Such agreements should not be executed until after project approval or sanctioning, or if execution occurs beforehand, Manitoba Hydro should ensure that it has the right to terminate the agreement without any material penalty or delay the effective date of the contract if a project is not needed until further in the future.

Recommendation #2.8: Treasury Board should continue to monitor the financial health of Manitoba Hydro. This should include the continued review of Manitoba Hydro's annual operating and capital budgets against financial targets set by the Government.

Recommendation #2.4: The Commissioner believes that the requirement in The Manitoba Hydro Amendment and Public Utilities Board Amendment Act for public review and Cabinet approval of any new power generating station with a peak capacity of at least 200 MW, and any new transmission with a voltage of at least 230 kV, that will require an investment by Manitoba Hydro of $200 million or more, is reasonable. However, the Commissioner would propose that this mandatory public review should include an evaluation of any other new project or facility upon which the new generating

station or transmission line is dependent (in the way that Keeyask was dependent on Bipole III to transmit power that it produces).

Recommendation #2.9: Government should strengthen its internal oversight processes to ensure Cabinet is fully aware, on an ongoing basis, of the need, benefits, and risks of Manitoba Hydro capital projects. The intent would be to assess projects proposed by Manitoba Hydro before public regulatory bodies review them. This would likely require additional resources with the capacity to understand complex economic and technical energy matters. For example, the Crown Services Secretariat could assess the rationale for the need for new generation and transmission and confirm options that have been comprehensively considered.

Recommendation #3.1: Manitoba Hydro's assessment of project alternatives must be flexible enough to account for changes in underlying assumptions up to the point in time when a final approval/ sanctioning decision is made. The PUB's review process should similarly ensure that projects are not recommended to proceed unless they are the best solution for the Province, based on the best available information at that time.

Recommendation #3.2: The Government should ensure that the timelines provided for public reviews of major new facilities are reasonable in light of the scope of such reviews and their terms of reference. The PUB must have the ability to request an extension if more time is necessary to complete a review of a major new facility, including if more evidence is needed to fulfill its mandate.

Recommendation #3.4: Unless Manitoba Hydro is directed by the Government to pursue and choose a project based on socio-economic benefits, such benefits should not be considered in the assessment of a development plan or project unless more than one development plan or project are equal in terms of cost and technical performance. If Manitoba Hydro is directed by the Government to pursue and choose a project based on socio-economic benefits, rather than lowest cost to ratepayers, the socio-economic benefits of a development plan or project should be evaluated against its incremental costs relative to the lowest-cost option (which, as stated in Recommendation #2.11, should be borne by taxpayers, not ratepayers).

Recommendation #3.5: In addition to Recommendation #1.9, the Commissioner recommends that CPV be used as a metric for economic analysis along with NPV, in order to capture important information regarding the timing of costs and benefits of a project or development plan through the study period (and not just at the end of the study period, like NPV).

Recommendation #4.3: As a public utility whose performance affects the electricity rates paid by Manitobans and can have fiscal implications for the Province, Manitoba Hydro should design its cost estimates in a way that is more conservative to minimize the potential for cost overruns (as has occurred on Keeyask and, to a lesser extent, on Bipole III). At the time that the project is formally sanctioned, a P80 cost estimate should be developed by Manitoba Hydro, if possible, to better understand the risk of cost overruns.

Recommendation #4.4: Manitoba Hydro should use the industry standard "stage gate" approach for internal approvals of major projects like Keeyask and Bipole III. As part of this approach, there should be a "gate" at each major decision point during the project development process, whether that consists of a required internal approval from the MHEB, a decision that will result in significantly higher sunk costs, or a decision from which Manitoba Hydro will otherwise have difficulty returning (e.g., executing the GCC). This process should be designed with particular attention to the consideration and implementation of defined off-ramps so that the project can be stopped (e.g., once a certain amount of money has been spent on a project, before sunk costs are unreasonably high).

Recommendation #4.8: The contract type for a high-value contract such as the GCC should be part of the mandatory public review process in respect of a major capital project that is contemplated in The Manitoba Hydro Amendment and Public Utilities Board Amendment Act, given that it is an important part of the risk management process. If Manitoba Hydro decides to use a contract type for a major capital project that is not industry standard, such as the GCC, it should be required to justify that decision during public review and seek direction before executing the contract.

Recommendation #4.11: The decision to build a project of the scale and cost of Keeyask should not be made until after the risks have been fully assessed, including the project's immediate and long-term fiscal implications for Manitoba Hydro (and its ratepayers) and the Province (and its taxpayers). As recommended in Chapter 1 of this report, the need for a project should be justified through comprehensive IRP completed by Manitoba Hydro and then reviewed by an independent regulator such as the PUB in a public proceeding. Under The Manitoba Hydro Amendment and Public Utilities Board Amendment Act, the required NFAT of a major new facility should also include a full assessment of risk and fiscal implications.

Recommendation #5.2: For any future major capital project that Manitoba Hydro proposes to construct, it should be required to demonstrate available capacity for project management through internal and/or external resources. For areas where Manitoba Hydro lacks internal expertise, it should retain the services of external parties through a model that shares risks for that aspect of project execution with the third party (such as a P3 model, as discussed in Recommendation #2.2).

Recommendation #5.3: Given the PUB's jurisdiction to consider Manitoba Hydro's capital expenditures as a factor in setting rates and to ensure that rates reflect prudent expenditures, the PUB should carefully scrutinize the costs incurred by Manitoba Hydro with respect to capital projects like Keeyask. Any costs incurred by Manitoba Hydro that are not prudent should be excluded in the PUB's calculation of rates and thus borne by Manitoba Hydro and its shareholder (the Government of Manitoba), rather than ratepayers.

6. Indigenous Partnerships

Background:

Indigenous peoples around the world have been seeking to be more involved in infrastructure projects through negotiations with governments and project proponents. Evolving legal decisions, settlements, education, a greater community, internet, and social media access have been strong anchors in this process.

The First Nations Major Project Coalition (FNMPC), a non-profit organization of First Nations seeking greater environmental and economic involvement in major projects, has researched the worldwide progression of Indigenous participation in energy, mining and other infrastructure projects. They have found a distinct progression in Indigenous involvement in proposed ventures.

According to the FNMPC, over the past 50+ years, Indigenous peoples have increasingly become more involved in new major projects in various sectors, i.e. mining, power utilities, etc. Participation agreements, commonly known in Canada as Impact Benefit Agreements (IBA), are written agreements that are often used as the basis for documenting the means by which Indigenous communities and companies plan to manage project impacts, ensure that environmental impacts are mitigated and that local Indigenous communities access employment and economic benefits from proposed projects.

IBAs between companies and Indigenous communities started to appear in the 1970s. Early IBAs generally included employment and environment provisions that encouraged Indigenous participation in major projects. The involvement of Indigenous communities in major projects created a positive impact on many local communities, local economies, and the environment. Many early IBAs encouraged entry-level employment for local community members, which fostered local training and economic development. Additionally, IBA agreements on environmental monitoring and remediation protocols were signed between communities, governments, and companies.

In the 1980s, IBAs began to include provisions that contracted indigenous-owned businesses to provide project support functions in various capacities, i.e. catering, cleaning, and security services. In the 2000s, revenue-sharing clauses started appearing in IBAs, allowing Indigenous peoples a share of project revenues. At this time, some IBAs began detailing equity shares in projects via grants or buy-in provisions, furthering the direct involvement of Indigenous peoples in projects.

In 2019, the FNMPC undertook a worldwide comparative analysis of Indigenous and local community involvement in electrical infrastructure. They found 60 examples of Indigenous and local community equity participation in a wide range of electrical infrastructure projects all around the world. This global trend of Indigenous equity participation in electric infrastructure projects is also a fact for Canada. The report outlined a number of

Canadian examples where First Nations own equity stakes in electric generation and distribution assets, including the Ontario example of 129 First Nations collectively owning 2.4% of Hydro One, the provincial transmission utility.

The work of FNMPC found that many Indigenous governments and communities are extremely interested and wish to be involved in any new development in their traditional territories. Many Indigenous communities consider any major project commissioned without an Indigenous consultation or involvement "unacceptable." For some First Nations, the recent federal adoption of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), which includes provisions referencing the need for Indigenous "free, prior, and informed consent" in land use projects, has changed how they see their involvement in infrastructure developments.

ERBK Report Findings:

While the Commission could find no evidence that a formal net benefit calculation was performed, the Government determined that the environmental benefits of avoiding the boreal forest on the east side of Lake Winnipeg to support a UNESCO World Heritage Site application coupled with what was reported to be rejection of an eastern alignment for Bipole III by Indigenous groups, made the western route more attractive. The Commission could find no evidence that UNESCO at that time would decline the World Heritage Site application if there was a transmission line on the east side of Lake Winnipeg. Moreover, support from Indigenous groups for an east side route may have been achieved if partnerships were offered to those groups. There was a relatively weak effort to mitigate the concerns of Indigenous groups, as the eastern route was eventually precluded by government direction.

Public testimony in the Legislative Committee indicated that Government direction with respect to the routing of Bipole III was given in part because of the opposition of Indigenous groups on the east side of Lake Winnipeg. During the review, the Commission heard from Indigenous group leadership that a structure that allowed for equity ownership in Bipole III by Indigenous partners would have helped reduce or even eliminate their opposition. Government documents from that time indicate that the Government of the day was opposed to equity partnerships on the basis that they could be confused with privatization, which was contrary to government policy.

Partnerships with Indigenous peoples on the east side of Lake Winnipeg as part of the Bipole III project were not sufficiently explored by the Government of the day. Options such as equity partnership or meaningful impact benefit agreements would have provided benefits to Indigenous partners on the east side of the Province that could have effectively been paid for by savings from Bipole III East (compared to Bipole III West), while also addressing concerns about impacts of Bipole III on east side Indigenous communities. Instead of exploring partnerships – which the Commission heard would have helped reduce or eliminate Indigenous opposition – the Government directed an alternative route and cited Indigenous opposition as a reason for that decision.

Recommended Government Actions:

- Government and Manitoba Hydro to prepare an assessment of options for economic opportunity partnerships related to shorter-term service and supply initiatives (e.g. procurement activities) and major longer-term projects (e.g. new generation, transmission)
- As part of the assessment consider the following questions:
    - What would be the mechanisms of Indigenous involvement in the new major projects?
    - What consultation process is most appropriate?
    - What are the expectations of Indigenous communities?
    - What are the lessons learned from previous Indigenous partnerships (i.e. Wuskwatim, Keeyask)?
    - What are the implications of allowing the participation of local community groups in MB Hydro projects?
    - How will capital for potential Indigenous equity be raised?
- Incorporate the most economical options into procurement and contract policies for shorter-term initiatives.
- Consult with Indigenous communities on potential longer-term partnership agreement options.
- Ensure partnership objectives are clearly defined and outcomes measured.

Expected Outcomes From These Actions:

- Improved relationship between Manitoba Hydro and Indigenous communities in the spirit of reconciliation.
- Improved capacity within Indigenous communities to participate in economic opportunities.
- Less resistance, greater understanding and more support from local communities for future major projects.
- More robust mitigation measures to address project impacts.

Current Status

To commence in January 2023

Action Lead:

- Establish a committee (Manitoba Indigenous Reconciliation and Northern Relations; Economic Development, Investment and Trade; Finance; Manitoba Hydro; and Indigenous Services Canada) to examine opportunities for reconciliation and economic partnerships.
- Involve Indigenous communities in early discussions for new major projects in various capacities.

Milestones:

To be completed in fall 2023

Recommendations From ERBK Report Addressed:

Recommendation #1.3: The Government should pursue Indigenous partnerships including equity, means of mitigating project impacts (e.g., modified routing within a preferred corridor), and other means of addressing concerns when a particular project is the most economical way of providing for the supply of power adequate for the needs of the Province, as opposed to rejecting the most economical option out of hand in favour of a more expensive option.

Recommendation #2.3: The Government should be open to equity options or other opportunities with Indigenous partners for all activities, including transmission projects like Bipole III. In addition to helping to fulfill the goal of reconciliation, such partnerships with Indigenous peoples may help to ensure that projects can be completed on schedule and on budget by allowing Manitoba Hydro to proceed with its preferred development option without delays caused by Indigenous opposition.

7. Accountability

Background:

- The old legislative framework, The Crown Corporations Public Review and Accountability Act, was enacted in 1989 to provide a framework for oversight of Manitoba commercial Crown corporations. The legislation was antiquated, lacked clarity, and did not adequately reflect the new mandate of the Minister of Crown Services or the Government.
- In 2017, the Crown Corporations Governance and Accountability Act (CCGAA) replaced the previous Act and:
    - established a governance model based on a defined accountability system and clear accountability relationships;
    - established board accountability requirements;
    - introduced Ministerial Mandate Letters to Crowns;
    - dissolved the Crown Corporations Council and implemented a secretariat model that resides within Government; and
    - provided for policy directives to be issued by the Minister and department.
- The legislation is part of the Government's commitment to strengthen the oversight of Crown corporations while respecting the responsibility of their Boards and management to govern and manage. The legislation also advanced transparency and accountability.
- The principle reporting requirements under the Act include:
    - A Roles and Responsibility Record;
    - Ministerial Mandate Letters;
    - Policy Directives;
    - Annual Business Plans; and
    - Quarterly and Annual Financial Reports.
- Through these requirements, Manitobans gain insight into the relationship between the government and Crown corporations as all documents and directives included under the Act are required to be made public
- Similar legislation exists in other Canadian Jurisdictions such as Alberta, British Columbia and Nova Scotia.

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ERBK Report Findings:

PUB members are at more risk of being sensitive to politics as they hold office during the pleasure of Cabinet (i.e. Cabinet can terminate them at pleasure).

During the Commission's review of documents received from Manitoba Hydro and the Government, it encountered very few written briefings from Manitoba Hydro or the MHEB to the Minister Responsible for Manitoba Hydro. The written briefings reviewed appeared to have been provided on an ad hoc basis. This raises the question of what the Government knew and when it knew it. Written briefings regarding the escalating costs for Keeyask and Bipole III in particular ought to have been provided to the Government, yet the Commission did not encounter such a document among either the Cabinet documents or briefing notes to government that were reviewed.

Based on the Commissioner's review of MHEB minutes, it unclear that the MHEB held Manitoba Hydro management to account as was their duty, particularly as risks materialized and costs rose.

The Commissioner saw no evidence of interest or proactive outreach on the part of the former elected Government of Manitoba to provide oversight, accountability, and overall leadership on the Keeyask and Bipole III projects. The former Government seems to have been largely focused on rate increase issues instead. As the costs of the projects grew and the potential impact on Manitoba Hydro became apparent, there is no evidence that the former Government engaged with the MHEB or provided any direction. While the construction of the projects was a priority and part of the former Government's vision of "Manitoba's oil," oversight of them appeared not to be a priority.

Throughout both the Bipole III and Keeyask history the MHEB was presented with ever increasing budgets until eventually, the projects were built and could not cost any more. The MHEB certainly raised these issues with management and asked for updated estimates, but in each case, they ultimately went along with all of the budget increases sought. This is not an example of an appropriate accountability framework and did not lead to better performance by management in terms of better accuracy or cost containment until the recovery plan for Keeyask was instituted in 2016/17.

While Manitoba Hydro management is accountable for its failures through these projects, the MHEB is the organization that is tasked with holding them to account, and until the change in 2016, at no time did the MHEB require better performance from the senior management.

Recommended Government Actions:

Alignment

- Ensure appropriate skill set/capacity with MHEB selection and where necessary utilize outside experts
- Continue to expand the MHEB directors' onboarding and training
- Implement the roles and responsibilities record as intended
- Enhance the clarity and delivery timeliness of government strategic direction
- Continue to strengthen the budgeting, strategic and business planning processes

Accountability

- Further implement the CCGAA framework as intended, holding both the crowns and Government accountable for their responsibilities
- Continue to enhance Crown Service's role and capacity regarding the governance and oversight functions
- Enhance the process for review and analysis of risks, financial results, business performance outcomes and KPIs

Expected Outcomes From These Actions:

- Improved reporting structure between Manitoba Hydro and the Government that will ensure Government is better informed on costs/benefits/risks associated with any future major capital projects
- Government in a better position to make decisions on projects that could significantly affect the economy

Current Status:

The Division of Crown Services works to ensure alignment between government and Manitoba's Crown corporation priorities. This is facilitated through the core functions of:

- **Policy**- identification of policy issues; consultation with Crown corporations and other key groups as indicated, analysis of policy issues, major capital proposals and policy considerations and implications; preparation of documents to support government decision-making; management of legislative and regulatory requirements as indicated; liaison with Crown corporations to ensure broad alignment in policy implementation.

- **Planning and Commissioning** - review of Crown corporation strategic plans; support of government's review and issuance of mandate letters to Crown corporations; including input from Crown corporations as indicated; development and issuance of planning direction or parameters to Crown corporations with respect to annual business and capital plans, and other major decisions facing Crown corporation boards; analysis of annual business plans and budget proposals in collaboration with Treasury Board Secretariat; identification of key performance indicators and measures; support to government's estimates process and development and issuance of accountability letters for Crown corporations to communicate annual approval and expected results for the coming fiscal year.
- **Accountability Management** - oversight of intended output in collaboration with Crown corporation boards; outcomes and impacts of approved Crown corporation business plans and budgets throughout the fiscal year; using agreed to indicators and measures, course correcting, re-aligning or re-setting where results are not being achieved; ensuring- in consultation with Treasury Board Secretariat- alignment to summary government objectives.
- **Regulatory** - ensure compliance (attestation), including reporting requirements of Crown corporations under various applicable Acts within the purview of the Responsible Minister.

Crown Services is working with Treasury Board and the Crown corporations on optimizing the governance oversight model to further alignment and accountability.

The initiative has three key objectives:

1. **Communication Strategy** - Review and enhance the existing communication processes.
2. **Alignment** - Review and enhance the current alignment mechanisms and framework used by both government and Crown corporations to achieve and maintain alignment to shared goals and objectives.
3. **Performance Accountability** - Build a robust performance accountability model that is underpinned by strong business planning, sound financial and risk management, enhanced visibility and clearly defined and executed accountability expectations.

It is anticipated that the outcome will be an implemented governance and performance accountability structure built in partnership with the Crown corporations that supports defined Mandates, Legislation, and Acts and considers broader potential impacts to whole of government by enhancing alignment and accountability of key business activities.

Annually, Manitoba Hydro presents its budget and business plan to Treasury Board as part of the annual estimates process. This provides government with upfront and first hand insight into their operating and capital budget, hiring intentions, financial volatilities, and other operational risks.

Action Lead:

Manitoba Finance - Crown Services

Milestones:

Ongoing

Recommendations From ERBK Report Addressed:

Recommendation #3.3: Members of the PUB should be appointed for long terms with limited ability for the Government to terminate them during their terms, in order to ensure that members are less sensitive to politics in making their decisions.

Recommendation #4.9: Government should play an active role in evaluating commercial risk associated with major capital projects undertaken by Manitoba Hydro. Ministers and premiers must be held accountable for Crown corporation decisions. Accordingly, there must be regular reporting and communication from the Crown corporation to the Minister, as discussed further in Recommendation #5.8.

Recommendation #5.5: The MHEB must be provided with accurate, timely, and complete information on all material aspects of project development – including regarding project management risks and cost overruns – so that it can properly discharge its duties and make good decisions. It is the MHEB that is ultimately accountable (to the Government and, by extension, to Manitobans) for Manitoba Hydro's capital program and the consequences of any cost overruns or other failures.

Recommendation #5.6: The Commissioner believes that the relationship between the Government and Manitoba Hydro should be between the Chair of the MHEB, the CEO of Manitoba Hydro and the Minister Responsible for Manitoba Hydro. There should be regular briefings from the Chair of the MHEB and the CEO of Manitoba Hydro to the Minister Responsible for Manitoba Hydro, in addition to any project-specific briefing recommended in this report. The Minister Responsible for Manitoba Hydro should, in turn, be accountable for decisions by Manitoba Hydro, including to the Legislature through plenary proceedings and standing committees.

Recommendation #5.7: The Chair of the MHEB must ensure that the MHEB has the capacity to evaluate management proposals and hold management to account, as is its duty. To the extent that the MHEB does not have this capacity through its members, the Chair of the MHEB should ensure that the MHEB retains external expertise (e.g., in the form of external reviews and technical advisors) to ensure that it is properly discharging its oversight function.

If a regular reporting relationship is in place between Manitoba Hydro and the Government, as discussed in Recommendation #5.8, there is no need to have any MLAs appointed to the MHEB.

Recommendation #5.8: Government has an important role to play in being aware of, and actively monitor, major capital projects like Keeyask and Bipole III. Government is responsible to Manitobans and should fulfill that responsibility by expecting regular reports and asking questions about project progress and holding Crown corporations like Manitoba Hydro to account through the responsible Minister. The Minister should be held responsible for the level of knowledge of the Government and, in terms of project risk, the Minister should report on activities to do with project variance and risks to Cabinet.

Recommendation #6.1: MHEB is the body to whom Manitoba Hydro's management is responsible. To improve the accountability and therefore the performance of management, the MHEB must:

1. Expect more accurate demand forecasts or identify the uncertainty and mitigate it, either by delaying decisions or ensuring that sufficient risk reserves are in place.
2. Expect more accurate cost estimates. Wuskwatim, Bipole III, and Keeyask have been significantly over the original control budgets. Simply creating another increased control budget without accountability is not careful management by the MHEB.
3. Management must be held accountable for the accuracy of information presented to the MHEB for decision.

ERBK Terms of Reference

Economic Review of Bipole III and Keeyask

Terms of Reference

Manitoba Hydro proceeded with developing the Keeyask Generating Station project ("Keeyask") and the Bipole III transmission line and converter station project ("Bipole III") during a time when the market price for energy was declining. Continuing with these projects has required Manitobans to deal with the costs, and the billions in related cost overruns, through increases in electricity rates that far exceed the expected rate of inflation.

As a result, the commissioner is to

(a) inquire into the following matters:

1 With reference to the actual or proposed in-service dates of Keeyask and Bipole III, to what extent did Manitoba Hydro pursue these two projects when they were not necessary, or not necessary at the time, to meet the province's then-anticipated electrical needs in a timely and cost-effective manner?

2 With reference to Keeyask and Bipole III, to what extent did the directions that the government gave to Manitoba Hydro

(i) promote economy and efficiency in the generation, transmission, distribution and supply of power in the province; and

(ii) result in Manitoba Hydro having to address matters beyond its statutory mandate?

3 To what extent were the estimated net benefits projected at the planning stage for Keeyask and Bipole III

(i) determined in accordance with best practices then applicable for such projects;

(ii) demonstrably superior to the estimated net benefits of proceeding with other options then available for addressing the province's then-anticipated electrical needs in a timely and cost-effective manner; and

(iii) based on sound export market forecasts?

4 To what extent did the Keeyask and Bipole III planning and approval processes of Manitoba Hydro and the government, and any other applicable approval or review processes, appropriately

(i) evaluate the commercial risk associated with each project and the risks of the two projects proceeding concurrently;

(ii) assess the allocation of the risks among those involved in the construction of the projects; and

(iii) consider the immediate and long-term fiscal implications of the projects for the province and Manitoba taxpayers and Manitoba Hydro and its ratepayers?

5 Given the magnitude of Keeyask and Bipole III and the time lines necessary to complete them, to what extent did the oversight process that was followed after these projects were approved

(i) reflect best practices then applicable for such projects; and

(ii) mitigate the associated commercial risk and accommodate changing circumstances as they occurred?

(b) make recommendations about the following matters:

1 How should Manitoba Hydro's and the government's oversight of any similar project proposed in the future, including the planning, approval, procurement and construction processes for the project, be strengthened to ensure that

(i) there is appropriate transparency and accountability for decisions;

(ii) the commercial risk associated with the project is appropriately evaluated and allocated, both on an individual project and on a systemic basis; and

(iii) the financial and fiscal implications of the project for Manitoba Hydro and the province are assessed in an appropriate and timely manner?

2 Should Manitoba Hydro's statutory mandate be clarified to ensure that decisions concerning any such future project are in the best interests of Manitobans?

3 Should the planning and approval processes for such a future project include additional regulatory approvals or an external review? If so, what form and manner should the regulatory approvals or external review take?

4 If such a future project is approved to proceed, how should the project oversight process be improved so that

(i) changes in circumstances are accommodated in a timely and cost-effective manner; and

(ii) verification is carried out at appropriate junctures to ensure that the project continues to be in the best interests of Manitobans?

5 Are there prudent steps for the government and its Crown Corporation Manitoba Hydro to take to restore the corporation's financial health, given the government's ongoing obligation to ensure that provincial finances are managed responsibly and that Manitoba has an attractive investment environment?

ERBK List of Recommendations

ERBK List of Recommendations

In response to Order in Council 301/2018 and the Terms of Reference attached thereto, the Commissioner makes the following recommendations:

Recommendation #1.1: Transmission and generation should both be considered in an ongoing IRP process. If there is a need (e.g., for reliability), it should be discussed in such a process along with potential solutions. A need should not be allowed to go unaddressed for decades until a solution for that need can be justified by a profit motive, as was the case for Bipole III. An IRP process involves the consideration of alternatives well in advance of when a business case for an option is finalized and ready for regulatory review. The Commissioner supports changes proposed in Bill 35, whereby Manitoba Hydro will have to regularly prepare and submit to the Minister an IRP, taking into account government policies, risk, and financial targets, among other things. However, the Commissioner is of the view that this IRP, while led by Manitoba Hydro based on criteria set by Government, should be developed through a public process involving independent experts and overseen by an independent regulator such as the PUB, rather than by Manitoba Hydro alone.

Recommendation #1.2: The Commissioner is supportive of the changes in Bill 35 that would require Treasury Board approval for Manitoba Hydro's capital expenditure programs. This provides a process by which government (a party other than Manitoba Hydro) can assess the financial implications of a proposed capital expenditure program or project like Bipole III on the Province and taxpayers. Bill 35 would also require a review by the PUB for any new transmission line with a voltage higher than 230 kV, if $200 million or more of investment is required by Manitoba Hydro. Such reviews would consider impacts on rates and Manitoba Hydro's financial health. In the Commissioner's view, an independent technical assessment of whether a proposed project is necessary and should be pursued over other possible alternatives, as well as the reasonableness of Manitoba Hydro's underlying forecasts, should also be required, along with an assessment of whether a proposed project is consistent with provincial energy policy.

Recommendation #1.3: The Government should pursue Indigenous partnerships including equity, means of mitigating project impacts (e.g., modified routing within a preferred corridor), and other means of **addressing** concerns when a particular project is the most economical way of providing for the supply of power adequate for the needs of the Province, as opposed to rejecting the most economical option out of hand in favour of a more expensive option.

Recommendation #1.4: The Government needs to be aware of and transparent about the incremental costs of constraints and additional requirements that its policies impose on Manitoba Hydro with respect to its projects (e.g., route siting). While it is reasonable to expect a Crown corporation like Manitoba Hydro to adhere to government policies, those policies must be explicit and transparent so that the Government can be properly held accountable for them and their incremental costs. Those policies should be reflected in a policy statement published by the Government.

Recommendation #1.5: The large and long-term investment in hydroelectric power generation requires the Government to provide guidance to Manitoba Hydro with respect to energy policy. This energy policy should address “merchant plants” if they are to continue being built in the future, including criteria for their commercial evaluation and the extent to which exports (firm and opportunity sales) may drive or advance the development of new generation by Manitoba Hydro.

Recommendation #1.6: Manitoba Hydro, the PUB, and the Government of Manitoba should not respectively pursue, recommend, and approve a multibillion-dollar project based on a need date advanced by multiple years to serve last-minute load forecasted for a small number of customers. If a major project is being built based on a need date to serve load for a small number of customers, that load should be vigorously vetted and verified ahead of time as part of the mandatory public review of such a project (as discussed in other recommendations). The Commissioner notes that Manitoba Hydro’s load forecasts include a sensitivity analysis, including around the increase or decrease of one very large industrial customer and that, since the NFAT, Manitoba Hydro has changed the forecasting methodology for potential large industrial load in response to direction from the PUB, resulting in a more conservative methodology and significantly reduced load forecast.

Recommendation #1.7: The Commissioner concurs with the PUB’s call for a comprehensive and regularly occurring IRP process in which DSM will be evaluated as a stand-alone resource and placed on an equal footing with other energy resource options. The Commissioner acknowledges that IRP is part of Manitoba Hydro’s new management plan, which marks an improvement to the previous resource planning process, and that Bill 35 will mandate IRP. In the Commissioner’s view, this IRP process should be led by Manitoba Hydro based on criteria set by the Government but developed through a public process involving independent experts and overseen by an independent regulator such as the PUB.

Recommendation #1.8: The Commissioner agrees that independent expert consultants made useful recommendations during the 2017/18 GRA that Manitoba Hydro should consider implementing into its load forecasting methodology, particularly regarding elasticities, scenario analysis, and use of longer-term data to estimate weather-dependent load. The Commissioner supports the PUB’s direction for Manitoba Hydro to provide details of the implementation of these recommendations, or reasons for not implementing them, at the next GRA.

Recommendation #1.9: Given the inherent unreliability in long-term forecasts, projects and development plans should be evaluated using a study period that is significantly shorter than 78 years (the length of the period used during the NFAT). Benefits forecasted over the long term should not be relied upon to justify a project or development plan that does not make sense within a reasonable timeframe (e.g., the 35-year detailed analysis period used during the NFAT).

Recommendation #1.10: While it may be reasonable for Manitoba Hydro to negotiate agreements for project construction and agreements with impacted Indigenous groups to establish costs of a project, these contracts should not influence a decision to proceed with a project before it is actually needed or approved. Such agreements should not be executed until after project approval or sanctioning, or if execution occurs beforehand, Manitoba Hydro should ensure that it has the right to terminate the agreement without any material penalty or delay the effective date of the contract if a project is not needed until further in the future. Furthermore, as recommended in more detail in Chapter 2 of this report, limits should be placed on how much advance costs can be spent on a major capital project prior to final approval and sanctioning of that project.

Recommendation #2.1: The Government should commission an independent review and public report regarding transmission tariffs, access to transmission in the Province, and related government policies to ensure that they are not a barrier to other companies building new generation in Manitoba for export, in accordance with its policy of allowing same. Fostering competition for merchant plants will likely drive efficiencies and cost reductions for all such projects, including those pursued by Manitoba Hydro.

Recommendation #2.2: The Government of Manitoba and Manitoba Hydro should consider P3 arrangements for any future high-value capital projects. Under a P3 model, the allocation of risk and cost overruns to the private partner(s) on a project like Keeyask may make this option more favourable than the classic design/build/own model. Keeyask has experienced significant cost overruns and delays like many other public infrastructure projects, at least in part because Manitoba Hydro is not a construction manager. By contrast, cost overruns and delays are less common on P3 projects, in which risks and responsibilities are allocated to the private sector based on its areas of expertise (e.g., construction management). Such a P3 arrangement could include a takeout option in the future and help avoid multibillion-dollar cost overruns in the future.

Recommendation #2.3: The Government should be open to equity options or other opportunities with Indigenous partners for all activities, including transmission projects like Bipole III. In addition to helping to fulfill the goal of reconciliation, such partnerships with Indigenous peoples may help to ensure that projects can be completed on schedule and on budget by allowing Manitoba Hydro to proceed with its preferred development option without delays caused by Indigenous opposition.

Recommendation #2.4: The Commissioner believes that the requirement in Bill 35 for public review and Cabinet approval of any new power generating station with a peak capacity of at least 200 MW, and any new transmission with a voltage of at least 230 kV, that will require an investment by Manitoba Hydro of $200 million or more, is reasonable. However, the Commissioner would propose that this mandatory public review should include an evaluation of any other new project or facility upon which the new generating station or transmission line is dependent (in the way that Keeyask was dependent on Bipole III to transmit power that it produces).

Recommendation #2.5: Limits should be placed on how much advance costs can be spent on a major capital project prior to final approval and sanctioning of that project. The only costs that should be incurred prior to a major project's approval are for activities required to assess the merits of the project (such as preliminary engineering and environmental work, Indigenous engagement, and, in some cases, costs to negotiate material agreements provided that the agreements can be cancelled if the project does not proceed – as discussed in Chapter 1). Prior to the major project being approved, costs should not be incurred that unnecessarily constrain the subsequent decision-making process.

Recommendation #2.6: Manitoba Hydro's ratepayers should not bear the risk associated with new generation projects that will, for an extended period of time, be commercial in nature, used for exports, and not needed to serve domestic demand. In other words, they should not be used as involuntary equity investors for projects to serve export demand in a risky market. Since it is the Government that approves export contracts and new generation projects like Keeyask, not ratepayers, and the Government that benefits (through water rentals, capital taxes and debt guarantee fees from Manitoba Hydro) even if such projects do not turn out well financially (as discussed in Chapter 4), it is the Government that should bear this risk. Accordingly, if a Government in the future approves a generation project that is, for an extended period of time, primarily for export and not needed for domestic demand, then the Government should bear the risk if this commercial plant is not successful during that period. If the market plan fails and export

revenues do not cover the costs of operating the plant during that period and the proportion of capital costs for that part of the plant's operating life, then the Government should reduce or suspend its collection of transfers from Manitoba Hydro until those cost shortfalls are made up. This will have the effect of putting government's budget at risk for decisions that are made by Government, rather than ratepayers. The Commissioner believes that this recommendation will add accountability that will improve decision making at the government level and will provide a proper incentive to the Government of Manitoba to provide greater oversight and accountability with respect to any future major capital projects. To implement this recommendation, Government may wish to legislate a reduction or suspension in the transfers that Manitoba Hydro is required to pay to the Government in the circumstances set out above.

Recommendation #2.7: As recommended in Chapter 1 of this report, the Government should develop new policy regarding merchant plants that includes evaluating the commercial merits (i.e., profit potential) of those projects differently than projects built to serve domestic demand. In addition, the Government should develop new policy regarding the extent to which exports should drive or advance the development of new generation by Manitoba Hydro. This policy should address how much of those exports should be supported by firm sales agreements (as opposed to opportunity sales).

Recommendation #2.8: Treasury Board should continue to monitor the financial health of Manitoba Hydro. This should include the continued review of Manitoba Hydro's annual operating and capital budgets against financial targets set by the Government. This would provide the Government with an oversight process involving its financial experts reviewing these plans and advising the Government on their financial implications for the Province and, by extension, the public.

Recommendation #2.9: Government should strengthen its internal oversight processes to ensure Cabinet is fully aware, on an ongoing basis, of the need, benefits, and risks of Manitoba Hydro capital projects. The intent would be to assess projects proposed by Manitoba Hydro before public regulatory bodies review them. This would likely require additional resources with the capacity to understand complex economic and technical energy matters. The benefits of such a measure would significantly outweigh the costs given the magnitude of the impacts mega-projects have on the provincial economy. For example, the Crown Services Secretariat could assess the rationale for the need for new generation and transmission and confirm options that have been comprehensively considered.

Recommendation #2.10: For any future major capital project like Keeyask or Conawapa, the Government should create a formal management structure to oversee the project, similar to what was put in place for Conawapa in the 1990s. Within that structure, there was involvement at all levels from various ministries (including the Ministry of Industry, Trade and Tourism that existed at the time). If such a structure is used on a major capital project that is underpinned by export contracts to the U.S., like Keeyask, there could be similar involvement from the Department of Intergovernmental Affairs and International Relations and it could provide advice regarding U.S. policy affecting export opportunities.

Recommendation #2.11: Manitoba Hydro's statutory mandate should be amended to provide clarity in terms of its objectives and priorities. In the Commissioner's view, Manitoba Hydro's statutory mandate should not include socio-economic development. Rather, Manitoba Hydro's mandate should be to provide the most economic and efficient electric system within the boundaries of the Province's energy policy (which should not pre-determine projects or resource options). Manitoba Hydro should pursue and choose projects based on lowest cost and technical performance, not based on socioeconomic development benefits. Issues of socio-economic

development are broader matters of public policy and the responsibility of Government. It is the Government that is the custodian of the economy and pursues social policies in the collective interest. If the Government decides that Manitoba Hydro should pursue and choose a project based on socioeconomic development benefits, rather than lowest cost to ratepayers, the Government must be publicly transparent about that decision so that it can be held accountable, and taxpayers should be responsible for the incremental costs of that policy decision, not ratepayers.

Recommendation #3.1: Manitoba Hydro's assessment of project alternatives must be flexible enough to account for changes in underlying assumptions up to the point in time when a final approval/ sanctioning decision is made. Often, a project gains momentum as it proceeds through the planning phases. However, before significant long-term capital is invested in a project, it is critical for the ultimate decision makers to make a fresh, objective assessment of the need for the project and whether it should proceed instead of other possible alternatives. The PUB's review process should similarly ensure that projects are not recommended to proceed unless they are the best solution for the Province, based on the best available information at that time.

Recommendation #3.2: The Government should ensure that the timelines provided for public reviews of major new facilities are reasonable in light of the scope of such reviews and their terms of reference. The PUB must have the ability to request an extension if more time is necessary to complete a review of a major new facility, including if more evidence is needed to fulfill its mandate.

Recommendation #3.3: Members of the PUB should be appointed for long terms with limited ability for the Government to terminate them during their terms, in order to ensure that members are less sensitive to politics in making their decisions. Currently, *The Public Utilities Board Act* provides that each member of the PUB holds office during pleasure of Cabinet (i.e., Cabinet can terminate them at pleasure). Some provinces have legislated minimum terms for members of utility commissions and boards. The Government of Manitoba should consider amending *The Public Utilities Board Act* to include such minimum terms for members of the PUB.

Recommendation #3.4: Unless Manitoba Hydro is directed by the Government to pursue and choose a project based on socio-economic benefits, such benefits should not be considered in the assessment of a development plan or project unless more than one development plan or project are equal in terms of cost and technical performance. The primary assessment of a development plan or project in terms of cost and technical performance is consistent with Manitoba Hydro's current (and recommended) mandate to "engage in and to promote economy and efficiency in the development, generation, transmission, distribution, supply and end-use of power." If Manitoba Hydro is directed by the Government to pursue and choose a project based on socio-economic benefits, rather than lowest cost to ratepayers, the socio-economic benefits of a development plan or project should be evaluated against its incremental costs relative to the lowest-cost option (which, as stated in Recommendation #2.11, should be borne by taxpayers, not ratepayers).

Recommendation #3.5: In addition to Recommendation #1.9, the Commissioner recommends that CPV be used as a metric for economic analysis along with NPV, in order to capture important information regarding the timing of costs and benefits of a project or development plan through the study period (and not just at the end of the study period, like NPV). CPV allows for economic analysis within more certain time frames and discloses intergenerational costs and benefits. Given the increasing unreliability of assumptions over time, this information captured by CPV should be considered in any economic analysis.

Recommendation #3.6: In identifying the preferred option to meet Manitoba's energy needs, alternatives should be assessed based on a "like to like" comparison of their individual merits. Only costs associated with the specific development plan being considered, as well as associated facilities required for that development plan, should be assessed as the costs for that development plan.

Recommendation #3.7: While it is reasonable for Manitoba Hydro to negotiate long-term power sales agreements, the contracts should not pre-determine the preferred energy supply option before that option has been approved and sanctioned. Similarly, the fact that a contract has been executed should not be the justification for proceeding with one resource option over another, otherwise preferable, option. To the extent that Manitoba Hydro enters into a power sales agreement that is contingent on a particular project proceeding that has not yet been sanctioned, Manitoba Hydro should ensure that it has the right to terminate the contract without any material penalty if that project is ultimately not sanctioned.

Recommendation #3.8: As noted in Chapter 1 of this report, the Commissioner concurs with the PUB's call for a comprehensive and regularly occurring IRP process in which DSM would be evaluated as a stand-alone resource and placed on an equal footing with other energy resources options.

Recommendation #3.9: As noted in Chapter 2 of this report, the Government should clarify Manitoba Hydro's mandate in selecting projects to meet future energy demand. If Manitoba Hydro's primary focus should be on impacts to ratepayers (as recommended by the Commissioner in Recommendation #2.11), then many "benefits" from the perspective of government should actually be assessed as "costs" from the perspective of ratepayers. Under its current statutory mandate to provide adequate supply of power for the needs of the Province, a public and recurring IRP process provides a framework to determine those needs and select the right supply option to fulfill them.

Recommendation #4.1: Manitoba Hydro should assess long-term risks and the compound risks of executing multiple projects together as part of the IRP process. For project-specific risk, the risk register should incorporate and address compound risk for the project. These changes would assist Manitoba Hydro in effectively identifying and managing risks.

Recommendation #4.2: The evaluation of risks of executing a project should include the risks associated with any other new project or new facility upon which it is dependent. For example, Keeyask was dependent on the construction of Bipole III. The assessment of Keeyask and of any other new generating station should include the risks associated with any new transmission project that is needed to transmit the power that it produces.

Recommendation #4.3: As a public utility whose performance affects the electricity rates paid by Manitobans and can have fiscal implications for the Province, Manitoba Hydro should design its cost estimates in a way that is more conservative to minimize the potential for cost overruns (as has occurred on Keeyask and, to a lesser extent, on Bipole III). These estimates should be as accurate as possible based on the project development stage and include a project contingency that is proportionate to the risks identified through a detailed risk evaluation for the project. At the time that the project is formally sanctioned, a P80 cost estimate should be developed by Manitoba Hydro, if possible, to better understand the risk of cost overruns.

Recommendation #4.4: Manitoba Hydro should use the industry standard "stage gate" approach for internal approvals of major projects like Keeyask and Bipole III. As part of this approach, there should be a "gate" at each major decision point during the project development process, whether that consists of a required internal approval from the MHEB, a decision that will result in

significantly higher sunk costs, or a decision from which Manitoba Hydro will otherwise have difficulty returning (e.g., executing the GCC). This process should be designed with particular attention to the consideration and implementation of defined off-ramps so that the project can be stopped (e.g., once a certain amount of money has been spent on a project, before sunk costs are unreasonably high). At each stage gate, Manitoba Hydro ought to re-evaluate the business case for the project to determine if such a case still exists, including an examination of whether the assumptions underlying that business case are still valid (e.g., domestic load and export market forecasts).

Recommendation #4.5: The MHEB and Minister Responsible for Manitoba Hydro must have a complete understanding of the kind of contract being recommended by Manitoba Hydro management as to cost overrun risk exposure. This understanding could come from enhanced reporting to the MHEB and the Minister and from a formal management structure to oversee any future major capital project (similar to what was put in place for Conawapa in the 1990s), which is addressed in Recommendation #2.10.

Recommendation #4.6: Manitoba Hydro should use the services of an external consultant for any future major capital projects to help with market-testing high value contracts such as the GCC and to help determine and design the appropriate contract structure, in order to minimize the risks allocated to Manitoba Hydro (and, by extension, its ratepayers) under those contracts.

Recommendation #4.7: Manitoba Hydro should structure its construction contracts for major projects in a manner that incentivizes the contractor to complete the project on time and on budget. Such incentives may be achieved through a fixed or unit price contract. If Manitoba Hydro elects to proceed with a cost reimbursable-target price contract, Manitoba Hydro should ensure that it carefully reviews all bids to ensure that the contract is designed to provide meaningful and effective incentives to the selected contractor.

Recommendation #4.8: The contract type for a high-value contract such as the GCC should be part of the mandatory public review process in respect of a major capital project that is contemplated in Bill 35, given that it is an important part of the risk management process. As part of that process, Manitoba Hydro should be required to justify a choice of contract type (which should be chosen with the advice of an external consultant, as discussed in Recommendation #4.6). If Manitoba Hydro decides to use a contract type for a major capital project that is not industry standard, such as the GCC, it should be required to justify that decision during public review and seek direction before executing the contract.

Recommendation #4.9: Government should play an active role in evaluating commercial risk associated with major capital projects undertaken by Manitoba Hydro. This is necessary in respect of a utility, which, by virtue of being government-owned, has no other shareholders to whom it is responsible and by whom it is held accountable for its performance.

Crown corporations are very much like line departments when it comes to the principle of responsible government in a parliamentary democracy. Ministers and premiers must be held accountable for Crown corporation decisions. Accordingly, there must be regular reporting and communication from the Crown corporation to the Minister, as discussed further in Recommendation #5.8. This does not necessarily imply inappropriate interference as the Crown corporation seeks to pursue its legislated mandate on commercial terms. Rather, the accountability of the Crown corporation that comes from a regular reporting relationship can act as a safeguard for the shareholder from the kinds of things that occurred with respect to Manitoba Hydro in the matters of Keeyask and Bipole III. The Crown corporation must be accountable to the Minister who, along with rest of Cabinet is, in turn, accountable to the Legislature and the public.

Recommendation #4.10: As discussed in Chapters 2 and 3 of this report, the Government should revise Manitoba Hydro's statutory mandate as set out in *The Manitoba Hydro Act* to make it clear that Manitoba Hydro's mandate is to meet Manitoba's peak domestic load in the most cost-effective manner possible and not to maximize jobs in the north or carry out the Province's environmental policy, unless otherwise directed by the Government through a transparent process. It should not preclude Manitoba Hydro from exporting power provided it is done in accordance with provincial energy policy which, as recommended in this report, should provide guidance regarding exports including commercial targets for projects built for exports (regardless of whether they eventually are used to serve domestic demand).

Recommendation #4.11: The decision to build a project of the scale and cost of Keeyask should not be made until after the risks have been fully assessed, including the project's immediate and longterm fiscal implications for Manitoba Hydro (and its ratepayers) and the Province (and its taxpayers). As recommended in Chapter 1 of this report, the need for a project should be justified through comprehensive IRP completed by Manitoba Hydro and then reviewed by an independent regulator such as the PUB in a public proceeding. Under Bill 35, the required NFAT of a major new facility should also include a full assessment of risk and fiscal implications.

Recommendation #4.12: As discussed in Chapter 5, the Commissioner views Manitoba Hydro's establishment of the MPEC as a good decision and a positive development in terms of project oversight, coordination, and accountability within Manitoba Hydro. The MPEC or a structure with similar, direct executive involvement (including the President and CEO) should be in place at the beginning of any future large-scale capital project at Manitoba Hydro. Such a structure helps provide clear lines of responsibility and executive oversight within the company.

Recommendation #5.1: The Commissioner concurs with the recommendation that Manitoba Hydro use the services of an external construction management expert for future high-value capital projects and those with cost reimbursable payment structures, who could help Manitoba Hydro with effective cost controls and risk management. The Commissioner also concurs that Manitoba Hydro should continue implementing recommendations made by MGF and KCB. Manitoba Hydro should also report on its implementation of recommendations in the Keeyask health check that KPMG prepared in 2016 regarding cost control, forecasting, and risk management, and it should report its progress on implementing MGF, KCB, and these KPMG recommendations, both to the PUB at the next GRA and to the Government.

Recommendation #5.2: For any future major capital project that Manitoba Hydro proposes to construct, it should be required to demonstrate available capacity for project management through internal and/or external resources. This is a matter of execution risk that must be dealt with and considered during the mandatory public review of the project. This review should focus on the specific individuals and processes proposed to be used for the project in question, not Manitoba Hydro's institutional expertise that the project team may or may not benefit from. For areas where Manitoba Hydro lacks internal expertise, it should retain the services of external parties through a model that shares risks for that aspect of project execution with the third party (such as a P3 model, as discussed in Recommendation #2.2).

Recommendation #5.3: Given the PUB's jurisdiction to consider Manitoba Hydro's capital expenditures as a factor in setting rates and to ensure that rates reflect prudent expenditures, the PUB should carefully scrutinize the costs incurred by Manitoba Hydro with respect to capital projects like Keeyask. Any costs incurred by Manitoba Hydro that are not prudent should be excluded in the PUB's calculation of rates and thus borne by Manitoba Hydro and its shareholder (the Government of Manitoba), rather than ratepayers. This would provide an incentive to Manitoba Hydro and the Government of Manitoba to provide greater oversight of any future major capital projects and implement processes to mitigate cost overruns and avoid incurring imprudent costs.

Recommendation #5.4: To supplement Recommendations #5.1 and #5.2 for Manitoba to use external expertise for any future high-value capital projects (including potential P3 arrangements), Manitoba Hydro should plan its capital development program where possible so that multiple "mega" projects are not constructed simultaneously. This would help avoid capacity issues and improve project execution, which would, in turn, improve the financial health of Manitoba Hydro (and the Province). To the extent that any major projects are carried out by Manitoba Hydro in the future, dedicated senior management should be assigned to provide clear lines of responsibility and executive oversight, as noted in Recommendation #4.12.

Recommendation #5.5: The MHEB must be provided with accurate, timely, and complete information on all material aspects of project development – including regarding project management risks and cost overruns – so that it can properly discharge its duties and make good decisions. It is the MHEB that is ultimately accountable (to the Government and, by extension, to Manitobans) for Manitoba Hydro's capital program and the consequences of any cost overruns or other failures. The Government relies on the MHEB for its analysis.

Recommendation #5.6: The Commissioner believes that the relationship between the Government and Manitoba Hydro should be between the Chair of the MHEB, the CEO of Manitoba Hydro and the Minister Responsible for Manitoba Hydro. There should be regular briefings from the Chair of the MHEB and the CEO of Manitoba Hydro to the Minister Responsible for Manitoba Hydro, in addition to any project-specific briefing recommended in this report. The Minister Responsible for Manitoba Hydro should, in turn, be accountable for decisions by Manitoba Hydro, including to the Legislature through plenary proceedings and standing committees.

Recommendation #5.7: The Chair of the MHEB must ensure that the MHEB has the capacity to evaluate management proposals and hold management to account, as is its duty. To the extent that the MHEB does not have this capacity through its members, the Chair of the MHEB should ensure that the MHEB retains external expertise (e.g., in the form of external reviews and technical advisors) to ensure that it is properly discharging its oversight function. If a regular reporting relationship is in place between Manitoba Hydro and the Government, as discussed in Recommendation #5.8, there is no need to have any MLAs appointed to the MHEB.

Recommendation #5.8: Government has an important role to play in being aware of, and actively monitor, major capital projects like Keeyask and Bipole III. Government is responsible to Manitobans and should fulfill that responsibility by expecting regular reports and asking questions about project progress and holding Crown corporations like Manitoba Hydro to account through the responsible Minister. The Minister should be held responsible for the level of knowledge of the Government and, in terms of project risk, the Minister should report on activities to do with project variance and risks to Cabinet. To do so, the Minister must be aware of emerging risks and question the project managers regarding details of their mitigation plan(s) and hold them to account for their performance against the approved plan(s).

Recommendation #6.1: MHEB is the body to whom Manitoba Hydro's management is responsible. To improve the accountability and therefore the performance of management, the MHEB must:

1. Expect more accurate demand forecasts or identify the uncertainty and mitigate it, either by delaying decisions or ensuring that sufficient risk reserves are in place.

2. Expect more accurate cost estimates. Wuskwatim, Bipole III, and Keeyask have been significantly over the original control budgets. Simply creating another increased control budget without accountability is not careful management by the MHEB.

3. Management must be held accountable for the accuracy of information presented to the MHEB for decision.

Glossary of Terms

Alternating Current (AC): Electric current that reverses its direction of flow at regular intervals. This occurs 60 times each second and is referred to as a frequency of 60 cycle (Hertz). All utilities in North America use 60 Hertz.

Bill 35: A Government Bill, titled *The Public Utilities Ratepayer Protection and Regulatory Reform Act*, that received first reading in the Legislative Assembly of Manitoba on October 14, 2020, during the third session of the 42nd Legislature. As of the date this report was finalized, Bill 35 had not yet received second reading. In substance, Bill 35 is identical to Bill 44, which received first reading on March 19, 2020 during the second session of the 42nd Legislature, but did not receive second reading before the end of that session. Bill 35 was reintroduced as Bill 36, the *Manitoba Hydro Amendment and Public Utilities Board Amendment Act* which was enacted in November 2022.

Bipole: An electrical power transmission line, within a high-voltage direct current (HVDC) system, having two direct current conductors in opposite polarity. Manitoba Hydro implemented a high-voltage direct current system to economically and efficiently transmit power generated by hydroelectric stations on the Lower Nelson River to southern Manitoba.

Bipole I: An 895-kilometre HVDC transmission line that connects the Radisson converter station north of Gillam, which first transmitted energy in March 1971, with the Dorsey converter station in Rosser in the south, which received its first transmission from Bipole I in June 1972. Before Bipole III's completion in 2018, over 70% of the electricity generated in Manitoba was delivered to customers through Bipole I and Bipole II.

Bipole II: A 937-kilometre HVDC transmission line that connects the Henday converter storage north of Gillam, which first transmitted energy in October 1978, with the Dorsey converter station in Rosser in the south. Bipole II runs alongside Bipole I for much of its route. Before Bipole III's completion in 2018, over 70% of the electricity generated in Manitoba was delivered to customers through Bipole I and Bipole II.

Bipole III: A project built by Manitoba Hydro that includes a 1400-kilometre HVDC transmission line, the new Keewatinohk converter station northwest of Gillam, and the Riel converter station just east of Winnipeg, which that transmission line connects. Bipole III provides 2000 MW of additional capacity and an HVDC system that is physically separate from Bipole I and Bipole II.

Bipole III Coalition: An organization on behalf of which presentations were delivered to the PUB during the NFAT and the 2017/18 GRA.

Bipole III East: A shorter, alternative route that was initially proposed for the Bipole III transmission line that would have been located east of Lake Winnipeg. The route for Bipole III East would have been approximately half the length of the route for Bipole III West – the route that was ultimately approved and used to construct Bipole III. This alternative route was examined in the September 2016 report from BCG.

Bipole III West: The 1400-kilometre route of the Bipole III transmission line on the west side of the Province that was ultimately approved and used to construct Bipole III. This route is approximately twice the length of Bipole III East.

Capacity: The amount of power that a piece of equipment, or a group of pieces of equipment acting together, can generate or transmit. For example, a transmission line may have a transfer capacity of 750 megawatts, or a generating station may have a capacity to produce 1200 megawatts.

Capital Expenditure Forecast (CEF): A projection of the capital expenditures needed annually for new and replacement equipment and facilities to meet the electricity requirements in Manitoba and firm export sale commitments outside the Province.

Capital Project Justification (CPJ): A framework used by Manitoba Hydro to summarize technical, economic, and financial information for a project that is being proposed or revised for inclusion in Manitoba Hydro's capital program. Once the need for a capital project is identified, Manitoba Hydro prepares a CPJ. Information relative to each project, such as a business case, risk assessment, resourcing requirements, and other pertinent details, are presented in the CPJ. Proposed capital expenditure projects are reviewed and approved by Manitoba Hydro's management and executive prior to their inclusion in Manitoba Hydro's CEF.

Carbon Price: A tax or surcharge levied by a government on electricity generated from sources that emit carbon dioxide (CO_2). The carbon price is specified in dollars per tonne of CO_2. Different generating stations produce different amounts of carbon dioxide per MWh of electricity output, with coal producing the greatest amount of CO_2 and combined cycle gas turbines producing about half of the emissions of coal per MWh.

Clean Energy Strategy: An energy policy document released by the Government of Manitoba in December 2012. It outlines proposed goals and actions in five areas: (1) building a new Manitoba Hydro; (2) leading Canada in energy efficiency; (3) keeping rates low; (4) growing renewable alternatives; and (5) freedom from fossil fuels.

Clean Environment Commission (CEC): Manitoba's environmental regulatory tribunal.

Combined Cycle Gas Turbine (CCGT): The combination of a gas turbine and a steam turbine in an electric generating plant. The waste heat from the gas turbine provides the heat energy for the steam turbine.

Commission: The Economic Review of Bipole III & Keeyask Commission that inquired into Manitoba Hydro's development of Keeyask and Bipole III under the direction of the Commissioner and his predecessor, Gordon Campbell.

Commissioner: Brad Wall, who was appointed as a commissioner to inquire into Manitoba Hydro's development of Keeyask and Bipole III pursuant to Order in Council (O.C.) 333/2019, which amended O.C. 301/2018.

Conawapa: A potential hydroelectric generating station on the Nelson River, most recently proposed by Manitoba Hydro as part of its Preferred Development Plan in 2013 and reviewed at the NFAT in 2014. The NFAT Panel recommended that Manitoba Hydro cease its development and this recommendation was accepted by the provincial Government.

Control Budget: A formal budget for a capital project developed by the project team and approved by management.

Converter Station: A high-voltage direct current (HVDC) converter station is a specialized type of substation, which forms the terminal equipment for a HVDC transmission line. Converter station equipment converts alternating current to direct current, or the reverse. Manitoba Hydro currently operates, or has in construction, three northern converter stations (Henday, Radisson, and Keewatinohk) to convert alternating current (AC) collected from nearby generating stations to direct current (DC) power for transmission. As well, Manitoba Hydro operates, or has in construction, two southern converter stations (Dorsey and Riel) to convert DC to AC for downstream customer transmission and distribution.

Cost Reimbursable Contract: A contract pricing structure in which the contractor is paid for its costs for materials and direct labour, plus profit and general administration and overheads. In a cost reimbursable contract, the project owner (Manitoba Hydro) is at risk for quantities, productivity, and inefficiency of the contractor.

Debt Guarantee Fee: In the case of Manitoba Hydro, a 1.0% fee that is paid to the Government of Manitoba based on a percentage of Manitoba Hydro's outstanding debt.

Demand Side Management (DSM): A targeted reduction in the demand for electricity through energy efficiency measures and updated codes and standards. DSM can reduce the requirement for new electricity generation and serve as a source of meeting demand in the same manner as new generation.

Dependable Energy: The energy that a hydroelectric generating station or electric system reliant on hydroelectric generation can produce under the lowest water flow conditions. Manitoba Hydro's total dependable energy is comprised of dependable energy from hydro generation, thermal generation, wind generation, and imports.

Development Plan: A plan formulated by Manitoba Hydro and presented during the NFAT using screened-in resource options (i.e., DSM, hydro, wind, natural gas, and imports), considering economic, financial, environmental, socio-economic/provincial characteristics, and strategic business opportunities. Each development plan must have been able to meet Manitoba Hydro's expected domestic load and existing firm export commitments. During the NFAT, various development plans were comparatively evaluated, including the preferred development plan and alternative development plans.

Discount Rate: A percentage rate by which a future revenue flow is discounted to derive the Net Present Value (NPV) of that flow of money.

Distribution: Utility assets used to distribute lower voltage electricity to individual customers. These assets include distribution lines operating at less than 30 kV along with associated low voltage portions of substations, low voltage transformers, and metering.

Domestic Demand: Domestic load (e.g., in Manitoba) net of reductions resulting from DSM.

Dorsey Converter Station (Dorsey): A converter station in Rosser that is the southern end point for Bipole I and Bipole II. Over 70 % of the electricity produced in Manitoba is transmitted through Dorsey. It received its first transmission from Bipole I in June 1972.

Energy: A quantity of power consumed over a period of time. Energy is expressed in kilowatt-hours (kWh), megawatt-hours (MWh), or gigawatt-hours (GWh). A 100-watt incandescent light bulb burning for 10 hours consumes one kWh (0.1 kW x 10 hrs).

Firm Export: The guaranteed sale of a contracted amount of energy and/or capacity to utilities or customers located outside of Manitoba.

Firm Power: Capacity and energy that must be supplied to meet domestic demand or under certain export contracts. Firm power is guaranteed to be available when specified and can only be interrupted in emergencies or when the reliability of the power system is threatened.

General Civil Contract (GCC): The primary contract that Manitoba Hydro entered into for construction of the Keeyask generating station. The GCC encompasses work related to river management, earthworks to build dams and dykes, concrete structures, and electrical and mechanical work within the powerhouse and spillway structures.

General Rate Application (GRA): A PUB process to review Manitoba Hydro's proposed changes to electrical or gas rates and their impacts on various customer groups.

Generation: Utility assets used to generate electricity. Manitoba Hydro considers all generating facilities, northern collector transmission lines, and HVDC facilities (such as Bipoles and converter stations) as generation in its cost of service studies.

Gigawatt-Hour (GWh): A unit of electrical energy. A GWh is the amount of electrical energy produced by one gigawatt of power applied over one hour of time, or 1000 MW over one hour. A GWh is equivalent to 1,000,000 kilowatt hours (kWh) or 1000 megawatt hours (MWh).

Great Northern Transmission Line: A 750 MW, 500 kV AC transmission line built by Minnesota Power in Minnesota. In the north, it joins the Manitoba-Minnesota Transmission Project. In the south, it terminates near Duluth, Minnesota.

Greenhouse Gases (GHG): Gases that contribute to climate change because they contribute to the greenhouse effect of the Earth's atmosphere by trapping thermal radiation from the sun. For electricity generation, the most common greenhouse gas – and the one of greatest concern – is carbon dioxide (CO_2), which is a product of the combustion of fossil fuels such as coal and natural gas.

High-Voltage Direct Current (HVDC): An electric power transmission system that uses direct current for the bulk transmission of electrical power, in contrast with the more common alternating current (AC) systems. HVDC transmission is point-to-point, as opposed to the interlaced networks that are possible with AC systems. For long-distance transmission, HVDC systems may be less expensive and suffer lower electrical losses.

In-Service Date: The date on which a unit or facility is complete and ready for service.

Independent Expert Consultant (IEC): Independent third-party experts retained by the NFAT Panel for purposes of the NFAT Review. IECs were represented by independent legal counsel and subject to cross-examination of their reports and testimony.

Integrated Resource Planning (IRP): A method of utility resource planning that determines analytically what resource is in the best interests of consumers by examining a full spectrum of possible supply-side and demand-side options (e.g., DSM) and measuring them against a collective set of objectives and criteria. This contrasts with traditional methods of utility resource planning, which emphasize supply-side options such as building new generation, transmission, and distribution facilities.

Joint Keeyask Development Agreement (JKDA): The agreement between the Manitoba Hydro-Electric Board and the Keeyask Cree Nations that governs how Keeyask is being developed and sets out understandings related to potential income opportunities, training, employment, business opportunities, and other related matters.

Keeyask Cree Nations (KCN): A term used to collectively refer to the four First Nations that are parties to the Joint Keeyask Development Agreement and part of the Keeyask Hydropower Limited Partnership. These four First Nations are Tataskweyak, War Lake, Fox Lake, and York Factory.

Keeyask Generating Station (Keeyask): Manitoba Hydro's newest and fourth largest hydroelectric generating station currently under construction on the Nelson River. It will have a capacity of 695 MW and produce annual dependable energy of 3000 GWh.

Keeyask Hydropower Limited Partnership (KHLP): The partnership between Manitoba Hydro and the Keeyask Cree Nations through which Keeyask is being developed, in accordance with the terms of the Joint Keeyask Development Agreement. Manitoba Hydro provides the administrative and management services for the partnership and will own at least 75% of the equity of the partnership, while the Keeyask Cree Nations together have the right to own up to 25%. The partnership has contracted the planning, construction, and operation of Keeyask to Manitoba Hydro and will sell all the power produced at Keeyask to Manitoba Hydro.

Keeyask Infrastructure Project (KIP): A project that involved the construction of preparatory support infrastructure required to construct the Keeyask Generating Station, including the construction of roads and work camps. Approved and begun in early 2012, this infrastructure work was separately licensed and approved in advance of the Keeyask Generating Station. It was completed in July 2014.

Kilovolt (kV): An amount of electromotive force equivalent to 1000 volts. A volt is representative of the difference of potential that would drive one ampere of current against one ohm of resistance. It is roughly analogous to the pressure in a water pipe.

Kilowatt (kW): The unit of electrical power equivalent to 1000 watts (W). A watt is unit of measurement for electrical power, corresponding to the power in an electric circuit in which the potential difference is one volt and the current is one ampere.

Kilowatt-Hour (kWh): A unit by which electrical energy is measured. A kilowatt-hour is a unit of energy equivalent to one kilowatt (1000 watts) of power applied over one hour of time. For example, ten 100 W light bulbs switched on for one hour would use one kilowatt-hour. The electrical energy used in homes and small businesses is usually measured in kilowatt-hours.

Load: The total amount of electricity demand in a jurisdiction, such as Manitoba.

Load Forecast: A forecast of load over a specified period of time in the future. Manitoba Hydro prepares a 20-year load forecast on an annual basis that projects demand in several customers classes, including residential, general service commercial, general service industrial, and top consumers. Manitoba Hydro's load forecast is used for several purposes, including forecasting revenue for rate-setting and resource planning.

Major Projects Executive Committee (MPEC): A committee established by Manitoba Hydro in 2016 which comprised Manitoba Hydro's President and CEO as well as five vice-presidents with accountability over the areas of the company responsible for the execution of major capital projects. The MPEC was established to provide oversight, direction, and strategic decision making with respect to Keeyask, Bipole III, the MMTP, and the Great Northern Transmission Line.

Manitoba Hydro (MH): A Manitoba Crown corporation governed through the Manitoba Hydro-Electric Board and continued by *The Manitoba Hydro Act*. Its statutory mandate is to provide for the continuance of a supply of power adequate for the needs of the Province, and to engage in and to promote economy and efficiency in the development, generation, transmission, distribution, supply, and end-use of power. In addition, it has a mandate to: (a) provide and market products, services, and expertise related to the development, generation, transmission, distribution, supply, and end-use of power, within and outside the Province; and (b) market and supply power to persons outside the Province on terms and conditions acceptable to the Manitoba Hydro-Electric Board.

Manitoba Hydro-Electric Board (MHEB): The board provided for in section 5 of *The Manitoba Hydro Act*, which is charged with administering the affairs of Manitoba Hydro and is to consist of 6 to 10 members appointed by the Lieutenant Governor in Council. Members of the MHEB serve for the term specified in the order in council by which they are appointed. One of the members is designated as the chair and another as the vice-chair.

Manitoba Minnesota Transmission Project (MMTP): A 750 MW, 500 kV AC transmission line built by Manitoba Hydro which entered service on June 1, 2020. It connects Dorsey south of Winnipeg with the Great Northern Transmission Line at the Manitoba-Minnesota border.

Megawatt (MW): The unit of electrical power equivalent to 1,000,000 watts (W).

Megawatt-Hour (MWh): A unit by which electrical energy is measured. One MWh is a unit of energy equivalent to 1,000,000 watts (W) of power applied over one hour of time.

Merchant Plant: A generating station that is primarily designed and built for the export market, rather than the domestic market.

MGF Project Services (MGF): Construction management experts retained by the PUB during the 2017/18 GRA as the project lead to conduct a review of Manitoba Hydro's major capital expenditures, including with respect to Keeyask and Bipole III.

Minister Responsible for Manitoba Hydro: The member of the Manitoba Cabinet charged with the administration of *The Manitoba Hydro Act*. Currently, the Minister Responsible for Manitoba Hydro is the Minister of Crown Services.

Minnesota Power (MP): An owner and operator of electric generation and transmission facilities in Minnesota that is engaged in the generation, transmission, distribution, and sale of electric energy. Minnesota Power has entered into export contracts with Manitoba Hydro for the purchase of electric power from Manitoba Hydro.

Need Date: The year in which new generation resources, such as Keeyask or a gas turbine plant, are required due to a shortfall in energy or capacity.

Net Present Value (NPV): The present value of a future revenue and cost stream. NPV is calculated by taking an assumed revenue in each future year and applying a discount rate to account for the time value of money (e.g., 10 years from now, $100 will not have the same value as today). The applicable discount rate is a matter of judgment and was a subject of debate in the NFAT. Frequently in the NFAT, the NPV of development plans was referenced to the NPV of the All-Gas plan (i.e., the All-Gas plan NPV was set to zero and the NPVs of the other plans were adjusted accordingly).

Needs For and Alternatives To (NFAT): The review of Manitoba Hydro's Preferred Development Plan by the PUB, with final recommendations made to the Province of Manitoba as to which development option should proceed, as requested by the Government of Manitoba via Order in Council 128/2013.

NFAT Panel: The members of the PUB who conducted the NFAT and issued a report, as requested by the Government of Manitoba via Order in Council 128/2013.

NFAT Report: The report issued by the NFAT Panel following the NFAT, as requested by the Government of Manitoba via Order in Council 128/2013.

NFAT Terms of Reference: The terms of reference that were attached to Order in Council 128/2013, through which the Government of Manitoba requested the NFAT and in accordance with which the NFAT was to be conducted.

Opportunity Sales: Export sales made from surplus generation, typically hydroelectric generation that is available in most water flow conditions except drought conditions.

P50: A value at which the expected outcomes have a 50% probability of being higher than the value and 50% chance of being lower than the value.

P75: A value at which the expected outcomes have a 25% probability of being higher than the value and 75% chance of being lower than the value.

P80: A value at which the expected outcomes have a 20% probability of being higher than the value and 80% chance of being lower than the value.

P90: A value at which the expected outcomes have a 10% probability of being higher than the value and 90% chance of being lower than the value.

Peak Demand: The instantaneous maximum amount of electricity required by a customer or group of customers.

Peak Load: Instantaneous maximum amount of electricity used. On an annual basis, peak load in MISO occurs during the summer air conditioning season, while peak load in Manitoba occurs during the winter heating season. On a daily basis, peak load varies with the business cycle.

Person-Year: A person-year of employment is the equivalent of one full-time job for one year. The number of hours assigned to a person-year vary. In the Keeyask EIS, one person-year of employment was defined as 3000 hours of work.

Power: The flow of electricity at any given time. Power is expressed in watts (W), kilowatts (kW – 1000 watts) or megawatts (MW – 1,000,000 watts).

Preferred Development Plan (PDP): The development plan that Manitoba Hydro advocated for in its application during the NFAT. It included the following:

- Keeyask, with a planned in-service date of 2019;
- Conawapa, with a planned in-service date of 2026;
- The Manitoba Minnesota Transmission Project, with a planned in-service date of 2020;
- New natural gas-fired generation starting in 2041/42;
- A 250 MW system power sale agreement with Minnesota Power; and • A 308 MW system power sale agreement with Wisconsin Public Service.

Project Contingency: An amount of funds added to the base cost estimate of a project to cover estimate uncertainty and manage identified risks.

Public-Private Partnership (P3): A partnership between government(s) and the private sector to build public infrastructure such as roads, hospitals, or schools, or to deliver services. Unlike traditional procurement, the public sector integrates all parts of a P3 project into one contract.

Public Utilities Board (PUB): An arm's length, provincial, quasi-judicial body established under *The Public Utilities Board Act*. The Lieutenant Governor in Council appoints the PUB's members. One of the PUB's main functions is to set "just and reasonable rates" that utilities such as Manitoba Hydro may collect from ratepayers for electricity and natural gas services. In addition to its general jurisdiction, the PUB may, from time to time, perform additional duties assigned to it, such as those assigned by order of the Lieutenant Governor in Council under section 107(b) of *The Public Utilities Board Act*.

Ratepayers: A customer of a public utility, such as Manitoba Hydro, who pays for that utility service based upon a certain rate. In the case of Manitoba Hydro, the rates that it may collect from ratepayers are set by the PUB.

Reliability: The ability of the power system to meet peak load. Part of Manitoba Hydro's statutory mandate is to provide and maintain a reliable power system. The degree of system reliability is typically measured by "loss of load expectation" – the average number of days per year that the load cannot be fully met.

Stage Gate: A project management tool whereby a project does not move from one pre-defined stage to the next (i.e., receive approval to go to the next pre-defined stage) until a set of criteria is satisfied. The criteria may be technical, financial, commercial, or other.

Sunk Cost: Money that has already been spent and cannot be recovered. Sunk costs are excluded from future business decisions because the cost will remain the same regardless of the outcome of a decision.

Surplus Energy: Energy not needed to meet Manitoba's domestic demand and which Manitoba Hydro is not contractually required to export.

Target Price Contract: A contract pricing structure in which the contractor's profit erodes if the target price is exceeded and the contractor's profit increases if the actual cost is less than the target price. This structure is intended to incent the contractor to perform well.

Terms of Reference: The terms of reference that were attached to the order in council through which the Government of Manitoba appointed the Commissioner and in accordance with which the Commission inquired into Manitoba Hydro's development of Keeyask and Bipole III.

Top Consumers: The largest industrial consumers of electricity in Manitoba (i.e., the top energy consuming operations). In Manitoba Hydro's 2018 electric load forecast, there were 10 distinct companies that counted as 26 top consumers in the mining and forestry, chemical treatment, and petrol/oil/natural gas sectors, and accounted for a combined 25% of all general consumer sales.

Transmission: Utility assets used to transmit electricity between load centres. In its cost of service studies, Manitoba Hydro considers all transmission lines and high-voltage portions of substations operating in excess of 100 kV as transmission. With respect to capital expenditures, transmission refers to assets operating in excess of 33 kV.

Treasury Board: A sub-committee of Cabinet responsible for the overall fiscal management and reporting of the Government of Manitoba and the establishment of policies required for the effective management of public funds to meet government objectives.

Treasury Board Secretariat: An independent secretariat that provides financial and analytical support and strategic management advice to the Minister of Finance and Treasury Board. The Secretariat is headed by a deputy minister who acts as Secretary to the Treasury Board. Its major functions include monitoring, analyzing, and reporting on the financial position of the Province, and planning and coordinating the review and preparation of the annual estimate, and participating in the development of the annual budget.

UNESCO World Heritage Site Designation: The designation for places on Earth that are considered by the United Nations Educational, Scientific and Cultural Organization (UNESCO) to be of outstanding universal value to humanity and as such, are inscribed on its World Heritage List in hopes of protecting them for future generations.

Unit Price Contract: A contract pricing structure in which a contractor is paid a pre-defined unit rate (or rate per quantity) multiplied by the quantity of work. In a unit price contract, the contractor is at risk for productivity and the project owner (Manitoba Hydro) is at risk for variation in quantity from the initial estimates provided by the owner.

Water Rentals: Fees paid by Manitoba Hydro to the provincial Government based on the amount of electricity produced from hydroelectric generation.

Wisconsin Public Service (WPS): An owner and operator of electric generation and transmission facilities in Wisconsin that is engaged in the generation, transmission, distribution, and sale of electric energy. Wisconsin entered into export contracts with Manitoba Hydro for the purchase of electric power from Manitoba Hydro.

Wuskwatim Generating Station (Wuskwatim): The most recent hydroelectric generating station completed by Manitoba Hydro, which is located on the Burntwood River. It has a capacity of 210 MW and was completed in 2012 at a cost of $1.3 billion.

Voltage: The electric potential between two points in an electric connection, expressed in volts (V) or kilovolts (kV). A North American electrical outlet operates at 120 volts. High-voltage transmission usually operates at either 230 kV or 500 kV.

Appendix #4

ERBK News Release

News Release - Manitoba

June 18, 2021

MANITOBA GOVERNMENT LAUNCHES FORMAL PROCESS TO RESPOND TO ECONOMIC REVIEW OF BIPOLE III AND KEEYASK

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External Expert Panel to Provide Future Direction for Manitoba Hydro: Wharton

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The Manitoba government has established a formal process that includes creating a project team to respond to the 51 recommendations from the Economic Review of Bipole III and Keeyask (ERBK) from commissioner Brad Wall, as well as an external expert panel to provide direction and guidance for future Manitoba Hydro decisions, Crown Services Minister Jeff Wharton announced today.

“Our government is committed to taking action to create strong and transparent policies to ensure future Manitoba Hydro projects are both accountable and demonstrate clear values to Manitobans,” said Wharton. “The external experts will support the project team on critical recommendations in the areas of procurement and contracting. They will serve in an advisory capacity over the next year to guide the development of action plans that address these recommendations.”

The members of the panel are:
• Mark Podlasly – director of economic policy at the First Nations Major Projects Coalition;
• Tim Stanley – engineer and president at Stratice Consulting; and
• Chris Gauer – engineer and former president, project delivery, Infrastructure Ontario.

“Leveraging the skills and expertise of our panel members will allow us to strengthen the future of Manitoba Hydro and find ways to better protect Manitobans by not running the risk of repeating the same mistakes with past decisions from former governments,” said Wharton.

The project team, chaired by Manitoba Crown Services and composed of various members across government departments, will prepare a response to all 51 recommendations. It will undertake a further examination of areas such as cost-reimbursable contracts, impact of project labour agreements, a deeper analysis of the Bipole III routing decision, the failure to disclose escalating cost estimates to the Public Utilities Board (PUB), and how $1.2 billion was spent on Keeyask/Bipole III prior to its approval by the PUB.

A public formal response document that describes the actions that have been or will been taken in response to each of the ERBK recommendations will be tabled in the house in fall of 2022, the minister said.

Under the Crowns Corporations Governance and Accountability Act, the minister provided a directive to Manitoba Hydro to support the implementation of the province’s response to the 51 recommendations outlined in the ERBK.

“Implementing the recommendations of commissioner Brad Wall’s review showcases our commitment to strengthen Manitoba Hydro,” added Wharton. “We remain committed to the future of Manitoba Hydro and the integral work they do for Manitobans.”

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Expert Panel Background:

Mark Podlasly, from the Nlaka’pamux Nation, is the director of economic policy at the First Nations Major Projects Coalition (www.fnmpc.ca), a national, 70+ Indigenous nation collective that seeks greater First Nations environmental and economic involvement in major infrastructure projects. He has over 20 years of experience in the development of capital projects connected to energy, natural resources and community infrastructure around the world. Podlasly holds a Harvard University master degree and is a regular speaker at global business and governance events.

Tim Stanley, P.Eng. Stanley is a senior executive with a broad-based career over 40 years in consulting engineering, project management, construction administration, and corporate management within a large Canadian employee-owned firm and Stratice Consulting Inc. He is a recognized professional in the area of strategic development of large-scale infrastructure projects ranging from government buildings, airports, exhibition facilities, bridges and highways, power generation facilities and transit facilities. His corporate and project board experience includes past-board chair of Columbia Power Corporation (Provincial Crown Corporation www.columbiapower.org) including chair of the Major Capital Projects Committee, past-chair and current board member of ACEC-BC (www.acec-bc.ca), board member (treasurer) ACEC Canada (www.acec.ca) and project board director for the Core Area Wastewater Treatment Program in the Capital Regional District of Victoria, B.C.

Chris Gauer, P.Eng., VMA Gauer is a civil engineer with a combined 43 years experience in public and private-sector project delivery. Much of his early career was as a consulting engineer designing and delivering major civil works. Gauer finished his career as president, project delivery for Infrastructure Ontario, responsible for project development, procurement and construction of civil and social infrastructure public-private partnerships.