



Commission of Inquiry
Respecting the
Muskrat Falls
Project

Muskrat Falls: A Misguided Project



Volume 1: Executive Summary, Key Findings and
Recommendations

Volume 2: Pre-Sanction Events

Volume 3: Post-Sanction Events

Volume 4: Looking Forward

Volume 5: Appendices

Volume 6: Exhibit Listing

The Honourable Richard D. LeBlanc
Commissioner

March 5, 2020

**COMMISSION OF INQUIRY RESPECTING
THE MUSKRAT FALLS PROJECT**

MUSKRAT FALLS: A MISGUIDED PROJECT

VOLUME 4:

LOOKING FORWARD

The Honourable Richard D. LeBlanc, Commissioner

Submitted to:

**The Honourable Siobhan Coady
Minister of Natural Resources
for the Province of Newfoundland and Labrador**

March 5, 2020

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About This Report

This Report quotes heavily from testimony and exhibits presented at or to the Commission during the activities of its inquiry. Documentary evidence was catalogued and made available to the public on the Commission's website. When cited in this Report, these public exhibits are referred to by their individual number (for example, P-00001). Similarly, testimony given by witnesses during the public hearings was transcribed and made publicly available at muskratfallsinquiry.ca. Quotes from testimony are cited with a date and transcript page number. Because both types of citations are so numerous in this Report, smaller type was used to reduce their intrusion in the text.

No changes to spelling or punctuation were made in any quoted material. The minimal additions to quotes that were made (for clarity) were inserted [like this].

It should also be noted that, unless otherwise indicated, all monetary figures are in Canadian dollars. As will be explained in more detail in the text, the "Muskrat Falls Project" and "the Project" both refer to the tri-part development that includes the infrastructure and generating station at Muskrat Falls, the Labrador-Island Link and the Labrador Transmission Assets.

For the convenience of the reader, a Glossary of terms, a list of Acronyms and a list of Names and Affiliations has been included in each of the first four volumes of the Report.

This Report is in six volumes.

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CHAPTER 27: LOOKING FORWARD

Having set out in the previous two volumes the history and development of the Muskrat Falls Project as it was revealed during the work of the Commission, I find it appropriate to complete this Report by focusing on the future. These chapters consider the lessons to be learned and discuss some consequences—real and potential—of the Project. In Phase 3 of the hearings, the Commission heard evidence on these topics, which require some discussion. This evidence is also considered in the recommendations I have proposed.

2041: EXPECTATIONS AND PLANNING

When it comes to electrical power, the importance of 2041 looms large in the province of Newfoundland and Labrador's future. Under the 1969 Upper Churchill Contract, Churchill Falls (Labrador) Corporation committed to selling Hydro-Québec the vast majority of the power from the 5,428 megawatt Churchill Falls generating station at extremely low prices and for 70 years after first power in 1971. That contract, with its exceedingly favourable returns for Hydro-Québec, will expire in 2041.

I have previously expressed my concern that when Nalcor was considering the viable options for supplying electricity to Island ratepayers, the potential availability of electricity from the Churchill Falls facility in 2041 was not given adequate consideration. As has been seen, over time the terms of the Upper Churchill Contract have resulted in considerable resentment towards Québec within this province. It seems clear that this resentment was a major contributor to the Williams and Dunderdale governments' determination to "break the geographical stranglehold that Québec has on the province" by enabling the export of Muskrat Falls power via the Maritime route from Labrador through Newfoundland to Nova Scotia (P-00063, p. 14).

Before the Muskrat Falls Project was sanctioned, some people advocated for a program of building only the generation assets needed to meet the province's electricity needs in the period leading to 2041, after which abundant energy and potential benefits from Churchill Falls will become available. With Muskrat Falls in the picture, however, we must now think about what 2041 might look like with that asset in play.

Churchill Falls is one of the largest hydroelectric facilities in North America and its capital costs are fully paid off. It is thus one of the lowest-cost sources of electricity generation on the continent and one in which Newfoundland and Labrador holds a controlling interest. Pelino Colaiacovo, an expert witness for the Commission, testified that it is difficult to imagine a future scenario in which the output of Churchill Falls will not be valuable. As a point of comparison, the cheapest wind and solar facilities on record in the world currently generate power at approximately US\$20 to \$25 per megawatt hour. Churchill Falls generates power at \$2.70 per MWh (P-04445, pp. 25–26).

The Churchill Falls facility is owned by CF(L)Co and that corporation is owned 65.8% by Newfoundland and Labrador Hydro and 34.2% by Hydro-Québec. There is no doubt that the CF(L)Co board of directors has a fiduciary duty to maximize profits, and this may complicate negotiations with Hydro-Québec for the post-2041 period.

As Mr. Colaiacovo suggested, and I agree, there are two main alternatives for Churchill Falls power post-2041:

1. Negotiate a new agreement with Hydro-Québec. This would likely involve some combination of the sale of power to both Newfoundland and Labrador and to Québec, as well as transmission of electricity through Québec to North American markets.
2. Build new transmission facilities from Churchill Falls to Nova Scotia and on to New England, following the Maritime route.

Churchill Falls has always been extremely profitable for Hydro-Québec. In 2018, Hydro-Québec's profit from Churchill Falls power was approximately \$1.2 billion (P-04445, p. 27).

As I described in Volume 2 of this Report, Mr. Colaiacovo is of the view that the existence of the Labrador-Island Link and the Maritime Link may provide Newfoundland and Labrador with increased leverage in its negotiations with Québec for the post-2041 period. He testified (July 17, 2019, transcript):

The real contract—the real alternative is a new subsea transmission route. In 1970 or 1965, was that subsea transmission route an actual practical possibility? It wasn't deemed to be at the time. And a critical issue in considering Muskrat Falls is: if Muskrat Falls had not been pursued, would that subsea route be creditable today? It is very easy for us to believe that the subsea transmission route is a practical possibility today because the

Maritime Link has been built; the Labrador-Island Link has been built; we know they can be built.

All of the geotechnical work was done to show, you know, exactly where lines should be dropped in the Straits of Belle Isle so the icebergs won't rip it apart. But that work wasn't done in 1965 or 1970; it's only been done—it was only done, you know, recently. And even then, you know, by the time there's a negotiation related to Churchill Falls there will have been years of performance of the Muskrat Falls infrastructure of the transmission lines to demonstrate that that infrastructure will last and is a practical alternative to a deal with Hydro-Québec. (p. 17)

A further benefit resulting from the Project that will strengthen the Province's position in the negotiations leading up to 2041 is that, by then, as Stan Marshall testified, there will be a new generation of engineers with experience in areas such as HVdc technology (July 2, 2019, transcript, pp. 20–21).

The transmission facilities required to wheel the enormous amount of electricity produced at Churchill Falls on a route through Newfoundland will be expensive and building them will carry the risk of cost overruns. The subsea portion of the route will be subject to significantly higher transmission losses than the overland transmission facilities in Québec. In his report for the Commission, Mr. Colaiacovo stated that, despite these and other factors, the “existence of the subsea route as a real option constrains Hydro-Québec's flexibility to negotiate too aggressively” (P-04445, p. 30). In his testimony (July 17, 2019, transcript), he noted that

because a subsea transmission line is possible, is the best alternative, then you can have a real negotiation. Because why would Nalcor agree to any deal that had Nalcor profits being less than \$500 million a year, if that's what Nalcor could do with a subsea transmission route, right? (p. 17)

Mr. Colaiacovo's position was shared by former premier Danny Williams, who testified (October 2, 2018, transcript):

Well, the Maritime Link gives us a complete loop. It gives us a connection to the mainland. It allows us to have an alternative. It puts in place, you know, a prototype for when 2041—if Québec doesn't allow us to go through Québec, well then, at least we've established a corridor that would need more capacity—obviously, 'cause it's—wouldn't be able to handle the Upper Churchill. But, you know, it basically, you know, takes us away from the stranglehold that Québec had on us. (p. 7)

Hydro-Québec's ownership of 34.2% of the CF(L)Co shares is a complicating factor, however. Depending on its cost, a subsea route might be the most profitable option for Nalcor but not for CF(L)Co. So if CF(L)Co decides to favour a course of action that does not maximize profits, it could face legal action from Hydro-Québec. In his report, Mr. Colaiacovo explained the situation this way (P-04445):

Nalcor might find that pursuing a subsea route might lead to a requirement to make whole Hydro Québec as a minority shareholder in CF(L)Co, which would reduce the overall attractiveness of this option.

...

In a rational, commercial process, Nalcor and Hydro Québec would come to an agreement where Churchill Falls output transits through Québec to export markets (because this route is shorter and more efficient from a transmission perspective), and the two companies would split the net proceeds in a way that results in CF(L)Co achieving at least the level of profit it would achieve with the longer and more complicated subsea transmission route. (pp. 30, 28–29)

Clearly, both sides will have some leverage in the negotiations leading up to 2041. Hopefully, that will mean that a mutually beneficial agreement can be negotiated. What must be recognized, however, is that both this province and Québec will have to be willing to compromise. Achieving that willingness will be complicated by the history and political dynamics between Québec and Newfoundland and Labrador, particularly as it pertains to the Upper Churchill Contract.

On the one hand, politicians and citizens of this province will have to accept that Québec will always profit to some extent from the hydro resources of Labrador because of its geographical location and Hydro-Québec's equity position in CF(L)Co. On the other hand, Québec will have to realize that its geographical location does not provide it with the right to continue to reap windfall profits from the Upper Churchill, a facility inside another province. For this reason, the people of Newfoundland and Labrador have reason to hope for a greatly improved hydroelectric revenue regime from the Churchill Falls facility after 2041—but should be cautioned against expecting a massive windfall.

I understand that, at the time of this writing, the Government of Newfoundland and Labrador is not engaged in any discussions with Québec about the post-2041 period. In his testimony, Premier Ball said: "Truthfully, I'm trying to get [to] 2021, let alone 2041" (July 4, 2019, transcript, p. 84). While one may have some sympathy with that sentiment, I suggest that GNL should start to plan for 2041 sooner rather than later. According to

Mr. Colaiacovo, negotiations should be under way by 2030, to provide time for the construction of new transmission facilities if a suitable agreement cannot be reached with Hydro-Québec. Work would also have to be done to produce realistic cost estimates and scenarios for the construction of transmission lines to carry Churchill Falls power to New England. Mr. Colaiacovo testified (July 17, 2019, transcript):

[E]ven before opening any serious discussion, some development of that option will have to be done in order to have a sense of what the real economic cost is, because that will set the floor for the negotiations. (p. 34)

Another consideration when looking ahead to 2041 is the prospect of what has been referred to as “intergenerational inequity,” concerning who is shouldering the burden of electricity cost in the province. As described by Mr. Colaiacovo, ratepayers of the future can be divided into three main generational groups:

1. **The 2020 to 2041 group:** During this period, Island ratepayers or the province’s taxpayers will bear the high costs of Muskrat Falls energy.
2. **The 2041 to 2067 group:** By this time, revenue from Churchill Falls power, decreasing tariffs on the Labrador-Island Link and increasing returns on equity may provide the Province with more funds for rate mitigation.
3. **The post-2067 group:** After 2067, the cost of Muskrat Falls will be depreciated and Newfoundlanders and Labradorians will have access to more than 7,000 MW of fully paid-for hydroelectric resources.

As Mr. Colaiacovo’s groupings show, ratepayers during the next 20 years may be the most acutely burdened by the cost of Muskrat Falls. That generation will have almost no overlap with the people who will reap the benefits of the Project in 50 years’ time (P-04445, pp. 76–77).

Mr. Colaiacovo recommended that these intergenerational inequities be acknowledged and measured, and then potential mechanisms be explored as a way to transfer future benefits back through time. These intergenerational inequities can be taken into account in the Province’s negotiating position with Québec in the post-2041 period.

The possibility of developing the 2,250 MW Gull Island project should also not be dismissed based solely on the unfortunate Muskrat Falls experience. The potential of its development for export power could also play a role in negotiations with Hydro-Québec for the post-2041 period. Before any decision is made about developing Gull Island, however, a full and rigorous independent review of its business case, a good-faith consultation with Indigenous Peoples and an extensive environmental process should be undertaken. Furthermore, the Province should not bear all the risks of a Gull Island development, as it did for Muskrat Falls, and appropriate oversight will be a necessity.

In its final submission to the Commission, the Province's Consumer Advocate recommended that a panel of experts, independent of government, be established to make recommendations on preparing for 2041. I agree that this would be a reasonable first step. In my opinion, such a panel should focus on the technical and commercial considerations for these negotiations.

CHAPTER 28: NALCOR – A CROWN CORPORATION

As a Crown corporation, Nalcor has certain obligations to GNL, its shareholder. Nalcor is governed by a board of directors and, as indicated previously, the number of directors and the composition of the board were both deficient at the time of Project development and construction. Assuming that Nalcor will continue to exist as a Crown corporation and play an important role in the planning and generation of electricity in the province, it is important to discuss how Nalcor’s board structure and corporate governance can be improved.

Nalcor was established to operate at arm’s length from the Government of Newfoundland and Labrador. GNL decided that the objectives given to Nalcor were best implemented through a corporate model. Governments create Crown corporations through legislation. These corporations are, in turn, accountable to government and required to comply with legislative mandates, regulations and policies.

According to a 2011 report—*Guidelines for Governance of the Electricity Sector in Canada* (P-01790)—by Professor Guy Holburn of the Richard Ivey School of Business: “Governance issues have as much of an influence on utility operations and performance as do regulatory policies” (p. 4). Expert witnesses Professor Holburn and Professor Mel Cappe both testified before the Commission about the duties of Crown corporations. Former board members of Nalcor, particularly those serving at the time of Project sanction up to 2016, as well as the current Chair of the Nalcor board, also testified on these matters and the specifics of Nalcor board activities and issues. What follow are my views about how the relationship between Nalcor and GNL in the matter of corporate governance and oversight has been managed and should be managed in the future.

Professor Holburn provided the Commission with a report and a presentation about best practices for the governance of Crown corporations (P-01770; P-02020). At the hearings, he testified that government ownership presents several challenges and constraints that can affect the performance of any Crown corporation. The private sector has many ways to deal with conflicts between managers and shareholders, such as competition in the marketplace, takeovers, short-term and long-term incentive plans for management and active monitoring of work completed by institutional investors. These practices and mechanisms ensure that the interests of management and shareholders are aligned.

Some of the mechanisms available in the private sector are not, however, available in a Crown corporation setting.

The ability to deal with conflicts between Crown corporation management and the shareholder is more challenging, particularly when it comes to aligning the incentives of management and shareholders. Professor Holburn's presentation summarizes this as follows (P-02020):

Aligning Incentives in Crown Corporations

- Monitoring and control issues are more challenging for Crown corporations than private corps
 - Harder to assess and measure performance due to multiple corporate objectives (commercial and policy), which may change over time
 - Citizens (ultimate shareholders) are separated from Crown corporations by layer of government
 - Risk of bankruptcy absent
- Limited set of mechanisms to align managerial incentives
 - No market for citizens to buy/sell ownership rights; hostile takeover not possible
 - Strong incentive-based compensation for senior executives often not politically acceptable
 - No institutional equity investor monitoring and oversight
- The Board of Directors is a crucial element of governance for Crown corporations (p. 8)

Shareholders in private corporations have the forum of an annual general meeting in which to express their preferences directly to management, to elect directors and to appoint auditors. Similarly, Nalcor holds an annual general meeting that is open to the public and provides citizens with the opportunity to ask questions.

Like private corporations, Crown corporations are governed by a board of directors. In his testimony, Professor Holburn outlined the role of a Crown corporation board (February 25, 2019, transcript):

- Establish the corporation's strategic direction and plan
- Safeguard the corporation's resources in all forums

- Monitor corporate performance
- Report to government (p. 46)

According to Professor Holburn, any government responsible for a Crown corporation should undertake the following: establish performance objectives, priorities and targets; approve corporate plans and budgets; appoint a board of directors and a Chair; and possibly be involved in the appointment of a CEO.

Professor Holburn's report contains a summary table, "Corporate Governance Best Practice Principles for Crown corporations," that includes these key points (P-01770):

Corporate Purpose and Mandate

- The purpose of the Crown corporation should be clearly stated in enabling legislation
- Government should clearly state performance expectations for Crown corporations
- Crown corporation mandates should be regularly reviewed and updated
- A central government agency should provide advice on governance arrangements for Crown corporations
- Crown corporation boards should ensure that strategic plans are consistent with corporate mandates

Board Selection and Appointment Processes

- Director appointment processes should be open, transparent, and merit-based
- Crown corporation Boards should prepare a skills matrix outlining the experience and competencies required of individual directors and the Board as a whole
- Director remuneration should be structured to attract quality applicants and should be commensurate with the nature of public service and time commitments
- The size of Crown corporation Boards should be appropriate for the scope of roles and responsibilities
- Orientation and training programs should be provided to all Board members
- Appointments should be appropriately staggered to maintain continuity of experience

- Board vacancies should be filled on a timely basis

Board Functioning and Independence

- Directors of Crown corporations should be independent
- The Board should not involve itself in the day-to-day management of the Crown corporation
- There should be separation between the role of the Chairperson and CEO
- There should be limits around the appointment of public servants to Crown corporation Boards
- The Chair is responsible for facilitating the Board's debate and decision-making process
- Board decision-making and deliberations should be designed to embrace the challenge function required of independent Boards
- The Board should conduct periodic self-evaluations of its performance

Board Committee Structures and Responsibilities

- The Board should establish committees with specific roles and responsibilities
- Board committees should have written terms of reference
- Committee members should have relevant skills, qualifications and competencies
- Boards should constitute an Audit Committee that fulfills the oversight roles and responsibilities required for effective financial accountability
- The Board should ensure that an overall risk management process is in place
- The Board should conduct periodic evaluations of the performance of each of its committees

Board Relationship with Corporation's Executive

- The Board should be involved in the selection and appointment of the Chief Executive Officer
- The Board should develop clear performance expectations for the CEO
- The Board should develop with senior management the corporation's vision, strategy and values

- The Board should hold in camera sessions without the presence of the CEO and senior management on a regular basis

Monitoring and Reporting

- The Board should ensure that it receives sufficient performance information on a timely basis
- The Board should ensure that it receives appropriate financial and accounting information
- The Board should publicly report on Crown corporation performance each year
- The Board should communicate regularly with government (pp. 27–40)

Some of these points are discussed below.

I acknowledge that the Nalcor board meets or exceeds some of these best practice principles. However, there are areas that call for improvement in governance.

At the hearings, Professor Holburn testified about the importance of the “challenge function” of a board (February 25, 2019, transcript):

So this is really the central task of boards, which is not to necessarily accept at face value the recommendations, proposals, reports of management but to bring that constructive approach to testing management’s assumptions that have been made, the rationale for their arguments. So to have a healthy debate with management as to the appropriate course of action that’s being considered.

So it’s a check and a balance, or as I mentioned before, it’s like this is the opportunity for sober second thought to consider whether management proposal is the best way forward or not. And this is due to the reasons that I elaborated in the beginning, and that’s so the managerial interests may not be necessarily aligned with interests of the shareholders. So it is something that the board should keep in mind. (p. 55)

I believe that Nalcor’s board members made their best efforts to follow these guidelines, but they were fettered in their efforts for the reasons discussed below.

CORPORATE OBJECTIVES AND PURPOSE

As noted in Professor Holburn’s *Best Practice Principles*, a Crown corporation’s purpose should be defined in its enabling legislation. Government should also clearly define performance expectations, objectives, priorities and targets. In some jurisdictions,

such direction often takes the form of a mandate letter. Such letters usually also include reporting requirements and protocols, a schedule for meetings and an outline of the type of information government expects to receive.

Section 5 of Newfoundland and Labrador’s *Energy Corporation Act* states Nalcor’s purposes:

5. (1) The objects of the corporation are to invest in, engage in, and carry out activities in all areas of the energy sector in the province and elsewhere, including,
 - (a) the development, generation, production, transmission, distribution, delivery, supply, sale, export, purchase and use of power from wind, water, steam, gas, coal, oil, hydrogen or other products used or useful in the production of power;
 - (b) the exploration for, development, production, refining, marketing and transportation of hydrocarbons and products from hydrocarbons;
 - (c) the manufacture, production, distribution and sale of energy related products and services; and
 - (d) research and development.
- (2) Notwithstanding subsection (1), the corporation may engage in those other activities that the Lieutenant-Governor in Council may approve.

GNL’s 2007 Energy Plan provided a more detailed statement of purpose for Nalcor. As noted earlier, in his testimony Gilbert Bennett agreed that it would be fair to describe the Energy Plan as a mandate document—instructions that set out the government policy that Nalcor was expected to implement (November 26, 2018, transcript, p. 4).

In 2015, Power Advisory completed a report on electricity regulation in NL for the Department of Natural Resources (P-00110). This report confirmed the role of the Energy Plan:

The formal articulation of Government’s objectives for Nalcor and NLH can be found in the “strategic directions” reflected in the *Energy Plan*. While the *Energy Plan* was issued about eight years ago and there have been fundamental changes to the province’s electricity sector since it was issued (many of which were derived from the *Energy Plan*), these strategic directions appear to continue to be appropriate and represent a reasonable articulation of Government objectives. (pp. 156–57)

The “strategic directions” that the Energy Plan listed included pursuing increased exploration and development of mining and energy resources, performing responsible resource development, providing maximum benefit to the province through the strategic development of NL resources, and ensuring a stable and competitive energy supply for domestic use and for the export market.

In its report, Power Advisory further stated:

Nonetheless, it is best practice for such strategic directions to be periodically reassessed, particularly after fundamental changes in industry conditions. Best practices on goals and objectives setting varies depending on the level of attention that the area of focus has received. If it is a fundamental element of government policy that has received significant debate and attention by stakeholders, then a case can be made that these objectives are a natural product of this debate and should be consistent with the view that prevailed. Where this is an area that has received less attention, it is appropriate to ensure that all stakeholder views are heard and considered in the formulation of these objectives and that appropriate effort is devoted to ensuring that they are adequately informed.

While these “strategic directions” appear to be reasonable and represent a reasonable articulation of government policy, it appears that they could be sharpened. For example, one strategic direction is “export of surplus energy”. No direction is provided regarding the value received or risks borne. Providing such strategic direction is best practice. Further definition of this strategic direction would assist Nalcor and NLH in developing the strategic initiatives that properly balance Government objectives. (p. 157)

When he was asked to comment on the maximum period of time between reviews of a Crown corporation’s mandate, Professor Holburn testified (February 25, 2019, transcript):

I think it’s a matter of trying to create a balance between, sort of, short-term, sort of, interventions that can maybe unnecessarily, sort of, change directions and then having, sort of, too long a period without enabling governments to align the direction of the organization.

I haven’t seen any literature on—that says, look, this would be a maximum. I know in Québec then, the mission of the enterprise is evaluated, sort of, once every 10 years, and that’s the longest that I’ve seen. The risk with an annual review is that there may be too many changes on an annual basis. Five is more of that, sort of, moderate type of approach, I would say, in terms of providing some predictability and stability for the organization to take a reasonable time frame for its planning objectives. (p. 53)

GNL drafted a shareholder's letter of expectations in 2011 that included a description of Nalcor's mandate (P-01168). For reasons unknown, it was never finalized. Tom Clift, the chair of the board's Governance Committee at the time, had no recollection of the existence of this letter from GNL during his tenure, which lasted until April 2016 (October 15, 2018, transcript, p. 20). Mr. Clift indicated that the mandate from GNL came in the form of the *Energy Corporation Act*. In November 2016, Minister of Natural Resources Siobhan Coady drafted a mandate letter for Nalcor's board. It included the following statements (P-04111):

Newfoundlanders and Labradorians must be the primary beneficiaries of the Muskrat Falls Project. Therefore, our Government has committed to opening the books on the project and ensuring it is managed effectively. To support this commitment, I ask the Board to provide regular and timely updates regarding the cost and schedule of the Muskrat Falls Project and to work expeditiously to ensure the project is on track.

...

I ask Nalcor to complete a governance review, including all subsidiaries, to ensure that roles are clearly defined and appropriate accountabilities are in place in order to improve management oversight. (p. 3)

There is no evidence that this draft letter was ever sent to Nalcor's board. I recommend that GNL conduct a further review of Nalcor's mandate. This should entail a review of the Energy Plan, considering the changed circumstances since it was developed, as well as lessons learned from the experience of Muskrat Falls.

THE APPOINTMENT OF BOARD MEMBERS

According to Professor Holburn, membership on Crown corporation boards, which should ideally have eight to twelve directors, should (P-02020):

- Be open to the public, with a transparent process that mandates accountability
- Be aligned with a skills matrix that sets out the needs of the board
- Come with adequate remuneration to attract qualified candidates, though certainly such remuneration may well be lower than in the private sector
- Be staggered to allow for continuity on the board as terms expire and are refilled

- Come with proper orientation and training (p. 14)

In addition, directorships should be filled in a timely manner, so that vacancies and their duration are minimized.

In 2006, the Governance Committee of Nalcor’s board implemented a director selection process. It included the skills matrix reproduced in Figure 4.1, which maps the board members’ skills in various areas of experience (P-00388, p. 7).

Board Skills and Experience Matrix

	A	B	C	D	E	F	G	H
Business and Industry Skills and Experience:								
General Business Skills & Acumen								
Oil and Gas Industry								
Major Construction Projects								
Ontario/U.S. Energy Markets								
Senior Leadership Experience								
Other Board Experience								
Functional Skills and Experience								
Capital Markets/Infrastructure Financing								
Audit Committee Financial Expert								
Legal								
Mergers and Acquisitions								
Communications Skills								
Safety, Health & Environment								

Figure 4.1: Nalcor Skills and Experience Matrix

Tom Clift testified that the Nalcor board used the skills matrix to assess the strengths and weaknesses of individual board members. Gerry Shortall, a former Nalcor board member, testified about the shortcomings of using the matrix and made the following related observations (October 15, 2018, transcript):

Because when we did the matrix at the Governance Committee and we highlighted areas where we thought the board could be strengthened, most of those areas were in the megaproject field; in other words, large project experience, large financing experience, electrical engineering experience.

The Hydro board, while complex is much simpler than the Nalcor board because it’s basically just a—it’s a regulated utility so it generates electricity, transmits it, sells it to customers. It’s a relatively simple business and the

amount of expertise a board member needs for Hydro is, in my view, far less demanding than the expertise needed at the Nalcor level. (p. 84)

I am satisfied that the board members, Nalcor's management and GNL were all aware of the deficiencies in recruitment, composition and selection processes for Nalcor board members. This is clearly shown in an email Tom Clift wrote to Robert Thompson (then Clerk of the Executive Council) in 2012 (P-00401), which attached a copy of a letter Mr. Clift had written to the Chair of Newfoundland and Labrador Hydro in 2008. That earlier letter, which Mr. Clift understood had been sent to GNL in 2008, outlined the NLH board members' concerns and read in part (P-00401):

In particular, Board members appear to be most concerned about the following issues:

1. The amount of time (9–12 months) that it is taking to find and appoint people to each of these boards¹;
2. The potential negative impact that could arise from the loss of continuity on these Boards (and on Board committees) as individual appointments expire and replacement appointments are slow to be processed; associated with this is the need for remaining Board members to sit on additional sub-committees as the total number of members is diminished;
3. The subsequent pressure that is being experienced by remaining board members to accommodate additional sub-committee responsibilities – not all of which they feel qualified for. In recent months, remaining members often have had to make costly changes to their own busy travel schedules (or participate via teleconference from as far as 4 time zones away, while on vacation, in order to allow these boards and sub-committees to achieve quorum status and conduct their business in a timely and efficient manner;
4. The absence of Board level expertise in a number of specialized areas deemed to be 'of significance' to NL Hydro and the Energy Corporation of Newfoundland. Notable areas where board level expertise would be beneficial include: large-scale or mega-project project management; specialized hydro generation engineering; large-scale environmental project management; and legal affairs (including Labour Relations), all of which will increase in importance as a number of the

¹ By 2012, the Labrador-Island Link Corporation and the Labrador-Island Link Holding Corporation portfolios had been added to board members' responsibilities.

large-scale development projects (presently under development or in the final negotiation stages) at Newfoundland and Labrador Hydro and the Energy Corporation of Newfoundland come to fruition. (pp. 3–4)

In a prescient passage in that same 2008 letter, Mr. Clift stated:

Implications: From a more broadly based governance perspective, what is perhaps most unfortunate in all of this is that during this same time period (when Board governance activities were minimized and appointments to these board were slow in coming), NL Hydro [Nalcor] was itself actively engaged in negotiations with a number of large-scale international petroleum companies and also engaged in the ongoing development of the Lower Churchill project and in each case the Board of Directors would have benefited greatly from additional expertise in the areas previously noted in this document.

Mr. Chairman, one could reasonably argue that when projects of this magnitude are actively being negotiated, we owe it to our constituent publics to exercise the highest possible level of diligence and governance. At the present time we are in a sub-optimal position in this regard.

Once again, I wish to reiterate, it is not our wish to be alarmist here, rather it is our desire to point out that members of the Boards of NL Hydro and the Energy Corporation of Newfoundland appear to be legitimately concerned about the time that it has taken to resolve these issues – particularly of the magnitude (and potential impact) of the decisions that are presently being made by this relatively small group of individuals. (p. 5)

In his testimony, Mr. Clift said that he had no recollection of receiving any response to this 2012 email to Robert Thompson (October 15, 2018, transcript, p. 32).

Nalcor carries out a significant and important function when considering the impact of its mandate on the finances of this Province. Whether in the fields of oil and gas or electricity, Nalcor's activities and decisions have at present an enormous impact on the revenues available to GNL. Having the necessary and best expertise possible on a fully constituted and appropriately sized board is essential. Board numbers and the issue of compensation are discussed more specifically toward the end of this chapter.

BOARD FUNCTIONING AND INDEPENDENCE

In a presentation given during his testimony, Professor Holburn identified the following best practices in the area of board functioning and independence (February 25, 2019, transcript):

- A majority of the directors of a Crown corporation should be independent of management and of the corporation
- The board should not be involved in day-to-day management of the corporation which is the responsibility of the CEO
- It is preferable not to appoint representatives of the government to Crown boards
- The choice of the right board Chair is an important ministerial responsibility given that the Chair is the external spokesperson for the board and also the link between the board and the government
- Board meetings should happen regularly and should be an appropriate length
- Board members should undertake an annual self-evaluation or peer evaluation of the work of the board
- The Auditor General should undertake a detailed review of board effectiveness on a periodic basis (pp. 49–50)

I am satisfied that Nalcor's board members were independent (with the exception of the CEO, who is a member of the board *ex officio*, with voting rights).

In 2006, Nalcor had prepared a draft independence policy for board members, which stated (P-00388):

The Corporation's Independence Policy consists of the following:

1. A majority of the Board of Directors, including the Board Chair and all Committee Chairs shall be independent in accordance with the criteria established by the Corporation.
2. All of the members of the Audit Committee, Compensation Committee, Corporate Governance Committee, and Environment Committee shall be independent Directors.
3. Annually, the Directors will be required to provide a formal declaration indicating that they satisfy the Corporation's Independence Criteria.
4. Directors have a responsibility to discuss any potential conflicts that might impact the Director's independence with the Board Chair or the Chair of the Corporate Governance Committee. If, based on these discussions, it is determined that the independence of the Director has been impacted, the Board should be advised.

5. If Directors do not satisfy the Independence Criteria, they should not participate in any discussion or voting relating to matters that contribute to the Independence issue. (p. 4)

The Commission was unable to find a final version of this draft. However, when asked if the board followed the policies outlined in this version, former board Chair Ken Marshall replied, “Very much so. Yes” (October 15, 2018, transcript, p. 23). Notwithstanding this assurance from Mr. Marshall, a final version of this policy should be prepared and implemented.

I note that GNL had a representative on the NLH board in its early days, from 2006 to 2009—Chris Kieley, then Deputy Minister of the Department of Natural Resources. In his testimony, Ken Marshall recalled: “It was felt that the deputy minister or ADM on [the] file would not be on the board because of the structure to make sure that there was independence from shareholder” (October 15, 2018, transcript, p. 21). Mr. Marshall’s observation is consistent with Professor Holburn’s views. As noted above, Professor Holburn indicated that appointing civil servants to the board of a Crown corporation is undesirable because of the possible perception of a conflict of interest.

Stan Marshall holds an opposing view on this point. He testified that he strongly believes that the presence of a GNL representative on Nalcor’s board would be beneficial (July 3, 2019, transcript, p. 48). I agree with Stan Marshall’s position. In the case of Nalcor, I believe that the presence of at least one high-level civil servant on Nalcor’s board could have, with appropriate and full disclosure to the board by the executive, assisted the Department of Natural Resources and GNL in understanding the important decisions being made about the Project and it would have facilitated improved communications and the transfer of information from Nalcor to GNL.

As well, in his testimony, Tom Clift indicated that the Nalcor board had been evaluating its competencies and performance issues annually (October 15, 2018, transcript, p. 32). I was also advised that board meetings were held regularly and that *in camera* meetings without Nalcor management present immediately followed many board meetings. Mr. Clift testified that the subject matter of such meetings would generally relate to “the content of the meeting [and also be] about the performance of the various people who we’d seen that particular day” (October 15, 2018, transcript, p. 80).

Minutes taken at the Nalcor board and committee meetings were entered into evidence. Having reviewed them, I conclude that their brevity and lack of detail (about discussion topics, decisions, facts and figures) render them a poor record of the

governance in action. I recognize that publicly available corporate minutes should occasionally be abridged to protect commercially sensitive information, but this practice should be the exception and not the rule. In any event, all records including those containing commercially sensitive information should not be withheld from the Premier, the Minister of Natural Resources and Cabinet.

BOARD COMMITTEES

Professor Holburn also testified about best practices related to board committees and sub-committees. In the case of Crown corporations, the board committees should include an Audit Committee, Corporate Governance Committee, Human Resources/Compensation Committee and, in organizations responsible for construction, a Health and Safety Committee. Nalcor's board did have standing committees in all of these areas, although some of them occasionally had very few members (P-00401).

Professor Holburn testified about the advantages, in some situations, of also establishing a Special Project Committee. An example he noted in his report for the Commission was Ontario Power Generation Inc.'s creation of a special committee to oversee the refurbishment of its Darlington nuclear facility, which "monitors the project's progress and performance against schedule and budget" (P-01770, p. 23). Six of the 14 Ontario Power Generation board members sit on this special committee, which meets quarterly. Two independent external experts also undertake quarterly assessments of the project status and risks and they report directly to the committee. The special committee receives reports from Ontario's Refurbishment Construction Review Board, which has retained four external experts with experience in megaprojects to provide project oversight and advice to senior management. It is readily apparent that the Nalcor board did not have anything remotely close to this type of a committee to provide a similar significant level of oversight for the Muskrat Falls Project. This was a critical error on the part of the Nalcor board and GNL.

Professor Holburn testified that board committees also require clear terms of reference and that they typically exercise their mandates in an advisory capacity. I am satisfied that Nalcor's committees generally met this objective. Further, Professor Holburn recommended that the Chair of the Audit Committee should be a chartered professional accountant (February 25, 2019, transcript, p. 50). Nalcor's board also met this objective in its

appointment of Gerry Shortall as Chair of the Audit Committee, a position he held for many years until he left the board in 2016.

Many Nalcor board members are also directors on the boards of Nalcor's subsidiary companies. The 2014 Liberty Report (P-00521) put forward recommendations about how to improve the governance of Newfoundland and Labrador Hydro and outlined areas of divergence from best practices. Liberty concluded that, while promoting strong commonality between Nalcor and NLH is preferred, it is to be recognized that significant differences exist in NLH's and Nalcor's operations and they thus demand different considerations in the composition of their respective boards:

Applying that common model would call for the appointment of directors that sit only on the Hydro board (and not the Nalcor board) and would expand the breadth and depth of skills and experience to ensure effective board oversight of Hydro's operations, including its opportunities and risks.

...

That factor, along with the size of the operations and the risks and opportunities of some of those other business leads us to conclude that Nalcor should extend to Hydro the practice of appointing a small number of directors who serve only on the Hydro board. (pp. 157, 169)

The Liberty Report made additional recommendations for the NLH board. I strongly urge GNL to implement these recommendations for both Nalcor and NLH, and in a timely manner.

THE RELATIONSHIP OF THE BOARD AND THE CEO

Turning to relations between a board and a CEO, Professor Holburn testified that a Crown corporation board should "constructively challenge" the CEO but not interfere in day-to-day operations of the corporation (February 25, 2019, transcript, p. 50). He also stated:

Let's move on to board selection and appointment processes. So with the central role of the board, the key goal is to select and appoint a board that can effectively oversee management and act as an independent check and balance in the decision-making process. So the board should be able to operate in a constructively critical way, rather than simply as a rubber stamp for management proposals. (p. 47-48)

He further testified that a board should be involved in the hiring of a CEO and should have input into the CEO's compensation package. In addition, a board should establish

clear performance expectations for the CEO from operational, financial, health, safety and special projects perspectives.

Ken Marshall testified that the NLH board was involved in the selection of Edmund Martin as CEO², although it is clear that then Premier Danny Williams had “final sign-off” (October 1, 2018, transcript, p. 48). The Nalcor board was not involved when Stan Marshall was hired as CEO in 2016, however.

Regarding how a board should exercise its oversight responsibility, Professor Holburn testified (February 25, 2019, transcript):

You need to have the right expertise and skills to ask the right questions of management to evaluate their responses and also, to evaluate whether the information that’s being provided by management to the board is sufficient. And that’s important outside the context of board meetings as well, because typically board members—well, they should be receiving all the information for board meetings before the meeting—sometime before the board meetings occur. And this gives them an opportunity to assess is this the right type of information that I need.

And so, for that—yes, you need to have experienced board members who understand the organization, the industry, the political context. And also, having experience as a board member generally, I think, will alert board members to areas where they should potentially probe and challenge more. (p. 55)

Because Nalcor board members’ lacked experience in the planning and construction of megaprojects, I have found that its board was unable to effectively discharge its “challenge function” for the Project. During the time of the development and construction of the Project, until 2016, the board members did have appropriate skills and expertise in some fields. However, I conclude that there were significant gaps in the directors’ expertise and knowledge about construction of such a large-scale hydroelectric and transmission project. This gap in experience and knowledge heightened the board’s dependence on information and assessments that Nalcor management provided.

Although board members may have felt that they had access to adequate information and resources to discharge their duties, the evidence clearly establishes that they did not. As well, without solid related industry experience, board members lacked the necessary expertise and knowledge that would have led them to ask the right

² At that time, Nalcor had not yet been established.

questions or to know which relevant and important information they needed to see to provide responsible oversight. It is also worth noting that the board members clearly understood that they had authority to retain experts for advice because they had done so for matters involving board governance. As found earlier, it is thus surprising that even though they were aware they lacked sufficient expertise in megaproject development, they nevertheless failed to engage any experts.

COMMUNICATIONS WITH GOVERNMENT

In his testimony, Professor Holburn made the following comments about communication channels between a Crown corporation and government (February 25, 2019, transcript):

I think one of the errors is around communication of information. So, typically, having a separate CEO and a chair allows for two channels of communication between the organization and government. So typically, it would be the responsibility of the chair to communicate with the minister. That provides one flow of information backwards and forwards, and it would be the responsibility of the CEO to be liaising with a deputy minister. So then you've got two channels of information flows between government and the corporations or broadly defined as opposed to channelling it all through . . . one individual. (pp. 54–55)

I endorse Professor Holburn's recommendations. It is clear that Nalcor CEO Edmund Martin was the person with the responsibility for communication with government on important matters related to the Project. I find that the board Chair should be the one to communicate with the Premier and the Minister of Natural Resources and that Nalcor's CEO should communicate with the Deputy Minister of Natural Resources.

Terry Styles was Chair of the Nalcor board at the time of Project sanction. He testified that his communication with GNL was "virtually none." He recalled only an introductory meeting with Jerome Kennedy, then Minister of Natural Resources (October 15, 2018, transcript, p. 21). Ken Marshall, who served first as Acting Chair and then followed Mr. Styles as board Chair, testified that he had accompanied the CEO to meetings with Minister of Natural Resources Derrick Dalley. He also recalled attending other meetings with Premier Dwight Ball, particularly at the end of his tenure on the board.

THE ROLE OF CROWN CORPORATIONS AND RELATED MATTERS

As set out earlier, Professor Mel Cappe testified before the Commission as an expert witness in the areas of governance and the role of the public service.

Regarding the duty of public servants, Professor Cappe testified (July 26, 2019, transcript):

So, officials—and here I will sort of summarize a very important point—but officials are accountable to ministers, who are in turn accountable to Parliament, who are in turn accountable to the public, and that’s what representative democracy means. So, public servants are not accountable to the public. Public servants are accountable to ministers, who in turn are accountable to Parliament, who in turn are accountable to the public. (p. 6)

In his testimony, he explained that the same considerations apply to Crown corporations, but “in a different way, a different fashion.” He added that Crown corporations are established “at arm’s length from government in order to avoid political decision-making” because some decisions should be guided by purely administrative arrangements (July 26, 2019, transcript, p. 8).

Professor Cappe also testified about the importance of who appoints a CEO (July 26, 2019, transcript):

[T]he CEO is also appointed separately by the government, which leads to further accountability complexity because you have a board appointed by the government and the CEO, normally accountable to the board, but [who is] actually appointed by the government, and that complexity can be very complicating and difficult. (p. 8).

Professor Cappe stated that the federal government, with which he had extensive work experience at senior levels, manages some of these complexities by identifying the accountabilities of Crown corporations in their enabling legislation. As well, federal Crown corporations are bound by legislation such as the *Financial Administration Act*, RSC 1985, c. F-11, which identifies requirements for Crown corporations that are dependent on whether or not they are competing with private-sector entities. Professor Cappe spoke about a situation in which the management of a Crown corporation has to “operate in a commercially competitive fashion, and at the same time be sensitive to government objects and political requirements” (July 26, 2019, transcript, p. 50).

Regarding whether establishing a Crown corporation for a specific activity is the best approach, he testified:

Then you have to ask, what are the purposes of the Crown corporation, why—what is the public interest in the Crown acting in this way, and why that corporate form is appropriate in terms of dealing with it? Is it something that could be done by a government department, for instance, or not? And there may be reasons why you want the corporate form because it's a more efficient vehicle for delivering some kinds of activities. Or, it may be inappropriate because it is inherently a governmental activity where you're asking them to do what is in the public interest and not commercially viable. (p. 51)

Professor Cappe further testified about the differences in this protocol in Crown corporations, noting that the authorizing legislation for any Crown corporation is key. He indicated that ministers are responsible for Crown corporations and are held to account by the legislature. The board of directors of a Crown corporation is appointed by the government, as is the CEO in some cases. But the CEO is always accountable to the board, whereas the board is always accountable to the minister. According to Mr. Cappe, this adds a layer of complexity, particularly where Crown corporations are intended to be at arm's length from government in order to avoid political decision-making.

THE NUMBER AND COMPENSATION OF BOARD MEMBERS

The number of members on the Nalcor board was an obvious issue, as was discussed during the hearings. As well, witnesses agreed that board compensation at Nalcor was, and continues to be, minimal, despite the complexity and importance of the board's mandate on the Province's financial position.

In 2015, Nalcor engaged Knightsbridge Robertson Surette (KBRS) to review the size, capability and compensation of Nalcor's board. KBRS suggested increasing the Nalcor board's size (P-00379):

[W]e are recommending that at the outset the Board be constituted at 10 members. This will provide reasonable opportunity for diversity of experience yet keep the Board at a manageable size while keeping costs down. Once the Board has been functioning effectively for a few years, you can always increase the size to 12, which appears to be the optimum number for an organization the size and complexity of Nalcor. (p. 2)

Nalcor's board operated with far fewer directors than the recommended number for long periods of time. Most shockingly, from May 1 to June 5, 2012, as Nalcor was seeking sanction of the Project, the board had only four members, one of whom was CEO Edmund Martin (P-00429).

I recommend that the Nalcor board have a minimum of nine and a maximum of eleven members. An amendment to the *Energy Corporation Act* will be necessary to implement this recommendation, as do others that I am making.

Regarding the proper level of compensation, Professor Holburn testified (February 25, 2019, transcript):

So, typically, Crown corporations can be quite different in terms of their size, their responsibilities, their roles. And so there would need to be some determination made of the particular needs and the appropriate level of pay for a type of corporation overall. So some recognition that corporation A is not like corporation B would then naturally lead to differences in pay recommendations.

But, again, setting up an independent or a separate government authority to make recommendations to specify what the ban[d]s would be, that would help to de-politicize that type of process. (p. 54)

As for how to address compensation specifically for the Nalcor board, I agree with the following observation, which The Liberty Consulting Group made in its 2014 report to the Public Utilities Board (P-00521):

Liberty’s review of [the NLH board’s] meeting schedules, minutes, and attendance indicated a lesser level of engagement opportunities with senior management than Liberty typically sees. In seeking a greater level of engagement, one must recognize the need to ensure adequate compensation for the time and effort it takes to perform at a level consistent with best practices. Experience compels the conclusion that it takes more than nominal or comparatively very low compensation to keep engaged, active, and strong directors and to attract replacements as they become necessary. Director performance in accord with best practices takes significantly more preparation (reading) time than it did historically. Off-meeting contacts among directors, regular participation in industry specific and governance training, use of periodic off-site planning “retreats,” presentations from outside directors, and special reports from management providing a depth that normal quarterly reporting simply cannot typify the kinds of activities that require directors to spend more time than they used to keep abreast of a changing and complex business. (pp. 169–70)

In the cover letter to its 2015 report to Nalcor, KBRS made the following point about board member compensation: “One additional item that needs to be undertaken is a decision around board compensation. This is an item that needs to be addressed

internally but must be completed prior to gaining agreement from candidates to join the Nalcor Board” (P-00379, p. 2).

KBRS also identified compensation arrangements for several comparable relevant organizations (public and private). At the lowest end of the spectrum (a provincial power utility), the level of compensation for board members was an annual retainer of \$10,000 and a meeting fee of \$1,000 per meeting (p. 3). I have also reviewed a 2014 report prepared by Wood Mackenzie Limited for GNL, where the issue of compensation (and the number of board members) for other utilities and state-owned energy companies was considered (P-02113).

At this writing, Nalcor board members remain inadequately compensated. Former board member Gerry Shortall testified that he was paid nothing as a Nalcor board member but received about \$5,000 a year for his duties on the boards of NLH and CF(L)Co. Other board members were compensated only for being directors on the NLH board (October 15, 2018, transcript, p. 37). In his testimony, Mr. Shortall said (October 15, 2018, transcript):

I have a feeling when we were talking about when we were doing our—on the Governance Committee doing that major skill matrix, that the people we were looking for we probably were not going to find them here in Newfoundland, we’d have to go outside the province.

And if you’re going to go outside the province for expert-level expertise, you’re going to pay for it. And, you know, paying \$850 instead of 18,000 is not going to cut it. You won’t get those people for that kind of compensation. . . . Nalcor was lucky to find—sorry, to find some people like us guys who would give a hometown discount to basically do it for free. But you’re not going to get high-level expertise from outside the province for free. (p. 37)

Ken Marshall testified that compensation for board members should not be expected to motivate existing board members to work harder but rather would ensure that serving on the board is a sufficiently attractive proposition for prospective new board members. He testified (October 15, 2018, transcript):

But from—the point of view, from my perspective, is it never became personal about the money, it was always about how can this board effectively run. And you wouldn’t have gotten any of the individuals on this panel to work any harder if they were paid more, that I can assure you. They worked exceptionally hard, at every single turn, at every single meeting from my observation. (p. 39)

In her testimony, former premier Kathy Dunderdale offered the following explanation about why GNL had not seen fit to arrange for compensation for Nalcor’s

board members, considering the importance of their oversight role (December 18, 2018, transcript):

[T]he amounts of money that we were talking about, which were significant—and not just for any expertise that we might bring to the board—that everybody expected to be compensated in a similar way. And there are, you know, six subsidiaries—or six corporations over there—six subsidiaries in Nalcor all having boards—a significant number of people.

So, if we're talking compensation of \$80,000 a year, \$90,000 a year, you know, the price tag gets very high. But then, I'm—you know, I also have to look at the health boards, the education boards, all who have large boards of directors, who have great responsibilities, who put in significant time and effort in what they do on behalf of the province. And if I'm going to compensate one board, I really have an obligation to consider compensation for the vast majority of the boards.

And then that became a significant amount of money. And we never ever saw ourselves in a position that you could do that. And it's not been done to this day. (pp. 44–45)

I disagree with Ms. Dunderdale's view. From my point of view, the considerations against compensation for Nalcor directors appear to amount to the fact that it would cost money to implement and that it would be unfair to compensate Nalcor board members and not all board members in the province. These considerations are, frankly, short-sighted and simplistic.

Not all of Nalcor's subsidiary boards would require compensation based on their present structures, although NLH does require some special consideration, as noted earlier. It is perfectly reasonable and possible to compensate Nalcor board members because of the significant impact that Nalcor's activities can have on the financial position of the Province. The possibility that Nalcor could involve itself again in future megaproject construction is not out of the question. It is my position that there is nothing wrong with assessing the needs and roles of particular provincially owned entities individually, rather than compensating all their boards or compensating them all at the same level.

As I understand it, GNL currently groups agencies, boards and commissions, paying compensation at different levels, and such compensation is in the form of daily rates. It is obvious that the differences in roles and responsibilities of the various boards has influenced how board members have been compensated. What seems odd is that the Nalcor board members were not even remunerated within that framework. It is simply

unreasonable and unacceptable that the body responsible for exercising oversight of a multi-billion dollar investment on behalf of the people of the province, as well as Newfoundland and Labrador's oil and gas concerns, were so inadequately compensated. While there were individuals who were prepared to take on the role of director without compensation, they recognized, as government was told, that they lacked the necessary expertise to appropriately fulfill their oversight role.

I also emphasize that Nalcor is distinctively different from a health or an education board. Without diminishing the importance of the health and education system in creating and maintaining a prosperous society, a given hospital or school is not expected to earn money. Health and education are public services and their boards exercise oversight with that in mind. Less specialized expertise is necessary to effectively exercise a board member's fiduciary duty in that context.

By contrast, Nalcor is expected to generate significant revenue in a different way. The organization is oriented toward business and requires that its board members be equipped to make decisions about large capital investments in the expectation of a financial return for the residents of the province. Recruiting people with related expertise is obviously worthwhile and advantageous.

What level, then, of board compensation is appropriate? Several reports that were entered into evidence weighed in on this question, including those by KBRS (P-00379) and Wood Mackenzie (P-02113). The information in these reports is limited and dated and I therefore decline to express an opinion on an appropriate level of compensation for Nalcor board members.

RECOMMENDATIONS

In light of the previous discussion, the expert advice received and the testimony on these issues, aside from the suggestions I have set out above, I recommend that:

- GNL obtain a report on board compensation for Nalcor from an expert consultant within six months of the date of the filing of this Report and thereafter, within three months, GNL consider the resulting recommendations in setting an appropriate level of compensation for Nalcor board members

- The Nalcor board have a minimum of nine and a maximum of eleven members
- Nalcor's CEO not be a voting member or the acting chair of the board
- Nalcor directors be appointed for an initial term of three years and allowed to serve for a maximum of nine years
- Vacancies on the Nalcor board be filled in a timely basis by GNL, with no vacancy lasting more than 45 days
- Board appointments be staggered over time to ensure continuity on the board
- GNL provide a mandate letter annually for the Nalcor board and the boards of Nalcor's subsidiaries, and all directors acknowledge its receipt and direction by signing the mandate letter
- GNL update the Energy Plan and Nalcor's mandate to reflect changes in the energy landscape that have occurred since it was created
- The process of appointing Nalcor's directors be guided by its skills competency matrix, which should be reviewed and updated annually to ensure that the board is properly equipped to exercise its challenge function and to oversee the lines of business of Nalcor
- A high-level civil servant be appointed as a member of Nalcor's board
- Details of board discussions and of presentations made to the board by management be reflected in board minutes and those minutes be provided in un-redacted form to the Premier, Minister of Natural Resources and Cabinet
- A second, abridged set of minutes be prepared for public view, when that is necessary to protect commercially sensitive matters

CHAPTER 29: THE ROLE OF THE PUBLIC SERVICE AND THE DUTY TO DOCUMENT**PROVIDING ADVICE**

At the hearings, the terms “public servant” and “civil servant” were used interchangeably by witnesses and counsel. Although there may be a distinction in their meaning in some specific contexts, in this chapter of the Report they have the same meaning.

Over the duration of the hearings, several GNL civil servants testified about their interpretation of their roles vis-à-vis Nalcor and their ministers. I find that not every civil servant had a clear idea of his or her duties and role. I also heard evidence about the lack of documentation in existence relating to the Project within GNL, and that civil servants feared creating records because of the requirements of Newfoundland and Labrador’s *Access to Information and Protection of Public Privacy Act, 2015*.

As noted earlier, Professor Mel Cappe has worked extensively in the upper echelons of the Canadian federal public service, including as Secretary to Cabinet, Clerk of the Privy Council and head of the Public Service of Canada. He has authored several books and currently teaches courses related to governance at the University of Toronto, Munk School of Global Affairs and Public Policy (P-04465). In a presentation deck prepared for the Commission (P-04466), Professor Cappe explained that a democratic government functioning in the Westminster system (as ours does) has the following expectations of public servants and elected officials:

- Public servants do not have a duty to the public; their duty is to their minister; they must ensure that ministers are fully aware of the major options of action and potential consequences
- Ministers are accountable to Parliament and through Parliament to the public
- Ministerial responsibility requires regular provision of information and explanation to Parliament and the public about activities within the minister’s department

In his testimony, Professor Cappe noted that although his experience was in the Canadian federal public service, the general principles and duties outlined above apply equally in the provincial context, without exception (July 26, 2019, transcript, p. 15).

Professor Cappe testified that public servants are obliged to provide their ministers with courageous, full and frank advice, regardless of the political agenda of the day. He added that Crown corporations function differently, but only to a degree. Employees of a Crown corporation are not public servants in the strictest sense, but they are nevertheless obliged to provide their superiors with the same courageous, full and frank advice.

Deputy ministers in particular are obliged to provide all relevant information to their ministers. They must also ensure that all the risks in any proposed action are considered and communicated. A fully functioning relationship between a deputy minister and a minister is not characterized by unequivocal acquiescence to a minister's wishes. It involves providing advice that the minister may not wish to hear, and disagreement may follow. However the discussion of an issue goes, faithful implementation of the minister's ultimate decision is required in the end. Professor Cappe described this principle as "courageous advice and loyal implementation" (July 26, 2019, transcript, p. 4).

As shown in the excerpt below, Professor Cappe also presented information about the role public servants should take in risk management (P-04466):

- Governments have to be deliberate in order to manage risk.
- Institutions, policies and practices coupled with technique and people are required to optimize risk.
- The optimal quantity of risk is not zero.
- Choice of how risky is a political decision.
- The role of the public service is:
 - to be the conscience of the government and expose to them the risks,
 - advise on what risks to take.
 - suggest strategies for managing risk and then
 - implement project and risk tactics and approaches (p. 3)

According to Professor Cappe, it is fair for elected officials to advance and support their agendas, but they must be fully informed as they do so and be able to defend their

decisions before the legislature. Choosing how much risk to assume on any given initiative is a political decision, but it must be an informed political decision. The public should be aware and confident that its government has conducted proper risk analyses before making decisions.

Professional public servants, including deputy ministers, must be unbiased, non-partisan and capable of serving the government of the day. Professor Cappe indicated that public servants should neither publicly criticize nor publicly support government policy. Public servants must provide knowledge and expertise to enable politicians to make well-informed choices. It is incumbent on all public servants to do risk analyses, to know which resources to source if a matter does not fall within the capabilities of a department and to turn to external sources if the capabilities are not found anywhere within the public service. This sometimes means engaging outside consultants.

In his testimony, Professor Cappe highlighted a significant obstacle in the functioning of the public service in the manner described above (July 26, 2019, transcript):

I think an even worse problem is the marginalization of the public service where the public service may still be professional and non-partisan and independent, but actually isn't listened to. And by listened to I don't mean that their advice is followed, but that their advice is heard. And the danger is when you have a marginalized public service. (p. 12)

Professor Kelly Blidook of Memorial University was asked by the Commission to conduct a study about how GNL public servants understand their roles and their duties when it comes to documenting government activities and events. For this study, Professor Blidook interviewed 15 current or former public servants, three of whom are still employed by GNL. Included in this group were four directors, three assistant deputy ministers, six deputy ministers and two participants below the level of director. The sample size in Professor Blidook's study was small and not sufficiently representative to allow reliable conclusions to be drawn. Nevertheless, I believe that the experiences of these 15 participants as documented in Professor Blidook's report are of some interest and assistance.

Professor Blidook testified (July 25, 2019, transcript):

A lot of people talked about the fearless advice, loyal implementation. You give fearless advice; you say what you need to say; it's often not accepted. It's just the nature of your job. And so as soon as it's not accepted but you're asked to put into practice whatever the decision is, you switch to that and you do it.

And some people express it in a—you know, they get it. That’s their system, and maybe their experiences are also such that they never really felt that they were really being ignored. (p. 17)

This suggests that public servants interviewed were cognizant of their role. However, some public servants may feel reluctant to speak up if they feel that their employment or advancement could be affected. According to a report prepared in 2000, *A Strong Foundation: Report of the Task Force on Public Service Values and Ethics*, public servants are often concerned about being seen as “‘offside’ or untrustworthy” if they present a view that they believe their ministers will not like (P-04481, pp. 62–63).

Before his appointment to the bench in 2019, Donovan Molloy was a senior GNL public servant who had been the Director of Public Prosecutions and later the Privacy Commissioner. In his testimony, he described what he had interpreted as some public servants’ fear of jeopardizing their jobs or standing if they offered “a contrarian view” (July 22, 2019, transcript, p. 18). Judge Molloy testified:

Sometimes that would result in discussions before it went on to the minister about certain aspects of a memo, which sometimes, you know, you’re dealing with the law, interpretation of the law that it’s absolutely correct and fine, but if you’re talking about sort of things that aren’t within the confines, strictly, of prosecutions, then you question sort of whether or not you’re able to fully express your advice. (p. 19)

He also noted that this fear could sometimes influence the fulfilment of their duty to provide advice fearlessly:

There was one occasion where I was told that—I prepared a memo for the minister, it was not solicited, but it was a matter—regarding a matter of significant importance to Public Prosecutions and I was told that that memo specifically was not going to be given to the minister because it would make the minister angry and could result in prejudice to Public Prosecutions as a whole, not to me personally. (p. 19)

Many participants in Professor Blidook’s study generally felt that they could “say what they wanted,” but there were some exceptions. Professor Blidook testified (July 25, 2019, transcript):

Sure, and there was actually sort of two dimensions within this theme. I think there’s an element of—where some people feel based on precarity or based on the possibility there’d be any form of sanctions, so that they might be shut out or they might ultimately put themselves in a bad position. The concern that being able to speak to superiors was sometimes truncated, but I think it’s

important to qualify that, in part because most interviewees talked about this in a general sense. Relatively few of them had specific examples of themselves, and I think that's an important qualification, right?

So people are saying they observed this, they say they saw this, they saw this amongst colleagues, this was something that was concerning; but, in most cases, they said that they were typically able to say what they wanted. They were able to report in the manner that they felt they should.

So now the second dimension to this is people observing this behaviour of perhaps people having fear, but not seeing that there was really—that the fear was warranted, if you will. A couple people talked about the fact that there are—some people have greater levels of insecurity, greater levels of confidence. (p. 15)

Professor Cappe testified that the public service has never been a place of guaranteed employment. He also said that the prospect of losing one's job should not hold anyone back from advising their minister to the best of their ability (July 26, 2019, transcript, pp. 16, 39–40).

Todd Stanley was a senior lawyer in the Department of Justice and later its Deputy Minister. He provided legal advice to GNL about the Project. At the hearings, Mr. Stanley testified that Nalcor was required to report directly to the Department of Natural Resources, in the ordinary course of events. He noted that every Crown corporation has a specified responsible department through which Cabinet papers flow. In the case of Nalcor, however, its officials would often bypass the Department of Natural Resources and report directly to the Premier's Office. As a result, there were times when department heads would not be informed of progress on the Project in a timely manner. In addition, there was a concern that the Premier's Office was making decisions without having all of the required information. The following exchange between Commission counsel and Todd Stanley at the hearings illustrates the point (October 22, 2018, transcript):

MR. LEARMONTH: Yeah. And just going a little deeper into this point, Mr. Stanley, with respect to the word “fiefdom,” on page 19 of your transcript—I'm quoting from something you say: You know, there were instances where we met, “we went over to Hydro, or Nalcor, for a briefing on something as to how the Muskrat project would be structured—this was fairly early days—and they would tell us it's gonna be A, B or C.”

And then you say: “I remember a meeting where we went—and I can't remember what the briefing was, the topic of it—but the instructions were, like, you know: And it's gonna work like this. And the government people were

sitting there and were like: Well, who said it's going to work like that? That's, you know, the perceived, at least, concerns about how that would be.

“And Nalcor’s response was, this was approved by the premier. And one of the Natural Resources people who was there said: Oh, that’s interesting, I don’t remember writing the policy analysis on that. The comment was facetious. There was no policy analysis on it. Right? It never came through the experts at Natural Resources to say: Okay, here’s the wrinkles, here’s the hairs on that, here’s the problem with it.

“Nalcor came and got approval from the Premier’s office. We’re gonna do this; marched off and had their instructions and their approvals. So that was unusual.”

Do you recall saying that?

MR. STANLEY: Oh yes, I did.

MR. LEARMONTH: Yeah. And do you stand by that comment?

MR. STANLEY: Yes. (p. 9)

Based on the evidence, I questioned whether GNL’s civil servants provided “courageous advice” to ministers. After reflection, my answer is an emphatic “no.” GNL made a policy decision to develop the lower Churchill River and eventually Muskrat Falls and it was the clear intention of the Williams and Dunderdale governments to proceed with the Project. I conclude that the public service failed in its duty to properly advise GNL about the risks associated with such a large and expensive project and about the need for independent assessment and appropriate oversight. With few possible exceptions, there is no indication in the evidence that any public servants provided any form of “courageous advice” to ministers at any time during the development and construction of the Project.

As discussed earlier, no detailed, independent assessment of the Project’s cost, schedule and risks was undertaken by GNL until 2016, when EY performed an audit. The “independent” assessments done previously were either conducted at too narrow a scope, were carried out without access to full information or were too heavily influenced by Nalcor representatives. An example of this is Manitoba Hydro International’s DG3 report, which was reduced in usefulness when GNL removed strategic risk analysis from the contract’s scope of work, at Nalcor’s request.

I also find that GNL’s Department of Finance failed to take the lead to ensure that a full financial analysis of the Project was completed before Project sanction and Financial

Close. In addition, the Department of Finance failed to conduct any review of the impact that significant cost overruns would have on the financial position of the Province.

I am satisfied that there is a belief among at least some public servants that they cannot provide courageous advice to politicians because to do so would subject them to a potential loss of their employment or trigger some other negative effect.

As a result, I believe a study is required to determine the views that public servants hold about exercising their duty to provide courageous advice. The survey undertaken by Professor Blidook was limited by its small sample size. As well, most of its participants were retired or no longer employed in GNL's public service, and so their input may not be sufficiently current. I recommend that GNL commission a study for this purpose.

THE DUTY TO DOCUMENT

Newfoundland and Labrador's *Access to Information and Protection of Privacy Act, 2015* came into force on January 17, 2005, with the exception of Part IV (Protection of Privacy), which was proclaimed on January 16, 2008. ATIPPA requires a comprehensive review of the Act every five years. The 2014 Statutory Review Committee examined the Act while considering how the 2012 amending legislation (Bill 29) altered its functioning. In its report, the Review Committee advised on how Bill 29 should be revised. The Review Committee held consultations with private citizens and stakeholders, considered the standards and leading practices in other jurisdictions and released its report in 2015 (P-04469, P-04470). The report recommended several statutory changes and provided a draft amending bill. GNL accepted the recommendations and incorporated them into a legislative amendment on June 1, 2015. A further review of ATIPPA is expected to be undertaken in 2020.

ATIPPA exists to increase the transparency, openness and accountability of GNL and to facilitate democracy. As described in the Review Committee's report, it is the "public's portal" to the information held by GNL (P-04469, p. 15). Some people, however, perceive access to information legislation as being in conflict with government's occasional legitimate interest in secrecy, which is upheld to promote candour and fullness in government decision-making.

The difficulty for all governments lies in finding a fair balance between openness and secrecy. In Professor Cappe's view, decisions should be publicly available, but specific

advice should not. In his testimony, he stated that “openness is desirable for accountability, but secrecy is desirable for candour in considering the options” (July 26, 2019, transcript, p. 13). This province’s ATIPPA aims to balance the need for transparency and accountability with the need for secrecy for commercial or other required considerations.

Civil servants have a “duty to document” that is related to government decisions. However, it appears that increasing the openness of government decision-making has had a “chilling” effect on government’s written record-keeping. In addition to offending the common law duty to document, the reluctance to document is problematic for several reasons. For example, it impedes the public’s ability to hold government accountable. As Professor Cappe pointed out in his testimony, it also limits what is available to be preserved in the written record for historical purposes (July 26, 2019, transcript, p. 13). Professor Blidook testified that his review found “a culture of avoiding creating documents” and that public servants were concerned that what they wrote would or could end up in the news (July 25, 2019, transcript, pp. 12–13).

In the “Executive Summary” of its report, the 2014 Review Committee made the following recommendation about documentation vis-a-vis the ATIPPA (P-04469):

However, “duty to document” is gaining status in government and information management circles. It has become a rallying cry for information and privacy commissioners and, it seems, for good reason: how can they properly oversee laws on privacy and access to information in the absence of good records or, in some cases, any records at all? This issue was raised in the last statutory review, and it has been an issue in the United Kingdom.

The *ATIPPA* assumes that records have already been created. The *Act* does not address how records should be managed, apart from the duty to protect personal information. A separate piece of legislation applies to records of public bodies excluding municipalities, the *Management of Information Act*.

...

Canada’s Information Commissioner, Suzanne Legault, recommended a legal duty to document decisions, “including information and processes that form the rationale for that decision.” Commissioner Legault felt that without such a legal requirement, there is no way to ensure all information related to the decision making process is recorded. She was also concerned “the risk is compounded by the advent of new technologies used in government institutions, such as instant messaging.”

...

[I]t must be realized that the success of the ATIPP system depends entirely on maintaining reliable records. Senior officials must ensure that appropriate resources are allocated to do the job completely, and that all public bodies understand the essential role that information management plays in a well-functioning access to information system. It is appropriate to observe that public officials, including political leaders should have a duty to document their decisions.

...

The legislated duty to document should be expressed in the *Management of Information Act*. (pp. 60, 61)

In the second volume of its report, the Review Committee also noted that “more must be done” and that “[s]ome departments and public bodies . . . have not achieved the same level of proficiency in information management as others” (P-04470, p. 323).

At the hearings, Judge Molloy testified about his experience with civil servants’ record-keeping (July 22, 2019, transcript):

JUDGE MOLLOY: There was never really any clear direction as to what was required to be documented or not. We had just come out of—Public Prosecutions had come out of the Lamer Inquiry, which stressed, among other things, the importance of accountability and transparency.

So I was accustomed to a culture in which everything was recorded, written down and so I continued that practice. But it—after some, not too long a period of time, I would often be sort of subject of jibes or other comments about: Oh, well, you know, we don’t have to worry because I’m sure Donovan will do a memo or, you know, or when can we expect your memo and—it was always like a subtle kind of dig at my practice of memorializing advice and, you know, I think somebody who, with less independence and more worried, sort of, about their tenure, it’s the type of thing that, I believe, would discourage you from continuing to document your advice.

MS. MUZYCHKA: Okay. Are you aware—I mean we’ve heard some evidence in this Inquiry that the practice of providing ministers with detailed briefings and advice in terms of—to assist them in decision-making has changed over the years and that very little, or less—much less information is put in writing to ministers, due to concerns of ATIPP requests. Are you aware—

JUDGE MOLLOY: Yeah, that—

MS. MUZYCHKA: —of that at all?

JUDGE MOLLOY: Yes, and, in fact, I think some departments, ministers refuse to take briefing notes whatsoever, everything’s been reduced to oral briefings

and, frankly, not only does that undermine the accountability and transparency, but it sends a very important message in terms of culture.

Culture in an organization flows downwards, and by engaging in those practices, basically, either intentionally or not, you're communicating to people below you that keeping records is bad. So, you know, you can have whatever you like in terms of legislation, but if the person who's running the show is engaging in practices that actively discourage documentation, well, everybody below that is going to see that as sort of their direction, regardless of whether or not it's stated expressly. (pp. 19–20)

The Review Committee noted that high-quality record-keeping leads to successful completion of access requests (P-04470, p. 318).

The ATIPPA assumes that records have already been created. It does not address how they should be managed, except in relation to the protection of personal information. The *Management of Information Act*, SNL 2005, c. M-1.01, directs which documents and communications must be saved.

Although GNL sought to implement almost all of the ATIPPA Review Committee's recommendations, it has not yet legislated the duty to document. According to the updated implementation report provided to the Commission (P-04507), GNL has been focusing on policies and guidelines for documentation but has not yet completed the research and consultation processes required to implement the recommendation on the duty to document.

In August 2017, an Information Note prepared by GNL's Office of the Chief Information Officer about the status of the duty to document stated (P-04503):

The *Management of Information Act* already establishes a requirement to create records: "A permanent head of a public body shall develop, implement and maintain a record management system for the creation, classification, retention, storage, maintenance, retrieval, preservation, protection, disposal and transfer of government records." (Section 6 (1)) (emphasis in original, p. 1)

Section 6(1) does not establish any duty to record or document. Judge Molloy explained in his testimony that there is a difference between legislation that requires the public service to maintain records and a legally enforceable duty to create a record of the decisions of government. Regarding the "chilling effect," Judge Molloy's perception is that a duty to document would "free" public servants from their fear of creating records, because that duty would be mandated by legislation and not be left up to an individual's discretion (July 22, 2019, transcript):

MS. MUZYCHKA: . . . Some would say that the requirement to document would have a chilling effect on members of the civil service for fear of having to disclose. What do you say to that?

JUDGE MOLLOY: In my view, there's more of a chilling effect now in terms of fear of documenting something that's perceived or have been told that, you know, shouldn't be documented. So, you know, civil servants are stressed by creating records, not because it's sort of, you know—you know, not as an administrative burden, but as the potential, sort of, what happens if I create the records, it sort of leads to a scandal or some other issue for government. The duty to document will frankly free them from that because then it's not a matter of individual choice or discretion, it dictates that records of certain decisions, transactions be kept. And so, you know, to my point of view, I think it would be much harder for government to take issue with somebody for complying with what is in fact a legal duty pursuant to a piece of provincial legislation. (p. 29)

Judge Molloy acknowledged in his testimony that GNL has been working on this recommendation and made the following observations (July 22, 2019, transcript):

I'm acknowledging that the—that work is being done, but my understanding is that it's, in terms of timelines, like, there are no set timelines and that it's—you know, while work has been done, it's one of those things that often takes a back seat to other operational priorities. So, you know, it's one thing to be doing work, but the proof of the pudding is in the eating, and there's no indication as to when it might actually happen because they're not even yet satisfied with their information management systems, which also adds to the work of coordinators and, you know, you have issues with your IM [information management] program. (p. 41)

As some of the participants in Professor Blidook's study confirmed, there is little consistency within GNL when it comes to documentation. Professor Blidook testified that many of the participants in his study found that there was inconsistency in documentation protocols within different government departments (July 25, 2019, transcript, p. 11).

British Columbia is the only jurisdiction in Canada that has, to date, legislated a duty to document for its civil service. However, that duty is limited to giving the Chief Records Officer the discretion to make a directive and provide guidelines for the creation of adequate records. It is not clear whether this legislative provision has been implemented. In his testimony, Judge Molloy explained the failures in that legislation. He stated that, in order to be effective, an enforceable duty to document would include both the requirement to have government decisions documented and to provide "someone

outside government” with the power to review “failure to document” allegations as required by the legislation (July 22, 2019, transcript, p. 28).

During the hearings, it was suggested that public servants now work in a culture that undermines the need to document, not one that promotes its importance. In turn, this situation implies that training, policies and guidelines about documentation could all be improved. Professor Cappe testified that beyond creating a legal requirement to document, governments need to establish a strong culture of documentation. He specified that this culture needs to start at the highest level of leadership and flow downward. In fact, the Review Committee also commented on the leadership role of government (P-04469):

Systems for access to information and protection of personal information can only work effectively if political leaders and senior executives are supportive and committed to the purpose of the *Act*.

Leaders must challenge themselves to lose their fear of giving up control when they release information to the public. At times this will require leaps of faith and acknowledgement that despite the potential embarrassment about the disclosure of certain records, it is the right thing to do. This kind of attitude among leaders can signal important cultural shifts to others in public bodies. People do lead by example. (p. 16)

The concept of “transitory records” was also raised at the hearings in discussions about the duty to document. Currently, GNL has no requirement to maintain transitory records. Professor Blidook testified that participants in his study provided some indication that they were even unclear about what “transitory records” meant.

The *Management of Information Act* defines a transitory record as “a government record of temporary usefulness in any format or medium having no ongoing value beyond an immediate and minor transaction or the preparation of a subsequent record” (s. 2(h)).

Evidence was presented during the hearings that notebooks containing important information were often considered transitory and were consequently destroyed. As well, the scarcity of documentation related to GNL’s assessments of the development and construction of the Project is surprising and disturbing. In my view, aside from a lack of clarity regarding transitory records, there is a culture within parts of the public service that has been promoted by both politicians and public servants to resist preparing written documentation that could potentially be made public through an ATIPPA request.

The official policy of GNL has been to deliver transparency and openness via the process outlined in the ATIPPA. In practice, it is clear that both politicians and public servants have consistently attempted to curtail this official policy by failing to document important information related to the development and construction of the Project.

As noted above, GNL adopted the Review Committee's recommendations for strengthening the provisions of the ATIPPA in 2015. I find, however, that the culture in government appears to circumvent the spirit of that legislation.

I conclude that there is a need for a change in culture within GNL to promote the requirement to document and create records. The direction for this cultural change must come from the Premier and from members of Cabinet, and I recommend that legislation in this province be amended to incorporate a duty to document. Since this has been under consideration within GNL for some time now, it should be done within six months of the submission of this Report.

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CHAPTER 30: ELECTRICITY REGULATION

As noted earlier, pursuant to s. 3(b) of the *Electrical Power Control Act, 1994*, the electricity system in Newfoundland and Labrador is regulated by the Public Utilities Board. The PUB's mandate requires, among other things, that it ensure the following:

- Electricity in the province is generated, transmitted and distributed in the most efficient manner
- Consumers in the province have equitable access to an adequate supply of electricity
- Electricity is delivered to consumers in the province at the lowest possible cost consistent with reliable service

For many years, the province's electricity has been produced, transmitted and distributed by two utilities. The Crown corporation that generates and transmits most of this electricity is Newfoundland and Labrador Hydro. NLH distributes power in Labrador and to many parts of the Island, including the Great Northern and Connaigre peninsulas and many isolated communities. The second utility, Newfoundland Power is owned by the publicly traded Fortis Inc. This utility distributes electricity in areas of the Island not serviced by NLH, including on the Avalon Peninsula.

Under the current regulatory regime, Newfoundland Power and NLH make regular applications to the PUB for permission to recover their costs of service from ratepayers. The PUB allows them to recover reasonable and prudent costs and earn a reasonable rate of return. In this province, utilities do not need to apply to set their rates on a fixed schedule. However, if they earn significantly more than their permitted rate of return in any given year, they are required to provide this excess return to ratepayers.

In theory, to fulfill its mandate, the PUB should review the cost of any new generation project undertaken in the province. In practice, as we have seen with the Muskrat Falls Project, this has not always occurred. As referred to earlier, the Project and other generation projects before it have been exempted from PUB review (P-00110, p. 85).

My comments on this province's future electricity regulation, which follow, are based on:

- Evidence related to the Power Advisory report of 2015 (P-00110)

- Expert evidence from Professor Guy Holburn, who testified and provided a report to the Commission (P-00528)
- Expert evidence from A.J. Goulding of London Economics International, who testified and provided a report to the Commission (P-04457)

THE MANDATE OF THE PUB

Many jurisdictions include in their regulators' mandates a responsibility to consider the public interest when making decisions about public utilities. Newfoundland and Labrador's PUB does not have this obligation. Its mandate is to focus narrowly on providing power at the lowest cost consistent with reliable service. In the absence of a directive from GNL, its restricted mandate prevents the PUB from considering environmental factors when it makes its decisions. For example, such factors cannot be considered when the PUB determines whether Holyrood should use more expensive, but cleaner, low-sulphur fuel. These types of situations may arise more frequently in future, since clean electricity is part of GNL's climate-change action plans.

When the Project begins to produce electricity for both ratepayers and potential export, a new set of dynamics will be in play in this province's electricity sector that may require further consideration by its regulator. This is a reason why GNL has been undertaking a review of the PUB mandate at this time.

In some other jurisdictions, regulators are required to set rates that are "just and reasonable" or "not unduly discriminatory" rather than "least cost" (as here). Such regulators can therefore exercise more discretion than the PUB can. In its *Review of the Newfoundland and Labrador Electricity System*, prepared in 2015 for GNL's Department of Natural Resources, the consultant firm Power Advisory recommended that NL's PUB be granted the right to apply a similar public-interest test (P-00110):

The appropriate standard that is to be employed by the PUB to guide its decision-making is a public policy question best determined by government. However, the degree to which the PUB departs from a narrowly defined public interest test expressed in terms of "least cost", the greater the likelihood that higher costs will be incurred. (pp. 160–62)

A further area of the PUB's mandate requiring review by GNL is its Cost of Service methodology for matching customer electricity rates with a utility's cost to provide

service. Mr. Goulding suggests that the PUB's current pricing model could be improved. Newfoundland Power stated a similar position (with which I agree) in its final submission to the Commission:

Assessment of the appropriateness of changes to provincial power policy and the regulatory framework should be considered based on local circumstances and take a long-term perspective. The [Public Utilities] Board is well positioned to undertake such an assessment. Ultimately, the evolution of regulations and mechanisms should be left to the Board's discretion, within the broad direction established by government policy. (Final Submission of Newfoundland Power, pp. 26–27)

I recommend that GNL complete its review of the PUB's mandate and, following appropriate consultation, decide whether changes to the *Electricity Power Control Act, 1994* and the *Public Utilities Act* are required.

PERFORMANCE-BASED REGULATION

As Mr. Goulding's report for the Commission explains, many jurisdictions have changed their approach to utility regulation from using a Cost of Service model to models that can "provide incentives for regulated utilities to improve efficiency" (P-04457, p. 42). This approach is known as Performance-Based Regulation (PBR). Using PBR, a regulator minimizes "the direct linkage between costs and rates" and shifts "the balance of the ratemaking process away from one that investigates costs to one that sets a partly pre-determined (formulaic) path for rate growth" (P-04457, p. 42). In his report, Mr. Goulding describes two types of PBR approaches (p. 43):

- **Soft PBR:** In this approach, the regulator sets a rate for a specific set of years and the utility receives the same amount of money whether its costs increase or decrease; rates are shaped by the cost of providing the service, but between rate applications the utility has a strong incentive to save money
- **Hard PBR:** In this approach, the regulator fixes a price for power that adjusts every year for inflation, which is even cheaper for a regulator to administer and gives a utility a strong incentive to cut costs; under this system, however, utilities can fail if costs rise and ratepayers do not benefit if costs fall

PBR approaches can be created on a spectrum from soft (more like a Cost of Service model) to hard, which are often paired with performance standards. Performance standards can be limited to reliable service or can extend to social or environmental goals.

In his testimony, Mr. Goulding indicated that shifting the PUB's model to PBR would take time to implement in Newfoundland and Labrador, but the rate-setting method could be introduced incrementally. He cautioned, however, that it would yield only incremental change and that "orders of magnitude will be small." He also noted that the approach cannot "make pre-existing costs disappear" (July 18, 2019, transcript, pp. 80–81). Nalcor's position is that PBR should not be implemented at this time (P-04553). Nevertheless, Mr. Goulding recommended that GNL consider introducing a PBR framework.

I agree with Mr. Goulding. I recognize that NL's current regulatory system has been very effective in keeping our electricity rates relatively low, but in light of a power management environment about to experience big changes, I recommend that GNL conduct a review of PBR options. Although the benefits may not be large enough to require immediate action, I conclude that PBR could be beneficial.

INTEGRATED RESOURCE PLANNING

As noted earlier, the PUB should have directed Nalcor to use Integrated Resource Planning to evaluate the Project. The evidence establishes that IRP remains the best practice in non-competitive electrical systems. Power Advisory (P-00110, p. 182), Professor Guy Holburn (P-00528, p. 15), and A.J. Goulding (P-04457, p. 26) all recommended a shift to IRP in the PUB's planning activities. It should be recognized that, because of the time and resources that IRP requires, such a change will likely increase regulatory costs and will only reduce rates if improved decision-making results. Mr. Goulding noted, as well, that low load growths and low export prices for electricity make new investments unlikely in this province in the coming decades. If this proves to be true, the benefits of adopting IRP would be limited.

With interconnection to the North American grid available via the Labrador-Island Link and the Maritime Link, Nalcor gains two options: importing power instead of generating it, and selling power instead of spilling it. These opportunities will create new regulatory challenges in this province. For instance, when infrastructure is used for both exports and domestic use, how should the cost of infrastructure and the value of exports

be split between ratepayers and taxpayers? As indicated in the evidence, some jurisdictions allocate system costs for transmission to exports and those charges are repaid to ratepayers.

As part of any review of the PUB's mandate, IRP should also be considered.

EXPORTING POWER

Several questions remain about the marketing of energy in the future:

- How should the cost of the Project and the value of exports be divided between ratepayers and taxpayers?
- How can the PUB be assured that NLH's decisions about when to import power and when not to are reasonable?
- What about NLH's decisions to sell power instead of keeping additional water in reservoirs or banking additional energy through the Water Management Agreement?
- Should Nalcor market energy exports itself or engage a third party to do it?

Mr. Goulding addressed some of these issues in his report and in his testimony. They all require analysis and consideration in the coming years. I recommend that GNL review these areas.

MAJOR PROJECTS AND THE PUB

The question of whether the PUB should have the power to review major projects remains germane. As outlined previously, the development of the lower Churchill River's hydropower generating potential was exempted from PUB scrutiny by the *Electrical Power Control Act, 1994*. Even so, the Project proceeded generally by following a utility-based measure—that is, by providing power for ratepayers at the lowest possible cost consistent with reliable service.

In his report for the Commission, *The Impact of Exempting the Muskrat Falls Project from Oversight by the NL Board of Commissioners of Public Utilities*, Professor Guy Holburn recommended that an upfront regulatory evaluation of a proposed project and a final

review of expenditures is required (P-00528). He indicated that the prospect of regulatory scrutiny and the potential disallowance of full cost recovery can “exert a powerful discipline on project management to control costs” (p. 24).

In its report, Power Advisory stated (P-00110):

Best practice is to rely on the regulatory process to assess the need for major new facilities and their cost-effectiveness relative to alternatives. However, there may be situations where government wishes to retain the final decision in a matter to itself, rather than defer decision-making to the regulator. This is often the case with respect to oversight of major capital projects such as large new hydro developments. A case can be made that these types of projects require a broader scope for the public interest that recognizes their strategic significance to the province. Therefore, these are legitimate decisions for governments to make and it is appropriate for Government to exempt such projects from formal regulatory review. (p. 177)

Mr. Goulding disagrees. He believes that any project whose costs are passed on to ratepayers should be reviewed by the PUB (P-04457, p. 26). I agree with Mr. Goulding. Some utility projects will be promoted on the basis of public policy that is external to the Province’s energy policy and normal regulatory criteria. However, where there is any potential for an impact on the province’s ratepayers, the PUB should be involved in the project’s review. Any expenditure funded through electricity rates should be subject to full regulatory review, and I recommend this.

ENERGY/ENVIRONMENTAL POLICY

Mr. Goulding recommended a coordinated approach to government policy on energy and the environment and also that this coordinated approach should be monitored quarterly by an inter-ministerial working group. I agree with Mr. Goulding and recommend that, once the Project is fully operational, GNL undertake this type of coordinated approach. It should be recognized, however, that Nalcor and NLH will need some time to work through the Project’s initial commissioning challenges to gain experience with the new electrical system.

POWER ADVISORY'S RECOMMENDATIONS

In its 2015 report, Power Advisory made recommendations about the province's future electricity regulation system, many of which were subsequently also proposed by A.J. Goulding. Some of these recommendations remain largely unaddressed and should be acted on. Three require particular consideration:

1. GNL currently requires the PUB to approve capital expenditures of more than \$50,000 and capital leases of more than \$5,000. These thresholds are the lowest of any jurisdiction in Canada and they increase regulatory cost with little benefit. Both Power Advisory and Mr. Goulding recommended that these thresholds be significantly increased. Mr. Goulding added that the PUB should have the power to modify such thresholds over time (P-00110, pp. 164–65; P-04457, p. 26).
2. Island ratepayers connected to isolated, expensive diesel networks pay a subsidized rate for electricity and the subsidy is absorbed by the rest of the Island's ratepayers. Power Advisory indicated that this rural subsidy is unusually generous. It recommended that, beyond an initial block of discounted power (enough to meet basic needs), these consumers should pay the full cost of generating the extra power they use. Mr. Goulding also suggested that this is the appropriate approach to take (P-00110, p. 166–67; P-04457, p. 26).
3. NLH and Newfoundland Power should be required to file regular general rate applications, for instance, every three years. In addition, once the record of a rate application is closed, the best practice is to set a maximum time (for example, 90 days) for the filing of a decision (P-00110, pp. 167–68; P-04457, p. 26).

These are only a few of the recommendations that have not been acted upon that require attention.

FINAL THOUGHTS ON ELECTRICITY REGULATION AND THE ENERGY PLAN

The evidence given at the hearings about the future of the Province's electricity regulation system was brief, but it did provide important perspectives that GNL should consider.

As concluded above, the Energy Plan is out of date. The 2015 Energy Plan update was essentially a progress report. It did nothing to address significant changes in the international and local energy markets since the first Energy Plan was written in 2007. I have recommended that GNL should immediately undertake a comprehensive review of the Energy Plan to guide the Province's energy policy. I also suggest that GNL establish a regular schedule for future reviews.

Shale gas, renewable energy and initiatives to address climate change have all transformed international energy markets. The 2007 Energy Plan assumed high and rising oil prices, yet current prices are considerably lower than it predicted. It also assumed that NL's energy warehouse needed access to markets. In contrast, A.J. Goulding now suggests that expansion of NL's renewable energy resources in the coming decades is unlikely to be competitive in export markets (P-04457, p. 60).

The Project will transform GNL's energy grid and electricity policy. Until now, that policy focused on the need to reduce energy use and avoid the cost of operating Holyrood. In the future, the Province's energy policy will focus on the need to maximize the value of the abundant energy that will be available when the Project is completed. In addition, as Mr. Goulding testified, energy policy and climate policy are definitely intertwined. If the Province plans to increase oil production while also meeting its climate targets, policy in other sectors will have to adapt accordingly.

CHAPTER 31: FINANCIAL IMPACTS – RATEPAYERS AND TAXPAYERS

As stated earlier in this Report, the full costs of the Project are to be recovered by NLH from Island ratepayers. However, because Project costs have grown so significantly from the original estimates, the provincial government has indicated that rate mitigation and other measures may be implemented to reduce the impact on Island electricity rates. Other measures to reduce the burden on the province's taxpayers are also under consideration. In September 2018, GNL directed the PUB to perform a detailed review of electricity rate mitigation options.

In s. 5(e) of the Terms of Reference, I am to consider “the need to balance the interests of ratepayers and the interests of taxpayers in carrying out a large-scale publicly funded project.” Consequently, as part of the Phase 3 hearings, Commission counsel assembled a panel of witnesses who could make informed presentations on three pressing questions related to this directive:

- How do we pay for the Project?
- What are the issues and consequences of the various options being considered as ways to pay for the Project?
- How are the interests of ratepayers and taxpayers affected by each of these options?

The panel consisted of these eight witnesses:

1. **Professor Brandon Schaufele** was qualified as an economics expert for the panel. Since 2014, he has been an Assistant Professor at the Ivey Business School, Western University (London, Ontario). Prior to that, he was an Assistant Professor in the Department of Economics at the University of Ottawa. Professor Schaufele specializes in environment and energy economics and has published many articles and policy briefings about electricity and energy policy.
2. **Kevin Fagan** is Director of Regulatory Affairs at Newfoundland and Labrador Hydro, where he is responsible for NLH's interactions with the PUB as well as for planning and developing proposals for general rate and capital budget applications. Mr. Fagan has a background in mathematics and statistics, and began his career at Newfoundland

Power in 1986 as a statistical analyst. He later took on other roles in rates analysis, customer service, policy and regulation development, and eventually became the Director of Rates. He began his work at NLH in 2014 as the Manager of Rates and Regulations, which work has now expanded into his current role.

3. **Peter Alteen** is the President and CEO of Newfoundland Power. He served as Vice-President of Regulation and Planning from 2009 until his appointment as President in 2018.
4. **Dennis Browne** is the current Consumer Advocate for the province, appointed under the *Public Utilities Act* to represent ratepayers in specific applications before the PUB. Mr. Browne previously served in this position from 1996 to 2004 and was reappointed in 2016. Mr. Browne was also a member of the 2041 Lawyers' Group, which advocated against the Muskrat Falls development.
5. **Denise Hanrahan** has been the Deputy Minister of the Department of Finance and Secretary to the Treasury Board since November 2017. She is a Certified Professional Accountant.
6. **Lorraine Michael** had recently retired as a member of this province's House of Assembly when she served on the panel. She had served as an MHA from 2006 to April 2019. She holds an Education degree from Memorial University as well as a master's degree in Theology from the University of Toronto.
7. **Jerry Earle** has been the President of the Newfoundland and Labrador Association of Public and Private Employees since 2015. He also serves on the Newfoundland and Labrador Federation of Labour Executive Council and on the national executive board of the National Union of Public and General Employees.
8. **Bernice Hancock** is the Executive Director of the Community Education Network, a non-profit organization in southwestern Newfoundland that provides community-based programs and services to rural and remote populations.

This chapter of the Report provides a high-level description of the possible financial implications of the Project, as reviewed by the panel.

There are four main policy options that the Province can use to address the financial challenges it faces because of the Project. Each will have direct and indirect effects on ratepayers and taxpayers, as well as implications for the province generally:

1. Increase electricity rates
2. Increase taxes and/or fees
3. Decrease government spending by decreasing government salaries and/or service levels
4. Increase the Province's deficit

Paying for the Project will likely require a combination of some or all of these options. In addition, GNL may seek out other sources of revenue to assist in the subsidization of rates.

After reviewing all of the evidence, it is clear that each option has pros and cons. Ultimately, GNL will have to rely on the PUB for advice about its approach to rate mitigation.

In Brandon Schaufele's words, "there is no perfect prescription to pay for the Muskrat Falls Project. . . . I think it's important to state that good decisions consider all of the costs—not just the accounting costs. And that there is no single silver bullet to pay for this project" (July 16, 2019, transcript, p. 5). Professor Schaufele also pointed out in his testimony that some policy decisions are worse than others and that GNL and the PUB will need to weigh the merits and demerits of each. Professor Schaufele's testimony covered two other high-level considerations:

1. Mitigating electricity rate increases is not necessarily a welfare-maximizing objective. In other words, if GNL were to pay for the Project while maintaining current electricity rates, it will have to forgo allocating funds to other worthwhile initiatives. He stated: "The objective of the Government of Newfoundland and Labrador should be to maximize the overall benefits to the province's residents **under the condition that they need to pay for the Muskrat Falls Project.** This does not necessarily imply that electricity rates should be kept as low as possible or at what they are now" (emphasis added, July 16, 2019, transcript, p. 5). However, given the size and scale of the Muskrat Falls Project and the amount of repayment required, it is impossible to

treat it as an independent utility—its cost and repayment obligations are inherently linked to GNL’s finances.

2. Paying for the Project introduces a trade-off between what economists term “efficiency” and “equity.” Paying for the Project has implications for both efficiency (the total value available in the Province) and equity (who gets a share of that value). GNL’s choices for what the trade-off balance is may be disadvantageous for certain groups in society.

Dr. Schaufele went on to say (July 16, 2019, transcript):

These fixed costs are sunk; they need to be paid. They either need to be paid by ratepayers or by taxpayers. And the objective of [efficiency] . . . is that you want to choose the mix of taxes and rates that minimize the implications on the economy.

Now, by choosing those taxes and rates, you can disadvantage certain groups. . . . And that may be unpalatable for residents of Newfoundland, it may be unpalatable for the government, it may be something that’s, you know, undesirable. And so, as a result, you need to explore the different mixes of rate increases or rate mitigation, as the case may be, taxes. (p. 65)

In order to understand the impacts of the Project on various groups, as well as how the four policy options will affect them, it is important to once again review how the province’s power system works and who the ratepayers and taxpayers actually are.

There are two main power distributors in this province, Newfoundland and Labrador Hydro and Newfoundland Power. As shown in Figure 4.2, Newfoundland Power is the primary power distributor on the Island, serving 92% of all customers on the Island’s integrated grid. More than half of Newfoundland Power’s 268,000 customers are located on the Avalon Peninsula.

According to Kevin Fagan’s testimony, Newfoundland Power purchases almost all of its power from NLH, at a rate of 8.8 cents per kWh as of October 2019 (July 16, 2019, transcript, p. 15). The rest of its power comes from 23 small hydroelectric generating stations and five small thermal generation plants on the Island that Newfoundland Power owns and operates. The cost of buying power from NLH is about two-thirds of Newfoundland Power’s costs to serve its customers. Excluding the cost of purchasing the power from NLH, Mr. Fagan testified that Newfoundland Power’s current cost to serve its customers is 4.4 cents per kWh (July 16, 2019, transcript, p. 15).

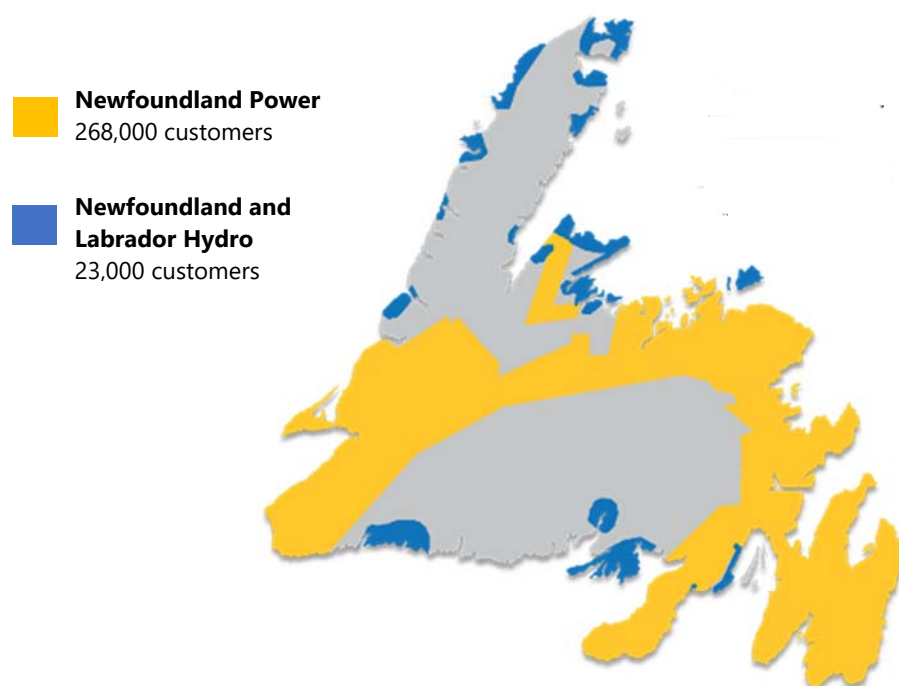


Figure 4.2: Electricity Distribution on the Island of Newfoundland

RESIDENTIAL CUSTOMERS

According to Peter Alteen, Newfoundland Power serves approximately 233,000 residential households on the Island (P-04446, p. 4). He also noted that half the electricity that Newfoundland Power delivers to its residential customers is used for heating and that 70% of its customers heat their homes or buildings entirely with electric heat (July 16, 2019, transcript, pp. 10, 11). Of those customers, 90% also use electric hot water heaters (p. 11).

Consumer Advocate Dennis Browne noted that the percentage of households using electric heat in NL is disproportionately high compared to other Canadian provinces, with the exception of Québec and New Brunswick (July 16, 2019, transcript, p. 23). He added that electricity consumption in this province was much higher than the Canadian average and that the bulk of electricity use in the province occurs in households with annual incomes over \$60,000 (July 16, 2019, transcript, p. 24).

In his testimony, Peter Alteen indicated that Newfoundland Power sees the power sales in the province as “particularly vulnerable to . . . the effects related to the Muskrat Falls Project and pricing that’ll come out of it.” He further indicated that, based on data

from recent years, approximately 61,000 customers have electricity bills higher than \$3,000 a year. These amounts are typically for single-family homes of 1,500 square feet (140 square metres) of heated area (July 16, 2019, transcript, p. 11).

Mr. Alteen testified that NLH serves the remaining 8% of residential customers in the province (July 16, 2019, transcript, p. 10). This represents approximately 38,600 direct rural households in more than 240 communities in Newfoundland and all of Labrador. According to NLH's presentation to the Commission, power generation in Labrador comes from the L'Anse-au-Loup system on the south coast of Labrador and from diesel-based systems in the rest of Labrador (P-04455, p 12). Mr. Fagan testified that power for the L'Anse-au-Loup system is supplied by a secondary purchase agreement from Québec, as well as by its own diesel system (July 16, 2019, transcript, p. 16).

As outlined in Kevin Fagan's presentation to the Commission, NLH's residential customers, whether supplied by the Island interconnected system or the L'Anse-au-Loup system, pay the same rates as customers of Newfoundland Power (P-04455, p. 12). When rates to Newfoundland Power's customers change, rates to the isolated diesel system customers on the Island change by the same percentage. In his testimony, Mr. Fagan explained one implication of this arrangement (July 16, 2019, transcript):

When rates—Newfoundland Power's customers changed, rates for the Island diesel customers change as well. So while the customers on the isolated diesel systems may not be paying for the cost of Muskrat Falls, their rates can certainly be impacted, depending on what happens with Island rates for the cost of Muskrat Falls. (p. 16)

Rates for customers on the Labrador interconnected system are not linked to Island rates and are calculated using a separate Cost of Service method.

Until October 1, 2019, the residential rate on the Island was generally below the Canadian average (P-04455, p. 9). With the recent rate increase (October 1, 2019), the Island residential rate still remains below the rates in some Atlantic provinces (P-04455, p. 9). Pointing to the historical rates in this province, Dennis Browne noted that the rate has fluctuated between 9 cents and 11 cents per kWh since 2006 (July 16, 2019, transcript, p. 23; P-04463, p. 4).

INDUSTRIAL CUSTOMERS

Kevin Fagan testified that NLH currently has five industrial customers on the Island: NARL Refining Limited Partnership (Come by Chance Refinery), Vale Newfoundland and Labrador, Praxair, Corner Brook Pulp and Paper, and Teck Resources (July 16, 2019, transcript, p. 16). He noted that Teck Resources was in operational shutdown at the time of his testimony and was expected to soon leave the system.

Industrial customers on the Island pay a slightly lower rate for power than other types of customers. Mr. Fagan noted that the industrial rate was 5.5 cents per kWh at the time of his testimony but was also scheduled to increase to 6.2 cents per kWh in October 2019. He stated that the industrial rates on the Island were also below the average rates of many provinces (July 16, 2019, transcript, p. 23).

According to Mr. Fagan, NLH has two Labrador industrial customers: the Iron Ore Company of Canada and Tacora Resources (July 16, 2019, transcript, p. 16). He noted that approximately 90% of the industrial rates in Labrador are outside the regulatory control of the PUB. Instead, they are established based on the Labrador industrial rates policy and filed with the provincial government for annual updates (p. 16). The remaining 10% of the rates, which are related to transmission costs, are subject to PUB regulation (p. 16).

COMMERCIAL/INSTITUTIONAL CUSTOMERS

Peter Alteen testified that Newfoundland Power serves approximately 24,000 commercial and institutional customers across the Island, which use 38% of the total energy it distributes (July 16, 2019, transcript, p. 10). Predominantly in the service sector, these customers include government services and purveyors of goods and services. Also included in this category are manufacturing, fishery and mining companies (p. 10). Approximately 2,500 of Newfoundland Power's commercial/institutional customers have annual electricity bills exceeding \$10,000 and some have annual electricity bills in the millions of dollars (July 16, 2019, transcript, p. 11).

POPULATION AND DEMOGRAPHICS

Also relevant to this discussion are the province's population, its demographic trajectory and its financial landscape. Professor Schaufele testified about what this kind of data tells us about the coming years (July 16, 2019, transcript):

Newfoundland and Labrador, unlike other provinces, has a declining and aging population. This means that the labour force is going to be eroding, health care costs are likely to increase and the economy is going to struggle to grow at the same rate as other provinces. This has implications for load; this [has] implications for the tax base. (p. 9)

In his testimony, Dennis Browne provided some data related to the ongoing population decline. In 1989, the population of the province was approximately 576,000. In 2019, it had decreased to approximately 515,000 (July 16, 2019, transcript, p. 23). He noted that the 2016 census demonstrated that the province's population was aging, with a median age of 46 (P-04463, p. 7; July 16, 2019, transcript, p. 23). The number of births here each year no longer offsets the annual number of deaths.

Ms. Michael made the following points in her testimony about unemployment in the province (July 16, 2019, transcript):

We have the highest annual unemployment rate in Canada which at 13.8% is more than twice the national average and which accounts for 36,000 people. The number of people on EI in January 2019 was 33,900, and the maximum weekly EI payment—maximum—is \$562. Six per cent of the workforce of 213,700 earn minimum wage, which is just slightly above the low-income cut-off level. Thirty-two point three per cent of the workforce earn less than \$15 an hour, which in many arenas in our country is considered the bare minimum that a worker should earn. Latest available statistics show nearly two-thirds (65.5%) of people aged 20 to 24, the youth of the province, are earning \$15 or less. This age group makes up the largest share of these low wage workers, at 18.4%. (p. 35)

Speaking about income support recipients, Ms. Michael testified:

In May 2019, there were 35,850 adults and children on income support, which is thousands of dollars below the Statistics Canada Low-Income Cut-Off figures whether talking about families or single people.

About half of the 107,925 seniors in the province have incomes so low that they qualify for the Guaranteed Income Supplement. (p. 35)

Her remarks about the debt load of residents of the province noted the following:

The “Survey of Financial Security” indicates that 29.6 per cent of Canadian families are debt free compared to 23.9 per cent of Newfoundland and Labrador families.

76.1 per cent of economic families, plus persons not in an economic family in Newfoundland and Labrador, hold some form of debt. The Canadian average is 70.4 per cent. Newfoundland and Labrador has the highest percentage of all the provinces. (p. 36)

In painting this picture of the financial health of the province’s residents, Ms. Michael also noted the debt load of students, a lack of affordable housing and rising prices for consumer goods and services.

Considered together, these points provide an important context for developing policies to recover the costs of the Project. Ms. Hancock, Ms. Michael and Mr. Earle all voiced concern about the real risk of out-migration in the coming years, especially of young families and workers in the early stages of their careers, as a result of the additional financial burden these groups face because of the Project. Significant out-migration would decrease the province’s ratepayer and taxpayer base, which would exacerbate the financial struggle to recover costs of the Project over time for those who remain here.

It is with these important considerations in mind that I turn to a discussion of the policies that GNL could adopt to deal with the situation. Again, my objective is not to decide what GNL’s policy should be or to evaluate GNL’s current mitigation plan. Rather, my intention is to set out some of the applicable facts and considerations.

A CONSIDERATION OF GNL’S FOUR POLICY OPTIONS

1: Increase Electricity Rates

The first, most obvious policy choice the government should consider is increasing electricity rates. To provide context for how increasing electricity rates might affect the province, Professor Schaufele provided a brief outline of the basic principles of electricity economics (July 16, 2019, transcript):

Economics has a very clear prescription on an ideal way to price electricity. The ideal pricing—way to price electricity is referred to as a marginal cost

pricing rule, that “Volumetric rates should be set to maximize . . . the total value of electricity to the economy” to maximize economic efficiency. (p. 6)

This rule says that each kWh of electricity should, in an ideal world, be priced at the cost of producing it. However, the cost of producing power in the province now has to include a large fixed cost (the Project)—and that cost is much too large to make this pricing model feasible. So the Province must depart from the ideal pricing model and pursue other options and/or revenue generation, because the Project must now be paid for (July 16, 2019, transcript, p. 6). The objective in determining pricing to raise additional revenue is to minimize the size of the dead-weight loss, a loss of some kind of value to society caused by interventions that result in changes in demand and other market events. The question is then: what is the most efficient and equitable way for the Province to raise additional revenue, given that ideal pricing is not feasible?

Another important element in understanding electricity economics is the “price elasticity” of demand. As referred to earlier, elasticity refers to customers who are sensitive to changes in the price of a product or service, a sensitivity that is reflected in changes in demand. Simply stated, more product will be bought when the price is cheaper and less will be bought when the product is more expensive. To make fully informed decisions about rates, both GNL and the PUB need to know how sensitive people are to fluctuations in the price of electricity.

According to Professor Schaufele, many studies have estimated the price elasticity of electricity in jurisdictions in North America, Europe and elsewhere, and they show a wide range of potential estimates. In general, industrial and commercial customers tend to be more sensitive to electricity prices than residential customers. However, the studies have a limited value for informing the demand elasticity of electricity rates in this province.

The challenge in forecasting what will happen here is that there is not enough historical data or information from other jurisdictions to accurately predict price elasticity models for the magnitude of rate increases that GNL might have to implement because of the Project. Professor Schaufele testified (July 16, 2019, transcript) that

one of the unique features of the Muskrat Falls Project is there are very few jurisdictions that proposed as large an increase in electricity rates as would be needed here to cover all fixed costs. A large increase is usually on the scale of about 25 per cent, whereas the increase here is more on the scale of 80 per cent. And so this takes us outside of the standard sort of parameters that we’re familiar with.

...

At the end of the day, I think Synapse Energy Economics or the regulator is going to have to make an educated guess based upon the reality of what's occurring in Newfoundland and Labrador on what they think might occur. (pp. 7, 46)

It seems clear that we cannot be certain about how the province's residential customers will react to price increases of more than 25%. We do not yet have information, for example, about what happens to Newfoundland Power residential customer demand when the rates increased from 11.391 cents per kWh (the level before October 1, 2019). At the time of the hearings, there was testimony that the rate was to increase to 13.2 cents per kWh and that GNL has maintained that its goal is to increase rates only to 13.5 cents per kWh by 2021. According to Kevin Fagan, the PUB considers that a 10% increase in rates would be sufficient to cause "rate shock" (July 16, 2019, transcript, p. 15–17).

Without rate mitigation efforts, the possibility that power rates could increase to around 22.9 cents per kWh has stoked major fears that electricity bills will double. Regardless, there is no information to indicate what would happen to customers' purchasing behaviour with this magnitude of rate increases. However, it is apparent from the panel's testimony that the doubling of rates, or any major increase in rates, would illicit a strong consumer reaction. As Mr. Alteen testified (July 16, 2019, transcript):

So, if I could flash back to mid-year of 2017, when Nalcor energy did the update which increased the cost of the Muskrat Falls Project to \$12.7 billion, they had indicated that electricity costs would have to rise to an average of about 22.9 cents a kilowatt-hour to recover those increased costs at Muskrat Falls. Our customers' reaction to that was pretty immediate. We heard it on the phones and through the various digital channels that our customers choose to contact with us. We heard it in our survey results that we regularly do. We heard it in focus groups in which we engaged four months after the announcement to get a sense where customers' sentiment was on the Muskrat Falls Project.

... [F]ully 84 per cent of Newfoundland Power's customers had indicated that they were very concerned with where electricity price was going in this province. (p. 10)

Mr. Alteen added that current public survey results continue to show a high degree of customer anxiety about future electricity prices.

According to Lorraine Michael, rising electricity rates in the province have a disproportionately negative financial impact on low-income citizens, people on social

assistance, seniors, youth, “modest middle-income” individuals, Indigenous Peoples and women. Ms. Michael highlighted several socio-economic factors that affect the province’s more vulnerable social groups. They included the following: the provincial unemployment rate is twice the national average, child-care programs are inadequate, the overall cost of living continues to increase, and there is not enough affordable housing. Ms. Michael also pointed to inadequate income support supplements for fuel, which are currently \$71 per month and do not cover the heating needs of those on income support (P-00459, p. 5).

In her testimony, Bernice Hancock added that people living on low incomes have little to no financial flexibility or disposable income and so they “will be forced to choose between buying food, paying their rent or mortgage, or paying their electricity bill” (July 16, 2019, transcript, p. 45). Ms. Hancock spoke about the current levels of reliance on food banks in the province and noted that some people are spending time in public buildings to save on household heating costs. She also noted that higher electricity rates would affect middle-income residents and that the resulting reductions in that group’s disposable income will have a negative impact on the provincial economy (July 16, 2019, transcript, p. 45).

Ms. Hancock also examined these issues from the perspective of rural and remote communities. Her testimony echoed many of the concerns about marginalized social groups: “[I]t’s everywhere throughout the province but that is compounded for our rural and remote communities” (July 16, 2019, transcript, pp. 43–44).

According to Mr. Alteen, increased rates are also likely to have a negative financial impact on commercial/institutional customers. He testified (July 16, 2019, transcript):

In an environment where rates have to be increased by virtually 100 per cent, it’s fair to assume that these customers, who are heavily in the goods and services producing sectors—that these customers would be passing on some of those increases to the households that are going to experience the higher energy cost.

Our customers are very alive to the fact that the impacts that they will bear in respect of Muskrat Falls are not restricted to increased energy costs, but they are inclusive of knock-on effects that will come from the general economy. (p. 11)

Mr. Alteen further indicated that rate increases can affect commercial/institutional customers operating globally by making them less competitive.

Industrial customers have a high sensitivity to price increases. Their profitability is often linked to output and generally they have a “high load factor” (a high demand for

electricity). Given these facts, industrial customers may not be able to continue to operate in the province without sufficient rate mitigation. Kevin Fagan emphasized how drastic the effects can be for industrial customers (July 16, 2019, transcript):

The affordability of electric heating is what's really what we're talking about here with regard to residential customers. With regard to industrial customers, it's really survival. (p. 19)

Mr. Fagan noted that potential rate increases could lead industrial customers to go “behind the meter”—that is, implement systems to generate their own power and decrease the amount of electricity they purchase from NLH. As noted during the hearings, however, the ability to do so in this province is complicated by the provisions in s. 14.1 of the *Electrical Power Control Act*.

Whether triggered by losing industrial customers or a significant shift by residents to alternatives to electrical heating, any large decrease in the demand for electricity will be a major concern and must be considered when developing plans to pay for the Project. A general trend to reducing electricity use seems to be occurring already. Mr. Alteen testified that Newfoundland Power's sales have declined in each of the last three years, in part because customers are becoming more conservative in their use of electricity. It is clear that residential customers are turning to heating alternatives, including fuels such as wood, propane and oil, or by installing heat pumps. Over a recent 12-month period, for example, 12,000 heat pumps and mini-splits were added to homes in this province. Heat pumps and mini-splits operate by extracting heat from the air or ground and releasing it into a house or building; they can also transfer heat the other way and function as air conditioners. Heat pumps and mini-splits are attractive to homeowners because they can be installed in houses fairly easily and they use less electricity than other types of common electric heating, such as baseboard heating.

Bernice Hancock testified that alternative heating sources such as wood stoves are common in rural areas. She also observed that anyone who can find alternative sources of energy, will find them (July 16, 2019, transcript, p. 45). Dennis Browne also commented that “consumers do watch and are careful, and the real fear in Muskrat Falls is that the consumers will leave the system once rates start increasing dramatically” (July 16, 2019, transcript, p. 28).

Because of these trends, there is concern about the potential for a utility “death spiral” effect. The theory behind this phenomenon is that rising electricity prices create

incentives for customers to conserve energy or find alternatives to expensive electricity, which in turn decreases demand and reduces the customer base, which then causes further increases in prices for the remaining electricity consumers.

It cannot be accurately predicted whether unmitigated rates or even increasing rates beyond 25% would, in fact, cause a death spiral here, as Professor Schaufele noted in his testimony (July 16, 2019, transcript):

It's hard to draw conclusions on the likelihood of a utility death spiral. It is something that the industry claims is a significant threat, but we have seen very few situations where that has actually come to pass; however, again, this context is outside the standard parameters that we have explored before. (p. 47)

Despite this uncertainty, there appear to be corrective actions that may stabilize electricity use and rates, some of which the panel discussed at the hearings. These include implementing time-of-use rates, load-retention rates for industrial customers, selling excess power and increasing electrification.

It should be noted that efforts to manage electricity use and rates must take into consideration that the Project significantly increases the amount of energy that will be available in the province. However, in reality our system limits how much can actually be used at peak times. In his testimony, Kevin Fagan explained the situation this way (July 16, 2019, transcript):

I mentioned earlier that the Muskrat Falls Project provides some additional capacity, but not a lot. Hydro is also planning to retire two gas turbines—Hardwoods in Stephenville in 2021. So, while we've got somewhat of an abundance of energy available to serve customers, we have limited capacity available to serve customers on peak days. So we've moved to a place where we're a low marginal cost of energy and a high marginal cost of capacity and that has some implications for customer pricing going forward. (p. 20)

In other words, even though the Project can generate a large amount of energy over time, the maximum output it can produce at peak times is still limited. Efforts to increase electricity consumption must therefore aim to have that increase occur during non-peak hours and efforts must still be made to minimize power use at peak times.

Peter Alteen testified about the role that excess energy sales will play in the considerations at hand (July 16, 2019, transcript):

There's significant excess energy that will be available once Muskrat Falls is commissioned. . . . And government has indicated that the value of the revenue

associated with those—that additional revenue will be available to defray some of the costs of Muskrat Falls. And that’s a potential benefit for our customers and taxpayers, no matter where the line is drawn on who has to pay what.

Over the last three years, Nalcor Energy’s sales into export markets have yielded something that looks like three to four cents a kilowatt hour. The excess energy we’re talking about here looks to be about 2 terawatt hours, or 2 billion kilowatt hours. To give you a sense, that’s more than a third of the deliveries Newfoundland Power makes to its customers in a year, so it’s a substantial amount of power. (p. 12)

However, the significant difference between the three to four cents per kWh for export sales compared to the higher rate that customers within the province pay begs the question of whether it would make more economic sense to sell as much electricity as possible to the domestic market. Mr. Alteen explained the thinking behind this tactic

(July 16, 2019, transcript):

So there is an opportunity here, perhaps, to locally find more lucrative uses for the power than export markets that are yielding three or four cents a kilowatt hour. And, right now, there are studies underway to try to improve the understanding of how that might be practically achieved: You know, obvious things like attracting new businesses or things of that nature suggest themselves; so do, perhaps, a potential stimulation of new markets like electric vehicle markets. But that’s all underway and it falls under a broad rubric that’s being called publicly, electrification.

That’s out there and that’s a good thing from Newfoundland Power’s perspective and our customers’ perspective. (p. 12)

According to the evidence of the panel members, electrification of government buildings and encouraging the use of electric vehicles are both being explored as opportunities by which the provincial government can stimulate increased domestic consumption of electricity. Stimulating the use of electric cars is a particularly beneficial electrification initiative because such vehicles are generally recharged overnight in the non-peak hours.

A challenge in implementing this tactic, however, is the lack of infrastructure for electric vehicles in the province. As Professor Schaufele testified, it may be difficult to get traction for this solution (July 16, 2019, transcript):

I think the challenge with electric vehicles in Newfoundland is that the penetration rate is very low right now. . . . [T]here’s very little infrastructure in place right now. And so, it’s a bit of a chicken-and-egg situation. If there’s

no infrastructure to charge an electric vehicle, even if the benefits are there, would we expect a high penetration rate?

Alternatively, if we don't have a high-penetration rate of electric vehicles, why would you want to invest in the infrastructure to charge these vehicles? And so, I'm not sure how much scope there is for electric vehicles to solve some of the rate issues involved with Muskrat Falls. (p. 48)

Kevin Fagan explained that GNL is taking a phased approach in its plan to encourage the use of electric cars. Establishing charging stations across the province will align with the growing number of electric vehicles across eastern Canada. Professor Schaufele also commented that initiatives supporting the use of electric vehicles and the electrification of government buildings are promising means to increase demand in the province.

Conservation Demand Management programs aimed at reducing electricity use have been implemented in the province. Mr. Alteen indicated, however, that the focus of CDM efforts will now have to change—from reducing electricity use to changing when we use it (July 16, 2019, transcript):

So up until now, the first decade of CDM at Newfoundland Power we were really trying to displace Holyrood fuel, because we could take a kilowatt hour off the system for a couple of pennies and we could avoid 15 cents, 14 cents, 16 cents, whatever the prevailing cost in fuel was. So that benefited our customer but it also benefited the system. That dynamic has changed now. And so I think that the next generation of CDM programs will be more focused on shifting load to off-peak hours and making your energy system less peaky to the degree you can.

...

We're actually doing the potential studies right now to—which are the basis for the evaluation of the programs. So we—I'd expect that to be done in concert with the marginal costs studies that Hydro-Nalcor are doing and the cost-of-service proceeding that's currently scheduled before the PUB. So you would match your cost evaluation, how you're pricing it, with what would be appropriate offerings under a CDM sort of environment; what's good to the system in the future. (pp. 50, 51)

According to Mr. Alteen, Newfoundland Power is now winding down its “reduce energy use” CDM programs and is doing studies to evaluate new CDM programs.

Mr. Alteen also spoke about the possibility of implementing time-of-day electricity rates to encourage off-peak consumption. According to Mr. Alteen, about ten years ago Newfoundland Power ran a pilot project for time-of-day meters, which was judged as not

worthwhile at the time. He added that the concept should now be re-evaluated (July 16, 2019, transcript, p. 51).

Kevin Fagan made the following comments about this approach and some of its related challenges (July 16, 2019, transcript):

I recently met with the consultant who is doing the conservation demand potential study, and they were talking about time-of-use rates. And they're not sold yet with respect to it. In our system, we've got a morning peak and an evening peak, but on the coldest days in the winter, the midday and the mid-afternoon peaks are not that much below the evening peak or the morning peak. So with our capacity assistance agreements that we have, which may give us around 100 megawatts to serve the peaks—so that's really benefit to customers—the concern . . . is that time-of-use rates could push more energy into the midday or later evening and just devalue the capacity assistance agreements. So there's more study required in that area, but . . . it's not as strictly morning and evening peak. On these really cold days of the year, the peak is high all day long. (p. 53)

Some panel members expressed the view that the effectiveness of any new measures undertaken will not be immediately clear. It takes time for customers' behaviour to change and also for potential benefits and unexpected side effects to be realized.

Mr. Fagan testified that discussions with industrial customers about their rates are ongoing. Under consideration are load retention rates, which would give some industrial customers a lower rate to keep them on the system and avoid rate increases that would occur if they shut down and left the system.

All of the options and factors discussed above must be considered in any potential plan to increase rates.

2: Increase Taxes and/or Fees

The second policy that GNL could follow to assist in mitigating electricity rates (by finding Project cost repayments from sources other than ratepayers) would be to increase taxes and/or fees for government services in the province.

Denise Hanrahan presented an overview of the provincial tax base and tax system as a foundation for discussions about this approach. She explained that taxation represents about 50% of GNL's annual total revenues. The largest component of the various tax revenue sources is personal income tax, which represents \$1.6 billion of the \$3.9 billion

total tax revenue expected in the 2019–20 budget. In 2016, roughly 425,000 people filed a tax return in the province, but only about 277,000 actually paid income tax. In other words, just over half of the population in Newfoundland and Labrador (53%) earned enough income to be required to pay income tax. Ms. Hanrahan provided further details in her testimony (July 16, 2019, transcript):

Approximately 51 per cent of income tax filers had taxable incomes of \$30,000 or less, and they paid approximately 4 per cent of the total personal income tax collected. Conversely, 49 per cent of tax filers paid over 96 per cent of income tax collected. Another indication of the structure of our income tax base is that less than seven per cent of tax filers had a taxable income over \$100,000, while more than 20 per cent had a taxable income below \$10,000. (p. 32)

Ms. Hanrahan went on to say that the second-largest component of tax revenues in this province is sales tax, which represents 15% of total revenue (\$1.2 billion) and includes the Province’s 10% share of the Harmonized Sales Tax (July 16, 2019, transcript, p. 32). The next two highest tax sources are corporate income taxes, at \$411 million, and gasoline tax, at \$186 million (July 16, 2019, transcript, p. 32). Other taxes levied include tobacco tax, payroll tax, insurance companies tax, mining tax, corporate capital tax, carbon tax and cannabis tax (July 16, 2019, transcript, p. 32).

According to Professor Schaufele, it is important for governments to balance the overall level of taxation and the mix of taxes (corporate income tax, personal income taxes and sales taxes) with the overall level of services that government delivers (July 16, 2019, transcript):

[T]here’s a cost to raising a dollar of tax revenue. That a dollar of tax revenue raised through a personal income tax imposes a larger cost on society than one dollar. We refer to this cost—the technical term for this cost, is the marginal cost of public funds. The marginal cost of public funds measures the losses incurred from raising money from a particular tax base, whether it’s the corporate income tax base, whether it’s the personal income tax base or whether it’s the sales tax base.

We need to use the marginal cost of public funds to evaluate both public expenditures—and this means whether funds are going to be allocated towards paying for lower rates, because of the Muskrat Falls Project, or whether these funds are going to be allocated towards providing other government services. We need to consider the economic costs of taxation in these decisions. (p. 8)

Using estimates from a paper produced by the C.D. Howe Institute in 2011, Professor Schaufele noted that this province's residents are particularly sensitive to taxes. The cost of raising \$1 of corporate income tax in Newfoundland and Labrador is really \$30 (July 16, 2019, transcript, p. 8). The cost of raising \$1 of personal income tax is \$2.50, and the cost of raising \$1 of sales tax is \$1.15, making the latter the most efficient tax basis (July 16, 2019, transcript, p. 8). Professor Schaufele also noted that electricity rates in Newfoundland and Labrador are (or have been) currently below average compared to the rest of Canada, notably below the average of other Atlantic provinces (July 16, 2019, transcript, p. 8). Professor Schaufele went on to raise a significant related point in his testimony:

[I]f you're going to use taxes to pay for rate mitigation—electricity rate mitigation, you need to value that tax revenue at a larger multiple than you would typically use. And the example I put up here is that if you are going to divert the \$200-million Nalcor dividend from general revenues to electricity rates and you wanted to replace that \$200 million via higher taxes, you cannot just say we are going to get \$200 million higher taxes. What you need to do is you to consider the cost of taxation with that.

So in order to replace that \$200 million via if you add in personal income tax rate increases, it would cost—using these estimates—\$500 million. If you increase the sales tax, it would cost \$230 million. What this means is that if you are going to divert funds from general revenues to mitigate rates, you need to value that diversion in terms of the cost of replacing those revenues.

...

What this means is that rate mitigation, such as has been pursued by the province and the PUB, is not free . . . and there are costs to increasing taxes to pay for government services. (p. 8)

This is important information to consider in any rate mitigation exercise.

3: Decrease Government Spending

The third action GNL could take to mitigate electricity rates is reducing government spending. The typical ways to decrease spending include salary cuts for government employees, salary freezes for government jobs, hiring freezes, layoffs and reductions in services. Dr. Schaufele testified (July 16, 2019, transcript):

We need to use the marginal cost of public funds to evaluate both public expenditures—and this means whether funds are going to be allocated towards paying for lower rates, because of the Muskrat Falls Project, or whether these funds are going to be allocated towards providing other

government services. We need to consider the economic costs of taxation in these decisions. (p. 8)

Denise Hanrahan testified that, in conjunction with its rate mitigation plan, GNL intends to review service delivery with the objective of identifying efficiencies, rather than simply reducing the current level of services it offers (P-04456, p. 10).

In his testimony, Jerry Earle spoke about the potential impacts of cutbacks to government services on the public and private sectors in NL, as well as about the effects on the province at large should government spending decrease (July 16, 2019, transcript):

Cutting public sector workers not only impacts the individual worker, it means fewer services for everyone. It means fewer opportunities for young people to stay and work in our province and it means less money for the local economy. It means longer wait times, less care and more people falling through the cracks. (p. 41)

Mr. Earle stated that decreasing government salaries will have negative impacts on the public service workers affected by these salary cuts. Decreasing service levels will have negative effects on both public sector workers, who may lose their jobs, and on the people who use those services. He further commented that the negative impacts of government austerity measures on the province's residents will include financial strain, potential relocation, rising debt, decreased spending and increased dependence on income support and social services. He testified about who would be most affected by these measures (July 16, 2019, transcript):

We must also recognize that cuts to public services or to the people that provide them would be felt the hardest by those that are most vulnerable in our society: the sick, the elderly, women and the poor to name but a few. They will bear the brunt of public sector austerity. (p. 41)

Bernice Hancock testified that paying for the Project through cuts in government spending would affect organizations such as the Community Education Network, which relies 100% on government funding. She indicated that the Community Education Network, which builds collaborative partnerships with government departments and community groups, is already a cost-effective way to facilitate a wide variety of community-based programs and services for rural and remote populations. Cuts to funding would result in reductions to both staff and services—potentially just at the time when rising power rates or taxes would increase the need for the work that the Community Education Network does.

4: Increase the Province's Deficit

Denise Hanrahan testified about the Province's current financial position. As of the date she testified (July 16, 2019), the 2019 budget was projecting a net debt of \$13.8 billion (approximately \$26,300 per capita).³ This projection "does not include any self-supporting utility debt, which would be recorded on Nalcor's consolidated financial statements. The Muskrat Falls asset would be recorded on Nalcor's statements as well" (P-04456, p. 7). Ms. Hanrahan testified that the debt that the Province has incurred by proceeding with the Project does not actually show as an increase in net debt on the Province's financial statements.

According to Ms. Hanrahan's testimony, GNL intends to use its electricity rate mitigation plan to avoid any impact on the Province's deficit or debt, and that GNL has a "multi-year fiscal strategy to return to surplus in 2022/23." Ms. Hanrahan noted that this is necessary to maintain the Province's bond rating (P-04456, p. 7).

Ms. Michael testified that she did not support GNL's approach (July 16, 2019, transcript):

I also believe the decisions about how to move forward have to be made not from a political perspective to meet views of political parties but from a solid non-partisan and economic analysis based on people's needs and not on the directions from bond-rating agencies, though I do not deny we have a problem in that area.

...

I believe it is crucial that we accept we have a revenue problem when it comes to meeting the needs of paying for Muskrat Falls. We do not have a problem because government is spending recklessly on our social infrastructure, which is not, at this moment, taking care of people's full needs. I also believe that keeping people in the forefront will mean being very cautious about how quickly we, as a province, move towards a balanced budget with a surplus. I believe looking for that budget by '22-'23 is problematic. (p. 37)

Professor Schaufele weighed in on this topic, as well: "We've got to remember that if we incur deficits today, that just means we're paying taxes in the future. . . . Current deficits are future taxes. And we have to look at the economic and equity costs of these different dimensions" (July 16, 2019, transcript, pp. 65-66).

³ But see the Province's Fiscal and Economic Update dated December 11, 2019, and the Auditor General's report to the House of Assembly on the financial position of the Province for the year ended March 31, 2019, released on December 19, 2019.

The April 2019 Rate Mitigation Plan

GNL’s electricity rate mitigation plan was released in April 2019 (P-04456). Ms. Hanrahan testified that, based on ongoing general rate applications, the cost of electricity for Island residential ratepayers is likely to increase by 4%, from 12.3 cents to 12.9 cents per kWh. Assuming inflation of 2.25% per year, the cost of electricity is expected to increase to around 13.5 cents per kWh by 2021. GNL’s rate mitigation plan is based on this forecast rate of 13.5 cents per kWh and is designed to “ensure the ratepayers and taxpayers will not pay any incremental costs relating to the Muskrat Falls Project” (July 16, 2019, transcript p. 30).

Ms. Hanrahan explained that in 2021, the funding requirements for the mitigation plan will be approximately \$725.9 million and comprise the following five components (July 16, 2019, transcript):

1. **Net fuel and operational savings from NL Hydro: \$178.2 million.** Realized through the transition from the Holyrood thermal generating station to Muskrat Falls power, plus some other regulated revenue.
2. **Provincial investment: \$249.1 million.** Of this total, \$49.1 million will come from selling surplus energy from the Project or from recaptured energy from Churchill Falls. The remaining \$200 million will come from committed Nalcor dividends, starting in 2021—that is, any Nalcor return on equity realized from the Project, as well as from revenues from other Nalcor lines of business such as Nalcor’s existing holdings in oil and gas projects.
3. **Reduced Nalcor expenses: \$39.4 million.** The PUB’s interim report on rate mitigation identified annual costs savings from Nalcor restructuring and also from reductions in operations and maintenance costs. Reductions in diesel fuel consumption by the 20 isolated generation systems in the province can also be achieved by installing renewable energy solutions, funded through federal programs and initiatives.

-
4. **Increased revenue: \$59.2 million.** Realized three ways:
- (a) Switching government buildings' heating systems to electrical power (while taking advantage of federal funding available to help with conversion costs)
 - (b) Selling surplus energy to new customers such as data centres or [existing] large customers (which will be a higher value product than spot export energy sales)
 - (c) Adding in Holyrood performance credits, earned for reducing the greenhouse gas emissions when Holyrood burns less fuel
5. **Federal government support: \$200 million.** Which will involve jointly managing the financial structure of Muskrat Falls, evaluating all options as presented in the PUB interim report, reviewing cost drivers and revenue opportunities, and considering how the Project “can further the climate change commitment issued by both Canada and our Provincial Government.” (p. 30)

Ms. Hanrahan further testified that GNL's rate mitigation plan will be finalized after the PUB's final report is submitted in January 2020, which is before Muskrat Falls payments commence. Ms. Hanrahan added (July 16, 2019, transcript):

There were many options to consider—the key was choosing those options likely to have the least possible impact on the people of our province while keeping the province's fiscal situation in mind. . . .

Any plan has risks, and unforeseen challenges sometimes occur. It would be unrealistic to ignore that possibility. Government will continue to assess its rate mitigation plan and revise its approach as needed on a regular basis when such challenges arise. (pp. 30–31)

Limited testimony was given at the hearings that evaluated GNL's proposed plan for meeting the funding requirements of the rate mitigation plan. Professor Schaufele did offer these comments, however (July 16, 2019, transcript):

I think it's important to keep in mind that public policy and creating government budgets is hard. It is a challenging endeavour. And so at a high level, when I initially read the government's policy, I thought it was a sensible

policy given the public policy objective that they stated. My understanding is that voters had significant rate anxiety.

Regardless of whether that anxiety was well founded or not, this was a public policy objective that was—that was selected and the government put together a plan in an effort to meet that objective. So at a high level, you'll—this is a challenging endeavour and I appreciate what the Department of Finance [has] done. With regard to specifics, I think that there is some questionable aspects to it and there's some sensible aspects to it. (p. 74)

GNL's rate mitigation plan extends only to the year 2021. Clearly, the Project's operating, maintenance and other costs will increase over time, and it is not clear to me how GNL will be able to sufficiently mitigate these rising costs. It appears that GNL's plans are to make appropriate adjustments during the next half-century. The extent of the rate mitigation that will be required beyond 2021 will be significantly affected by the results of electrification efforts and CDM programs and by changes in the province's population and demand for energy.

Undoubtedly, the cost of the Project will have a significant impact on the welfare of ratepayers and taxpayers in this province. At the time of Project sanction, the position of GNL was that "Muskrat Falls will meet our Province's future energy needs, stabilize rates for residents and businesses, while generating significant economic, employment, and social benefits for the people of our Province, the Atlantic region and the rest of the country" (P-00066, p. 1). Unfortunately, these assurances have not been met.

Premier Dwight Ball testified that although there may well be some benefit from this Project in the long term, it is the shorter term that will likely affect the Province and its financial position most significantly. For example, he testified that, in the coming years, GNL may be required to spend approximately \$200 million of expected dividends from oil and gas revenues annually to mitigate the rate increases that paying for the Project require (July 4, 2019, transcript, p. 80). That is a lot of money diverted away from other programs and services.

CHAPTER 32: MANAGING LARGE PUBLICLY FUNDED PROJECTS

My review of the history of the Project and of the testimony of the many people who came before the Commission have convinced me of the necessity and importance of executing a full, objective and independent review before any future decisions about whether or not to proceed with large publicly funded projects are made.

At the hearings, Professors Bent Flyvbjerg, George Jergeas and Ole Jonny Klakegg all testified as expert witnesses on topics related to publicly funded megaprojects, including project management, governance and cost estimates. I referred earlier to the testimony and report of Professor Flyvbjerg, which noted the prevalence of cost overruns and schedule delays in large construction projects (P-00004). Professor Jergeas testified and prepared a report covering similar topics (P-04101). Professor Klakegg, who teaches Project Management at Norway's University of Science and Technology, prepared a report and testified on project governance in several jurisdictions, describing options for the governance of large capital projects. The opinions of these expert witnesses provide guidance for oversight and development of large projects in Newfoundland and Labrador in the future.

The classic definition of a megaproject is a project with a value of \$1 billion or more. Given the size of the province's economy and population, I suggest that projects of a significant, but lesser, value may merit the same scrutiny that is applied to megaprojects elsewhere.

FOUNDATIONS FOR RELIABLE ESTIMATES AND EXECUTION: PROFESSOR BENT FLYVBJERG

Professor Flyvbjerg was clear in stating that cost overruns on megaprojects are not new. Using the Niagara Tunnel project as an example, Professor Flyvbjerg testified about how these cost overruns are often explained (September 17, 2018, transcript):

The type of explanations we usually see here I've tried to exemplify by the Niagara Tunnel Project, which had a 62 per cent cost overrun and 43 per cent schedule overrun. And when they tried to explain what had happened they said that they—we had worse-than-expected ground conditions and we had more mixed-face mining than we thought we would have and there were additional tasks so we had to do profile restoration. And also, we had to allow additional time for removing the tunnel equipment before you could remove the coffer dam and actually start finalizing the thing.

So these are the types of explanations that we typically find. The thing about worse-than expected ground condition is a classic, and scope changes is a classic that we find. And what I always say to organizations that come up with these explanations is that this is not an explanation, this is an excuse. (p. 13)

In Volume 2 of this Report, I referred to Professor Flyvbjerg's testimony on the causes of megaproject cost overruns, specifically the concepts of optimism bias, strategic misrepresentation and political bias. He provided recommendations for neutralizing these biases. One suggested approach is for project owners and planners to take an "outside view." In his report for the Commission, Professor Flyvbjerg described this practice (P-00004):

The outside view pools lessons from past projects. In the basic form, the outside view can be taken by comparing the project at hand to comparable past projects with a view to learn from them. (p. 20)

His report also states that project planners often fail to take an outside view, noting:

Projects are typically weak in applying lessons learned from other projects. Research has shown that this is linked to the perceived uniqueness of projects. When project planners perceive their project to be unique they implicitly exclude the experience and knowledge gained from other projects because these are not relevant to their project. In reality, unique projects are rare. Projects are typically specific to a location and a context, but they are rarely unique when looking at global experience and track record. (p. 20)

Professor Flyvbjerg also expressed the view that risk should be communicated to decision makers clearly and that a full range of possible cost and schedule outcomes should be part of that exercise—rather than simply a single-point estimate. His report further recommends separating a project into three components (P-00004):

1. **Economic viability:** "For this question, the *mean* of the quantitative risk assessment is the recommended measure. The mean reflects the expected cost, schedule and benefits of when a project, that is part of a large portfolio of investments, will deliver the outcome intended."
2. **Project affordability:** "[D]ecision makers tend to require a higher degree of certainty, i.e. they have a low risk appetite. To evaluate the affordability, decision makers should consider a *downside scenario*, i.e. estimates at a high P-level (P80 – P90)."
3. **Budget and timeline targets:** "[D]ecision makers need to trade-off between the level of certainty required and the level of challenge and ambition set for suppliers and builders of a project. In practice,

a *tiered contingency regime* is becoming the standard approach to achieve this tradeoff between control and ambition.” (p. 21)

Professor Flyvbjerg provided the following description of a “tiered contingency regime” (September 17, 2018, transcript):

[A] tiered contingency regime operates with different contingencies for different actions in the delivery of the project. So, you’d have one contingency . . . indicated by the P30 for the contractors, you’d have one for the project director which is indicated by P50, and you’d have a third, the P80, for the project owner, and this is in order to put downward pressure on the budget so that you don’t get—the contingency gets spent just because it’s there. (p. 30)

He noted that a tiered contingency regime is mandatory for large projects in Norway, and that “the UK government is using it and Hong Kong is just implementing it now” (September 17, 2018, transcript, p. 30).

Professor Flyvbjerg went on to describe reference-class forecasting, which is a method to “systematically take the outside view by using data from previous projects and thus bypassing optimism and political bias” (P-00004, p. 33). He recommended the use of reference-class forecasting in preparing cost and schedule estimates, but provided the following caution (P-00004):

In many megaprojects, government acts as both promoter of a project and the guardian of public interest issues for that project, such as protection of the environment, safety and of the taxpayer against unnecessary financial risks. These often conflicting objectives not only create conflicts of interest and principle-agent problems but also political bias. (p. 28)

Therefore, an independent quality assurance review that has specific directives related to the proposed process is also required for large projects.

At the hearings, Professor Flyvbjerg provided the following summary of his recommendations (September 17, 2018, transcript):

But, basically, summing up and wrapping up my presentation here regarding recommendation, there’s really—there’s three things you need. The first is **you need a realistic business case upfront**. You need a realistic frontend. You will not succeed with a project if you don’t have a realistic business case and no matter how good a team you get to deliver your project, if the business case is crap, they’re not going to be able to do it. And by that I mean, if the costs are way underestimated in the business case, no matter how good a team you get, they will not be able to deliver to that budget. And the same if the schedule is

way optimistic. No matter how good a team you get, they will not be able to deliver to that. So, therefore, the first thing is you need to have a realistic business case upfront, that's the first recommendation. You've got to make sure of doing that. The outside view, Reference Class Forecasting and so on is a way of getting that.

Second, **you need to hire a high-quality team**, somebody who really knows what they're doing and somebody whose tried this before, who actually has experience in this area. That's more difficult than you think. This sounds like a no brainer but once you go out there and try to find the last group of people who really know what they're doing in megaproject delivery, you will see how difficult it is. There's actually not a lot of talent. This is one of the reasons that Oxford University have decided to do a specific program in this training is because there are just not enough people with the qualifications to deliver megaprojects out there. So that's the second thing you need.

Then the third thing is **you need to create a structure around this of accountability**. So you actually hold the team accountable for what they are doing. So you actually hold the people who develop the upfront business case accountable for the business case. And there's a lot of elements involved in that like we just saw, but those are the three things: realistic upfront business case, a team that knows what they're doing, that have a documented track record of being able to deliver the project that you are delivering and then third, an accountability, an incentive structure around the whole thing so everybody is held accountable and incentivized to do what they're supposed to do. (emphasis added, p. 19)

COMPLEXITY, RISK AND LEADERSHIP: PROFESSOR GEORGE JERGEAS

Professor Jergeas' presentation and testimony concerned the issues and risks that confront megaproject managers. He identified the following defining characteristics of a megaproject (P-04102):

- Billions in capital investment
- Thousands of workers, engineers, suppliers, contractors and owners support staff
- Extreme complexity, both technological and size
- Lack of predictability and increased risks
- Some risks are outside the control of the project management team or even the executives' level
- Environmental, regulatory and community impacts

- Interface management issues
- Labour availability and labour management issues
- High visibility, and in most cases, cost overruns that exceed the approved budget. (p. 11)

In Professor Jergeas' view, megaproject owners should absolutely expect that scope change will occur. Change should also be expected for a project's strategic risks, particularly those that are not within the control of the project owner. Predicting these types of risks is not easy, and sometimes impossible. Professor Jergeas recommends that operational (tactical risks) should be budgeted at P50, and strategic and contextual risks at P85.

In his testimony, Professor Jergeas favoured a "benevolent dictatorship" model for project governance, providing the following description (June 18, 2019, transcript):

Why I called it dictatorship and benevolent; somebody who makes decision on behalf of the organization but has a good heart, complies with law and ethics and moral obligation so they can deliver project and empower the team to finish a project with good decision in a timely manner. (p. 66)

He stated that clear authority and accountability is essential for project leaders. Furthermore, they must communicate with stakeholders and have the power to address the root causes of any project delay or inefficiency. Collaboration and trust are essential elements of the relationships between owners and contractors on megaprojects.

I would note that many of Professor Jergeas' comments are similar to those of Professor Flyvbjerg regarding project risk, cost and schedule.

COMPARING GOVERNANCE FRAMEWORKS: PROFESSOR OLE JONNY KLAKEGG

In his presentation to the Commission, Professor Klakegg described specific governance frameworks for major public projects in six jurisdictions (P-04438):

- Norway
- The Netherlands
- United Kingdom
- Sweden
- Denmark
- Québec

The following summary of these projects draws on his testimony and a 2016 comparative report (P-04439) by Norwegian academics that Professor Klakegg shared with the Commission. In his testimony, Professor Klakegg identified points of divergence and commonality for project governance approaches in these examples.

Norway

The Norwegian governance framework, in place since 2000, is continually assessed and changed to ensure its effectiveness. In describing it, Professor Klakegg indicated that the intention of this project-assessment process is to ensure that the political decisions made about megaprojects will be as solid as possible (P-04438, p. 11). He identified the following elements of the Norwegian framework:

- There are two “decision gates” for politicians in a project’s early phases
 1. The first gate (QA1 or “Quality assurance of the choice of concept”) is meant to “ensure tactical and strategic success, and is concerned with evaluating effects and societal objectives, as well as purpose and allocation effectiveness” (P-04439, p. 30)
 2. The second gate (QA2 or “Quality assurance of the management documentation”) is intended to “ensure operational success, and is focused on realistic budgets and on ensuring that delivery takes place in a time- and cost-effective manner” (P-04439, p. 31)
- The process applies to all investments made by the central government that have a budget of over 750 million Norwegian kroner (approximately \$115 million CAD); in practice, the projects assessed under the framework are typically those in the transportation, defence and construction sectors
- Importantly, the Ministry of Finance is the custodian of the process, regardless of which government department or agency is the project’s proponent

Professor Klakegg testified that the first gate (QA1) “is a more important choice for the total result but [it is] controversial because it goes into priorities that the different ministries and agencies would like to control themselves” (July 24, 2019, transcript, p. 5). He indicated that the agency or ministry that is proposing a project must present at least two possibilities as well as the option of doing nothing. Formally considering several options helps counter the bias of established practice, a phenomenon described as follows (P-04439):

The principle is «business as usual», in the sense that no specific changes to the procedures of ministries and agencies are required, thus enabling these to implement their projects as before. However, current requirements are somewhat stricter with regard to the planning documents intended to assure quality and the comprehensiveness of analyses. It is also a requirement that more than one alternative be analysed in addition to the zero option. This is intended to counteract the tendency to path dependency, which has largely characterized established practice. One opts, as a matter of principle and from the very beginning, for the same solution as was used the previous time, which has not always turned out to be the best choice, since circumstances, underlying premises, user groups and priorities tend to change over time. (p. 26)

Before being submitted for appraisal at the political level, the project’s supporting documentation must be quality assured by external advisors, groups of experts and consultants who have a limited mandate to examine the quality of the documents without addressing the political issues relating to the project. They are also required to perform a separate independent analysis of the uncertainty associated with the project’s investment cost and economic profitability (P-04439, p. 27).

At the next stage, when the project has been approved, an overall strategy document is prepared by the proponent ministry or agency. This document provides information about objectives, budgets and target costs, implementation and contract strategy. The ministry/agency must consider at least two fundamentally different contracting strategies and generate a complete base-cost estimate. The external advisors assess this document and it is then submitted to Parliament for a decision on whether to authorize the project.

A key element of the Norwegian project governance framework is the external review of both the project cost and schedule, as well as the merits of the project itself. Professor Klakegg’s testimony indicates that the results of this process have led to improvements in controlling large cost overruns and schedule delays.

The Netherlands

In 2007, the Netherlands introduced a governance framework for its publicly funded large projects. In his presentation, Professor Klakegg identified the following elements of this framework (P-04438):

- The process is de-centralized: each ministry has its own processes and does its own planning
- The Ministry of Infrastructure and Environment has implemented a stage-gate process for planning and budgeting called MIRT (multi-year plan for infrastructure, spatial planning and transport)
 - MIRT begins with examination of three alternatives
 - MIRT has three phases and four reviews
 - MIRT is transparent: documents are uploaded to the ministry's website
- Once an alternative has been chosen for review, more detailed planning and costing processes occur and thereafter are subject to an external quality assurance review; like the Norwegian quality assurers, independent appraisers play a technical role in assessing projects
- The Inter-Ministerial Commission for Improvement of the Structure of the Economy plays more of a political role in assessing the project proposals and weighing them against each other

United Kingdom

Professor Klakegg noted that the United Kingdom was an early adopter of a public project governance framework. He outlined the following elements of its framework:

- The Infrastructure and Major Projects Authority reports directly to the Cabinet office
- This framework is complex, involving a multi-stage gate process
- It is largely reliant on internal civil service resources enhanced by occasional external consultancy; the internal civil service resources

clearly have a wealth of experience in large project initiation, development and construction

- Different levels of scrutiny are applied, depending on the size of the project

Generally, the process begins at a starting gate, which requires “checking whether an initiative is in line with the priorities of the Government that it is viable and that it does not entail unnecessary risk” (P-04439, p. 58). Quality assurers conduct interviews and write a recommendation to the relevant ministry.

Next, a plan for quality assurance that includes project decision points is prepared. It must be approved by the Infrastructure and Major Projects Authority and also the Treasury Department. Three versions of a business case are then provided, with progressive specificity. The business case must cover five aspects: the project’s strategic case, economic case, commercial case, financial case and management case. The final approval of the business case equates to project sanction.

The quality assurance process is carried out by a team of two or three independent project review experts. They may be civil servants and/or external consultants. The team is appointed by the Infrastructure and Projects Authority on a case-by-case basis and drawn from a pool of five hundred accredited quality assurers.

Sweden

Professor Klakegg noted that the system in Sweden is far different from Norway’s or the United Kingdom’s because the quality assurance process is internal, conducted by each agency or ministry. The Swedish Parliament is not involved in approving projects and no formal external quality assurance process is required. Technical assessments and quality assurance are done by the agency itself.

As in the Netherlands, however, there are many governance processes in place, varying in number by the agency or sector involved. The Swedish transportation agency is the largest sector. It is engaged in more than half of the country’s large-scale projects. Sweden’s project governance framework places more weight on a project’s economic profitability than on the issue of the validity of the cost estimates.

Denmark

Professor Klakegg noted that the governance framework in Denmark differs from the processes in other jurisdictions. It is not so much intended to ensure the quality of documentation presented by proponents, but rather to add information that might be missing. The governance framework was introduced in Denmark in 2007 following major cost overruns and significant schedule delays on large public projects. Its purpose is to ensure that realistic budgets are produced and to establish a process that must be followed by project proponents seeking government funding.

In this system, amounts are added to project costs at various stages of the development process, according to an “experienced-based supplement.” The supplement is reduced as the project estimate becomes more certain. The process for determining the amount of the supplement is reference-class forecasting, as described by Professor Flyvbjerg. Quality-assurance work, including external quality assurance, is conducted throughout the stage-gate process and before a decision to proceed with a project is made.

Québec

Québec uses a project governance framework based on the Norwegian model and with some features of the UK system. According to Professor Klakegg, the Québec system has become increasingly complex over time and been modified twice since 2008.

Currently, a specialized agency, the Société Québécoise des Infrastructures (SQI), which reports to Québec’s Treasury Board, stewards the project-governance process. The SQI reports to a Council of Ministers that oversees this process. Initially, oversight was provided by external consultants. Professor Klakegg testified, however, that internal experts have now been hired, due to a significant increase in public service competence and capacity to properly review large projects.

Québec law allows the Treasury Board to produce directives for the governance of major projects. Ministries and agencies are thus legally obligated to comply with a project’s governance scheme. The SQI is mandated to act as project manager for all major infrastructure projects, in association with the proponent department or agency. Both the SQI and Treasury Board perform quality assurance analyses before presenting the project to political decision makers.

Any project under review goes through three phases of quality analysis, each with increasing specificity, before project execution can begin. A cost estimate is prepared at each phase, each with more restrictive margins of error than the last. Once the project is completed, a closing report must be produced for Treasury Board.

Québec's framework applies to projects costing more than \$50 million, or \$100 million for improvements to transportation infrastructure.

CONCLUSIONS

Independent and knowledgeable oversight is needed when large publicly funded projects are under consideration. Whether or not a major megaproject is ever again undertaken in Newfoundland and Labrador, the province will certainly see its share of large projects. I recommend that GNL establish a formal governance framework for assessing projects that have a budget in excess of \$50 million.

I am hopeful that the expert evidence presented at the hearings will guide GNL policy makers and decision makers in developing a solid governance framework for this province's large projects. The diversity of frameworks in other jurisdictions is evident. Differences arise based on factors such as culture, geography and level of economic development.

I recommend that GNL establish a project governance framework that will:

- Be established at a high level within the government, to give it authority and stability
- Give careful consideration to Québec's framework, as a starting point
- Be overseen by Treasury Board, with adequate resources and support
- Require project proponents to submit multiple project options and the status quo
- Require that any quality assurance process commences at an early stage
- Require GNL to receive advice from external, independent, competent and knowledgeable consultants

- Require that, without exception, projects are subject to quality assurance processes that have external reviewers with sufficient competence and capacity
- Require a P80 to P85 level for project strategic risks
- Be completely transparent and make planning documents available to the public, while recognizing the need for non-disclosure of contingency amounts as required

CHAPTER 33: CLOSING REMARKS

At the time the Muskrat Falls Project was initiated, there was much optimism in Newfoundland and Labrador. Resource revenue from offshore oil and the impact of the Atlantic Accord made the province's financial future brighter than it had ever been. Politicians were communicating with bravado and confidence. Generally speaking, the people of the province were feeling optimistic about our prospects for the 21st century.

However, plans for the province's future required careful thought and execution, particularly with our financial position being so dependent on revenues from offshore oil. We remained a province with a small and aging population with many needs. Good leadership was required to chart the path forward.

Once it was determined that the Province would proceed with the development of the Muskrat Falls Project, steps had to be taken to ensure that a realistic business case was developed and that the necessary expertise and oversight would be in place to execute and manage this megaproject. Unfortunately, as is set out in this Report, the leadership of both the Government of Newfoundland and Labrador and of Nalcor failed in its responsibilities to the citizens of the province.

I have no doubt that even if the Project was the least-cost option at the time of sanction, Nalcor knew or ought to have known that its cost would be higher than the estimate of \$6.2 billion used to sanction the Project. Nalcor's unwillingness to provide the Government of Newfoundland and Labrador with timely disclosure of the Project's increasing costs, and GNL's unreasonable decision to rely on Nalcor's leadership without independent oversight, has left us—ratepayers, taxpayers, citizens and government—in a place that greatly contrasts with our circumstances at the time of Project sanction.

While there may be some long-term benefits that will accrue to the province as a result of the Project, the real issue facing us today and in the future is how to pay for it. All the positive talk about dividends and export sales revenue flowing into the Province's treasury has now shifted to a situation in which all those revenues, and more, may be required for rate mitigation and to pay off the Project costs.

At the time of Project sanction, some key players may have considered using other revenues, such as those from offshore oil, as a source of funds to pay for potential Project cost overruns. But this position was never clearly communicated to the public by Project proponents. It now appears that we must rely on the Government of Canada to assist the

Province in making electricity rates affordable, while at the same time allowing the Province to service the debt arising from the Project.

In his testimony before the Commission, Danny Williams spoke of his efforts during his seven years as Premier to build the confidence of the people of this province and “make them feel good about themselves.” He faulted the Project’s critics for the loss of confidence that is now prevalent in the province. It is clear to me, however, that it is not those critics or the people with negative views about the Project who are to blame for this loss of confidence. Rather, it is the Province’s current financial position and the loss of opportunities, both of which have been caused by the need to pay for the Muskrat Falls Project on the terms negotiated. That is what has caused many residents of this province to become concerned about the future.

The financial reality facing residents of Newfoundland and Labrador, as described by some witnesses at the hearings and during the Commission’s public consultation process, was striking. In a written submission, one self-described “middle income” couple nearing retirement—who had expected to be able to rely on provincial government pensions—spoke of their need to move away from their families and lifelong friends for fear that they would not be able to afford to live here. Similarly, a young man spoke of his efforts to obtain an education that would enable him to remain living and working here—but he, too, now fears he will be forced to leave because of the financial fallout from the Project.

The reality is that the financial burden brought about by the Project has significantly diminished the confidence of many people in this province. This is certainly a sad commentary. Newfoundlanders and Labradorians were told that the Project would be the “next chapter in our Province’s future . . . guided by independence, security and self-sufficiency” and that “it will meet our Province’s future energy needs, stabilize rates for residents and businesses.” That is not the reality today for the people of this province.

Strong leadership will once again be extremely important in charting the province’s future course, not only in determining how to pay for the Project but also in guiding the Province’s ability to maximize benefits from the hydroelectric sites along the Churchill River. Labradorians affected by this Project will also need assurance that their way of life will not be dramatically changed as a result of the Project.

In short, restoring the confidence of the people of Newfoundland and Labrador in our shared future will be a significant challenge for this province’s present and future leaders.

ACKNOWLEDGEMENTS

The Commission of Inquiry Respecting the Muskrat Falls Project was established by the Government of Newfoundland and Labrador on November 20, 2017. I was appointed Commissioner.

The Commission derives its authority from Terms of Reference that are set out in O.C. 2017-339 and from the *Public Inquiries Act, 2006*. It began its work in December 2017 and was given until December 31, 2019, to deliver its Report. At my request, GNL granted a three-month extension to March 31, 2020.

The work of the Commission has proven to be challenging for several reasons. These include the issues to be investigated, the complexity of the Muskrat Falls Project, the quantity and length of documents to be reviewed and the number of individuals and companies associated with the Project. As well, the requirement that the Commission perform its work before the Project was completed has been a complicating factor.

As a result of the co-operation and efforts of the parties with standing, other witnesses and legal counsel, the Commission was able to obtain all the documents that were potentially relevant to our work. Using a practical approach, legal counsel were able to agree on necessary redactions prior to entering the documents as exhibits. Only a small number of documents became confidential exhibits, a designation that was necessary to protect commercially sensitive and privileged information. In preparing my Report, I have reviewed all exhibits, both public and confidential, and the testimony of all of the witnesses.

I wish to express my sincere gratitude to the parties and witnesses, as well as their legal counsel, who participated in the hearings. Essential to maintaining the hearings' tight schedule was their willingness and ability to work co-operatively with the Commission, which they did. With respect to document disclosure, particular recognition must be given to Nalcor, its employees and legal counsel, who responded to the Commission's summonses in a timely manner.

I also recognize the efforts of the Government of Newfoundland and Labrador, particularly information management personnel, legal counsel and staff of the Office of the Chief Information Officer, who facilitated the timely disclosure of records and provided logistical support.

It goes without saying that, given the significant work of this Commission of Inquiry, it was necessary for Commission counsel and staff to work diligently for long hours, which included many late nights and weekends. Without their dedication, the Commission would not have succeeded in completing its investigation and in meeting the timelines I set for the hearings.

Commission co-counsel Barry Learmonth, Q.C., Irene Muzychka, Q.C., and Kate O'Brien (who was Commission co-counsel until her appointment to the Supreme Court of Newfoundland and Labrador in March 2019) were diligent in their organization and principled approach to the work and schedule of this Commission. Each of them provided me with sound advice and I cannot say enough about my appreciation for their work and effort.

A total of 134 witnesses testified during 140 days of hearings, which were held in Happy Valley–Goose Bay and St. John's. The Commission received 5,932,194 documents, of which 4,559 were made public exhibits and 119 were made confidential exhibits. The work required to review this documentation and to prepare for the hearings was significant and would not have been possible without the assistance of Commission Associate Counsel—Michael Collins, Adrienne Ding, Kirsten Morry and Gobhina Nagarajah—who all provided invaluable support to the Commission.

I also acknowledge the significant contribution of Commission researchers Kate Dutton, Joanne Harris, Stephen Kiraly, Chris McGee, Sheridan Moores and Rosie Myers.

The Commission benefitted greatly from its able and skilled administrative staff. In particular, I wish to express my sincere gratitude to Gerry Beresford, the Commission's Chief Administrative Officer, and to Diane Blackmore, Operations Manager, who also supervised our diligent and dedicated Information Management team, which included Jackie Barry, Courtney Careen and Patricia Oliver.

In addition, I wish to recognize the significant contribution made to the work of the Commission by Marcella Mulrooney, who acted as hearings clerk and as my principal assistant. I am also grateful to Natasha Boodansingh and Hannah Breckenridge for their contribution to the administrative work of the Commission.

Based on the need for forensic auditing services, I was fortunate to have the professional advice of David Howe of Noseworthy Chapman. I very much appreciate his

assistance and advice in coordinating the forensic audits and the other reports prepared by Grant Thornton.

In addition, the Commission would not have been able to fulfil its mandate without the contribution of many individuals, including:

- Neil Croke from the Department of Justice and Public Safety
- Broadcast professionals from the House of Assembly and Eastern Audio
- Transcription staff from the House of Assembly
- Sherriff's Officers in St. John's and Happy Valley–Goose Bay, led by Neil Kelly: Tina Bradbury, Wally Broomfield, Adam Byrne and Corrine Pye
- Staff of the Lawrence O'Brien Arts Centre in Happy Valley–Goose Bay
- Journalists who reported on the work of the Commission

To complete this Report, I had the benefit of the expertise and assistance of Sandy Newton, who provided editing services. Her suggestions and advice to me in writing this Report were extremely helpful.

Finally, it is my hope that this Report will serve both as an accurate account of what has transpired related to the Muskrat Falls Project and as a resource that can be used to identify areas for improvement in the consideration, initiation, evaluation, development, construction and oversight of any and all future large-scale projects or megaprojects in this province.

The Honourable Richard D. LeBlanc, Commissioner
March 2020

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GLOSSARY

This list includes terms and their meanings as used in this Report.

Term	Meaning
alternating current (AC)	An electric current that periodically reverses direction. Alternating current power is typically the form of power delivered to households and businesses.
base estimate	An estimate that reflects the most likely costs for known and defined scope associated with the Project's specifications and execution plan.
bifurcation	A separation into two parts. When used in the context of the Project, it describes the establishment of distinct management teams for the generation and transmission components, as implemented in June 2016.
bipole (operations)	A bipole HVdc system has two conductors and allows for greater reliability for transmission than a single-conductor or monopole system. If one line goes down, the system immediately reconfigures itself to monopole operation to avoid power outages.
capacity	The maximum power that a generating unit, generating station or other electrical apparatus can supply. Common units for measuring capacity include kilowatt (kW) and megawatt (MW).
cofferdam	A temporary enclosure built within (or in pairs across) a body of water to allow the enclosed area to be pumped dry. This pumping creates a dry work environment so that the main dam (or other) work can be carried out safely. Commonly used for construction or repair of permanent dams, oil platforms and bridge piers built in or over water.
Conservation and Demand Management (CDM)	A range of programs and initiatives to encourage energy consumers to conserve electricity and use it more efficiently. It also includes efforts to decrease peak demand for electricity.
contingency	In an estimate, the provision made for probable variations in estimates of time or cost that cannot be specifically identified at the time the estimate is prepared.

Term	Meaning
converter station	Equipment used to convert alternating current to direct current (or direct current to alternating current).
critical path	A project management term for the entire sequence of steps or activities between the start and completion of a target, milestone or project.
Cumulative Present Worth (CPW)	The present value of all incremental utility capital and operating costs expected to be incurred to reliably meet a specified load forecast, given a prescribed set of reliability criteria. CPW is used for comparative purposes, as a measure of the total costs of a supply option.
DarkNL	A series of widespread and significant power outages that occurred on the Island of Newfoundland in January 2014.
Decision Gate (DG)	In the development of a project, a pre-defined moment when the Gatekeeper (see below) has to make appropriate decisions about whether to move a project to the next stage, to place a temporary hold or to terminate it.
direct current (DC)	An electric current that flows in only one direction. Direct current is used to transport power over long distances. Direct current has to be converted to alternating current before it can be used by homes and businesses.
dispatchable power generation	Sources of electricity that can be used on demand at the request of power grid operators, according to market needs. Dispatchable power generators can be turned on or off, or can adjust their output according to an order.
electrostatic scrubbers and precipitators	Pollution abatement equipment that reduces particulate emissions from thermal generating plants, such as Holyrood.
energy	The total amount of electricity that a utility supplies or a customer uses over a period of time. The energy supplied to electricity consumers is usually recorded as kilowatt hours, megawatt hours, gigawatt hours or terawatt hours.
Engineering, Procurement and Construction Management (EPCM)	A contracting model in which the EPCM contractor, acting as the owner's representative, is responsible for the engineering, procurement and construction management of suppliers and contractors.

Term	Meaning
escalation	In estimating, the provision for changes in price levels driven by economic conditions. Escalation includes inflation.
Federal Loan Guarantee (FLG)	The guarantee by Canada on a portion of the debt borrowed by Nalcor and Emera, enabling them to borrow at a lower interest rate than they would otherwise have been given.
Financial Close	The execution and delivery of several financing documents, the issuance of bonds and the advance of funds for the Project, pursuant to the Federal Loan Guarantee which took place in late 2013.
firm energy	Energy intended to be available throughout a specified period of time.
first power	The point at which power is first transmitted to the grid from a generating system.
<i>force majeure</i>	An event, condition or circumstance beyond the reasonable control of a party, and without fault or negligence of that party. Examples of <i>force majeure</i> events are natural disasters, environmental conditions, acts of war, court orders and strikes or lockouts.
full power	The first time the full capacity of a generating station is transmitted to the electrical grid.
Gatekeeper	The individual responsible for making decisions at each Decision Gate of a project's Gateway process. On the Muskrat Falls Project at DG2 and DG3, this was Nalcor CEO and President Edmund Martin.
Gateway process	A staged or phased decision-assurance process used to guide the planning and execution of the business opportunity presented by the development of the lower Churchill River.
geotechnical engineering	The study of the behaviour of soils under the influence of loading forces and soil-water interactions.
glaze ice	A smooth, transparent and homogeneous ice coating caused by freezing rain or drizzle.
grid	The layout of an electrical transmission or distribution system.

Term	Meaning
Integrated Resource Planning (IRP)	A method of least-cost planning that aims to properly compare the economic and environmental implications of alternative solutions for providing reliable electric power.
Interconnected Option	One of two options presented by Nalcor for the supply of electricity to Island ratepayers. It consists mainly of the Muskrat Falls Project and Labrador-Island Link, with thermal combustion providing reliability support.
Isolated Island Option	One of two options presented by Nalcor for the supply of electricity to Island ratepayers. It consists of a combination of thermal, small-scale hydro and wind generation projects on the Island.
Labrador Transmission Assets (LTA)	High-voltage cables transmitting power between Muskrat Falls and the Churchill Falls generating station.
Labrador-Island Link (LIL)	High-voltage cables transmitting 900 MW of power from Muskrat Falls through Labrador, across the Strait of Belle Isle and the Island to Soldiers Pond on the Avalon Peninsula.
Limited Notice to Proceed (LNTP)	A written notice that gives a contractor the go-ahead to begin work in a limited manner prior to the signing of a final contract.
LMAX	“Labour maximum cost,” or the maximum value of the reimbursable cost of labour that an owner will provide to a contractor. The intention of an LMAX is to make the contractor responsible for labour costs above the LMAX value.
load	The amount of electric power delivered at any specific point or at specific locations on a grid system.
Maritime Link (ML)	The 500 MW high voltage connection from Granite Canal, Newfoundland, to Woodbine, Nova Scotia.
Mass Hub Price	A measure of current market prices for electricity in New England.

Term	Meaning
methylmercury	A toxic organic form of mercury formed when inorganic mercury combines with a methyl group, which is composed of carbon and hydrogen. It can be absorbed by fish and marine mammals and, as mercury poisoning, affect the health of humans who the eat contaminated species.
mitigation	The adoption of special measures or techniques to minimize or neutralize the negative impacts of a particular event.
monopole	An HVdc transmission system with one conductor.
Monte Carlo simulation	A mathematical method using random sampling that can simulate the probability of various outcomes. It is used in engineering and construction as a tool for quantitative risk analysis, to help determine a range of likely cost outcomes.
non-dispatchable power generation	Sources of electricity that cannot be used on demand at the request of power grid operators, according to market needs. Examples are wind and solar generation, because their energy is not always available.
non-firm energy	A source of energy that is not guaranteed to be a continuous flow and reliably available.
North Spur	A feature of the landscape at Muskrat Falls that forms a natural dam.
optimism bias	The demonstrated tendency for people to be overly optimistic about the outcome of planned actions.
peak demand	The highest level of electricity consumption that a utility has to meet at any one time.
penetration (wind)	The amount of wind energy supplied to a power grid, often expressed as a percentage.
powerhouse	The structure that contains the turbine(s) and generator(s) of a power project.
price elasticity	An index or measure of consumers' responsiveness to a price changes. Simply put, more product will be bought when the price of a commodity is cheaper and less will be bought when the product is more expensive.

Term	Meaning
P value	The statistical confidence level of achieving specific cost and schedule forecasts. For example, a cost estimate with a P value of 75 indicates a 75% chance the predicted cost will be achieved.
Quantitative Risk Analysis (QRA)	A process that attempts to determine the probability of various cost and schedule outcomes. The cost risks can be separated into strategic and tactical risks.
Recall Block	The 300 MW block of power that can be recalled from Churchill Falls, under the existing power contract between Hydro-Québec and CF(L)Co. Also “recall power.”
reliability	The extent to which equipment, systems and facilities can be counted on to perform as intended.
rime ice	Opaque ice that forms when airborne drops of water freeze on contact with an object.
sanction	The milestone event at which a project’s scope, budget and schedule are authorized. Sanction for the Project occurred on December 17, 2012, marking the start of the execution phase.
S-Curve	A diagram that has an S-shaped curve, which in a cost analysis simulates the likelihood of achieving a capital cost. In a time risk analysis, the curve simulates the likelihood of achieving project completion at given times.
sensitivity analysis	Analysis of the impact on a project’s overall costs caused by variations in the key input parameters.
spilling water	Allowing water to pass through or over a dam, rather than using it to generate electricity.
Strait of Belle Isle (SOBI) crossing	A 30-kilometre underwater cable between Labrador and Newfoundland.
strategic misrepresentation	The planned, systematic distortion or misstatement of fact (lying) in response to incentives in a budget process.
strategic risk	Identified background risks that are outside of the control of the project team and that typically pertain to external issues.
Strategist	A software program that calculates and minimizes the cost of meeting anticipated energy demand for every hour of every year, suggesting which new generation assets should be built and when.

Term	Meaning
substation	A component of an electrical generation, transmission and distribution system where electricity passes through switchyards that transform it from high- to low-voltage electricity or vice versa.
synchronous condenser	A specialized machine, the unattached shaft of which spins freely. Its purpose is to assist in the voltage control of the transmission system to which it is connected.
tactical risk	The risk amounts associated with the base capital cost estimate and that result from uncertainties with the four components of that estimate: (1) project definition and scope omission, (2) construction methodology and schedule, (3) performance factors, and (4) price.
thermal generation	Electricity generated through the conversion of heat to electricity. Common thermal generating station types are coal, petroleum, geothermal, solar and natural gas.
watt	<p>The base unit of electrical power used to measure the generating capacity of an electrical system, or the maximum demand of electricity consumers.</p> <p>Equivalencies:</p> <p>1 kilowatt (kW) = 1,000 watts</p> <p>1 megawatt (MW) = 1,000,000 watts</p> <p>1 gigawatt (GW) = 1,000,000,000 watts</p> <p>1 terawatt (TW) = 1,000,000,000,000 watts</p>

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ACRONYMS

Acronym	Expansion
AACE	Association for the Advancement of Cost Engineering International
AC	alternating current
AFE	Authorization for Expenditure
ATIPPA	<i>Access to Information and Protection of Privacy Act</i>
CDM	Conservation and Demand Management
CEAA	Canadian Environmental Assessment Agency
CEO	Chief Executive Officer
CF(L)Co	Churchill Falls (Labrador) Corporation Limited
CFO	Chief Financial Officer
COREA	Cost Overrun Escrow Account
CPW	Cumulative Present Worth
COS	Cost of Service
CSA	Canadian Standards Association
DG	Decision Gate
EA	Environmental Assessment
EAA	Energy Access Agreement
EIS	Environmental Impact Statement
EOI	Expression of Interest
EPCA	<i>Electrical Power Control Act</i>
EPC	Engineer, Procure and Construct
EPCM	Engineering, Procurement and Construction Management
EY	Ernst & Young LLP
FFC	Final Forecast Cost / Forecast Final Cost
FLG	Federal Loan Guarantee
GDP	gross domestic product

Acronym	Expansion
GHG, GHGs	greenhouse gas(es)
GIS	gas insulated switchgear
GNL	Government of Newfoundland and Labrador
GWh	gigawatt hour
HHRAP	Human Health Risk Assessment Plan
HVac	high-voltage alternating current
HVdc	high-voltage direct current
IBA	Impacts and Benefits Agreement
IBEW	International Brotherhood of Electrical Workers
ICS	integrated cover system
IE	Independent Engineer
IEAC	Independent Expert Advisory Committee
IMT	Integrated Management Team
IPR	Independent Project Review
IRP	Integrated Resource Planning
JRP	Joint Review Panel
kV	kilovolt
kWh	kilowatt hour
LCC	line commutated converter
LCMC	Lower Churchill Management Corporation
LCP	Lower Churchill Project
LiDAR	light detection and ranging
LIL	Labrador–Island Link
LMAX	labour maximum cost
LNG	liquefied natural gas
LNTP	Limited Notice to Proceed
LTA	Labrador Transmission Assets

Acronym	Expansion
MF	Muskrat Falls
MFC	Muskrat Falls Corporation
MFEA	Muskrat Falls Employers Association
MHI	Manitoba Hydro International
ML	Maritime Link
MOU	Memorandum of Understanding
MW	megawatt
MWH	MWH Canada Inc.
MWh	megawatt hour
NCC	NunatuKavut Community Council
NERC	North American Electric Reliability Council
NG	Nunatsiavut Government
NLH	Newfoundland and Labrador Hydro
NSPI	Nova Scotia Power Inc.
O&M	operating and maintenance
P&C	protection and control (software)
PAA	Project Assignment Authorization
PBR	Performance-Based Regulation
PMT	Project Management Team
PPA	Power Purchase Agreement
PPE	personal protective equipment
PUB	Public Utilities Board
QRA	Quantitative Risk Assessment
RCC	roller-compacted concrete
RDTC	Resource Development Trades Council
RFI	Request for Information
RFP	Request for Proposals
ROW	right-of-way

Acronym	Expansion
SNC, SLI	SNC-Lavalin Group Inc.
SOBI	Strait of Belle Isle
SPO	Special Project Order
TWh	terawatt hour
UARB	Utility and Review Board (Nova Scotia)

NAMES AND AFFILIATIONS

This list includes the names and affiliations (as it pertains to the content of this Report) of people frequently referenced in this Report.

Last Name	First Name	Organization
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Bennett	Gilbert	Nalcor
Blidook	Kelly	Memorial University
Bown	Charles	Government of Newfoundland and Labrador
Brewer	Donna	Government of Newfoundland and Labrador
Brockway	Tom	Grant Thornton, Expert Witness
Browne	Dennis	Consumer Advocate
Bruneau	Stephen	Memorial University
Cappe	Mel	University of Toronto, Expert Witness
Card	Bob	SNC-Lavalin
Chebab	George	Nalcor
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Churchill	Jason	Cleo Research, Expert Witness
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Clift	Tom	Nalcor board of directors
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Harrington	Tim	Cahill-Ganotec
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Hussey	Patrick (Pat)	Nalcor
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Kennedy	Michael	Ernst & Young
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Marshall	Ken	Nalcor board of directors
Marshall	Thomas	Government of Newfoundland and Labrador
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Martin	Fred	Public Utilities Board
Martin	Thierry	General Electric
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McCormick	Patrick	Resource Development Trades Council
McLean	Carl	Nunatsiavut Government
Meaney	James	Nalcor
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Power	Tanya	Nalcor
Raphals	Philip	Helios Centre, Expert Witness

Names and Affiliations

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