

Manitoba Hydro Cost of Service 2016

Closing Submission of the Consumers' Coalition

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Executive Summary

This submission addresses the four major themes identified by the PUB for the oral portion of the Cost of Service Review.¹

The Coalition's comments begin with a consideration of a subject that has not been extensively canvassed in this process – the interpretative guidance given to the regulator by the statute and by prior Board Orders *117/06* and *5/12*.

In particular, the Coalition considers the analytic approach to be taken in determining whether rates are unjustly discriminatory under s. 77 and s. 82 of *the Public Utilities Board Act*.

The Coalition takes issue with certain witnesses who “pulling tight the shackles of didactic certitude” suggest that it is contrary to good rate making practice to take into account broader policy considerations in performing a cost of service study. This approach is not consistent with the statutory scheme which clearly authorizes the PUB to have reference to “any compelling policy considerations that the board considers relevant to the matter.”

In terms of the central issue of cost causation, the Coalition digs deeper into the 2014 NFAT report. Manitoba Hydro's costs are primarily driven by the fixed costs that flow from investment decisions. Processes such as the 2014 NFAT are the means by which key investment decisions are reviewed and decided. The considerations and principles used in those deliberations should be integral to cost causation deliberations.

Insight from the NFAT can also be helpful in weighing the evidence in this proceeding. In its September 7, 2016 presentation, Manitoba Hydro made much of an alleged gap between the recommendations of Mr. Bowman and of other witnesses in this hearing including Mr. William Harper who was retained by the Coalition.

However, from our client's point of view the more interesting analytic gap is between the positions articulated by Mr. Bowman in the NFAT proceeding and in the Cost of Service review. In the Coalition's respectful view, elements of Mr. Bowman's NFAT evidence offers strong support for the positions advanced by Mr. Harper and other witnesses in this hearing.

Finally, our client will ask the Public Utilities Board to make 11 key findings which it believes should underly the Board's determinations in this proceeding. Based upon these findings, it makes a number of recommendations for the Board's final order. A number of these recommendations echo those made by Mr. Harper; others have been developed by the Coalition based on its review of the process.

Also marked as Appendix A to this submission is a summary of Mr. Harper's recommendations. The Coalition endorses the recommendation set out in Appendix A.

¹Manitoba Public Utilities Board, *Board Order 84/16*: The treatment of export costs, including the number of export classes and the allocation of fixed and variable costs to such classes; The treatment of net export revenue and the allocation thereof; The functionalization, classification and allocation of generation and transmission assets, including the HVDC system and the U.S. interconnection, but excluding wind and coal assets; The classification and allocation of demand-side management.

Statutory Insight

Reliability, Economy and Efficiency at Full Cost

Reliability and the promotion of economy and efficiency lie at the heart of the Manitoba Hydro mandate. As set out in s. 2 of *The Manitoba Hydro Act*,² core purposes of Manitoba Hydro include:

*the **continuance of a supply of power** adequate for the needs of the province, (emphasis added), and to **promote economy and efficiency** in the development, generation, transmission, distribution, supply and end-use of power. (emphasis added)*

Legislative amendments in 1997 underscore the increasingly integral nature of export sales to the identity and operations of the Corporation. In that year, the purpose section of *The Manitoba Hydro Act* was amended to expressly include an additional purpose:

*to **market and supply power to persons outside the province on terms and conditions acceptable to the board.** (emphasis added)*

Subject to the regulatory oversight of the Public Utilities Board, the Corporation is authorized to recover the full cost of power including “necessary” operating expenses and “sufficient” reserves established for the stabilization of rates or extraordinary contingencies.³

While the statute is focused on economy and full cost recovery, an exception is provided in the case of rural, remote and less densely populated communities. The statute provides for uniform rates for any class of grid customers.

Notwithstanding the relatively higher cost to serve rural, remote and less densely populated

² *The Manitoba Hydro Act*, CCSM c H190, s 2 [Manitoba Hydro Act]: **Purposes and objects of Act**, The purposes and objects of this Act are to provide for the **continuance of a supply of power** adequate for the needs of the province, and to engage in and to **promote economy and efficiency** in the development, generation, transmission, distribution, supply and **end-use of power** and, in addition, are (a) to provide and market products, services and expertise related to the development, generation, transmission, distribution, supply and end-use of power, within and outside the province; and (b) to **market and supply power** to persons **outside the province** on terms and conditions acceptable to the board. [emphasis added]

³ *Ibid*, s 39(1): **Price of power sold by corporation**, The prices payable for power supplied by the corporation shall be such as to return to it in full **the cost to the corporation**, of supplying the power, including (a) the **necessary** operating expenses of the corporation, including the cost of generating, purchasing, distributing, and supplying power and of operating, maintaining, repairing, and insuring the property and works of the corporation, and its costs of administration . . . (c) the sum that, in the opinion of the board, should be provided in each year **for the reserves** or funds to be established and maintained pursuant to subsection 40(1); *Ibid*, s 40(1):

Establishment of reserves, The board shall establish and maintain, and may adjust as required, such reserves or funds of the corporation as are **sufficient**, in the opinion of the board, to provide . . . (c) **for the stabilization** by the board of **rates** or prices for power sold by the corporation, the meeting of **extraordinary contingencies**, and such other requirements or purposes as in the opinion of the board are proper. [emphasis added]

communities, the legislation expressly prohibits the classification of customers based solely on the region of the province in which they are located or on the population density of the area in which they are located.⁴

A review of Hansard makes it clear that the decision to implement uniform rates was tied to the expectation that export revenues rather than domestic customers were expected to cover the lost revenues associated with the move to uniform rates:

We are in the fortunate situation where we can bring forward a universal, uniform rate because we have the benefits of surpluses generated through export sales, so we are not asking other Manitobans to pay more to provide this uniform rate. [...] [We are] not having to ask anybody to pay more but moving the top rate or the higher rates to the lowest rate and paying for that through the surpluses we generate through export sales.⁵

Rates shall not be Unduly Discriminatory or Preferential

While Manitoba Hydro enjoys a monopoly in the retail sale of power in Manitoba, consumers are protected by the oversight of the Manitoba Public Utilities Board which is charged with ensuring that rates are “just and reasonable” and not “unjustly discriminatory or preferential”.⁶

It is generally understood that the objective of “just and reasonable” rates relates to the setting of a rate that is fair both to consumers as a whole and to the Corporation.

The concept of rates that are not “unjustly discriminatory or preferential” speaks to the need to preserve fairness between different classes of consumers. Allocating costs on the basis of

⁴ *Ibid*, s 39(2.1): **Equalization of rates** The rates charged for power supplied to a class of grid customers within the province shall be the same throughout the province; *Ibid*, s 39(2.2): **Interpretation**, For the purpose of subsection (2.1), (a) grid customers are those who obtain power from the corporation's main interconnected system for transmitting and distributing power in Manitoba; and (b) customers shall not be classified based solely on the region of the province in which they are located or on the population density of the area in which they are located.

⁵ Greg Selinger, Legislative Assembly of Manitoba, June 18, 2001, p 97.

⁶ Please see *The Crown Corporations Public Review and Accountability Act*, CCPRAA, CCSM c C336, s 26 (1) – (3) [CCPRA] regarding the rate approval authority of the Public Utilities Board with regard to rates for service for Manitoba Hydro. In terms of the statutory test employed by the the PUB, please see *The Public Utilities Board Act*, CCSM c P280, s 77: **Orders as to utilities**, The board may, by order in writing after notice to, and hearing of, the parties interested, (a) fix **just and reasonable individual rates**, joint rates, tolls, charges, or schedules thereof, as well as commutation, mileage, and other special rates that shall be imposed, observed, and followed thereafter, by any owner of a public utility wherever the board determines that any existing individual rate, joint rate, roll, charge or schedule thereof or commutation, mileage, or other special rate is unjust, unreasonable, insufficient, or **unjustly discriminatory or preferential**; s 82(1): **Discriminatory rates**, No owner of a public utility shall (a) make, impose, or exact any unjust or unreasonable, **unjustly discriminatory**, or unduly preferential, individual or joint rate, commutation rate, mileage, or other special rate, toll, fare, charge, or schedule, for any product or service supplied or rendered by it within the province. [emphasis added]

cost causation is considered an important indicator of a non-discriminatory rate.

It is notable however that the word discriminatory is modified by the term “unjustly”. The legislation clearly preserves for the regulator the jurisdiction to consider factors other than pure cost causation. This understanding is reinforced by the plain and ordinary language of *The Crown Corporations Public Review and Accountability Act* which specifically reserves to the PUB the authority to take into account:

*any compelling policy considerations that the board considers relevant to the matter.*⁷

The PUB has rejected a siloed restriction of its jurisdiction

The PUB has interpreted its role under this legislative scheme to include:

*ensuring that MH’s forecasts are reasonably reliable, ensuring that actual and projected costs incurred are necessary and prudent, assessing the reasonable revenue needs of the Corporation in the context of the overall general health of MH, determining an appropriate allocation of costs between classes, and setting just and reasonable rates in accordance with statutory objectives.*⁸

While all witnesses in this proceeding have confirmed that cost causation is a central consideration in the determination of cost allocation,⁹ certain witnesses seemed to imply that it is not appropriate to take into account policy considerations or other rate making objectives such as efficiency and stability of rates.

Pulling tight the shackles of didactic certitude, certain witnesses have suggested that it is

⁷ CCPRA, *supra* note 6, s 26(4): **Factors to be considered, hearings**, In reaching a decision pursuant to this Part, The Public Utilities Board may (a) take into consideration (i) the amount **required** to provide sufficient moneys to cover operating, maintenance and administration expenses of the corporation, . . . (iv) **reserves** for replacement, renewal and obsolescence of works of the corporation, (v) any other reserves that are **necessary** for the maintenance, operation, and replacement of works of the corporation, . . . (viii) **any compelling policy considerations that the board considers relevant to the matter**, (ix) any other factors that the board considers relevant to the matter. [emphasis added]

⁸ Manitoba Public Utilities Board, *Order 5/12*, p 26 -27: The Board’s role, according to CAC/MSOS, must involve ensuring that MH’s forecasts are reasonably reliable, ensuring that actual and projected costs incurred are necessary and prudent, assessing the reasonable revenue needs of the Corporation in the context of the overall general health of MH, determining an appropriate allocation of costs between classes, and setting just and reasonable rates in accordance with statutory objectives. The Board endorses these principles and the objectives as set out above that must inform it in the present circumstances when fixing *rates for the test years in question*. [emphasis added]

⁹ See for example Cost of Service Hearing, Transcript September 8, 2016, Mr William Harper, at p 325, lines 11-13: “One (1) of the generally accepted measures of fairness is that [apportionment] should reflect cost/causation”; p 325, lines 15-17: “Customers should pay for the facilities that they use and benefit from -- i.e., pay for the costs incurred to serve them”; p 325, lines 17-20: “The purpose of a cost of service study is to apportion the revenue requirement to customer classes based on cost causality”; p 326, lines 5-9: “Cost of service studies focus -- focus on distinguishing the different types of services that customers are provided and benefit from, and what customers characteristics drive the costs incurred to provide those services.”

contrary to good rate making practice to take into account broader policy considerations in performing a cost of service study.

This allegation is not consistent with the statutory scheme which clearly authorizes the PUB to have reference to “any compelling policy considerations that the board considers relevant to the matter.” It also fails to realize one of the core purposes of the legislation which is to “promote economy and efficiency”.

The Board has clearly rejected a siloed approach to the cost allocation process:

*The Board confirms that the primary objective of COSS is to assist in the testing of the **fairness of rates** between domestic customer classes. This objective is met in part by the allocation of MH’s prospective revenues and expenses by customer class, in accordance with **cost causation, legislation, policy and the public interest**,¹⁰ (emphasis added)*

*Each COSS involves **considerable judgment**; and with no industry standard available to guide the process, there is no “right” or “wrong” way to allocate costs. The fundamental objective in designing a COSS is to select a cost allocation method that both reflects **cost causation** and results in an **equitable sharing** of costs.¹¹ (emphasis added)*

Cost Allocation is not a Static Exercise

In *Order 117/06*, the Manitoba PUB accepted the contention “*that a **fundamental change** has occurred to its operations and prospects*” (emphasis added) due to developments in the marketplace.¹² As a consequence, it approved material changes in the approved Cost of Service study including the establishment of an export class and a new allocation approach for Net Export Revenue.¹³

Recognizing ongoing changes in the marketplace and policy environment, leading regulators such as FERC have emphasized the need for continued reform:

***Cost allocation reform** is one of the **most difficult issues** facing transmission service providers and regional transmission organizations (RTO)/independent system operators (ISO), including SPP. This is especially true given the **changing circumstances** affecting the transmission grid including, particularly the need to*

¹⁰ Manitoba Public Utilities Board, *Order 117/06*, p 56.

¹¹ *Ibid.*

¹² *Ibid.*, p 2.

¹³ It also made provision for the review of a marginal cost of service study as a necessary adjunct to considerations of fairness and equity under the embedded cost of service study.

*upgrade existing transmission infrastructure and build new transmission facilities to satisfy the expanding demands on the transmission system. Efforts to **integrate new resources**, including significant amounts of **location-constrained generation**, into existing transmission systems and to address **renewable portfolio standards** and other regulatory policies challenge existing cost allocation and transmission planning protocols.*¹⁴ (emphasis added)

*The Commission's responsibility to ensure that transmission rates are just and reasonable and not unduly discriminatory or preferential **is not new**; however, the **circumstances** in which the Commission must fulfill its statutory responsibilities **change** with developments in the electric industry, such as changes with respect to the demands placed on and the corresponding operation of the transmission grid.*¹⁵ (emphasis added)

While certain witnesses and intervenors may wish to “go back to the future” to a simpler time and a more simplistic cost of service study, the pace of market change and Hydro's increasingly integrated position in the broader North American market means there is no going back.

Recognizing the Unique Elements of Each Utility

Mr. Harper has noted that cost of service studies:

*will reflect the **unique attributes** of the utility concerned in terms of **system configuration**, generation mix, its **relationship with neighbouring markets**, and the **legislative and policy context** they operate in. As a result, cost of service methodologies and results will vary by utility.*¹⁶ (emphasis added)

In terms of Manitoba Hydro, two relatively unique aspects are:

its heavy reliance on export sales to the US marketplace,¹⁷ and

the reality that 75 percent of its generating capacity is connected through an HVDC system.¹⁸

14 131 FERC ¶ 61,252 UNITED STATES OF AMERICA FEDERAL ENERGY REGULATORY COMMISSION, Southwest Power Pool, Inc Docket No ER10-1069-000 ORDER ACCEPTING TARIFF REVISIONS (Issued June 17, 2010), para 2.

15 *Ibid*, para 63.

16 Cost of Service Hearing, Transcript September 8, 2016, Mr William Harper, p.367, lines 20 - p 368, line 1.

17 Please see Cost of Service Hearing, Transcript September 8, 2016, Christensen Associates (CA), p 490-492: COS methodology will be unique to each utility. The transcript goes on to discuss factors such as hydro storage, large component of export sales, interaction with markets based on marginal costs.

NFAT – COSS LINKAGE

There is general agreement in industry and among the experts in the current proceeding that the primary objective of a cost of service study is a fair allocation of cost to customer classes based on the principle of cost causation.

The majority of MH's costs are fixed costs in the sense that they are the depreciation, financing costs and net income requirements that result from investment decisions.

Processes such as the recent NFAT are the means by which potential investment decisions are reviewed and decided. The considerations and principles used in processes like the NFAT should be key in assessing cost causation.

Some of the principles and considerations out of the most recent NFAT that are relevant to the current COSS are:

- the importance of integrated resource planning and the role that DSM plays in the planning process:¹⁹
 - DSM is a powerful tool, as it can defer the need for new generation, and has the potential to be as economic, if not more economic, than new generation.
 - DSM must be evaluated as a stand-alone resource in an integrated resource planning process by Manitoba Hydro.
- the importance of exports revenues in Manitoba Hydro's overall business model:²⁰

18 Cost of Service Hearing, Transcript September 7, 2016, Manitoba Hydro, p 30 (Comment on Significant Amount of GRTA): "But we are also unique in that we have 75 percent of our generating capacity connected through an HVDC system. However, most generating facilities are connected through an AC network, unlike Manitoba Hydro, with no or little use of an HVDC -- an HVDC system, the Bipoles. And so it is of no surprise or consequence that other utilities have less poles and wires deemed to be generation-related transmission than Manitoba Hydro."

19 The Public Utilities Board, *Report on the Needs For and Alternatives To (NFAT): Review of Manitoba Hydro's Preferred Development Plan 2014* [NFAT], p. 21: "DSM is a powerful tool, as it can defer the need for new generation, and has the potential to be as economic, if not more economic, than new generation."; NFAT, 2014, p. 22: "Manitoba Hydro, formerly a leader in DSM initiatives, has been surpassed by a number of other jurisdictions,."; NFAT, 2014, p. 91: "The purpose of an integrated resource plan is to determine analytically what resource is in the best interest of consumers by examining a full spectrum of possible supply-side and demand-side options and measuring them against a collective set of objectives and criteria. . . .The NFAT Review demonstrated that DSM measures were not equally weighted with other energy options."; NFAT, 2014, p. 92: "It is clear: DSM must be evaluated as a stand-alone resource in an integrated resource planning process by Manitoba Hydro. In a time of rapid technological innovation on both the demand and supply side, openness to alternative resources and new technologies will be required. This may involve new methods of saving electricity as well as new methods of generating it, such as wind and solar power. Integrated resource planning provides the analytical framework to evaluate all such energy resource options – hydropower, wind, solar, gas, DSM, or other technologies – on an equal footing."

- Long-term export sales at premium prices underpin the business case of Manitoba Hydro’s Preferred Development Plan and many of its alternatives.
 - the Panel accepts the quantification of Manitoba Hydro’s contracted dependable capacity and energy revenues as well as the contracted surplus energy revenues as \$6.9 billion.
- the distinction between firm sales sourced from dependable power and opportunity exports as a trigger for additional/advanced investments:²¹
 - The Panel does not share Manitoba Hydro’s view that it can sell all of its surplus dependable energy and capacity as long-term firm contracted sales at premium prices.
 - The Panel considers it critical that Manitoba Hydro achieve firm bilateral sales, at premium prices, for its non-contracted surplus energy.
 - the importance of interconnections – not only for exports but for domestic reliability.²²
 - the need to take a long term perspective when considering capital investments.²³
 - the essential roles played by domestic need, firm export contracts and the reliability benefits of the US interconnection project in triggering the Keeyask approval:²⁴

20 *Ibid*, p 114: “Long-term export sales at premium prices underpin the business case of Manitoba Hydro’s Preferred Development Plan and many of its alternatives. “Surplus by design” as a business strategy requires the assurance that Manitoba Hydro has access to markets and can sell its surplus capacity at favourable prices, for decades to come.”; *Ibid*, p 115: “Based on the Panel’s and La Capra’s review of Manitoba Hydro’s bilateral firm contracts, the Panel accepts the quantification of Manitoba Hydro’s contracted dependable capacity and energy revenues as well as the contracted surplus energy revenues as \$6.9 billion. However, the Panel notes that diversity revenues are not guaranteed revenues as the counter-party has no obligation to purchase any diversity energy.”; *Ibid*, p 115: “The Panel is concerned with the risk that future export contracts may not attract the premium pricing that Manitoba Hydro assumes.”.

21 *Ibid*, p 115: “The Panel does not share Manitoba Hydro’s view that it can sell all of its surplus dependable energy and capacity as long-term firm contracted sales at premium prices.”; *Ibid*, p 115-16: “In the absence of long-term firm U.S. MISO bi-lateral sales, Manitoba Hydro will have to rely on opportunity sales, at market prices. Accordingly, the Panel considers Manitoba Hydro’s forecast of future firm export revenues to be optimistic.”; *Ibid*, p 117: “Considering the uncertainty of future export revenues, specifically those that flow from Conawapa, all of these factors add up to heightened and unacceptable risk associated with the Preferred Development Plan. The Panel considers it critical that Manitoba Hydro achieve firm bilateral sales, at premium prices, for its non-contracted surplus energy. Failure to do so exposes the domestic ratepayer to additional rate increases.”; See also NFAT, p. 31.

22 *Ibid*, at p 34: “There are good reasons to proceed with the Keeyask Project at this time in light of [...]. Moreover, there are associated reliability benefits with the 750 MW Transmission Interconnection Project.”; See also NFAT, p 70-72.

23 *Ibid*, p 28-29, 159 and 191.

24 *Ibid*, p 34.

- there are good reasons to proceed with the Keeyask Project at this time in light of **the need for new resources**, construction expenditures undertaken to date, the socio-economic and environmental benefits of the project, and the **important commercial relations** that Manitoba Hydro has established both with First Nations and **through its export contracts**. Moreover, there are **associated reliability benefits** with the 750 MW Transmission Interconnection Project. (emphasis added)

Recommended Finding 1

Regardless of the merits of the original decision to build Bipole III, the line will play an integral role in ensuring the reliability of northern generation, deferring other generation backstop options and delivering Keeyask power in higher flow years.

Significant support for classifying Bipole III as a Generation Related Transmission Asset (GRTA)

The PUB has recognized that Bipoles I and II are properly classified as GRTA given their intimate link to Nelson River generation:²⁵

*the **primary function** of the HVDC facilities is to **move energy** from the **remote generation** sites into the backbone transmission system and therefore serve as an extension of the generating facilities.* (emphasis added)

There has been considerable evidentiary support in this proceeding for the proposition that Bipole III also should be classified as a GRTA given:

the growing reliance on Northern generation and the risk associated with losing Bipoles I and II,²⁶

the recognition that Bipole III is needed to enable the full delivery of northern generation in Manitoba Hydro's current approved Development Plan,²⁷

²⁵Manitoba Public Utilities Board, *Board Order 7/03*, p 98

²⁶ Cost of Service Hearing, Transcript from September 8, 2016, Mr William Harper, p 353, lines 4-11: "It is clear that the need for Bipole III in order to support reliable delivery of the existing northern generation to the transmission network has evolved over time as reliability standards have changed, and Manitoba Hydro's own understanding of its -- of the vulnerability of its transmission network to weather-related events has improved."; Cost of Service Hearing, Transcript from September 8, 2016, Mr William Harper, p 353 at lines 12-20: "It is also clear that the reliance on northern generation is growing over time which is contributing to the increasing supply deficit that would occur in the absence of Bipoles I and II."

²⁷ Cost of Service Hearing, Transcript from September 8, 2016, Mr William Harper, p 353 at lines 22-24.

the reality that operationally it is part of the northern generation fleet.²⁸

As observed by Manitoba Hydro:

*These lines would not be required if it were not for the generating stations that have been built in -- in the north and far from the majority of the load centres down here in the south of Manitoba. . . . The Bipole lines are **only used by the generators**. A **loss of the Bipole means a loss of a generator**.*²⁹ (emphasis added)

Manitoba's Clean Environment Commission also has identified an intimate link between Bipole III and the development of additional remote generation:

*It should be noted that the Converter Station is adjacent to the proposed location of the Conawapa Generating Station, and that the Bipole III Transmission Project, although focused on reliability issues at this time, has been planned with future developments in mind. Furthermore, the current HVDC lines running from northern Manitoba to the Dorsey Converter Station near Winnipeg, Bipole I and Bipole II, do not have the capacity to transmit power from Keeyask.*³⁰

Mr. Bowman's Dissent

Mr. Bowman is the primary dissenting voice against the opinion that Bipole III should be classified as GRTA. He observes that Manitoba Hydro does not suggest there is a business case link between historic Lower Nelson stations, projects under construction (such as Keeyask) or future projects.³¹

Mr. Bowman concedes that Bipole III is complementary to the NFAT proposals

However, a review of Mr. Bowam's NFAT evidence during cross examination confirmed his view that "*it is **clear that the development is complimentary to the NFAT proposals***". (emphasis added).³²

28 Cost of Service Hearing, Transcript from September 8, 2016, CA, p 308: "We believe that is a key element and because of the operational features of the Bipole facilities, **the Bipole is inherently part of the northern generation fleet**. It is an integrated package taken as a whole and is very much generation." (emphasis added).

29 Cost of Service Hearing, Transcript from September 8, 2016, Manitoba Hydro, p 28, lines 5-8, 16-18.

30 Manitoba Clean Environment Commission, "Bipole III Transmission Project", June 2013, p 3.

31 Pre-Filed Testimony of Mr Patrick Bowman, June 10, 2016, p 30: "Bipole III was not required for the development of LWR/CRD and the existing Lower Nelson River stations (which operated successfully for decades without the line). Further, Bipole III is not submitted by Hydro to be integrally linked to Keeyask and future generation in terms of the fundamental business case for these projects (hence its exclusion from the NFAT proceedings, as a project that was determined to be justified to proceed regardless as to the conclusion on development of Keeyask or Conawapa). In short, Bipole III is a project that is not driven by generation and as such fails the "but for" test. Bipole III is driven by load growth."

During cross examination Mr. Bowman also confirmed that:

- the NFAT could not have occurred “without Bipole III in MH’s plans”,³³
- the purpose of Bipole III is to back up Bipoles I & II,³⁴ and
- without Bipole III neither all the capacity nor all the energy from Keeyask could be delivered.³⁵

Recommended Order flowing from Finding 1

Classify Bipole III as a Generation Related Transfer Asset

There is a strong basis for classifying Bipole III as GRTA based on prior regulatory practice and the operational realities. The dissenting opinion of Mr. Bowman is not consistent with the findings of the Clean Environment Commission, his own evidence in the NFAT or the opinions of most witnesses in this proceeding.

While Mr. Bowman takes issue with the relative proportion of Manitoba Hydro's assets classified as GRTA, MIPUG did not challenge in cross examination Manitoba Hydro's assertion that it was “*unique in that we have 75 percent of our generating capacity connected through an HVDC system.*”³⁶

Classify Dorsey and Riel inverters as GRTAs

In addition to classifying Bipole III as a GRTA, the Coalition also recommends that the Dorsey³⁷ and Riel inverters also be classified as GRTA. The Coalition primarily relies on the evidence and recommendations of Mr. Harper for these conclusions.

32 Cost of Service Hearing, Transcript September 9, 2016, Mr Patrick Bowman, p 716 at lines 20-25. See also Bowman, NFAT evidence, p. 3-4, fn 34: “In particular, although Bipole III is framed as a reliability initiative by Hydro, it is clear that the development is **complementary to the NFAT proposals**. For example see OL10-2 provided as Exhibit MH#154 in the Hydro 2010/11 and 2011/12 GRA which notes at page 25 that absent Bipole III, 1500 MW of natural gas generation would be targeted for 2017 with an additional 500 MW by 2025.” [emphasis added]

33 Cost of Service Hearing, Transcript September 9, 2016, Mr Patrick Bowman, p 716.

34 *Ibid*, p 718.

35 *Ibid*, p 723 and 770-771: “MR. PATRICK BOWMAN: Yes. Yes, Bipoles I and II do not provide enough capacity to get out the full capability of the northern system were one to develop -- develop Keeyask, p. 723 MR. PATRICK BOWMAN: I would agree that one (1) could not deliver every kilowatt hour produced by Keeyask without Bipole III, if that's what you mean by all.”

36 Cost of Service Hearing, Transcript September 7, 2016, p 30: “[...] a larger share of generation-related transmission assets compared to other utilities. But we are also unique in that we have 75 percent of our generating capacity connected through an HVDC system. However, most generating facilities are connected through an AC network, unlike Manitoba Hydro, with no or little use of an HVDC -- an HVDC system, the Bipoles. And so it is of no surprise or consequence that other utilities have less poles and wires deemed to be generation-related transmission than Manitoba Hydro.”

Mr. Bowman's concession that he did not spend "a whole lot of time thinking separately about the Riel converter" is also noted.³⁸

Recommended Finding 2

The US Interconnection is a Critical Complement to Baseload Hydraulic Generation.

US Interconnections Backstop Generation

An important issue related to US interconnections is whether they should be allocated based on weighted energy recognizing that the allocator captures both energy and capacity considerations.³⁹

A number of witnesses including Mr. Harper, CA and Manitoba Hydro support this proposal on the grounds that:

as noted by the PUB in the NFAT, the interconnections are important not only for exports but for domestic reliability,⁴⁰

Manitoba Hydro relies on the Interconnections for planning purposes,

the Interconnections enhance generation reliability,

37 The Coalition observes that *Order 7/03*, p 98 recommended a closer look at Dorsey as GRTA.. It accepts Hydro's analysis in Cost of Service Hearing, Transcript September 7, 2016, p 32-33 that its "HVDC system was built as part of the least-cost generation portfolio, and allowed Manitoba Hydro to develop northern hydraulic resources that would have otherwise been unfeasible. The Nelson River HVDC system essentially relocates the northern collector system generators, Kettle, Long Spruce, and Limestone, from Lower Nelson to Dorsey. It's like having these generation -- these generators in Rosser, Manitoba. The inverters, we're talking about the converter facilities at -- at Dorsey which are also known as the inverters, are analogous to step-up transformers, which are included in the generation function, in that they are needed to transform voltage to a usable level for the network transmission system. Until AC conversion is complete at Dorsey, the power is not usable for the load. In other words, the nature of the support that Dorsey provides to the AC system is in every sense that of generation."

38 Cost of Service Hearing, Transcript September 7, 2016, Mr Patrick Bowman, p 766: "MR. PATRICK BOWMAN: Riel has two (2) components. It has a converter and a AC yard. The AC yard as transmission is -- is consistent with its role in the transmission system. The Riel converter was, I would say, the last -- the last issue that I had looked at. And given that you're dealing with Dorsey as a transmission asset, and you're dealing with Bipole III, which I would suggest is a transmission asset, Riel sort of falls out of that, if you like. I didn't -- I didn't spend a -- a whole lot of time thinking separately about the Riel converter."

39 Cost of Service Hearing, Transcript September 8, 2016, Mr William Harper, p 354, lines 18-25: "When considering this issue, it is important to note that the . . . -- weighted energy allocator is meant to capture both energy and capacity considerations. Use of this allocator recognizes that investments in interconnections were made to support both energy and capacity reliability for domestic load with energy reliability actually being more critical."

40 NFAT, *supra* note 19 at p 70-72: There are good reasons to proceed with the Keeyask Project at this time in light of . . . Moreover, there are associated reliability benefits with the 750 MW Transmission Interconnection Project.

Mr. Harper observes that:

*Manitoba Hydro is fundamentally different from say a utility like BC Hydro which despite its interconnections plans and operates more as an island, and does not rely on interconnections for planning purposes*⁴¹

As noted by Manitoba Hydro:

*the function of the US interconnection is to **provide access to generation resources**. Reliability provided by the US interconnection is different than that of a regular network transmission line, or a regular strand of the spider web. The interconnection does not so much to enhance reliability of grid transmission as it does to enhance the reliability of generation.*⁴² (emphasis added)

Mr. Bowman (COS) - No Reason to Treat Differently

In his COS evidence, Mr. Bowman does not see any “compelling argument to treat these US interconnections [...] different than any other AC transmission.”⁴³

Mr. Bowman (NFAT) – Critical Complement to Baseload Hydraulic

However, in the NFAT process, Mr. Bowman's evidence actually offers ample support to the position of the Coalition and Manitoba Hydro that US interconnections are a critical backup or complement to generation:⁴⁴

Interconnections by Manitoba Hydro to other markets have proven to be **critical complements to baseload hydraulic resources**, (emphasis added)

Interconnections provide the ability for Manitoba to benefit from true diversity in power supplies (e.g., thermal, wind) through complementary relationships in MISO,

Added hydraulic generation in Manitoba could be viewed as “putting all the eggs in one basket” if not for interconnections.

41 Cost of Service Hearing, Transcript September 8, 2016, Mr William Harper, p 332 lines 4-8; See also p 355, lines 12 -13: “In BC Hydro's case, the utility does not rely on imports or interconnections in its planning process to support domestic load.” See also Cost of Service Hearing, Transcript September 8, 2016, CA, p 798-799, on Interconnections should be treated different from other AC transmission.

42 Cost of Service Hearing, Transcript September 7, 2016, Manitoba Hydro, p 41-42.

43 Bowman NFAT Evidence, *supra* note 32, p 33.

44 NFAT, Pre-Filed Testimony of Mr Patrick Bowman, February 28, 2014, p. 4-8;

Recommended Order flowing from Finding 2

The weighted energy allocator be used in allocating US interconnection costs

The Coalition recommends that the weighted energy allocator be used in allocating US interconnection costs. The Coalition notes that MIPUG did not successfully challenge Mr. Harper in his observations that interconnections were integral to the Manitoba Hydro planning process.

They also observe that Mr. Bowman's NFAT evidence is strongly supportive of the conclusion that the function of the US interconnection is to **provide access to generation resources**.

Overview of the Export Class Issue

Recognizing considerable room for judgement, the focus of cost of service studies involves:⁴⁵

- distinguishing the different types of services that customers are provided and benefit from; and
- determining what customers characteristics drive the costs incurred to provide those services.

Before presenting a recommended order relating to the Export Class and the treatment of dependable and opportunity exports, it is important to examine:

- the level of service received by domestic firm sales, dependable power sourced export sales and opportunity power sourced export sales;
- the roles played by domestic firm, dependable exports and opportunity exports in triggering capital expenditures; and
- material changes in any of the factors relied upon by the PUB in *Order 117/06* for the determination of whether there should be one or two export classes.

A recommended order relating to the export class issue will be addressed after consideration of recommended findings 3, 4 and 5.

⁴⁵ Cost of Service Hearing, Transcript, September 8, 2016, Mr William Harper, p 326, lines 5-9.

Recommended Finding 3

In terms of the level, type and reliability of service, there is a distinction between domestic firm sales, dependable export sales and opportunity export sales. Manitoba firm load takes priority over dependable export sales and opportunity export sales.

Three Tiers of Service

It would appear uncontested in this proceeding that there are distinct tiers in terms of the reliability of service provided to domestic firm sales, dependable export sales and opportunity export sales.

In coming to this conclusion, it is important to note that exports do not receive the same level of service reliability as firm domestic load.⁴⁶

Manitoba Hydro does not carry planning reserve margins for exports, even firm dependable exports,⁴⁷

Export contracts, even firm exports, have provisions that can be activated when continuing to serve exports would jeopardize Manitoba Hydro's domestic firm load.⁴⁸

As noted by Manitoba Hydro:

*Manitoba Hydro builds to serve Manitobans in the least-cost way that we can. **Manitobans have priority to all energy.** The service level provided to Manitoba customers is greater than that as a result compared to what is provided to dependable export customers.*⁴⁹ (emphasis added)

In addition, there is a difference between firm and opportunity exports in terms of the service provided:⁵⁰

While Manitoba Hydro includes firm export commitments in its planning process for generation and transmission, it does not do so for opportunity exports.⁵¹

46 *Ibid*, p 336, lines 4-6.

47 *Ibid*.

48 *Ibid*, p 336, line 6-10.

49 Cost of Service Hearing, Transcript September 7, 2016, Manitoba Hydro, p 48.

50 Cost of Service Hearing, Transcript, September 8, 2016, Mr William Harper, p 336, lines 15-17.

51 *Ibid*, p 336, lines 17-20.

Opportunity exports are curtailed before firm exports.⁵²

Recommended Finding 4

In terms of triggering major capital expenditures projects such as Keeyask and Conawapa, there are distinct levels of responsibility that can be attributed to domestic need, firm sales from dependable power and opportunity sales

Contributions to the Advancement of Generation

In addressing this issue, the Coalition is mindful of the challenges with terms.

The Coalition will use the term dependable export sales to identify those sales sourced from dependable power. They will use the term firm sales sourced from dependable power to identify what is generally considered to be the premium project in term of lower risk and higher value.

The Coalition will use the term opportunity sales to refer to those products sourced from opportunity power.

The Coalition expects that every witness in this proceeding would agree with the suggestion that both Dependable and Opportunity sourced exports have contributed to the economic case for the advancement of recent major generation projects.⁵³

For certain witnesses, that in essence ends the deliberations. For those individuals, it may be enough to identify any causal link.

From the Coalition's perspective, such an analysis does an injustice to the concept of cost causation.

In addition to the cost of service perspective canvassed in Finding 3, the equally important economic questions are:

among the three types of sale (domestic firm, dependable export, opportunity export) is there evidence to suggest that certain sales are significantly more important in triggering the decision to build or advance major projects?

⁵² *Ibid*, p 336 lines 23-24.

⁵³ See for example, Cost of Service Hearing, Transcript September 8, 2016, Mr William Harper, p 334, lines 20-22: "In the recent generation decisions related to Wuskwatim and Keeyask both firm and opportunity exports played a role in those economic evaluations." See also Cost of Service Hearing, Transcript September 8, 2016, Mr William Harper, p 615-616: "MR. WILLIAM HARPER: Well, I think --I think when you advance plant, you'll get opportunity -- you'll get both dependable and opportunity sales sooner. And depending upon -- depending upon the pricing that -- so then those -- that's going to be part of the economic evaluation that goes into whether or not it makes sense to advance the plant. . . . I don't have any evidence that suggests that opportunity sales weren't part of that overall -- since they were part of the total, weren't part of the overall consideration and therefore didn't influence -- didn't influence the decision."

if so, does this suggest that a higher ratio of costs should be assigned to that sale?

In the Coalition's perspective, it is reasonable to conclude that:

the existence of domestic need and firm export contracts sourced from domestic power are essential pre-conditions to the triggering of major current and future projects

There is significant support for this in the NFAT Report where the PUB cited both domestic need and firm export sales sourced from dependable power as critical factors in its recommendation that Keeyask be approved:

*there are good reasons to proceed with the Keeyask Project at this time in light of **the need for new resources**, construction expenditures undertaken to date, the socio-economic and environmental benefits of the project, and the **important commercial relations** that Manitoba Hydro has established both with First Nations and **through its export contracts**. Moreover, there are associated reliability benefits with the 750 MW Transmission Interconnection Project (emphasis added)⁵⁴*

The critical role played by firm export sales sourced from dependable power in triggering the recommendation to Stop or Go in terms of new generation can also be seen in the Board's rationale not to support Conawapa at this point in time:

Considering the uncertainty of future export revenues, specifically those that flow from Conawapa, all of these factors add up to heightened and unacceptable risk associated with the Preferred Development Plan. The Panel considers it critical that Manitoba Hydro achieve firm bilateral sales, at premium prices, for its non-contracted surplus (dependable) energy⁵⁵

In support of its conclusion that there are material distinctions in the cost relationship between generation and transmission, the Coalition notes:

in the cases of both Wuskwatim and Keeyask, the additional investment supported by a kilowatt hour of exports **is less than** the basic investment required just to support domestic load⁵⁶

it is evident from both the Wuskwatim and the Keeyask NFAT reviews that a kilowatt hour of firm exports has a greater impact on the business case than the kilowatt hour of opportunity exports in terms of both the associated risks and the associated prices⁵⁷

The Coalition also accepts the uncontested assertion of Manitoba Hydro that:

system planners do not expect that opportunity sales revenues in Limestone, Wuskwatim, and Keeyask to make a full contribution to embedded cost of those

54 NFAT, *supra* note 19, p 34

55 *Ibid*, p 117

56 Cost of Service Hearing, Transcript September 8, 2016, Mr William Harper, p 335, lines 2-5

57 *Ibid*, p 335, lines 9-14

facilities,⁵⁸ and

that investments related to opportunity sales were not considered in the economic business cases used to support projects that pre-dated Limestone⁵⁹

Bowman (COSS) – the full range of exports drive Hydro economics

Mr. Bowman has not expressly supported a tiered level of cost allocation to the domestic firm, dependable export and surplus export sales. He notes that:

absent the full range of export revenues being credited to help pay for the high capital costs of adding hydro plants, these plants would not have been developed in their current form⁶⁰

Bowman (NFAT) – identifies firm sales from dependable power as a key trigger

However, in his NFAT evidence, Mr. Bowman was quite clear in identifying firm export sales sourced from dependable power as the key trigger in his decision to support Keeyask⁶¹ and not to support Conawapa.⁶²

During cross examination, Mr. Bowman confirmed the existence of locked in firm contracts sourced from dependable power as an essential precondition for reducing risk and triggering major new generation:

MR. BYRON WILLIAMS: And I'm correct in suggesting that, in terms of that window of opportunity, your advice to Manitoba Hydro was that all reasonable efforts should be directed towards locking in fixed price contracts for Conawapa output in the MISO market or elsewhere, agreed?

MR. PATRICK BOWMAN: Well, sure. **I don't think anybody would say build 1,300 megawatts on spec.**

MR. BYRON WILLIAMS: And, in your view, securing a greater quantity of Conawapa's output under firm contracts would materially improve the economics of Conawapa,

58 Cost of Service Hearing, Transcript September 7, 2016, Manitoba Hydro, p 50: "The expectation is that they would cover variable cost and make some partial contribution toward fixed cost."

59 *Ibid*, citing MH Rebuttal Evidence, p 335, lines 15-19.

60 Pre-Filed Testimony of Mr Patrick Bowman, June 10, 2016, p 35.

61 NFAT, Pre-Filed Testimony of Mr Patrick Bowman, February 28, 2014, p 4-7: "As a result, based on the results of this financial analysis, it appears Manitoba Hydro should take up the Minnesota Power (MP) export agreement (including its requirement for Keeyask for 2019 which requires construction contract awards in the near term) and proceed with at minimum Pathway #3 (as represented by Plan 4 (K19/Gas/250MW)."

62 *Ibid*, at p 4-10: "Securing a greater quantity of Conawapa's output under firm contracts improves the economics of Conawapa (e.g., the NPV of benefits under Plan 14 (PDP) exceeds that under Plan 15 (K19/C26/750MW)) 57. As a result, before 2018 all reasonable efforts should be directed towards locking in committed long-term export contracts for all dependable output possible."

agreed?

MR. PATRICK BOWMAN: Well, it would materially improve the business case of Conawapa at a point in time. Whether it ultimately would improve the -- the economics would depend on what the prices you locked in versus those you might have gotten if you waited, but it would **take away significant uncertainty**, which is -- which is the issue you have to deal with at the point you make the decision⁶³ (emphasis added)

Clear Evidence of three distinct tiers

While there can be no doubt that domestic firm, dependable export sales and opportunity export sales all contribute to the business case for new generation, that does not end the inquiry.

There can be no doubt from the NFAT Report, the evidence of Mr. Harper and even the NFAT evidence of Mr. Bowman that domestic need and firm export sales sourced from dependable power were integral to the decision to proceed with Keeyask and to reject Conawapa.

MB Hydro also has clearly established that opportunity sales play a lesser role in the historic and current business case that domestic need and dependable sales.

Recommended Finding 5

There has been a material change in circumstances related to the relative prices earned by dependable and opportunity sales since Board Order 117/06 as well as in expectation for their future prices

The Original Decision to have one export class rather than two

Many elements went into the original decision of the PUB to reject the two export class concept.

The witness for MIPUG purports to present a history of the export class in Appendix B to his June 10, 2016 evidence. Largely (or perhaps totally) absent from this history was any discussion of the weight given by the Board in its deliberation to the relative price earned by dependable export sales as compared to opportunity export sales.

But it is clear based on *Order 117/06* that both the relative price earned through opportunity sales and the value/magnitude of those sales were key considerations for the board.

Indeed, the second factor cited by the PUB in rejecting two export classes was:

*b) data provided by MH indicated that **firm** export sales resulted in **lower unit export prices than did opportunity export sales** during fiscal 2005/06; it would appear that MH's firm and opportunity export sales have been **achieving similar average sales***

63 Cost of Service Hearing, Transcript September 8, 2016, Mr Patrick Bowman, p 499-500

*prices, though opportunity sales are more volatile to both volume and price*⁶⁴
(emphasis added)

After summing up a number of factors, the first conclusion offered by the Board was that:

*Accordingly, the Board finds it **inappropriate** to divide export sales into two classes, allocating **only variable costs** against one of the classes, the opportunity class, which has recently **represented almost 50% of export sales** (emphasis added)*⁶⁵

As confirmed during cross examination with Mr. Bowman:

on peak dependable sales are now significantly more valuable than on peak opportunity sales

the average price per KW.h for on peak opportunity sales is less than half what it was in 2005/06.⁶⁶

A table presented in IR Coalition/MH 1- 58 a) aptly demonstrates the material change in circumstances from *Order 117/06*.

TOTAL ON-PEAK SALES						
	DEPENDABLE ON-PEAK SALES			OPPORTUNITY ON-PEAK SALES		
	<u>GWh</u>	<u>CAD \$M</u>	<u>AvgPrice</u>	<u>GWh</u>	<u>CAD \$M</u>	<u>AvgPrice</u>
2005/06	3,742	228	60.62	3,142	245	72.73
2006/07	3,510	211	59.69	1,972	135	66.26
2007/08	3,612	198	54.56	2,212	162	66.19
2008/09	3,702	221	59.4	1,802	153	71.78
2009/10	3,073	180	58.15	2,497	84	31.14
2010/11	3,051	164	53.58	2,268	76	31.90
2011/12	3,240	164	50.38	1,952	59	28.76
2012/13	3,178	166	51.87	2,165	69	29.87

64 Manitoba Public Utilities Board, *Board Order 117/06*, p 49

65 *Ibid*, p 51. The Board went on to say: "On an overall system usage basis, firm and opportunity exports employ upwards of 30% and 40% of MH's generation and transmission capacity. This represents a large capacity devoted to exports, and exports, whether defined as firm or opportunity, thus should be allocated substantial portions of embedded costs. The Board has reached a similar conclusion considering generation and transmission assets on an incremental basis."

66 Cost of Service Hearing, Transcript September 9, 2016, see for example p 590 in discussing the 2011/12 year: "MR. PATRICK BOWMAN: Right. That's --that's why it's -- this actually understates the degree of -- of likely market change, because you had a lower volume, which means you should have been able to target some of the best prices available, which means -- and which the -- the twenty-eight (28) if anything is -- the twenty-eight seventy --seventy-six (28.76) shown there is the average price for that year **probably understates the degree to which the market had dropped** compared to '05/'06." [emphasis added]

2013/14	2,930	168	56.82	2,492	82	36.95
2014/15	2,735	172	62.62	2,264	84	35.98

Coalition/MH 1-58 a)

Recommended Order flowing from Findings 3, 4 and 5

The export class(es) should continue

A threshold question relating to the export class is whether a export class should be continued.

Although Mr. Bowman has wavered at times, it is the Coalition's understanding that all experts examined by Mr. Peters in his September 9, 2016 cross examination endorsed the export class concept with the proviso being that an export class speaks to the fairness of the allocation of costs not to the economic or business case for exports or the advancement of projects.⁶⁷

The Coalition concurs. It notes that:

- Manitoba Hydro is increasingly connected to the US marketplace and export sales continue to constitute a significant and unusually high portion of its revenues compared to non hydro-electric firms
- while Hydro does not have a stellar record in the forecast of export revenues, there is evidence to suggest export revenues may grow as a percentage of total revenues⁶⁸
- an export class provides a transparent and evidence based mechanism in which to discuss the implications for fairness and equity between classes of export revenues

A Cost of Service methodology should reflect the current realities of the corporation and be sustainable over time. The cost of going back to a simpler approach is outweighed by the benefits of maintaining an export class(es)

The Coalition has examined the issues relating to the export class from both a cost of service perspective and economic perspective. It is satisfied that there has been a material change in circumstances since *Order 117/06*.

It observes a material change since *Order 5/12* in that we have significantly more insight into cost causation issues by virtue of the 2014 *NFAT Report*.

⁶⁷Cost of Service Hearing, Transcript September 9, 2016, p 677 - 682

⁶⁸Pre-filed evidence of Mr. William Harper, June 10, 2016, p. 27

There should be two export classes with differential allocation of costs

Based on both the cost of service perspective (level of service) and the economic perspective, it is clear there are three distinct tiers between domestic firm, dependable export and opportunity export.

Once that threshold is crossed a power case for recognition of this distinction has been made. As stated by Hydro:

*We believe that **cost distinction** between dependable and opportunity sales as a means to allocate cost to the export class **i[s] warranted**. It recognizes the very different nature, service levels, and therefore cost distinction of export sales.*

That is a fundamental part of what we do in cost of service. This is our job as cost ana -- analysts. To not recognize dependable and opportunity sales differences in cost of service would be similar to ignoring distinctions between the – service-level distinctions between a residential customer and an industrial customer⁶⁹

There can be no doubt that in terms of reliability of service domestic firm sales sit atop the hierarchy, followed by dependable sales then opportunity sales.

While all three sales were factors in the Keeyask and Conawapa business cases, the central lesson from the 2014 NFAT is that domestic need and firm export contracts sourced from dependable power are the key triggers for a project to proceed.

In addition, no one has challenged Mr. Harper's suggestion that:

in the cases of both Wuskwatim and Keeyask, the additional investment supported by a kilowatt hour of exports **is less than** the basic investment required just to support domestic load

Fully allocating generation and transmission costs to the opportunity export class materially overstates the cost of that service and understates the costs that should be assigned to domestic firm customers.

Similarly, fully allocating generation and transmission costs to the dependable export class materially overstates the cost of that service and understates the costs that should be assigned to domestic firm customers.

In an idealized world, it might be desirable to apportion the highest level of generation and transmission (G and T) costs to domestic with a smaller allocations to dependable and an even smaller allocation to opportunity.

However, no practical method of accomplishing this has been presented. Accordingly, the Coalition supports the best available alternative which is the assignment of full G and T costs to dependable exports and the assignment of variable costs to opportunity sourced exports.

⁶⁹ Cost of Service Hearing, Transcript September 7, 2016, Manitoba Hydro, p 47-48.

As noted by CA in its evidence and information responses there is regulatory precedent for this practice.⁷⁰

Recommended Finding 6

Legislative and policy commitments should continue to be reflected in the Cost of Service methodology

The Legislative and Policy Mandate for the Direct Assignment of Uniform Rates and the AEF is clear

The policy and legislative roots for the direct assignment of uniform rate costs and the AEF to export revenue do not seem to be in dispute.

No party contested the evidence of Mr. Harper that:

At the time the legislation was introduced, the government of the day indicated that the ability to implement uniform rates was due to the benefits generated by export sales, and that it was not asking Manitobans to pay more.⁷¹

In the case of the Affordable Energy Fund, this too is a statutory requirement which legislation specifically states is to be funded from export revenues which also funds non-electric efficiency initiatives⁷²

Nor is the mathematical impact of the uniform rate challenged. In cross examination of Mr. Bowman on September 9, 2016⁷³, the Coalition established that the impact of that policy choice was to take residential consumers in the Winnipeg and rural residential sub-classes who were close to unity within the 95 – 105 zone and place them in an aggregated group with Northern Consumers that was beyond the ZOR at the time.

Notwithstanding the relatively higher cost to serve rural, remote and less densely populated communities, the legislation expressly prohibits the classification of customers based solely on the region of the province in which they are located or on the population density of the area in which they are located.⁷⁴

70 See for example, Cost of Service Hearing, Transcript September 8, 2016, CA, p 285 where they set out a COSS for Georgia Power Company as an example of assigning fixed costs just to dependable exports

71 Cost of Service Hearing, Transcript September 8, 2016, p 339, lines 16-20. See also Coalition Exhibit 31, Legislative Assembly of Manitoba, June 18, 2001, p. 97: “*We are in the fortunate situation where we can bring forward a universal, uniform rate because we have the benefits of surpluses generated through export sales, so we are not asking other Manitobans to pay more to provide this uniform rate . . . [we are] moving the top rate or the higher rates to the lowest rate and paying for that through the surpluses we generated through export sales.*”

72 Cost of Service Hearing, Transcript September 8, 2016, p 339, line 25 - p 340, line 4

73 Cost of Service Hearing, Transcript September 9, 2016, p 610-612

The resultant PUB Order was the proper mechanism to give effect to the legislative intent and policy commitment. To similar effect, the assignment of AEF costs to export revenues is the logical outcome of an express legislative intent.

Some witnesses have suggested that policy and legislative directives have no place in a cost of service study.

Such a submission ignores the reality that the Public Utilities Board is a creature of statute and is expressly authorized to take into account:

*any compelling policy considerations that the board considers relevant to the matter*⁷⁵

There is no support in the *CCPRAA* or *PUB Act* for any suggestion that somehow cost of service studies are immunized from legislative directives and policy considerations.

Recommended Order flowing from Finding 6

Consistent with legislative and policy intent and the express jurisdiction of the PUB to take policy considerations into account, the Coalition recommends that the direct assignment of uniform rate and AEF costs to the export class continue.

Recommended Finding 7

There is significant evidence supporting the conclusion that the current allocation methodology for generation fairly captures both energy and capacity costs. The theoretical assertion that capacity costs are not fully captured is not borne out by the record.

The Utility of the Weighted Energy Allocator

Most (and perhaps all) witnesses who have testified on the subject appear to be supportive of the use of the weighted energy allocator as a tool for the allocation of generation costs.

⁷⁴*Manitoba Hydro Act, supra* note 2, at s 39(2.1): Equalization of rates, The rates charged for power supplied to a class of grid customers within the province shall be the same throughout the province; s 39(2.2): Interpretation, For the purpose of subsection (2.1), (a) grid customers are those who obtain power from the corporation's main interconnected system for transmitting and distributing power in Manitoba; and (b) customers shall not be classified based solely on the region of the province in which they are located or on the population density of the area in which they are located.

⁷⁵*CCPRAA, supra* note 6, s 26(4): Factors to be considered, hearings, In reaching a decision pursuant to this Part, The Public Utilities Board may (a) take into consideration (i) the amount **required** to provide sufficient moneys to cover operating, maintenance and administration expenses of the corporation, . . . (iv) **reserves** for replacement, renewal and obsolescence of works of the corporation, (v) any other reserves that are **necessary** for the maintenance, operation, and replacement of works of the corporation, . . . (viii) **any compelling policy considerations that the board considers relevant to the matter** (ix) any other factors that the board considers relevant to the matter. [emphasis added]

Among the factors underlying their support for the concept are:⁷⁶

it recognizes the reality that energy is central cost driver in terms of hydraulic generation facilities

it captures the economic value of resources

it reflects how Hydro manages and operates its largely hydro-electric system

As observed by Manitoba Hydro, the weighted energy allocator achieves efficiency and equity rate-making goals:

*the weighted energy allocator incorporates **both efficiency and equity** rate-making goals within the context of embedded Cost of Service, which assigns greater responsibility to those who use more costly energy at peak periods, and essentially a meter -- a measure of fairness in the context of Cost of Service⁷⁷*

With the possible exception of Mr. Bowman, all witnesses in this proceeding have agreed that using the surplus energy program (which largely reflects market price) enables the capture not only of energy costs but the implicit capture of some capacity costs.⁷⁸

This holistic approach is well explained by Mr. Harper:⁷⁹

Rather than attempting to classify generation costs as demand-related and energy related and then allocating each of them separately, Manitoba Hydro uses the prices it charges under its surplus energy program which largely reflect market prices to establish the relative value of the kilowatt hour sold in different periods, and then to weight each customer class's energy in each of those periods for purposes of allocating generation costs

The Gap between Theory and Fact

Based on the advice of CA Consulting,⁸⁰ Manitoba Hydro has explicitly introduced a capacity adder in the weighted energy allocation factors determined using the SEP prices.

76 Cost of Service Hearing, Transcript September 7, 2016, Manitoba Hydro, p 35: "The weighted energy allocator approach recognizes the value of energy in different seasons and time of day. In essence, it captures -- it **captures the economic value of resources**. And this is particularly important, but decisions customers make to consume impact rates charged, particularly -- particularly recognizing that those decisions impact Manitoba Hydro's opportunity cost, which is often valued by the export market. We have taken that approach because it places **a heavier emphasis on energy as a cost driver** of our dominant hydraulic generation facilities that are put in place to reduce more, essentially, secure fixed energy costs. It **reflects how Manitoba Hydro plans and operates** our largely hydraulic system." [emphasis added]

77 *Ibid*, p 36.

78 Cost of Service Hearing, Transcript September 9, 2016, CA, p 775: "MR. BOB PETERS: And that insertion of the weighted energy allocator implicitly classifies and allocates some costs by demand? MR. ROBERT CAMFIELD: Yes."

79 Cost of Service Hearing, Transcript September 8, 2016, Mr William Harper, p 356, line 22 – p 357, line 5. See also p 357, lines 6-9.

80 CA Presentation, September 8, 2016, Slide 17.

During their presentation CA Consulting,⁸¹ asserted that circumstances have changed since 2006 such that there is a need to explicitly include a capacity adder. The specific circumstances that they point to are:

- MISO’s introduction of capacity markets starting in 2009 and
- The change in market conditions (e.g. decreased natural gas prices and improved supply/demand conditions) that occurred at approximately the same time.

However, there is strong agreement among Intervenor witnesses other than Mr. Bowman that the need for a capacity adder has not been substantiated, that it would lead to double counting of capacity⁸² and that the allocator proposed is grossly out of proportion to market results.

Perhaps the best evidence that the facts do not support the theory advanced by CA Consulting, is Table 2 which was prepared by Mr. Harper to compare peak period weights in PCOSS06, PCOSS08 and PCOSS14.

Contrary to the CA theory, and even without the inclusion of the capacity adder, the values have actually increased.⁸³ This table was not challenged in rebuttal evidence or in cross examination:

Table 2

COMPARISON OF PEAK PERIOD WEIGHTS USED FOR GENERATION ALLOCATION			
	PCOSS06 ¹	PCOSS08 ²	PCOSS14- Amended ³
Spring Peak	2.684	2.513	3.657
Summer Peak	3.114	3.258	4.560
Fall Peak	2.229	2.624	3.860
Winter Peak	3.286	3.406	4.659
Notes: 1) PUB-MFR 7 2) Coalition/MH I-53 b) 3) PCOSS14-Amended Model – with Fall/Winter Correction and No Capacity Adder			

In terms of methodology, there are two fundamental concerns:

81 Cost of Service Hearing, Transcript September 8, 2106, p 304-307.

82 Cost of Service Hearing, Transcript September 9, 2106, Mr William Harper, p 729 and Mr Paul Chernick, p 730.

83 Cost of Service Hearing, Transcript September 8, 2016, p 358, lines 12-19 and p 359, lines 19-24: “the peak period weights in PCOSS14 are higher in all four (4) periods than the weights in the earlier cost of service studies that there's been -- and that there's been no deterioration since the introduction of the MISO capacity market in 2009.”

Hydro has included a capacity adder in years prior to when the MISO market for capacity was actually created⁸⁴

the price of capacity in these markets has been extremely low - well below the CRP reference value that Manitoba Hydro bases the adder on⁸⁵

In a pithy quote that deserve extensive reproduction, London Economics questions the analytically unsound mixing of market and non-market based solutions represented by the capacity adder proposal⁸⁶

we generally agree with the use of the weighted energy allocator. However, it's striking how often people like to use market-based solutions when they produce the results that they like, and then assume market failure when the market produces results that they do not like.

And so there **is a concern about a mix-and-match approach** in which we say . . . And so we're going to accept Mid-Continent ISO energy prices, but we're going to throw out their capacity prices and we're going to add our own.

And so when we look at the comparison between the current capacity market clearing prices in-- in the Mid-Continent ISO, and we compare that to the proposed capacity adder here in Manitoba, we – we do have some concerns

More succinctly, Mr. Chernick observes:

Christensen finds the use of the CRP prices to be **plausible**. I **don't know where they get that from**.⁸⁷ (emphasis added)

Very recently, Manitoba Hydro provided an Undertaking response. While cross examination of the Undertaking is not possible at this late date, we would caution against reliance on that document for a number of reasons.⁸⁸

Recommended Order flowing from Finding 7

It is recommended that the capacity adder be rejected and the weighted energy allocator be affirmed as the primary tool for generation allocation at this time.

84 Cost of Service Hearing, Transcript September 8, 2016, p 358, lines 1-7.

85 *Ibid*, p 358, lines 8-11

86 Cost of Service Hearing, Transcript September 8, 2016, London Economics International (LEI), p 400-401.

87 Cost of Service Hearing, Transcript September 8, 2016, Mr Paul Chernick, p 472.

88 The off-peak prices in the Undertaking do not match (are higher than) the off-peak values in the corrected model. Since the CA analysis contains no reference to the shoulder period and does not indicate how it was handled it is suspected that it is the treatment of the shoulder period that gives rise to the difference but CA provides no explanation. The on-peak/off-peak ratios are much lower than in the PCOSS because CA's offpeak prices are higher than those in PCOSS14-amended/corrected. CA does not define the "Peak" and "Off-peak" periods. Interestingly, MH uses an average of 166.9 peak hours per month in its calculations which gives 2,002.8 peak hours in the year – not 2,064.

The evidence does not support this theory that conditions have changed sufficiently that there is a need to include a capacity adder in the calculation of the relative energy weightings:

- First, the capacity prices in the MISO markets have been extremely low - orders of magnitude less than the CRP value Manitoba Hydro proposes to use as its capacity adder
- While natural gas prices have fallen as have opportunity export prices in the MISO market, the differential between peak and off-peak prices which is the critical input to the weighted energy allocation factors has not decreased. Indeed the differential has increased

As result, neither Manitoba Hydro nor CA Consulting have provided sufficient factual evidence to support the inclusion of a capacity adder, particularly one based on the CRP discount.

Recommended Finding 8

DSM plays a critical role in least cost integrated resource planning and provides a benefit to all consumers including those who subscribe to the program and those who do not

DSM and Least Cost Planning

In its NFAT Report, the PUB underlined the importance of integrated resource planning and the role that DSM plays in the planning process:⁸⁹

- DSM is a powerful tool, as it can defer the need for new generation, and has the potential to be as economic, if not more economic, than new generation

Noting that in the NFAT, DSM measures were not equally weighted with other energy options, the PUB emphasized that DSM must be evaluated as a stand-alone resource in an integrated resource planning process.⁹⁰

Cost Allocation should recognize the true importance of DSM

In terms of DSM, a a relatively stark choice has been presented in this proceeding.

By accepting the advice of Mr. Harper, we can reaffirm the commitment to the integral role of DSM in integrated resource planning.

Alternatively, we adopt the position of Manitoba Hydro and Mr. Bowman and implicitly give lesser weight to the importance of DSM as an energy option.

⁸⁹ NFAT, *supra* note 19, at p 21: Manitoba Hydro, formerly a leader in DSM initiatives, has been surpassed by a number of other jurisdictions.

⁹⁰*ibid*, p 91.

The Coalition endorses Mr. Harper's position notwithstanding the relatively significant adverse effect it will have on its RCC coverage.⁹¹

It recognizes the adverse effect on consumers of Manitoba Hydro's failure to practice modern integrated resource planning in the past. It believes the integral nature of DSM to least cost planning must be reaffirmed.

A compelling case by Mr. Harper

Relying on the NFAT guidance of the PUB, Mr. Harper has made an eloquent case for the allocation of DSM to generation, transmission and distribution costs rather than to specific classes.

He points out that

DSM plans target savings opportunities that would not otherwise be undertaken are selected on the basis of their overall economics including their ability to contribute to a least-cost plan for Manitoba Hydro⁹²

Manitoba Hydro has no obligation to provide DSM programs and it elects to do so because it benefits the system overall⁹³

Hydro's DSM portfolio passes the RIM test which means that resource savings from DSM are equal to or exceed the sum of the utilities loss revenues plus any costs for those DSM programs⁹⁴

Customers participate, not as a result of natural market forces, but because they are encouraged to do so⁹⁵

Without past DSM investments, there would be shortages now⁹⁶

Not all customers within a customer class can actually participate in a classes DSM programs. But they still benefit just as non-participating customers do from other classes⁹⁷

91 See Table 7 in Mr. Harper's June 10, 2016 evidence suggesting a -1.3 percent impact on the RCC for residential customers.

92 Cost of Service Hearing, Transcript September 8, 2106, Mr William Harper, p 341, lines 6-12.

93 *Ibid*, lines 20-22.

94 *Ibid*, p 343, lines 16-20.

95 *Ibid*, p 341, lines 13-19: "This is a fundamentally different circumstance from the more traditional utility service offering where a customer seeks service from Manitoba Hydro, and it's the Utility's obligation to provide the service and incur the costs."

96 *Ibid*, p 342, lines 13-15.

97 *Ibid*, p 344, lines 2-4.

Has Hydro changed is DSM argument?

Both Manitoba Hydro and Mr. Bowman prefer to assign DSM costs to the specific class the program is designed for.

Hydro's initial rationale per the May Workshop was that their approach better matched cost causality. They now appear to be changing their rationale to focus on the impacts on participating and non-participating customers.⁹⁸

London Economics takes issue with Hydro's perspective on fairness. It argues that:

it is inappropriate for the cost of DSM programs to be attributed to the participating customer classes, and indeed we believe that this leads to a potentially pernicious outcome in that a customer class could be a net provider of system benefits to other customer classes but be required to pay for all the costs of those system benefits entirely itself⁹⁹

Some supportive words for the Coalition's position from Ms Derksen and Mr. Bowman

While Manitoba Hydro has adopted a specific position, the evidence of Ms Derksen from the workshop offers significant analytical support to Mr. Harper's perspective.

She observes that

There is also a good argument to be made or that could be made that DSM may be viewed as a substitute for generation and transmission. And possibly also for --for distribution¹⁰⁰

Everyone benefits, all customers benefit, notwithstanding the specific customers that partake in the programs themselves, but because all customers benefit from the fact that you're able to defer generation and transmission¹⁰¹

She also observes that

We undertake DSM . . . -- **as the least cost option** in terms of providing electrical service to Manitobans, and in the long term we would expect that that **generates lesser costs to the customers system wide** (emphasis added)¹⁰²

To similar effect, it is worth noting Mr. Bowman's NFAT evidence suggesting that "every plan economically benefits from adding DSM up to Level 2 DSM."¹⁰³

98 Cost of Service Hearing, Transcript September 7, 2016, p 57-58 and p 165-167.

99 Cost of Service Hearing, Transcript September 8, 2016, LEI, p 402.

100 *Ibid*, at p 645.

101 *Ibid*, at 646.

102 Cost of Service Hearing, Transcript September 7, 2016, Manitoba Hydro, p 163.

103 Bowman, NFAT Supplementary Pre-Filed Testimony, May 1, 2014, p 1-7 and see also p 1-4.

Recommended Order flowing from Finding 8

The Coalition recommends that DSM be allocated to G, T and D rather than assigned to specific customer classes.

Recommended Finding 9

While the allocation of embedded costs of service should continue to be a core element of the cost allocation process, marginal cost of service studies can provide important insight into larger questions such as the equity of the allocation of Net Export Revenues, the appropriate Zones of Reasonableness and the ultimate statutory question of whether rates are just and reasonable and not unjustly discriminatory

A Marginal Cost of Service Study can provide important insight on issues such as the allocation of net export revenues

From a neo-classical economic perspective, setting prices at their marginal cost is generally recognized as facilitating efficient market outcomes and producing economic welfare¹⁰⁴

Cost of service literature recognizes two major types of cost of service studies - embedded and marginal.¹⁰⁵

The Manitoba Public Utilities Board has recognized that additional information relating to marginal costs will add insight into the cost allocation dialogue:

*While the base COSS model will continue to rely on prospective historic embedded costs, information **reflecting marginal costs** and the value of carbon emissions representative of domestic energy consumption will also be considered¹⁰⁶*

CA Consulting has advised Manitoba Hydro that “Marginal costs are a valuable addition to cost of service and rate design”¹⁰⁷ although it does not recommend the replacement of traditional embedded cost-based methods with marginal cost-based methods.¹⁰⁸ Among the applications of such a tool, it identifies:

guidance in determining target class RCCs and the acceptable range for RCCs. For instance, a particular rate class with marginal cost distinctly different from other rate classes’ marginal cost and from its embedded cost might warrant variance from the

104 Cost of Service Hearing, Transcript September 7, 2016, Manitoba Hydro, p 105.

105 *Ibid*, p 113.

106 Manitoba Public Utilities Board, *Board Order 117/06*, p 5/6.

107 Cost of Service Hearing, Transcript September 7, 2016, Manitoba Hydro, p 121.

108 CA, “Review of Cost-of-Service Methods of Manitoba Hydro”, MB Hydro Submission, Appendix 5, p.36: CA identifies a number of utilities that have advanced marginal cost-based allocation of financial costs to regulators. It argues at p 34 that “Marginal cost-based pricing is generally recognized as the superior approach to obtaining efficient use of resources. Thus, marginal cost, as the basis for prices, fully satisfies the efficiency principle, a main criterion for both COS and the design of retail utility tariffs.”

traditional RCC target.¹⁰⁹

While focusing on an embedded cost of service approach, Mr. Harper has noted that cost of service methodologies that **incorporate marginal costs** in establishing cost responsibility and/or developing allocation factors are more likely to produce results that are compatible with the efficiency objective of ratemaking¹¹⁰ (emphasis added)

Using a marginal cost benchmark which admittedly is not fully reflective of the results of a marginal cost of service study, residential customers' embedded costs in 2009/10 were about 90 percent of the marginal cost at that particular point in time and large industrials are at about 50 percent of the estimated marginal cost of the benchmark.¹¹¹

Manitoba Hydro agrees there are advantages to a preparing marginal cost of service study but requires clarification from the PUB in terms of the framework for the study.¹¹²

Hydro has not gone back to the PUB to seek additional guidance. To date, it has not sought input from Intervenor who have previously expressed an interest in marginal cost of service studies.¹¹³

CA Consulting has indicated it typically takes three months to prepare a marginal cost of service study.¹¹⁴

Recommended Order Flowing from Finding 9

Manitoba Hydro be directed to:

meet with intervenor representatives and the PUB regarding issues related to undertaking a marginal cost of service study by January 15, 2016

file a draft term of reference for a marginal cost of service study by March 1, 2016

file a marginal Cost of Service study with the Board and Intervenor by October 1, 2017

¹⁰⁹ *Ibid*, p 36

¹¹⁰ Evidence of the Coalition, Mr William Harper, June 10, 2016, p 18-19.

¹¹¹ Cost of Service Hearing, Transcript September 7, 2016, Manitoba Hydro, p 126.

¹¹² *Ibid*, p 128-129.

¹¹³ *Ibid*, p 128-129. It should be noted that the Coalition and GAC are likely interested in Marginal Cost of Service studies for very different reasons. The Coalition sees marginal cost of service studies as an important analytical tool to supplement an embedded cost of service study. They may provide insight into questions of equity as well as the express statutory purpose of promoting efficiency. GAC may be more interested in such studies for the purposes of rate design. Given inelastic demand for residential consumers and challenges with the implementation of inverted rates in Manitoba and BC, the Coalition is less confident that inverted rates will prove an effective policy tool for residential consumers especially low income residential consumers.

¹¹⁴ Cost of Service Hearing, Transcript September 8, 2016, CA, p 521-522.

report back to the PUB by January 15, 2018 on the results of the Marginal Cost of Service Study

Recommended Finding 10

Based on the current record and recognizing the absence of the marginal cost of service study, the allocation of Net Export Revenue on the basis of Generation, Transmission and Distribution should continue

Keeping Track of the Net Export Revenue Debate

The Coalition has found it challenging to monitor issues related to the allocation of Net Export Revenue.

The task is daunting. There are as many or more different perspectives as there are Intervenors. The analytic playing field is rough and changing.

The challenge in 2006 was the distorting effects flowing from the allocation of significant net export revenue over a narrow rate base.

In 2014, Manitoba Hydro supported by MIPUG “doubled down” on the export market advancing Keeyask to secure the Minnesota Power sale as well as a much desired US interconnection.

Going forward, there is significant uncertainty relating to the prospects of the market and the costs of significant capital projects. Negative net export revenue is not beyond the realm of possibility although Hydro remains of the view that its market prospects will improve over time.

For the purpose of addressing this issue, the Coalition has asked:

What utility functions carry the risks associated with the export market and created the opportunity to explore the export market?

What is a principled way consistent with the statutory mandate of the PUB to allocate net export revenues?

Will removing the export class make the problem go away?

What utility functions carry the risks associated with the export market and created the opportunity to explore the export market?

During the cross examination portion of the hearing, Board Member Grant asked:

*if I'm bearing some particular risk then . . . that should be reflected on the cost side and maybe on both. Why aren't they equivalent? Why – why aren't the cost of service measure and the allocation of revenue the same?*¹¹⁵

Our client was not particularly enamoured by the response of CA Energy to what it considered to be a very intriguing question.

From our client's perspective, risk is managed through retained earnings which is augmented through net income. The higher net income required in order to maintain an adequate debt to equity ratio under the plans that call for advancement and capital intensive hydro is not borne strictly by G&T but also by D because the net income allocator is rate base.¹¹⁶

This applies particularly in the earlier years before Keeyask comes into service and is therefore not even in the rate base. Net income is allocated to all functions G/T/D with no special recognition that G & T may have more risk due to exports. From the risk perspective, one could suggest that G/T/D should share in NER.

This approach also would be consistent with what Mr. Harper calls the NFAT promise:

Manitoba Hydro's approach is also consistent with what I call the NFAT promise, which was made in both the Wuskwatim and the Keeyask reviews, which was investments in -- to increase exports would lead to lower costs and rates for all customers over the long-term, which -- which suggested all customers should share equa -- equally in -- in whatever low -- lower rates arise over the long-term¹¹⁷

London Economics has chosen to approach the perspective of who created the opportunity from a somewhat different viewpoint. In its view, it is the entire organization that provides the strength to undertake these initiatives and this should be recognized in allocation of NER¹¹⁸

*if we take an approach that says only generation and transmission is used in creating these net export revenues, therefore, we're going to credit all of that back to solely generation and transmission, I felt that **we were missing a larger picture.***

And if we think about this more broadly, right, the net export revenue is not an IPP, right. It's not a stand-alone venture. These generation stations, transmission stations, were not actually built on a non-recourse basis solely to serve export revenues. They were built as part of a larger portfolio.

*And so when we look at **what supports that larger portfolio, what supports the credit quality of the entity, what allows it to go out and borrow at favourable rates in addition, of course, to its sovereign association, then these customer classes make a larger contribution** than is being assumed when it is said that only*

115 Cost of Service Hearing, Transcript September 8, 2016, p 290 – 291.

116 Hydro Submission, Appendix 3.1, page 27.

117 Cost of Service Hearing, Transcript September 8, 2016, Mr William Harper, p 363 line 21 - p 364 line 4.

118 Cost of Service Hearing, Transcript September 8, 2016, LEI, p 555 and see also p. 525 and 526.

the generation and transmission attributes are being used in the creation of these net exports. (emphasis added)

To a certain extent, the patient capital concept developed by Mr. Bowman in the NFAT proceeding also supports this perspective.

From this perspective, it is only with the support of the Provincial Government and ultimately taxpayers that the economic and ratepayer benefits which Mr. Bowman believed were associated with Keeyask, Minnesota Power sale, and US Interconnection could be realized.¹¹⁹

The analogy Mr. Todd draws is that once the appropriate cost contributions to generation and transmission are made through the export class allocation “This entire area is driven by fairness and fairness is driven by judgment”:¹²⁰

it's kind of like a co-op. . . . So I'm thinking of this as this is a Crown corporation working for the province and it's seeking to identify an opportunity to provide a dividend to the customers.

What is a principled way consistent with the statutory mandate of the PUB to allocate net export revenues?

As set out in the statutory review section, the PUB is charged with setting rates that are just and reasonable and in the context of cost allocation – rates that are not unjustly discriminatory.

While the concept of discrimination in the cost allocation review speaks generally to the concept of cost causation, the key modifier is “unjustly”. Justice is a broader concept than cost causation and speaks to broader equity interests. This interpretation is consistent with the Board's authority under the CCPRAA to take into account “policy considerations.”

Finally, it must be recalled that an overarching statutory objective is the promotion of efficiency.

Taken as a whole, the principled analytic process suggested is:

make relevant cost causation determinations in the allocation of costs to the Export Class(es) in order to address the requirement that rate not be discriminatory

once cost causation has been de-linked from the analysis through the Export Class(es), broader justice (equity) considerations come into play as does the overarching efficiency perspective and any other relevant statutory or policy considerations.

119 See for example, Bowman, NFAT, *ibid*, p 2-5 to 2-7.

120 Cost of Service Hearing, Transcript September 8, 2016, Mr John Todd, p 523.

In this regard, note should be made of Mr. Harper's perspective that it is fair and appropriate to look at the overall cost allocation that would result from alternative NER treatments and conclude that the cost allocation results under certain treatments of NER will be more fair/reflective of cost causation than under others.

This was the reason for departing from the G&T allocation treatment to begin with. In 2006, the overall results were problematic from cost causality perspective (i.e. increases in industrial load customer load resulted in more costs being allocated to other classes than to industrial customers).¹²¹

Taking this approach, Hydro's proposal to use a broader allocation base produces results that are fairer and more reflective of cost causation.

Such an approach helps mitigate the problem that arises from using a narrow allocation base, such as strictly generation and transmission, where rates for a particular class is less than export prices, increases in the class' load will increase system cost overall, but the allocation of those costs will fall disproportionately on all . . .all other classes, which is really inconsistent with the principle of cost/causation.¹²²

Will Eliminating the NER make COS simpler

In a clever line of questioning, Mr. Peters suggested the number of issues that need to be addressed in a cost of service methodology would be measurably decreased if the export class is eliminated?

With the exception of Mr. Bowman, the general view of the experts canvassed was that Mr. Peter's hypothesis was unsound.¹²³ However, Mr. Bowman appears united with the other experts in concluding there is merit in maintaining a separate class(es) for exports.

Recommended Order flowing from Finding 10

That the existing allocation of NER be maintained.

Recommended Finding 11

Up front consumer engagement is desirable and necessary.

121 Evidence of the Coalition, Mr William Harper, June 10, 2016, p 86; Cost of Service Hearing, Transcript September 8, p 363.

122 Cost of Service Hearing, Transcript September 8, p 363, lines 12-20.

123 Cost of Service Hearing, Transcript September 9, p 704.

Consultation and Engagement can minimize hearing time

As Mr. Harper noted in his oral comments, the Hydro cost of service study is a work in progress.¹²⁴

Without prejudging the determinations of the Board, it is possible that PUB directions on methodology will flow from this proceeding (some of which MH will be able to readily implement and some of which will require further study). In addition, it is conceivable that data improvements and model refinements will be ordered by the PUB.

Potentially, the more significant areas requiring additional study might include: 1) need for and appropriate level for capacity adder, 2) how capacity adder should be assigned to hours 3) classification of poles and wires, 4) allocation parameters for customer administration costs 5) marginal cost COSS .

Depending on the nature of the order, it is possible this analysis will not be completed prior to the filing of MH's next GRA.

Recommended Order flowing from Finding 11

The PUB should direct MH to produce a timetable outlining what will be done for April 2017 rates with a view to completing the rest for consideration as part of the April 2018 rates.

That timeline should include provision for a up-front consumer engagement.

All of which is respectfully submitted this 21st day of September, 2016.

Byron Williams, Director, Public Interest Law Centre

124 Cost of Service Hearing, Transcript September 8, 2016, Mr William Harper, p 367, lines 9-14.