

# Office of the Consumer Advocate

PO Box 23135  
Terrace on the Square  
St. John's, NL Canada  
A1B 4J9

Tel: 709-724-3800  
Fax: 709-754-3800

December 4, 2017

## Via Email and Courier

Board of Commissions of Public Utilities  
120 Torbay Road, P.O. Box 2140  
St. John's, NL A1A 5B2

Attention: **G. Cheryl Blundon, Director of  
Corporate Services / Board Secretary**

Dear Ms. Blundon:

**RE: Newfoundland and Labrador Hydro - 2017 General Rate Application**

Further to the above-captioned, enclosed please find enclosed the original and thirteen (13) copies of the Expert Evidence Report of C. Douglas Bowman.

Yours truly,



**Dennis Browne, Q.C.**

Encl.  
/bb

cc **Newfoundland & Labrador Hydro**  
Geoff Young ([gyoung@nlh.nl.ca](mailto:gyoung@nlh.nl.ca))  
Tracey Pennell ([traceypennell@nlh.nl.ca](mailto:traceypennell@nlh.nl.ca))  
Alex Templeton ([alex.templeton@mcinniscooper.com](mailto:alex.templeton@mcinniscooper.com))  
NLH Regulatory ([NLHRegulatory@nlh.nl.ca](mailto:NLHRegulatory@nlh.nl.ca))  
**Newfoundland Power Inc.**  
NP Regulatory ([regulatory@newfoundlandpower.com](mailto:regulatory@newfoundlandpower.com))  
Gerard Hayes ([ghayes@newfoundlandpower.com](mailto:ghayes@newfoundlandpower.com))  
Liam O'Brien ([lobrien@curtisdawe.nf.ca](mailto:lobrien@curtisdawe.nf.ca))  
**Board of Commissioners of Public Utilities**  
Cheryl Blundon ([cblundon@pub.nl.ca](mailto:cblundon@pub.nl.ca))  
Jacqui Glynn ([jglynn@pub.nl.ca](mailto:jglynn@pub.nl.ca))  
Maureen Greene ([mgreene@pub.nl.ca](mailto:mgreene@pub.nl.ca))  
PUB Official Email ([ito@pub.nl.ca](mailto:ito@pub.nl.ca))

**Island Industrial Customers Group**  
Paul Coxworthy ([pcoxworthy@stewartmckelvey.com](mailto:pcoxworthy@stewartmckelvey.com))  
Dean Porter ([dporter@poolealthouse.ca](mailto:dporter@poolealthouse.ca))  
Denis Fleming ([dfleming@coxandpalmer.com](mailto:dfleming@coxandpalmer.com))  
**Iron Ore Company of Canada**  
Van Alexopoulos ([Van.Alexopoulos@ironore.ca](mailto:Van.Alexopoulos@ironore.ca))  
Benoit Pepin ([benoit.pepin@riotinto.com](mailto:benoit.pepin@riotinto.com))  
**Communities of Sheshatshiu, Happy Valley-Goose Bay  
Wabush and Labrador City**  
Senwung Luk ([sluk@oktlaw.com](mailto:sluk@oktlaw.com))

**THE BOARD OF COMMISSIONERS OF PUBLIC  
UTILITIES**

**IN THE MATTER OF**

the *Electric Power Control Act*, 1994, SNL 1994,  
Chapter E-5.1 and the *Public Utilities Act*,  
RSN 1990, Chapter P-47 (the “*Act*”);

**AND**

**IN THE MATTER OF**

a *General Rate Application* (the “*Application*”)  
by Newfoundland and Labrador Hydro to  
establish customer electricity rates for 2018 and 2019.

**PRE-FILED EVIDENCE  
OF  
C. DOUGLAS BOWMAN**

December 4, 2017

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**Evidence Outline**

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**List of Exhibits**

*Exhibit CDB-1 – C. Douglas Bowman Background and Qualifications*

**THE BOARD OF COMMISSIONERS OF PUBLIC UTILITIES**

**IN THE MATTER OF** the *Electric Power Control Act*, 1994, SNL 1994, Chapter E-5.1 and the *Public Utilities Act*, RSN 1990, Chapter P-47 (the “Act”);

**AND**

**IN THE MATTER OF** a *General Rate Application* (the “Application”) by Newfoundland and Labrador Hydro to establish customer electricity rates for 2018 and 2019.

**PRE-FILED EVIDENCE OF C. DOUGLAS BOWMAN**

1 My name is Doug Bowman. This document was prepared by myself, and is correct to the  
2 best of my knowledge and belief. I have been retained by the Government appointed  
3 Consumer Advocate to provide expert advice and evidence to the Consumer Advocate in  
4 response to Newfoundland and Labrador Hydro’s (“Hydro’s”) 2017 General Rate  
5 Application.

6

7 A summary of my background and qualifications is provided in *Exhibit CDB-1*. I have  
8 both a B.S. and an M.S. in Electrical Engineering from the State University of New York  
9 at Buffalo and 39 years of experience in the electricity services and consulting industry.

10 My primary expertise includes electricity services costing and pricing, and power sector  
11 restructuring, regulation and market design. I am an independent Energy Consultant  
12 working out of my office located in Warrenton, Virginia.

13

14 Prior to becoming an independent consultant, I was employed by KEMA Consulting,  
15 Nexant Inc., Pace Global Energy Services, International Resources Group, CSA Energy

1 Consultants and Ontario Hydro. I have taken part in the regulatory process in the Province  
2 of Newfoundland and Labrador on behalf of the Consumer Advocate since 1996, and have  
3 submitted testimony before this Board ten times previously as an expert witness on cost of  
4 service and rate design at Newfoundland Power's 1996 *Application by Petition for*  
5 *Approval of Certain Revisions to its Rates, Charges and Regulations*, at Newfoundland  
6 and Labrador Hydro's 2001 *General Rate Proceeding*, at Newfoundland Power's 2003  
7 *General Rate Application*, at Newfoundland and Labrador Hydro's 2003 *General Rate*  
8 *Application*, at Newfoundland and Labrador Hydro's 2006 *General Rate Application*, at  
9 Newfoundland Power's 2007 *General Rate Application*, at Newfoundland and Labrador  
10 Hydro's 2009 *Application concerning the Rate Stabilization Plan components of the rates*  
11 *to be charged Industrial Customers*, at Newfoundland and Labrador Hydro's 2013 *General*  
12 *Rate Application*, at Newfoundland and Labrador Hydro's *Amended 2013 General Rate*  
13 *Application*, and at the Board's *Investigation and Hearing into Supply Issues and Power*  
14 *Outages on the Island Interconnected System*. I have also appeared twice before the Nova  
15 Scotia Utility and Review Board as an expert witness on cost of service and rate design,  
16 and while at Ontario Hydro, I was involved with the regulatory process in the areas of  
17 generation and transmission planning, demand/supply integration, operations, rate design  
18 and customer service.

19

20 **Section 1** of my Pre-filed Evidence includes a summary of the key points in the Application  
21 relating to rates and cost of service; **Section 2** includes a summary of issues for the Board's  
22 consideration, and **Section 3** includes my recommendations.

23

1     **1.     Application**  
2

3     The cover letter accompanying Hydro’s 2017 General Rate Application indicates that a  
4     primary purpose of the application is to manage cost increases for customers (page 2 of  
5     cover letter). Hydro states “*It is well known that the impact of the Muskrat Falls Project*  
6     *on customer rates will be significant. Hydro has been working with its parent company,*  
7     *Nalcor Energy (Nalcor), and the Government of Newfoundland and Labrador, to*  
8     *determine potential options to help mitigate and manage these cost increases for*  
9     *customers*” (pages 1 and 2 of cover letter). Hydro proposes that its revenue requirement  
10    and rates be based on “*the continued supply of power to the Island Interconnected System*  
11    *from existing Island generation*” (page 2 of cover letter), and that an Off-Island Purchases  
12    Deferral Account be established to include *savings* resulting from off-island purchases  
13    relative to the costs that would have occurred had the energy been supplied from Holyrood.  
14    Hydro proposes that the *savings* that accumulate in the deferral account be used to  
15    “*mitigate future rate increases after the full commissioning of the Muskrat Falls project*”  
16    (page 2 of cover letter).

17    Hydro indicates that rates are expected to almost double as a result of the Muskrat Falls  
18    project (Application Volume 1 (rev 3), page 5.6, lines 4-6). Few, if any, jurisdictions have  
19    had to deal with such a large rate increase brought on by a single project (CA-NLH-196),  
20    so there is little in the way of regulatory precedence to guide the Board and the Parties on  
21    what has worked or not worked in other jurisdictions facing a challenge of this magnitude.

22  
23    Hydro acknowledges that its cost of service study for the 2018 and 2019 test years does  
24    not account for off-island purchases over the new Labrador-Island and Maritime Links, so

1 does not reflect its best forecast of costs in the 2018 and 2019 test years (LAB-NLH-8).  
2 Under Hydro's best forecast of costs in the 2018 and 2019 test years, the availability of  
3 off-island purchases over the new transmission links is "*anticipated to keep rates flat, or*  
4 *potentially reduce rates slightly*" (Application Volume 1 (rev 3), page 1.11, lines 19-20).<sup>1</sup>  
5 Hydro received a rate increase just five months ago on July 1, 2017 (NP-NLH-165, rev 1).  
6 Hydro states (LAB-NLH-36) "*The Provincial Government has indicated that it plans to*  
7 *keep rates at par with the forecast Atlantic Canada average of 17 cents per kWh.*" It is not  
8 clear what the Atlantic Canada Provinces average of 17 cents per kWh means for Island  
9 residential customers, but it appears the rate increase would be much lower than the post  
10 Muskrat Falls figure of 22.89 cents/kWh (exclusive of HST) estimated by Nalcor  
11 (Application Volume 1 (rev 3), page 5.6, lines 4-6). Currently, Island residential customers  
12 are paying 11.7 cents/kWh (exclusive of HST) (Application Volume 1 (rev 3), page 5.6,  
13 lines 4-6).  
14 Neither Nalcor nor the Provincial Government have endorsed Hydro's proposed rate  
15 mitigation plan, but neither is there correspondence indicating their disagreement with  
16 Hydro's proposed plan (CA-NLH-186). Further, Hydro indicates that it (CA-NLH-6) "*has*  
17 *been informed that rate mitigation actions or plans beyond what Hydro has proposed in*  
18 *the 2017 GRA Hydro will be a policy decision of government.*" Hydro states that the Off-  
19 Island Purchases Deferral Account is "*one component of a number of rate mitigation*  
20 *initiatives that will be required to limit the required increase in customer rates*" (NP-NLH-  
21 245).

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<sup>1</sup> CA-NLH-25, rev 1 states that the use of Recapture Energy on the Island in 2019 provides \$78.1 million in savings equating to 12.0% of the 2019 Island revenue requirement of \$648.7 million.

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**2. Issues for the Board’s Consideration**

1) It would appear that the Provincial Government and the Atlantic Provinces, rather than the Board, may be setting rates for Island customers both pre- and post-Muskrat Falls given that “*The Provincial Government has indicated that it plans to keep rates at par with the forecast Atlantic Canada average of 17 cents per kWh*” (LAB-NLH-36), and given that “*rate mitigation actions or plans beyond what Hydro has proposed in the 2017 GRA Hydro will be a policy decision of government*” (CA-NLH-6). If this is the case, it might be better to divert time from this Application to the numerous other regulatory filings that Hydro has on its plate as outlined in CA-NLH-161.

2) Hydro forecasts that the amount that will accumulate in the Off-Island Purchases Deferral Account by August 31, 2020 is \$174.3 million (NP-NLH-115, rev 1). However, this amount may be understated as it:

- a. Includes LIL/LTA transmission costs of \$27.3 million in 2018 and \$52.9 million in 2019 (CA-NLH-50). This equates to 7.0 cents/kWh in 2018 and 5.8 cents/kWh in 2019 (CA-NLH-177), and compares to the proposed 2019 wheeling rate of 0.9 cents/kWh for the entire Island Interconnected transmission system (CA-NLH-82, rev 1). The current rate for Island residential customers of 11.7 cents/kWh (exclusive of HST) (Application Volume 1 (rev 3), page 5.6, lines 4-6) includes the cost of generation, transmission and distribution. The LIL/LTA estimate includes only O&M costs (no capital-related expenses), so appears to be extraordinarily high.



1 Hydro indicates (CA-NLH-177) that it is “currently reviewing the forecast  
2 operating and maintenance costs for LIL and LTA.”

3 b. Excludes purchases over the Maritime Link (CA-NLH-193) owing to “the  
4 confidential nature of negotiations” (CA-NLH-65).

5 c. Excludes sales of power and energy to off-island purchasers over the  
6 Maritime Link because “the focus of Hydro’s market activities in 2018 and  
7 2019 will be to displace thermal generation at the Holyrood Thermal  
8 Generating Station (CA-NLH-179).<sup>2</sup>

9 3) The scenario that Hydro has modelled in the cost of service study will result in rates  
10 that are expected to substantially over-collect the revenue requirement. The  
11 “savings” that Hydro indicates would accumulate in the Off-Island Purchases  
12 Deferral Account are not savings at all, but rather the difference in costs between  
13 the actual cost of supply and the cost of supply under a fictitious scenario that does  
14 not reflect the future operation of the system. The cost of service study clearly does  
15 not reflect the lowest cost of supply consistent with maintaining reasonable levels  
16 of supply reliability. Hydro could make its so-called *savings* look even greater if it  
17 were to base the cost of service study on an even more costly supply scenario; i.e.,  
18 if it were to assume that Holyrood would operate at full availability over the entire  
19 2018 and 2019 test years.

20 4) Hydro has provided what it believes is regulatory precedent for collecting costs up-  
21 front to mitigate upcoming rate increases. Hydro states (Application Volume 1 (rev

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<sup>2</sup> It is not clear if Hydro intends for profits from sales over the Maritime Link to be included in the Off-Island Purchases Deferral Account.

1 3), page 1.12, lines 4 to 12) “*In Order 73/15, Manitoba’s Public Utilities Board*  
2 *approved an interim rate increase for Manitoba Hydro of 3.95%. The revenues*  
3 *from 2.15% of that rate increase are to be placed in a deferral account to mitigate*  
4 *expected rate increases from when the Bipole Transmission Reliability Project*  
5 *(Bipole III) comes into service in 2018/19. In Order 73/15, the Manitoba regulator*  
6 *stated that, “Because very significant rate increases will be needed at that time, the*  
7 *Board sees a compelling policy reason to gradually increase rates to avoid rate*  
8 *shock for consumers three years from now. The funds set aside in the Board-*  
9 *ordered deferral account will be used to smooth the significant rate increases that*  
10 *may otherwise be required when the Bipole III is completed, helping to mitigate the*  
11 *resulting rate shock.”* In the Manitoba example, a fixed rate adder of 2.15% was  
12 approved for funding rate mitigation. As stated in CA-NLH-45 “*Based on Hydro’s*  
13 *interpretation of Order 73/15, the funds set aside to smooth future rate increases*  
14 *were derived based on a fixed percentage rate increase over and above the amount*  
15 *determined to be required to provide reasonable cost recovery for Manitoba*  
16 *Hydro*”. Hydro on the other hand is proposing that the Board approve a cost of  
17 service study that does not reflect its best forecast of costs in the test year along  
18 with an open-ended deferral account to fund rate mitigation. The two approaches  
19 are not the same.

20 5) Hydro states (Application Volume 1 (rev 3), page 5.6, lines 22-25) “*The Board’s*  
21 *approval of the proposed Off-Island Purchases Deferral Account will begin the*  
22 *transition to customer rates that will provide an opportunity to achieve reasonable*  
23 *recovery of Muskrat Falls Project costs. The current proposal is a critical step to*

1        *set the foundation for the broader approach for rate mitigation to be successful.”*

2        However, Hydro did not survey customer preferences on its proposed rate  
3        mitigation plan (CA-NLH-27). Hydro indicates that it “*values the opinions of its*  
4        *customers*”, and that a survey into customer preferences could be conducted, but  
5        “*believes that this present matter can be well addressed in the present proceeding,*  
6        *which includes intervenors representing a range of customers*” (CA-NLH-222).  
7        Since it is the customers who are facing a near doubling of rates, a survey on  
8        customer preferences on rate mitigation would provide valuable insights to the  
9        Board and the Parties to this Application.

10       6) Hydro states that the objective of the Off-Island Purchases Deferral Account is to  
11       (Application Volume 1 (rev 3), page 5.6, lines 22-25) “*begin the transition to*  
12       *customer rates that will provide an opportunity to achieve reasonable recovery of*  
13       *Muskrat Falls Project costs*”. However, Newfoundland Power is forecast to receive  
14       a cumulative rate increase of 50.9% over the 18-month period from July 1, 2017 to  
15       January 1, 2019, while Island Industrial Customers are forecast to receive a 20.3%  
16       rate increase over the same period (NP-NLH-165, rev 1). Both customer classes are  
17       served from the same generation and transmission system, so it would seem that  
18       rate increases for the two customer classes should be comparable. Otherwise, it has  
19       the appearance that rate mitigation is being funded on the backs of Newfoundland  
20       Power customers.

21       7) While the Parties might be amenable to rate mitigation, they may have difficulty  
22       granting Hydro an open-ended deferral account that is expected to accumulate  
23       hundreds of millions of dollars (NP-NLH-115, rev 1) including purchases over the

1 Maritime Link that are sourced from confidential negotiations (NP-NLH-115, rev  
2 1) lacking transparency, and negotiated by an entity, Nalcor Energy Marketing, that  
3 is apparently not under Board jurisdiction (LAB-NLH-37). Neither has Hydro  
4 proposed a methodology for re-allocating the funds to mitigate rate impacts on the  
5 different customer classes. When asked what guidance Hydro can provide the  
6 Board on how to allocate the proceeds of the proposed Off-Island Purchases  
7 Deferral Account (CA-NLH-190) Hydro responded “*The Board has broad power*  
8 *with respect to deferral accounts; in this case to determine a reasonable approach*  
9 *to allocate the net savings among customer classes.*” Apparently, Hydro is leaving  
10 it up to the Board to decide at some future date how best to allocate funds to the  
11 different customer classes for rate mitigation. Hydro has indicated a willingness to  
12 discuss alternative approaches to rate mitigation with interveners (CA-NLH-47),  
13 and suggests that this take place during the settlement discussions scheduled in  
14 January 2018 as part of this GRA (CA-NLH-185). The Board and the Parties need  
15 more details before a decision is rendered on Hydro’s proposed Off-Island  
16 Purchases Deferral Account, so the settlement discussions are likely to prove  
17 useful.

18 8) The new transmission lines that are coming into service, the Labrador-Island Link  
19 (LIL) and the Maritime Link (ML), open the door to imports that could provide  
20 significant benefits to customers (NP-NLH-115, rev 1). However, even though the  
21 Maritime Link is expected to be in service less than two months from now:

- 22 a. A power procurement plan for purchases over the Maritime Link does not  
23 appear to be in place (NP-NLH-115, rev 1),

- 1           b. A plan for sales of capacity and energy over the Maritime Link does not  
2           appear to be in place (CA-NLH-179),
- 3           c. A regulatory review process for power procurement and sales that ensures  
4           customers are gaining optimal value from the interconnections is not in  
5           place (CA-NLH-176), and
- 6           d. An open access transmission tariff has neither been filed, nor approved  
7           (CA-NLH-161). Hydro states (PUB-NLH-109) *“Based on the current in-*  
8           *service date of the Labrador-Island Link (LIL) and the Labrador*  
9           *Transmission Assets (LTA), anticipated to be July 1, 2018, in order to obtain*  
10           *the full benefits of LIL and the LTA, the necessary processes for the open*  
11           *access regime will need to be proposed for approval by July 1, 2018.”*

12           Further elaboration of this statement is necessary as it is not clear what  
13           additional benefits are gained from an approved open access regime both  
14           with respect to LIL/LTA and the Maritime Link, particularly during the pre-  
15           Muskrat Falls period.

16           As stated in the Liberty report to the Board dated August 19, 2016 (Page 113, VI-  
17           12) *“Given that the Maritime Link will be in service in about one year, there does*  
18           *not appear to be suitable progress in resolving issues relating to market*  
19           *transactions, such as responsibility, rate treatment, open access, and avoidance of*  
20           *conflicts between marketing and operations.”* More than a year later, this statement  
21           remains relevant, except there is greater urgency now since the scheduled in-service  
22           date for the Maritime Link is less than two months away (PUB-NLH-17).

1 9) The response to CA-NLH-34 indicates that Nalcor is not required to pay for  
2 transport of power and energy on the Maritime Link, but other entities might be so  
3 required. The response to CA-NLH-181 indicates that the Maritime Link will not  
4 be included in Hydro's open access transmission tariff because it is owned by  
5 Emera, so who pays for the Maritime Link, and how, falls "*within the purview of*  
6 *the Nova Scotia Utility and Review Board*". The response to CA-NLH-182  
7 indicates that Nalcor does not have "*free access*" to the Maritime Link – Nalcor is  
8 in effect paying for use of the Maritime Link as part of the "*broad suite of Muskrat*  
9 *Falls/Maritime Link agreements between Nalcor and Emera*". In the same  
10 response, Hydro indicates that there is "*no violation of FERC open access*  
11 *principles and Nalcor has not been given an unfair competitive advantage*". While  
12 this may not violate FERC principles, it may be detrimental to Island customers.  
13 For example, Nalcor would have a competitive advantage for supply to Hydro if  
14 other marketers were required to pay for use of the Maritime Link. The advantage  
15 would be significant if the tariff for use of the Maritime Link is comparable to the  
16 costs Hydro has submitted for use of the LIL/LTA transmission that are likely more  
17 than 6 cents/kWh when capital is included (CA-NLH-177). For comparison  
18 purposes, the real-time spot market price at the New York ISO on Friday, December  
19 1, 2017 averaged about 3.2 cents/kWh.<sup>3</sup> It may be that Hydro is "required" to  
20 purchase energy through Nalcor Energy Marketing, but in any case, it does not bode  
21 well for Island customers as Hydro would be more or less "stuck" buying from

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<sup>3</sup> Average price of 2.5 US cents/kWh converted using an exchange rate of 1 Can\$ = 0.79 US\$. See [http://www.nyiso.com/public/markets\\_operations/market\\_data/graphs/index.jsp](http://www.nyiso.com/public/markets_operations/market_data/graphs/index.jsp)

1 Nalcor Energy Marketing, thus reducing both its competitive options and  
2 transparency owing to the confidential nature of negotiations and the fact that  
3 Nalcor Energy Marketing is not under Board jurisdiction (LAB-NLH-37).

4 10) It seems Hydro has expended a great deal of effort defending the assumptions in a  
5 cost of service study that does not reflect its best forecast of costs. For example,  
6 Hydro provides justification for Holyrood fuel costs and the Holyrood fuel  
7 conversion factor used in the cost of service study when it plans to place Holyrood  
8 in standby mode beginning the second quarter of 2018 (PUB-NLH-68). Standby  
9 mode means the station will not operate for energy production purposes, but rather  
10 for capacity purposes only; i.e., during emergencies such as the failure of a  
11 transmission line. In fact, Holyrood Unit 3 will not be producing energy at all, being  
12 relegated to synchronous condenser mode of operation as of April 1, 2018 (PUB-  
13 NLH-68).<sup>4</sup> In the cost of service study, the assumed Holyrood capacity factor in the  
14 2019 test year is 38.2%, (CA-NLH-168), but owing to the availability of off-island  
15 purchases over the Labrador-Island Link, the actual Holyrood capacity factor in  
16 2019 is forecast to be 16.7% (CA-NLH-168), and this may be overstated since it  
17 does not incorporate purchases over the Maritime Link that would result in further  
18 decreases in Holyrood production. Holyrood fuel costs and conversion factor are of  
19 less consequence than the power procurement plan and regulatory review process  
20 for off-island purchases over the Maritime Link for which very little information is  
21 on the record.

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<sup>4</sup> It is not clear why Hydro has committed to taking Holyrood Unit 3 out of service before exploring the possibility of capacity sales over the Maritime Link (CA-NLH-179).

1 11) Basing the revenue requirement on a fictitious future means that cost allocations to  
2 customer classes are unfair because the cost of service study is not reflective of the  
3 costs that the different customer classes are expected to impose on the system. For  
4 example, by setting rates to over-collect revenues from Newfoundland Power  
5 customers while setting rates to collect the correct forecast amounts from Labrador  
6 Interconnected Customers, an inappropriate amount of the rural subsidy is allocated  
7 to Newfoundland Power Customers. Further, since Rural and Isolated Customer  
8 rates are pegged to Newfoundland Power rates which would be over-collecting,  
9 they would also be over-charged and the rural subsidy deficit amount would be less  
10 than it would be if Newfoundland Power rates reflected the costs it is expected to  
11 impose on the system.

12 12) With one exception, Hydro proposes no changes to the cost of service allocations  
13 (IC-NLH-108). In CA-NLH-90, the Consumer Advocate asks Hydro to show the  
14 impact on cost allocations and rates if 10%, 20%, 30%, 40% and 50% of the costs  
15 of the new TL267 transmission line were classified as energy. Hydro responds "*The*  
16 *approach since the implementation of the cost of service methodology approved in*  
17 *the 1993 Cost of Service Report by the Board, is that all functionalized transmission*  
18 *assets are classified as 100% demand related.*" Hydro indicates in its October 19,  
19 2017 letter to the Board (challenging a number of requests for information  
20 submitted by the Consumer Advocate) that issues relating to the cost of service  
21 methodology are more efficiently addressed in the proposed 2018 hearing on the  
22 cost of service methodology (page 2). However, as the Board states (page 4, lines  
23 27-31, P.U. 36(2017) "*TL267 is a significant asset which is being added to the rate*



1        *base as of 2018 for which customers will begin to pay in rates arising from this*  
2        *proceeding. As such the Board acknowledges that the fair classification and*  
3        *allocation of costs for the TL267 transmission line may be an issue which the*  
4        *parties may wish to argue should be addressed in this proceeding in advance of the*  
5        *scheduled cost of service hearing.”* The Board goes on to direct Hydro to provide a  
6        response to the question (page 4, lines 42-44). In spite of Hydro’s belief that cost  
7        of service issues are more efficiently addressed at the proposed hearing on the cost  
8        of service methodology, Hydro proposes to change the methodology for allocation  
9        of specifically-assigned operating and maintenance costs on the Island system.  
10       Hydro makes this proposal without referencing another jurisdiction that uses its  
11       proposed methodology (NP-NLH-161). CA-NLH-84 indicates that “*while other*  
12       *utilities utilize approaches with some features similar to Hydro’s methods, none*  
13       *can be said to utilize Hydro’s current or proposed methods”*. Hydro indicates it  
14       intends to start tracking actual operating and maintenance costs for specifically  
15       assigned assets beginning in 2018, but several years of history are needed before  
16       the new methodology can be properly implemented (PUB-NLH-78). It is not clear  
17       why Hydro is proposing a change to the methodology for allocating specifically-  
18       assigned operating and maintenance costs when the existing methodology has been  
19       vetted before the Board, but opposes changes to the classification of the costs of a  
20       new transmission line that it expects to recover in this Application, and that has  
21       never been vetted before the Board. This is especially concerning because the  
22       proposed methodology transfers costs from the Island Industrial Customers to  
23       Newfoundland Power whose rates are proposed to increase 50.9% over the 18-

1 month period from July 1, 2017 to January 1, 2019, compared to 20.3% for Island  
2 Industrial Customers over the corresponding period (NP-NLH-165, rev 1). It is not  
3 clear why Hydro is proposing any changes at all when the cost of service study does  
4 not reflect the expected supply scenario and its best estimate of future costs (LAB-  
5 NLH-8).

6 13) Hydro proposes a tail-block energy rate for Newfoundland Power of 14.141  
7 cents/kWh in 2019 based on a forecast No. 6 fuel cost of \$87.11 per barrel (\$Can)  
8 for the 2019 Test Year (Application Volume 1 (rev 3), page 5.18, lines 3 – 11).  
9 Hydro’s justification for this approach is that it is consistent with the currently  
10 approved method, and it can be given further consideration at a rate design review  
11 scheduled to occur subsequent to this GRA (Application Volume 1 (rev 3), page  
12 5.17, lines 8 – 23). However, the proposed rate is expected to be in place through  
13 2020, a period during which Holyrood production costs will no longer reflect  
14 marginal costs owing to the availability of off-island purchases. In CA-NLH-81,  
15 Hydro indicates that the annual average marginal energy cost forecast for 2019 is  
16 5.0 cents/kWh. Therefore, Hydro is proposing that Newfoundland Power respond  
17 to a price signal of 14.141 cents/kWh when it should be responding to a price signal  
18 of 5.0 cents/kWh. Clearly, this will not promote efficient consumption decisions,  
19 and is inconsistent with Board direction with respect to the Newfoundland Power  
20 rate that “*marginal costs should be considered in the future design of the wholesale*  
21 *rate*” (Application Volume 1 (rev 3), page 5.17, lines 10 – 11).

22 14) Hydro has not proposed aggressive cost-cutting or cost-controlling measures as a  
23 means for mitigating the upcoming rate increases. For example, Hydro proposes to

1 continue with the capacity assistance agreements even though the new transmission  
2 lines will address any capacity concerns in the 2018/19 winter. The table in CA-  
3 NLH-165 shows a reserve margin of 306 MW without the capacity assistance  
4 agreements, well above the 240 MW reserve requirement (if it were short capacity,  
5 Hydro would not be relegating Holyrood Unit 3 to synchronous condenser  
6 operation). Further, Hydro's rate of return continues to be fixed by legislation via  
7 OC2009-063. This can lead to inefficiency and less attention to regulatory  
8 commitments and directives, and reduced customer satisfaction, reliability of  
9 service and cost control. With customers facing a near triple digit rate increase,  
10 consideration should be given to repealing OC2009-063 in an effort to reduce  
11 Hydro's return and spread the pain.

12 15) The average cost of supply to Rural and Isolated Customers in 2016, the last year  
13 for which actual data are available, was about 23.0 cents/kWh (based on a cost to  
14 supply of \$117.2 million (NP-NLH-55, rev 1) and total energy sales of 508,418  
15 MWh (NP-NLH-58)). This rate is comparable to Nalcor's forecast cost of supply  
16 to Island residential customers of 22.89 cents/kWh (compared to 11.7 cents/kWh  
17 today) following commissioning of Muskrat Falls (figures exclusive of HST. See  
18 Application Volume 1 (rev 3), page 5.6, lines 4-6). This draws into question the  
19 desirability and ability of Newfoundland Power customers to continue funding the  
20 Rural Deficit post-Muskrat Falls (and perhaps pre-Muskrat Falls depending on the  
21 rate mitigation plan, if implemented). Hydro indicates it has recently provided  
22 information on the costs of the rural deficit to Department of Natural Resources

1 officials, but does not say if any action was recommended, or likely to be pursued  
2 (CA-NLH-199).

3 **3. Recommendations**  
4

5 With respect to rate mitigation for Island customers, Hydro indicates it “*believes that this*  
6 *present matter can be well addressed in the present proceeding, which includes intervenors*  
7 *representing a range of customers*” (CA-NLH-222). I make my recommendations within  
8 the context of this statement.

9 There are far too many gaps in the record for the Parties and the Board to make an informed  
10 decision on this Application. A more complete picture of the rate mitigation plan is needed.

11 I therefore recommend that the Board direct Hydro to undertake the following:

- 12 a) File a cost of service study for the Island system for the 2019 test year based on its  
13 best forecast of costs including off-island sales and purchases over the Labrador-  
14 Island Link, as well as sales and purchases over the Maritime Link; i.e., based on  
15 ISO New England spot prices. Only those changes to the cost of service allocations  
16 that are necessary to perform the cost of service study should be made; i.e.,  
17 functionalization of LIL and LTA operating and maintenance costs, and allocation  
18 of the costs of off-island purchases (CA-NLH-169).
- 19 b) Propose a deferral account to protect Hydro from the uncertainties brought on by  
20 variations in hydro generation, fuel costs and off-island purchases and sales.
- 21 c) Propose a rate mitigation plan based on the format referenced in Manitoba with a  
22 fixed rate adder over and above any required rate increase (if a rate increase is  
23 indeed required). The rate mitigation plan should explain how the funds that  
24 accumulate in the rate mitigation account will be applied to different customer

1 classes and over what period of time; i.e., 50% in the first year post-Muskrat Falls,  
2 35% in the second year and 15% in the third year. The proposed rate mitigation  
3 plan should address implications relating to allocation of the rural deficit.

4 d) Propose a power procurement plan for off-island purchases and explain how the  
5 regulatory vetting process will work to ensure customers are receiving optimum  
6 value.

7 e) Propose a plan for sales of capacity and energy surplus to the needs of the Island  
8 customers and explain how the regulatory vetting process will work to ensure  
9 customers are receiving optimum value.

10 f) Propose an open access transmission tariff<sup>5</sup> including an explanation of the facilities  
11 included in the tariff, how Hydro foresees the open access regime will work, which  
12 entities will be under Board jurisdiction, and how open access can be leveraged to  
13 provide optimum value to Island customers.

14 g) Propose a wholesale rate for Newfoundland Power that better reflects the marginal  
15 cost forecast.

16 h) Provide justification for the continued offering of capacity assistance and  
17 curtailable load.

18 The enormous cost escalation brought on by the Muskrat Falls Project and its resultant  
19 burden on Island customers requires that these matters receive top priority. I suggest that  
20 the settlement negotiations proceed as scheduled in January 2018 with intervenors working

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<sup>5</sup> Hydro intends to file its open access transmission tariff with the Board before the end of the first quarter of 2018 (CA-NLH-161).

- 1 with Hydro to expedite and improve the efficiency of the undertaking in order to bring the
- 2 2017 GRA to a successful and timely conclusion.
- 3
- 4
- 5 This concludes my pre-filed evidence.

# **Exhibit CDB-1**

*C. Douglas Bowman*

*Background and Qualifications*

***C. Douglas Bowman***  
***Background and Qualifications***

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*Exhibit CDB-1*

<b>Profession</b>	<b><i>ENERGY CONSULTANT</i></b>
<b>Nationality</b>	Canadian Citizen U.S. Resident
<b>Years of Experience</b>	39
<b>Education</b>	M.S./1977/Electrical Engineering/State University of New York, Buffalo, NY B.S./1975/Electrical Engineering/State University of New York, Buffalo, NY
<b>Key Qualifications</b>	<p>Mr. Bowman has 39 years of experience in the power industry both domestically and internationally. His primary areas of expertise include electricity services costing and pricing, and power sector restructuring, regulation and markets. Mr. Bowman has played a leading role in consulting projects in Canada, Armenia, Australia, Central America, China, Colombia, Dutch Antilles, Egypt, Georgia, Ghana, India, Indonesia, Macao SAR, Macedonia, Mexico, the Middle East, Mongolia, Pakistan, the Philippines, Russia, Saudi Arabia, Serbia, South Korea, Taiwan, Thailand, United States and Vietnam.</p> <p><b>Expert Testimony at Board of Commissioners of Public Utilities' Investigation and Hearing into Supply Issues and Power Outages on the Island Interconnected System</b> Provided written evidence on system planning and regulatory issues pre- and post-Muskrat Falls.</p> <p><b>Expert Testimony at Newfoundland and Labrador Hydro's Rates Submission</b> Provided expert written testimony on issues related to cost of service, rate design and regulation at Hydro's Amended 2013 General Rate Proceeding.</p> <p><b>Expert Testimony at Newfoundland and Labrador Hydro's Rates Submission</b> Provided expert written testimony on issues related to cost of service, rate design and regulation at Hydro's 2013 General Rate Proceeding.</p> <p><b>Expert Testimony at Newfoundland and Labrador Hydro's Application Concerning the Rate Stabilization Plan</b> Provided expert written testimony on issues related to Hydro's 2009 Application on the rate stabilization plan components of the rates to be charged Industrial Customers.</p> <p><b>Expert Testimony at Newfoundland Power Inc.'s Rates Submission</b></p>

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Provided expert written and oral testimony on issues related to cost of service, rate design and distribution quality and reliability of service standards at Newfoundland Power's 2008 General Rate Application.

**Expert Testimony at Newfoundland and Labrador Hydro's Rates Submission**

Provided expert oral and written testimony and participated in negotiation sessions on issues related to cost of service, rate design and regulation at Hydro's 2006 General Rate Proceeding.

**Expert Testimony at Newfoundland and Labrador Hydro's Rates Submission**

Provided expert oral and written testimony and participated in mediation sessions on issues related to cost of service, rate design and regulation at Hydro's 2003 General Rate Proceeding.

**Expert Testimony at Newfoundland Light & Power's Rates Submission**

Provided expert written testimony and participated in mediation/technical sessions on issues related to cost of service and rate design at Newfoundland Light & Power's 2003 General Rate Application.

**Expert Testimony at Newfoundland and Labrador Hydro's Rates Submission**

Provided expert oral and written testimony related to cost of service and rate design issues at Hydro's 2001 General Rate Proceeding.

**Expert Testimony at Newfoundland Light & Power's Rates Submission**

Provided expert oral and written testimony related to cost of service and rate design issues at Newfoundland Light & Power's 1996 General Rate Proceeding.

**Expert Testimony at Nova Scotia Power's Rates Submission**

Provided expert oral and written testimony related to cost of service and rate design issues. Recommended and designed time-of-day rates for all customer classes and designed an alternative interruptible rate design for large industrial customers.

**Expert Testimony at Nova Scotia Power's Rates Submission**

Provided expert oral and written testimony regarding an Industrial Expansion rate design. Recommended approval of rate with modifications and submitted two alternative rate designs for approval including a real-time surplus power rate and a time-of-day expansion rate.

**Cost of Service and Cost Reducing Rate Design Study**

On behalf of the Nova Scotia Utility and Review Board, reviewed Nova Scotia's cost of service study and developed rate designs consistent with Nova Scotia Power's integrated resource plan for all customer classes. Report was filed with Board, and reviewed as part of hearing on utility's subsequent rate submission.

**Economic Policy Reform and Competitiveness Project – Mongolia**

Assisted with the setup and training of the new regulatory commission in Mongolia. Developed tariff reform plan that was accepted by the regulatory commission for implementation. Developed incentive based power purchase agreement for sales of generating company capacity and energy to the transmission company. Developed market rules for governing competitive electricity market.

**Electricity Market Reform in Macedonia**

Participated in development of competitive electricity market design for Macedonia consistent with European Union market design. Assisted with development of Market Rules to govern operation of the competitive electricity market.

**Competitive Electricity Market Design – Taiwan**

Developed competitive market design for electricity sector in Taiwan. Drafted market governance documents including Market Rules and Grid Code. Managed market modeling component of project which simulated market operation under wide range of scenarios.

**Alberta RTO Evaluation Project**

Developed strategy related to preferred business relationship between the Alberta Regional Transmission Organization and RTO West to ensure Alberta's electricity needs are met by a competitive market. The project participants included the Alberta Department of Energy, ESBI Alberta Limited, and the Power Pool of Alberta.

**Detailed Market Design and Market Rules Development, Western Australia**

Served as project manager providing advice to the Government of Western Australia with regard to detailed market design, market rules development, and market power mitigation. Assisted with the stakeholder process, drafted position papers on various design topics, drafted market rules consistent with a bilateral contracts market, and designed a market power mitigation program.

**Market Assessment of Generating Company in Korea**

Provided advisory services to a client interested in submitting a bid for the purchase of a large generating company in Korea. Served as Project Manager for the market valuation component of the project.

**Expert Testimony in Kansas Civil Case Concerning IPP Development**

Provided expert testimony concerning the independent power producer (IPP) programs in India and Colombia. The testimony related to the difficulties and hurdles that must be overcome in order to successfully develop an independent power project in a developing country.

**Market Power Mitigation Strategy for Generating Company in Korea**

Provided advisory services to a large generating company in Korea relating to a market power mitigation strategy. Served as project

manager. The project included market simulation to determine if the generating company would have market power in the new competitive market, and if so, if its market power were any greater than other generating companies participating in the market.

**Advisory Services to World Bank on Regional Market Design among Arab Countries:** Conducted a review of the status of market reform in the Arab countries and designed a competitive regional electricity market and road map for implementation of the market and ultimately gain access to markets in the surrounding region. Developed governance documentation for the regional electricity market including a General Agreement, Market/Commercial Rules and a Grid Code.

**Advisory Services on Transmission Tariff Development in Georgia:** Provided advice to Government of Georgia on behalf of USAID on transmission tariff development. The project included a comparison of current practice in Georgia to best practice in the European Union and provided recommendations for bringing current practice up to EU standards.

**Advisory Services to World Bank on Regional Energy Integration in Middle East and Surrounding Area:** Provided advice to Government of Saudi Arabia on behalf of World Bank on regional energy integration of GCC countries (Saudi Arabia, Kuwait, Bahrain, Qatar, UAE and Oman), as well as a select number of other countries offering trade opportunities for Saudi Arabia including Egypt, Iraq, Jordan, Syria, Lebanon, Iran, Turkey and the EU. Advice included assessments of legal, regulatory and policy relating to international energy trade, energy demand and supply balance, electric transmission interconnection including HVAC and HVDC, and pipeline capacity to support trade.

**Advisory Services to World Bank on Potential Egypt – Saudi Electrical Interconnection:** On behalf of Government of Saudi Arabia, conducted evaluation of potential HVDC electrical interconnection between Saudi Arabia and Egypt.

**Advisory Services on Electricity Market Design in Serbia**  
Developed a high-level, phased design for the internal Serbian electricity market consistent with the EU Directive. The project intent was to provide institutional support to the Ministry of Mining and Energy to facilitate the phased development of the internal electricity market with competitive bilateral contracts taking into account Serbian Energy Policy, the draft Energy Law, European Union requirements and the Athens Memorandum 2002.

**Expert Testimony in California Civil Case Concerning Breach of Contract**

Provided expert testimony concerning the value of a company based on revenues generated less costs to manage and operate the business. Revenues were derived from a contract for energy services covering steam and electricity sales to an industrial client and its power purchase agreement covering electricity sales to a utility.

**Workshop on Transmission Planning in a Competitive Power Market**

Conducted workshop on transmission planning for proposed RTO West in Portland, Oregon. Workshop covered transmission planning responsibilities of Regional Transmission Organizations under FERC Order No. 2000.

**Workshop on Transmission Pricing in a Competitive Power Market**

Conducted workshop on transmission pricing for proposed RTO West in Portland, Oregon. Workshop covered transmission pricing in Regional Transmission Organizations under FERC Order 2000 and experience with domestic Independent System Operators and international transmission organizations.

**Development of Terms and Conditions for Transmission Tariff**

Assisted Ontario Hydro Services Company with development of terms and conditions for its new transmission tariff. The terms and conditions were filed with the regulatory authority as part of the utility's application for approval of the new tariff. Also assisted with preparation of responses to various discovery questions related to the tariff.

**International Survey of Transmission Rates and Services**

Conducted a survey of transmission rates and services provided in various domestic and international jurisdictions. Survey conducted in support of submission by Ontario Hydro Services Company to Ontario Energy Board on its new transmission tariff. Survey topics included: services offered such as network, point-to-point, connection, import and export service; cost recovery such as postage stamp, zonal and nodal pricing; treatment of generation; and transmission planning.

**Feasibility Study of Merchant Co-generation Project**

Participated with a team of consultants on a feasibility study for development of a merchant co-generation facility to sell power into the wholesale market and steam to the industrial plant. Directed market studies including analyses of forecasts for electricity demand, new generating plant construction, generation costs, market bid strategies, fuel costs, utility avoided costs, etc.

**Advice to Mid-west Cooperative Concerning Role in Deregulated Power Market**

Provided advice to a mid-west cooperative on positioning itself for a deregulated power market. Advice included the cooperative's future power purchasing strategy, transmission and distribution construction and operations and maintenance strategy and how it should position itself to compete in the future deregulated power market.

**Experience****Independent Consultant, Warrenton, VA 2005 to Present****Nexant, Inc., Washington, DC 2004**

Executive Consultant

**KEMA Consulting, Fairfax, VA 1999 to 2004**

Executive Consultant

**Pace Global Energy Services, Fairfax, VA 1998 to 1999**

Director, Power Services

**International Resources Group, Ltd. (IRG), Washington, DC 1995 to 1998**

Senior Manager, Energy Group

**CSA Energy Consultants, Arlington, VA 1994 to 1995**

Vice President (1995); Senior Manager, Power Supply Analysis (1994)

**Ontario Hydro, Toronto, Ontario, Canada 1977 to 1993**

*Industrial Service Advisor, Field Support Services Department, 1992-1993*

*Senior Rate Economist, Rate Structures Department, 1990-1992*

*Planning Engineer, Demand/Supply Integration, System Planning Division, 1988-1990*

*Senior Engineer, Resource Utilization, Power System Operations Division, 1987-1988*

*Planning Engineer, BES-Resources Planning, System Planning Division, 1981-1987*

*Assistant Planning Engineer, Transmission System Planning Department, 1979-1981*

*Engineer-in-Training, 1977-1979*