

Newfoundland and Labrador Hydro: General Rate Application 2013

Report on the Allocation of the Rural Deficit

Prepared

for

Miller & Hearn

Representing the Towns of

Labrador City, Wabush, Happy Valley-Goose Bay and North West River

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Economist

April 20, 2014

1 **I. Introduction**

2 There are areas in this province where Newfoundland and Labrador Hydro (NLH)
3 provides electricity to its retail customers at a loss. Those areas are in the L'Anse au Loup
4 System, the Island Interconnected System, Isolated Island Systems, and Isolated Labrador
5 Systems. The total of the operating losses across these systems is known as the rural
6 deficit. That deficit is the result of provincial government policy that requires NLH to
7 maintain prices to customers in those systems largely in line with those that other
8 customers pay. The deficit arises because of the higher costs of providing service to rural-
9 deficit customers. The rural deficit is substantial. In 2012 it was approximately \$49.3 million
10 and NLH's figures for the 2013 Test Year place it at \$60.7 million.

11 It is also government policy that the burden of this deficit be allocated to certain
12 retail consumers of electricity. At present, two groups must pay for the rural deficit. One
13 group is NLH's "rural" customers on its Labrador Interconnected System (LIS), which
14 excludes its industrial customer, namely the Iron Ore Company of Canada, as well as CFB
15 Goose Bay. The other paying group is the retail customers of Newfoundland Power (NP),
16 which is the main electricity distributor on the island of Newfoundland. Other than for
17 some modest self-generation, NP purchases its electricity from NLH. A portion of the rural
18 deficit is included in that purchase cost and is then passed along by NP to its customers. In
19 both cases, the cost of the rural deficit is embedded in customers' electricity rates. NLH's
20 island industrial customers have not been required to bear any of the rural deficit since the
21 end of 1999.¹

22 The restrictions on NLH pricing and the allocation of the resulting rural deficit to its
23 "rural" LIS (RLIS) as well as to NP's customers are all legislated government policy.
24 However, the formula for allocating the rural deficit is a matter that has been determined
25 by the Newfoundland and Labrador Board of Commissioners of Public Utilities (The Board).

26 The main proposition of this report is that the allocation of the rural deficit is unfair
27 to RLIS customers. They bear a disproportionately larger share of that deficit. In light of
28 NLH's 2013 General Rate Application, which seeks large percentage increases in RLIS
29 customers' rates, it is an appropriate time to re-consider the formula for allocating the rural
30 deficit.

31 In what follows, Section II provides data that illustrates the disproportionate share
32 of the rural deficit that RLIS customers must pay. Section III provides additional context and

¹ The Electrical Power Control Act is the legislation that compels NLH to pass the burden of the rural deficit on to its RLIS customers and, via NP, NP's customers. Through an amendment to that legislation in 1996, a provision was added that removed NLH's industrial customers from also bearing any of that burden after December 31, 1999.

1 discussion with respect to the existing allocation formula. Some alternative sharing
2 arrangements are identified and discussed in Section IV. Final remarks and conclusions are
3 in Section V.

4 5 **II. The Allocation**

6 This section deals with the outcome of the allocation formula. In basic terms, that
7 formula takes the dollar amount of the rural deficit and apportions it to the two groups
8 who are compelled to pay it. For example, in 2012, the rural deficit was \$49.3 million.
9 That figure was fed into the formula and it determined that NP Customers would pay
10 approximately \$43.9 million and RLIS customers would pay the remaining \$5.4 million.²
11 Once those two rural-deficit amounts are set then the formula's task is finished. The next
12 step is for NLH to top up its revenue requirements from RLIS customers by the share of the
13 rural deficit allocated to them. Similarly, NLH adds the NP customers' rural-deficit
14 allocation to NLH's revenue requirement from NP. The revenue requirements themselves
15 are the sums needed by NLH to cover its costs and earn its regulated rate of return in
16 providing its services to those respective purchasers. Thus, each of the two groups must
17 pay its revenue requirement and its share of the rural deficit. For RLIS customers the
18 amount of the rural deficit becomes embedded in their electricity rates. For NP
19 customers, their share of the rural deficit is embodied in the rates charged by NLH to NP
20 for its electricity purchases. That amount then enters NP's rate structure and is passed on
21 to its customers.

22 Table 1 provides one way of looking at the outcome of this process. It shows the
23 amount paid by each of the two sets of customers, expressed on a per-MWh (megawatt
24 hour) basis. That is to say, the amount that they pay toward the deficit is divided by the
25 amount of electricity that they purchase from NLH (directly in the case of RLIS customers
26 and indirectly in the case of NP Customers). Comparing those figures across the years, it is
27 clear that, on this basis, the burden on the RLIS customers is consistently higher than the
28 burden on Newfoundland Power's customers. The last two columns in the table show the
29 extent of that higher burden in dollar and proportional terms, respectively. In dollar terms,
30 over the period 2003 to 2013 RLIS customers paid between \$2 and \$3 more per MWh
31 towards the rural deficit than NP customers paid. For those same years, but in percentage
32 terms, they paid between 25% and 36% more per MWh towards the rural deficit than NP
33 customers.

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² These figures are from LWHN-NLH-056, Attachment 1, NLH 2013 GRA.

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Table 1

**Rural Deficit Allocation
Per MWh Purchased from NLH³**

Year	Newfoundland Power Customers	Rural Labrador Interconnected Customers	Absolute Difference	Percentage Difference
2003	\$8.35	\$11.19	\$2.83	33.9%
2004	\$7.26	\$9.29	\$2.04	28.1%
2005	\$7.06	\$9.35	\$2.29	32.4%
2006	\$7.48	\$10.07	\$2.59	34.6%
2007	\$7.11	\$9.41	\$2.30	32.4%
2008	\$7.98	\$10.37	\$2.39	29.9%
2009	\$6.79	\$9.21	\$2.43	35.7%
2010	\$7.16	\$9.49	\$2.33	32.5%
2011	\$8.26	\$11.03	\$2.77	33.5%
2012	\$8.18	\$10.29	\$2.11	25.8%
2013TY	\$9.63	\$12.11	\$2.48	25.8%
2014F	\$9.35	\$11.05	\$1.70	18.2%
2015F	\$8.48	\$10.01	\$1.53	18.1%
2016F	\$8.65	\$10.48	\$1.84	21.2%

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Yet, Table 1 may understate the difference in burdens per-MW hour. NP generates roughly about eight percent of its own electricity. It does not purchase all its electricity needs from NLH, which is unlike the Labrador situation where all the electricity is provided by NLH. Thus, in terms of MW hours consumed, the per-MW hour cost to RLIS customers is relatively higher. The difference is significant and is illustrated in Table 2.

For the years 2003 to 2013, Table 2 compares NP and RLIS customer burdens on the basis of MW hours consumed. Comparing actual consumption by the parties provides a more accurate picture than using only a subset of MW hours consumed, i.e., only those generated by NLH. The second last column of that table shows that a RLIS customer is burdened by between \$2.60 and \$3.50 per MWh more than a NP customer. The last column expresses those higher burdens in percentage terms. They are sizeable: up to 47.1 per cent.

³ Table 1 is based on data from Attachment 1 of NLH's response to LWHN-NLH-017.

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Table 2

**Rural Deficit Allocation
Per MWh Consumed⁴**

Year	Newfoundland Power Customers	Labrador Rural Interconnected Customers	Absolute Difference	Percentage Difference
2003	\$7.69	\$11.19	\$3.50	45.6%
2004	\$6.67	\$9.29	\$2.63	39.4%
2005	\$6.43	\$9.35	\$2.92	45.4%
2006	\$6.85	\$10.07	\$3.22	47.0%
2007	\$6.61	\$9.41	\$2.81	42.5%
2008	\$7.31	\$10.37	\$3.06	41.8%
2009	\$6.26	\$9.21	\$2.95	47.1%
2010	\$6.35	\$9.49	\$2.94	44.8%
2011	\$7.60	\$11.03	\$3.43	45.2%
2012	\$7.63	\$10.29	\$2.66	34.9%

While Tables 1 and 2 demonstrate that RLIS customers persistently bear a disproportionate share of the rural deficit, the figures in those tables understate the magnitudes of that higher burden. Both of those tables provide comparisons on a per MW hour basis. However, on the average, RLIS customers use more electricity. The combined effect of paying more per MW hour and consuming more MW hours causes an even larger disparity in the burden per customer. To gauge that effect, Table 3 compares the contributions of RLIS and NP customers to the rural deficit on a per-customer basis. The figures are striking. For every year in the table, the share of the rural deficit allocated to RLIS customers is substantially greater than the corresponding burden on NP customers. For instance, in 2012, the rural deficit that they had to bear amounted to \$505 each on the average; the corresponding number per NP customer was \$174.⁵ That is a difference of \$331, or about 190% more.

⁴ Table 2 is based on data from Attachment 1 of NLH's response to LWHN-NLH-017. Unpublished NP generation data is also used.

⁵ In 2012, RLIS customers were allocated \$5.411 million as their share of the rural deficit. There were 10,702 RLIS customers, so the per-customer burden was \$5.411 million divided by 10,712, which gives approximately \$505. On the other hand, NP's 251,531 customers were allocated \$43.847 million, which works out to be \$174 per customer.

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Table 3

**The Per-customer Allocation of the Rural Deficit
to RLIS and NP Customers⁶**

Year	Allocation per NP Customer	Allocation per RLIS Customer	Absolute Difference	Percentage Difference
2003	\$174.93	\$564.15	\$389.22	222.5%
2004	\$152.20	\$464.97	\$312.77	205.5%
2005	\$144.88	\$454.57	\$309.69	213.8%
2006	\$150.47	\$468.74	\$318.27	211.5%
2007	\$152.80	\$464.73	\$311.93	204.1%
2008	\$167.93	\$504.75	\$336.82	200.6%
2009	\$144.97	\$454.47	\$309.50	213.5%
2010	\$147.47	\$422.19	\$274.72	186.3%
2011	\$177.81	\$524.01	\$346.21	194.7%
2012	\$174.32	\$505.15	\$330.83	189.8%
2013F	\$214.22	\$630.39	\$416.17	194.3%
2014F	\$221.62	\$660.62	\$439.00	198.1%

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7 It is worthwhile to emphasize that the rural deficit is not allocated on a per-customer
8 basis or according to consumption. The formula simply splits the total dollar amount of the
9 rural deficit between the two distinct paying groups. It fails to take account of the
10 apparent unfair outcome that results once those shares are embedded in rates. Yet, the
11 original intent of the formula was to allocate the rural deficit fairly.

12 **III. Context**

13 The current allocation formula was recommended in a February 1993 report by the
14 Board to the Minister of Mines and Energy.⁷ Up to 1989, the rural-deficit areas had been
15 served by the Power Distribution District. Its deficit was covered directly by a provincial
16 government subsidy. In that year, the government decided to phase out its subsidy, to
17 amalgamate the Power Distribution District into NLH, and to have the subsidy covered by
18 NP (then Newfoundland Light & Power) ratepayers and NLH's island industrial customers.

⁶ Table 3 is based on data from LWHN-NLH-056, Attachment 1, NLH 2013 GRA.

⁷ "Report of the Board of Commissioners of Public Utilities to the Honourable Minister of Mines and Energy, Government of Newfoundland and Labrador on A Referral by Newfoundland and Labrador Hydro for the Proposed Cost of Service Methodology and A Proposed Method for Adjusting its Rate Stabilization Plan to Take into Account the Variation in Hydro's Rural Revenues Resulting from Variations in the Rates Set by the Board to be Charged by Newfoundland Light & Power Co. Limited to its Customers." February 1993. See PUB-NLH-113, Attachment 1.

1 In 1991 an amendment to the Electric Power Control Act removed an exemption for
2 Labrador interconnected customers. (This was prior to those customers being treated as a
3 single system but who are now the RLIS customers.) In its 1993 report to the Minister of
4 Mines and Energy, the Board addressed the question of how the rural deficit ought to be
5 allocated across the three groups (NP, RLIS and NLH's island industrial customers) that
6 would be required to pay for it. That Board's report also made clear that the criterion for
7 selecting a formula was fairness. It stated (p.59):

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9 "The Board agrees with the views of all parties that the allocation
10 be based on fairness."

11
12 and (p.60)

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14 "Fairness cannot be assessed as due to the method used but instead
15 we must assess fairness on the basis of the result, a shared burden
16 among the classes of customers that is fair to all and not discriminatory."

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18 At the time, the Board did not accept any of the payers' suggestions for how to allocate the
19 rural deficit. Instead, it decided to endorse a formula devised by its own expert witness and
20 recommended it to the Minister in its report. That formula is the one that was ultimately
21 adopted and, other than for the later exclusion of the island industrial customers and some
22 small adjustments, remains in use. Despite the previous Board's stated desire to have a fair
23 outcome, Tables 1 to 3 show that the intended outcome has not be realized. The allocation
24 formula results in a relatively heavier burden on RLIS customers, whether expressed on a
25 per-MWh basis or per-customer basis.

26 The formula itself involves a somewhat complex set of calculations akin to what was
27 described at the time as "a mini cost of service."⁸ Broadly speaking, one can see the fairness
28 in allocating a burden across two groups according to some proportionality; e.g., the bigger
29 group should pay more, or the richer group should pay more. That principle is in the
30 allocation formula. However, its use of different weightings across relative demand, energy
31 and customer costs, combined with various assumptions, yields an arithmetic derivation that
32 seems little related to equitable sharing.⁹ In any case, the litmus test for fairness is the
33 outcome, which has already been shown to be one-sided.

⁸ PUB-NLH-113, Attachment 1, p.65 of 83, NLH 2013 GRA.

⁹ The arithmetic derivation for determining the amounts to be paid by RLIS and NP customers is given in NLH 2013 General Rate Application, Vol. II, Exhibit 13, Schedule 1.2.1.

1 In sum, NP and RLIS customers bear the burden of the rural deficit. The formula for
2 allocating that deficit between the two groups is complex, would not be readily understood
3 by those payers, and results in an outcome is that is persistently and substantially to the
4 disadvantage of RLIS ratepayers. Moreover, the allocation of the rural deficit to these
5 groups is not done in a transparent fashion. Customers' electricity bills do not indicate what
6 they pay towards the rural deficit. While the allocation is provincial government policy,
7 neither its lack of transparency nor the formula for sharing it between the two paying groups
8 are legislated policy. Therefore, it would be worthwhile to take the opportunity of NLH's
9 GRA to devise a more equitable formula and to ensure that those who pay for the rural
10 deficit be made aware of what they are paying. A new formula should also be readily
11 understandable to those that pay.

12 13 **IV. Alternative Formulas**

14 Imposing price controls that keeping electricity rates below cost will cause a revenue
15 deficit for the provider of that electricity. If government implements such a policy then
16 ideally it should fund that deficit. However, in Newfoundland and Labrador, the provincial
17 government has decreed that the deficit should be funded through higher rates charged to
18 other electricity consumers. Therefore, the choice of alternatives must reflect that reality.
19 The question then becomes how to allocate the rural deficit fairly.

20 There are two groups that bear the burden of the rural deficit: NP customers and NLH's
21 RLIS customers. The current allocation formula is neither transparent, nor easily understood,
22 nor fair. Some alternatives follow.

23 Alternative A (Every Customer Pays the Same Dollar Amount)

24 A simple approach is to have each NP and RLIS customer pay an equal fixed amount
25 toward the rural deficit. This is an easily understood rule. It could be implemented in the
26 form of a lump-sum charge on each customer's monthly bill, which would make it explicit. It
27 would be fair in the sense that everyone would pay the same amount.

28 The effect of this alternative can be illustrated with 2012 data. In that year, there was a
29 rural deficit of \$49,258,834, and there were 251,531 NP customers and 10,712 RLIS
30 customers for a total of 262,243.¹⁰ The total deficit divided by the total number of
31 customers is \$187.84. Thus, a fixed charge of \$15.65 ($=\$187.84/12$) on every customer's

¹⁰ Data from LWHN-NLH-056, Attachment 1, NLH 2013 GRA.

1 monthly electricity bill would have covered that annual deficit. Below is a comparison of
2 that approach with the actual outcome.

	<u>Status Quo</u>	<u>Equal Fixed Payments</u>	
3			
4	Burden per RLIS Customer	\$505	\$188
5	Burden per NP Customer	\$174	\$188.

6 Under this arrangement the substantial differences in burdens per customer across the
7 two systems are eliminated. It is interesting to observe that the impact on NP customers of
8 this leveling of the burden is very small. The burden per NP customer rises by only \$15, from
9 \$174 to \$188, for the entire year. However, the burden on RLIS customers is greatly
10 reduced, by almost \$320. This reflects the fact that there are so many fewer customers in
11 the Labrador system than there are NP customers. That big difference in proportionality
12 means that a small change in what a NP customer pays has a huge impact on RLIS customers.
13 The ratio of the number of RLIS to NP customers is roughly 23 to 1, so if NP customers pay \$1
14 less each then the per-customer RLIS burden increases by \$23, and vice versa.

15
16 Alternative B (Every Customer Pays the Same Per MWh)

17 Alternative A guarantees equal per-customer burdens across the two systems.
18 However, since everyone pays the same dollar amount, it also guarantees equal per-
19 customer burdens within the systems. It may be argued that a fairer within-system
20 arrangement would be more appropriate. Thinking of the rural deficit allocation as a tax,
21 and it does appear analytically equivalent to one, the economics of taxation offers two
22 principles to consider: benefit taxation and taxation according to ability to pay. The former
23 involves having people pay according to the extent that they benefit from a public service.
24 However, in this case, there are no benefits to the payers so that principle is of no use. That
25 leaves the ability-to-pay principle. However, its applicability here is very restricted. The
26 rural deficit must be funded through NLH's electricity rates. NLH does not have any scope to
27 set customers rates according to their abilities to pay.

28 One possibility is to postulate that ability to pay is correlated with electricity
29 consumption. Then, an option to consider is to express the total rural deficit on a per MWh
30 basis and then charge that amount to everyone. Again to illustrate for 2012, total electricity
31 consumption by NP and RLIS customers was approximately 6.3 million MW hours.¹¹ Dividing

¹¹ This is the sum of 5.359 million MW hours sold by NLH to NP, 0.526 million sold by NLH to RLIS customers and 0.390 million self-generated by NP.

1 the rural deficit by that amount gives \$7.85 per MW hour. Under this alternative, that
2 amount of \$7.85 per MWh would be applied to every customer's consumption. Like the
3 fixed charge, it could be made explicit on bills and would be easily understood. Below is a
4 comparison of the outcome of employing this alternative with the status quo outcome:

	<u>Status Quo</u>	<u>Equal Payments Per MW hour</u>	
5			
6	Burden per RLIS Customer	\$505	\$385
7	Burden per NP Customer	\$174	\$184.

8 In this case, the result is less uneven sharing of the cost but still there is a considerably
9 greater burden on RLIS customers. Again, reflecting the fact that there are so many more of
10 them, the impact on NP customers is very small; only \$10 annually. Still, RLIS customers pay
11 much more than NP customers under this alternative. The obvious explanation lies in how
12 different the systems are. Colder winters, a higher penetration rate for reliance on electric
13 heat, and a different rate structure combine to cause RLIS customers to consume more
14 electricity than their NP counterparts on a per customer basis.

15

16 Alternative C (Uniform Two-Part Formula)

17 A compromise between Alternatives A and B is to adopt elements of both. A portion of
18 the required funds could be collected by a fixed charge on each customer plus a per-MWh
19 payment as well. A high fixed charge would require a small per-MWh charge, and vice
20 versa. However, unless the fixed charge is employed to raise all the required funds, as with
21 Alternative A, there would always be a difference in the per-customer burdens between the
22 two systems. The biggest gap of course would be as above with Alternative B, where no
23 fixed charge is employed.

24

25 Alternative D (Separate Formulas)

26 To avoid different per-customer costs between the two different systems, the rural
27 deficit allocation can be made on a per-customer basis in the first instance, as with
28 Alternative A. That would ensure that both systems' customers would contribute the same
29 per-customer amount towards the rural deficit. To allow for different consumption levels
30 within each system (based on the assumption that consumption within each system has
31 some correlation with ability to pay within the system), a per-MWh payment arrangement

1 would be employed in each.¹² As in all cases, the amount to be paid for the rural deficit
2 should be shown explicitly on customers' bills.

3 The advantages of Alternative D are as follows:

- 4 • it ensures that the average per-customer burdens across the two systems are equal;
- 5
- 6 • it ensures that those who consume more electricity bear a greater share of the
7 burden than others in the same system; and
- 8
- 9 • as with the other Alternatives, it is transparent and not difficult to understand.

10 For these reasons, Alternative D is the recommended alternative to the current allocation
11 formula.

12 Adopting a more equitable allocation formula, such as D, would have only very modest
13 implications for NP customers. As has been illustrated, moving to equal average customer
14 burdens across the two systems would have meant only about \$15 per NP customer in 2012.
15 On the other hand, the implications for the much fewer RLIS customers are large. A fairer
16 sharing of the burden would mean hundreds of dollars per year in savings for each one on
17 the average.

18 Figures provided by NLH for the 2013 test year place its revenue requirement from the
19 RLIS customers at \$15.5 million plus it requires an additional \$6.8 million for the rural
20 deficit.¹³ If the total rural deficit for that year were allotted so that the per-customer burden
21 in each system were equalized then the RLIS customers' allocation would be about \$2.5
22 million.¹⁴ That is \$4.3 million less than under the current formula. Coincidentally, in its 2013
23 GRA, NLH is seeking large percentage increases for in rates that it charges to all classes of
24 RLIS customers. For the 2013 test year such increases would cost RLIS customers
25 approximately \$4.2 million.

26 In short, a move to a fair allocation formula for the rural deficit would largely offset the
27 impact of NLH proposed rate increases, if they receive Board approval. Therefore any
28 required adjustment in rates would likely be very modest. At the same time, because of the

¹² Within each system, there could even be different fixed charges/per-MWh tariffs across rate classes.

¹³ Figures are from NLH 2013 General Rate Application, Vol. II, Exhibit 13, Schedule 1.2, p.3 of 109.

¹⁴ According to LWHN-NLH-056, Attachment 1, in 2013 there were 10,854 RLIS customers and 251,531 NP customers for a grand total of 262,385. Dividing that number into the rural deficit gives \$231. If the RLIS customers paid that much on average then their allocation would be \$2.5 million.

1 large number of NP customers, the adverse impact on the average NP customer would be
2 tiny.

3 4 **V. Concluding Remarks**

5 As long as the current government policy remains in place, the rural deficit is likely to
6 remain large and persistent. By not being able to send price signals to its rural customers,
7 NLH will be very restricted in its efforts to reduce the rural deficit. As indicated in its annual
8 reports on the rural deficit, NLH has taken some initiatives in that regard, but with very
9 modest success.¹⁵

10 This report has demonstrated that the current formula for allocating the rural deficit
11 does not meet the fairness criterion as was originally intended when the formula was first
12 endorsed more than 20 years ago. Specifically, on the average, a RLIS customer pays about
13 three times what a NP customer pays towards the deficit. The formula should be replaced
14 by one that ensures a more equal outcome. Also, most customers are likely completely
15 unaware that they are compelled to pay for the rural deficit. That ought to change.
16 Customers should be made aware of what they pay. There should be separate explicit
17 entries on their electricity bills so they can see what they are compelled to pay. Such a
18 practice would inform future public policy debates about the allocation of the rural deficit.

19 Also, this report has identified easily understandable formulas that would accomplish
20 the goals of fairness and transparency. In particular, Alternative D has the attractive features
21 of being easily understood, ensuring equal per-customer burdens on both systems, and
22 allowing for flexibility to suit the two distinct systems.

23 Finally, NLH's GRA is seeking an extra \$4.3 million from its RLIS customers in the 2013
24 Test Year. That is a substantial sum for a relatively small customer base. At the same time,
25 and coincidentally, RLIS customers are paying more than their fair share of the rural deficit
26 by a similar sum. Therefore, it is an opportune and appropriate time for the Board to re-
27 consider rural deficit allocation formula in the context of the GRA.

¹⁵ See, for example, "Rural Deficit Annual Report: Summary of Specific Initiatives," May 2013. LWHN-NLH-021, Attachment 5, NLH 2013 GRA.

CURRICULUM VITAE

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Education

<u>Institution</u>	<u>Concentration</u>	<u>Degree</u>
Memorial University (Canada)	Economics/Math	B.A
London School of Economics (UK)	Economics	M.Sc
Carleton University (Canada)	Economics	Ph.D

Areas of Expertise/Research Interest

The economics of public investment
Public Finance - Tax policy and benefit taxation; public goods; and common property
Fiscal federalism in Canada
Benefit-cost analysis/Impacts of natural resource development;
Newfoundland and Labrador economic development, policy and economic history;
Electricity policy.

Academic Awards and Distinctions

Centenary of Responsible Government Scholarship (Memorial University)
University Gold Medal for Academic Excellence in Economics (Memorial University)
Memorial University Graduate Fellowship (for study at London School of Economics)
Epstein Scholarship (outstanding graduate student in economics, Carleton University)
Finalist, 19th Annual National Tax Association-Tax Institute of America Awards Program
for Best Ph.D dissertation in Public Finance
Vanderkamp Prize, awarded by the Canadian Economics Association, 2004
Dean of Arts Award for Distinguished Scholarship, Memorial University, 2006

Synopsis of Career (1979 to present)

1982-present	Faculty member, Memorial University (Full Professor since 1999)
2002 and 2003	Research Advisor- Royal Commission on Strengthening and Renewing Our Place in Canada
1997 and 1999	Visiting Professor, Econ. Education and Research Consortium, Ukraine
1991	Visiting Professor, School of International Affairs, Carleton University
1989	Visiting Professor, Economics, University of Western Ontario
1979-1982	Program Review Officer and Senior Economist, Cabinet Secretariat, Government of Newfoundland and Labrador.

Advisory Appointments

Editorial Board of *Energy Studies Review* (2013-)
National Statistics Council of Canada (1999 to 2002, 2002-2005, 2006-2008)
Executive Council of the Canadian Economics Association (2002-2005)
NL Provincial Advisory Committee on Primary Health Care, 2001
Research Advisor, Atlantic Institute for Market Studies, (1996-2006)
Panel of Fiscal Experts, International Monetary Fund, 1992
Editorial Board of the *Canadian Journal of Economics* (1991-1994)

Forthcoming Refereed Publications

“The Equalization Formula: Peering inside the Black Box...and Beyond,” The School of Public Policy - Research Paper Series, University of Calgary.

“The Challenge of the Lower Churchill,” in Kerby, Matthew and Alex Marland, editors, *Masters of our own Destiny: Politics and Public Policy in Newfoundland and Labrador in the Danny Williams Era*, (McGill-Queen’s University Press, Montreal).

Refereed Articles

“Newfoundland’s Electricity Options: Making the Right Choice Requires an Efficient Pricing Regime,” *C. D. Howe Institute e-brief*, January 2012.

“Smallwood, Churchill Falls, and the Power Corridor through Quebec,” *Acadiensis: Journal of the History of the Atlantic Region*, of 40, no. 2, pp.112-127 (Autumn/Winter 2011).

“Capital-tax financing with scale economies in public-input production,” (with Mutsumi Matsumoto) *Regional Science and Urban Economics* 40, Elsevier Publications, pp.116-121, May 2010.

“The Empirical Impact of Public Infrastructure on the Japanese Economy,” (with Christopher Annala and Raymond Batina) *Japanese Economic Review* 59, pp.419-437, December 2008.

“The Origins of a Coming Crisis: Renewal of the Churchill Falls Contract,”(with Melvin Baker) *Dalhousie Law Journal*, 30, pp.207-258, Spring 2007.

“Labor and Capital Taxation with Public Inputs as Common Property,”(with Raymond Batina) *Public Finance Review*, 35, pp.626-642, Sage Publications, California, September 2007.

“Contributions to International Public Goods and the Notion of Country Size,” (with Ratna Shrestha) *FinanzArchiv* 59, pp.551-559, Mohr Siebeck, Germany, December 2003.

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"Theories of the Effects of Public Capital on the Economy in Static Models," (with Raymond G. Batina and Christopher N. Annala) January 2004.
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Published Monographs/Reports

"Federal Government Presence in Newfoundland and Labrador: Final Report," (with A. Coffin) The Harris Centre of Regional Policy and Development, Memorial University of Newfoundland, August 2006.

"The Renewal Clause in the Churchill Falls Contract: The Origins of a Coming Crisis," (with Melvin Baker) *Papers in Political Economy*, No. 96, Political Economy Research Group, University of Western Ontario: London, September 2005.

"An Analysis of the Use of Fluroquinolones for Uncomplicated Urinary Tract Infections, Prostatitis and Community-Acquired Pneumonia: Clinical and Economic Considerations," Canadian Coordinating Office for Health Technology Assessment, Ottawa, (with B. Barrett, M. Doyle, P. Parfrey, J. Fardy, S. Crewe, G. Kent, J. McDonald, K. White and V. Gadag - Barrett and Doyle were the primary authors), 1997. (Refereed)

"The Economic Impact of Memorial University of Newfoundland: A Benefit-Cost Approach," *ISER Report No. 10*, Institute of Social and Economic Research, Memorial University of Newfoundland, St. John's, December 1995. (Refereed)

Other Publications

"Electricity Market Integration: Newfoundland Chooses Monopoly and Protectionism," *AIMS Commentary*, November, 2013.

Book Review, Colin Waugh, "Ambition and Atrocity in Africa's Lone Star State: Charles Taylor and Liberia," *Canadian Journal of African Studies*, 47:1, 141-142, 2013.

"Danny Williams goes out on top," *Policy Options*, Vol. 32, pp.50-55, Institute for Research on Public Policy, February 2011.

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"Atlantica: An Idea too Strong to Die, Too Weak to Embrace," *The Beacon*, Atlantic Institute for Market Studies Quarterly Report, Vol. 2, pp.11-12. Halifax, Spring 1996, (Reprinted in the St. John Telegram Journal).

A number of internal short policy publications through Memorial University's ISER as well as newspaper articles.

Presentations in International Forums

"Sustainable Economic Growth and Structural Reform in Japan" Economic and Social research Institute, International Collaboration Project Meeting, Tokyo, Japan, February 2004.

"Public Inputs and the Private Economy: Some Conceptual and Policy-Theoretic Issues," Economic and Social Research Institute's International Forum for Macroeconomic Issues, Tokyo, Japan. February 2004.

"Public Infrastructure Support for Industry: Common Property versus Collective Property," Economic and Social Research Institute's International Forum for Macroeconomic Issues," Tokyo, Japan, February 2003.

"The Impact of Public Inputs on the Private Economy," Economic and Social Research Institute's International Forum for Macroeconomic Issues, The Brookings Institution, Washington DC, USA, October 2002.

"Public Infrastructure and Services to Industry: Collective property versus common property." International Institute of Public Finance, Annual Congress, University of Economics, Prague, Czech Republic, August 2002.

“Cigarette Smoking and the Cost of Publicly funded Health Care: An Econometric Approach” International Institute of Public Finance, Annual Congress, University of Helsinki, Helsinki, Finland, August 2001.

“Optimal Public Spending on Public Productivity-increasing Activities,” International Institute of Public Finance, Annual Congress, Moscow, Russia, August 1999

“Public Input Provision with Factor Taxation and Variable Factor Supply” Western Economics Association International, Annual Meetings, San Diego, USA, July 1999.

“The Economics of Public Inputs,” Washington State University, Department of Economics Seminar Presentation, Pullman, Washington USA, November 1998.

“Public investment and Lindahl pricing: financing factor-augmenting public inputs” International Institute of Public Finance, Annual Congress, National University, Cordoba, Argentina, August 1998.

“Public Inputs and Optimal Provision of the Hicksian Variety” International Institute of Public Finance, Annual Congress, Ritsumeikan University, Kyoto, Japan 1997.

“Factor-Augmenting Public Inputs: Optimal Provision in a SOE,” Eastern Economics Association, Annual Meetings, Boston USA 1996.

“The terms of trade and the size of government” Eastern Economics Association Annual Meetings, Boston, USA 1994.

Presentations in National and Local Forums

Invited presentation on hydro-electric development in Northern Alberta, Alberta Legislature’s Standing Committee on Natural Resource Stewardship, February 2013.

Presentations of scholarly papers (usually combined with service as discussant and/or chair) at numerous national and local conferences, such as:

- Canadian Economics Association Annual Meetings, various years
- Atlantic Canada Economic Association (ACEA) Meetings, various years
- Canadian Regional Economics Association Meeting,
- Canadian Public Economics Study Group, various years.
- ISER seminar

Seminar Presentations at various universities including:

- University of Western Ontario (Sloan Seminar, while a visiting faculty member) 1989
- Carleton University (invited speaker) 1990
- University of Alberta, Institute of Public Economics (invited speaker) 1997
- Queen’s University, Forum on Fiscal Federalism, (invited speaker) 2005

- University of Western Ontario, Political Economy Study Group (invited speaker) 2005
 - University of Toronto, meeting on municipal governance, panel, 2006
- Memorial University, Dept. of Political Science seminars, 2009 and 2010

Workshops (by invitation) with the federal government's *Expert Panel on Equalization and Territorial Formula Financing*:

- Ottawa, Academic workshop, May 2005
- Moncton, Atlantic Provinces consultations, June 2005
- Yellowknife, NWT, Territorial consultations, August 2005
- Montreal, Academic workshop on natural resource revenues, September 2005
- Ottawa, workshop on the Panel's report, June 2006

Workshops (by invitation) on *Fiscal Federalism*

"Roundtable on Fiscal Federalism and its Implications for Health Policy," Queen's University, October, 2001.

"Priorities for Fiscal Federalism," hosted by Queen's University for the Privy Council Office of Canada, December, 2005.

"Restoring Fiscal Balance in Canada," Halifax, sponsored by Department of Finance Canada, September, 2006.

"Peoples, Powers and Prospects in Canada's North," Institute for Research on Public Policy," 2007

Academic Refereeing Service

For Economics Journals:

- Journal of International Economics* (US)
- Canadian Journal of Economics* (Canada)
- Journal of Development Economics* (US)
- Economic Journal* (UK)
- Journal of Public Economics*, (US/UK)
- International Economic Review* (Japan/US)
- Review of International Economics* (US)
- Economic Record* (Australia)
- International Tax and Public Finance* (US/UK)
- International Economic Journal* (Korea)
- Public Finance/Finances Publiques* (Germany)
- Canadian Public Policy-Analyse de Politiques* (Canada)
- Journal of Economics* (Germany)
- Journal of International Trade and Economic Development* (US)
- FinanzArchiv* (Germany)
- Southern Economic Journal* (US)
- Energy Studies Review* (Canada)
- Journal of Economic Issues* (US)
- Journal of Institutional and Theoretical Economics* (Germany)

Others:

Acadiensis; The Journal of the History of the Atlantic Region

Queen's Law Review

Canadian Journal of Regional Science

Newfoundland and Labrador Studies

Mercatus Centre; George Mason University

Social Sciences and Humanities Research Council of Canada

Atlantic Institute for Market Studies

Canadian Coordinating Office for Health Technology Assessment

Alberta Heritage Foundation for Medical Research

Department of Fisheries and Oceans-Canada

Industry Canada

Institute of Intergovernmental Relations-Queen's University

ISER Books, Memorial University

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