

1 **REFERENCE: Page 1-3, Line 19 and Line 30**  
2 **Pre-Filed Testimony of P. Bowman**  
3

4 Mr. Bowman states at line 18-19: "...due to a proposed adoption of a  
5 new depreciation methodology (Equal Life Group, or ELG) that is not  
6 suited to Hydro's operation" and beginning at line 30: "...has  
7 fundamentally altered the cost profile of capital intensive assets so as  
8 to most aggressively recognize their costs early in the asset's life (as  
9 well as early as before the asset is even in service)...."

10  
11 **QUESTION:**  
12

- 13 a) Please provide a description of the specific mechanics of the ELG Procedure that  
14 would make it not suited to "Hydro's Operation".  
15  
16 b) Please clarify whether Mr. Bowman is suggesting that the ELG procedure can  
17 begin to depreciate an asset before it is placed into service and capitalized to  
18 gross plant in service.  
19

20 **ANSWER:**  
21

22 **(a)**  
23

24 Manitoba Hydro's operations reflect an economic profile that Mr. Bowman discusses in  
25 detail in Section 2.2 of the pre-filed testimony, particularly Section 2.2.4. In short,  
26 hydraulic generation and related major transmission assets are very long lived with  
27 economic characteristics that improve materially as the plant ages. Unlike a thermal  
28 plant, whose overall cost profile is one of generally increasing cost (as fuel prices rise), a  
29 hydraulic bulk power system achieves stable or decreasing costs over time (both in real  
30 and also nominal terms (inclusive of inflation), which is the basis of the related revenues  
31 earned by the plant).  
32

33 A good example of the cost profile of the different depreciation methodologies is set out  
34 in an information request in the recent Newfoundland Hydro hearing into depreciation  
35 methodologies – IC/NLH-8 (attached to this response, but without the detailed appendix  
36 from the original response which is unrelated to this issue). This request was for a long-  
37 term comparison of the annual depreciation amounts for a new hydro plant called

1 Granite Canal under 3 alternative depreciation approaches – the sinking fund method  
2 (which NLH has used up to this proceeding), the ASL approach (which NLH was  
3 proposing to adopt) and the ELG approach (which NLH rejected). As shown in the table  
4 on pages 2-3, the sinking fund method reflects a cost profile that ensures the largest  
5 parts of the depreciation expense are realized later in the plant’s life when the economic  
6 benefit of the plant to ratepayers is the greatest. However, it is generally understood that  
7 such “back ended” depreciation methods are now out of favour. In contrast, the ELG  
8 method is the most front-ended cost profile for depreciation, resulting in higher  
9 depreciation expense for the entire 60 year period shown in the table. As both ASL and  
10 ELG ultimately will depreciate the entire plant to the same dollar value, it is assumed that  
11 the ASL approach must have somewhat higher depreciation costs than ELG for the  
12 years after year 61.

13

14 Note that focusing on the first 10 years, the total depreciation expense under the ELG  
15 approach is \$28.8 million, while under the ASL approach the total expense to ratepayers  
16 is \$26.1 million, a \$2.7 million difference, or slightly over 10%. Given the extremely  
17 challenging economics of new hydro plants, such as described in PUB/MIPUG-7, it is not  
18 apparent that any benefit arises to ratepayers from the more onerous ELG approach.

19

20 **(b)**

21

22 No, Mr. Bowman is not suggesting that the ELG procedure can begin to depreciate an  
23 asset before it is placed into service.

- 1 Q. With respect to Granite Canal, please provide a copy of the business case analysis  
2 supporting construction of the facility, showing year by year projections for the life  
3 of the plant of  
4 (a) load or generation,  
5 (b) avoided diesel quantities (barrels),  
6 (c) avoided diesel expense,  
7 (d) annual operating costs, and  
8 (e) depreciation, interest and return under each of the four approaches to  
9 depreciation used, previously proposed or proposed by Hydro; that is i) the  
10 sinking fund method, ii) the Gannett Fleming 2005 Study approach, iii) the  
11 Gannett Fleming 2009 Study approach and iv) the approach proposed by the  
12 present Application.  
13  
14
- 15 A. Please refer to IC-NLH-8 Attachment 1. The detailed annual projections are not  
16 readily available as the analysis was completed in an integrated strategic planning  
17 computer program. The available data is contained in IC-NLH-8 Attachment 1 as  
18 follows:  
19 (a) Appendix A, Table A-1  
20 (b) Not applicable. The justification was based upon a comparison of alternatives,  
21 rather than avoided fuel.  
22 (c) Not applicable – The justification was based upon a comparison of alternatives,  
23 rather than avoided fuel.  
24 (d) Not available – each option used varying operation and maintenance costs.  
25 (e) Hydro does not have available data for the depreciation estimates for all  
26 options. However, the three options under discussion are the existing  
27 methodology - sinking fund, the proposed methodology – Average Service Life

**Depreciation Methodology and Asset Service Lives**

- 1 (ASL) and the methodology proposed in previous Gannett Fleming  
 2 recommendations - Equal life Group (ELG) are shown in the table below.

GRANITE	CANAL	Sinking Fund	ASL	ELG
		Depreciation Expense	Depreciation Expense	Depreciation Expense
	Y2003	72,865		
	Y2004	154,512		
	Y2005	187,444		
	Y2006	214,021		
	Y2007	224,166		
	Y2008	279,057		
	Y2009	270,029		
	Y2010	291,190		
	Y2011	314,010	2,610,238	2,886,641
	Y2012	338,618	2,610,238	2,886,641
	Y2013	365,154	2,610,238	2,886,641
	Y2014	393,770	2,610,238	2,886,641
	Y2015	424,629	2,610,238	2,886,641
	Y2016	457,905	2,610,238	2,886,641
	Y2017	493,790	2,610,238	2,886,641
	Y2018	524,552	2,610,229	2,886,631
	Y2019	557,420	2,603,944	2,879,681
	Y2020	601,103	2,599,528	2,874,797
	Y2021	648,209	2,599,528	2,874,797
	Y2022	699,007	2,577,412	2,850,339
	Y2023	639,782	2,555,605	2,826,223
	Y2024	571,531	2,555,604	2,826,222
	Y2025	616,316	2,555,604	2,826,222
	Y2026	664,602	2,549,343	2,819,298
	Y2027	716,588	2,480,466	2,743,127
	Y2028	731,839	2,468,378	2,729,759
	Y2029	746,711	2,451,454	2,711,043
	Y2030	805,222	2,378,859	2,630,761
	Y2031	868,317	2,364,836	2,615,253
	Y2032	936,357	2,354,870	2,604,232
	Y2033	993,660	2,354,870	2,604,232
	Y2034	1,054,836	2,354,870	2,604,232
	Y2035	1,137,490	2,350,763	2,599,690

Depreciation Methodology and Asset Service Lives

Y2036	1,226,621	2,330,226	2,576,978
Y2037	1,319,152	2,306,819	2,551,093
Y2038	1,415,094	2,302,138	2,545,916
Y2039	1,526,012	1,955,514	2,162,587
Y2040	1,645,625	1,883,721	2,083,192
Y2041	1,774,613	1,872,793	2,071,107
Y2042	1,913,712	1,872,249	2,070,505
Y2043	1,907,315	1,872,249	2,070,505
Y2044	1,894,402	1,872,249	2,070,505
Y2045	2,042,890	1,865,286	2,062,805
Y2046	2,203,017	1,481,590	1,638,478
Y2047	2,375,695	1,121,809	1,240,600
Y2048	2,561,907	1,113,492	1,231,402
Y2049	2,762,716	1,103,413	1,220,256
Y2050	2,979,265	1,103,413	1,220,256
Y2051	3,212,787	1,103,413	1,220,256
Y2052	3,464,613	1,097,346	1,213,546
Y2053	2,046,736	976,074	1,079,432
Y2054	452,759	911,118	1,007,598
Y2055	488,248	911,118	1,007,598
Y2056	526,518	906,844	1,002,872
Y2057	567,787	901,925	997,432
Y2058	612,292	897,834	992,907
Y2059	660,285	868,067	959,988
Y2060	712,040	868,067	959,988
Y2061	767,851	868,067	959,988
Y2062	828,037	699,428	773,492
Y2063	892,941	463,335	512,398
Y2064	n/a	463,335	512,398
Y2065	n/a	463,335	512,398
Y2066	n/a	463,335	512,398
Y2067	n/a	463,335	512,398
Y2068	n/a	463,334	512,397
Y2069	n/a	463,334	512,397
Y2070	n/a	463,334	512,397

- 1 The discount rate and cost of capital rates are specified in Section 2.6.1 of IC-NLH-8
- 2 Attachment 1.



1 **REFERENCE: Page I-6, Lines 16 to 28**  
2 **Pre-Filed Testimony of P. Bowman**  
3

4 Mr. Bowman recommends that for rate setting purposes, Manitoba  
5 Hydro should “Maintain allocations of overhead and administrative  
6 and general costs to capital on the basis of full cost accounting, as  
7 permitted by CGAAP, consistent with approaches used by Hydro in  
8 the 2008-2010 period” and “To the extent required (i.e., in the event  
9 regulatory accounting cannot be accommodated in Hydro’s audited  
10 financial statements), Hydro should provide the Board with ‘regulatory’  
11 statements and calculations as an alternative to the IFF, for the  
12 purposes of assessing rate requirements.”  
13

14 **QUESTION:**  
15

16 Please explain how Mr. Bowman’s recommendations with respect to overhead  
17 capitalized and separate regulatory accounting are consistent with the following:  
18

- 19 a) The findings and recommendations contained on pages 112, 113 and 389  
20 of Order 116/08, that the PUB was concerned about the aggressive  
21 deferral and capitalization of operating costs under a full-cost accounting  
22 approach and the recommendation that Manitoba Hydro consider the  
23 early adoption of less aggressive IFRS overhead capitalization practices;  
24 and  
25  
26 b) The acceptance by the PUB for rate-setting purposes of the reductions to  
27 overhead capitalized made by Manitoba Hydro that have been  
28 implemented from the 2009/10 to 2011/12 period in Order 5/12, pertaining  
29 to the 2010/11 and 2011/12 test years.  
30

31 **ANSWER:**  
32

33 **(a) and (b)**  
34

35 Mr. Bowman was not able to locate any reference to overheads on pages 112 or 113 of  
36 Order 116/08, and could not locate a page 389 in that Order (the final page is page 355).

1 Mr. Bowman also notes that Board Order 116/08 was issued at a time when IFRS  
2 changes were being hypothesized, but without solid information as to the standards and  
3 potential impacts. The Board expressed concerns in that Order that Hydro and  
4 ratepayers would be affected by a major change that could arise with IFRS, in that  
5 overheads would be reduced on an ongoing basis, but past project costs would continue  
6 to include a more fulsome overhead allocation that had been used in prior years, and as  
7 such future ratepayers may be in a way double-burdened by the change in approach<sup>1</sup>.

8  
9 The Board also expressed concern with Hydro's capitalization policies in that they  
10 provided a way to mask the degree of cost increases that were occurring in Hydro's  
11 spending<sup>2</sup>.

12  
13 In the end, the concern of the Board regarding Hydro's capitalization policies for major  
14 new construction, and their effects on intergenerational equity, was not justified. It is Mr.  
15 Bowman's view that the Board's conclusions on Hydro's capitalization policies did not  
16 properly consider the assets that were being developed, but only the dollars that were  
17 being spent, as noted in the following excerpt from Order 116/08 discussing Hydro's full  
18 cost accounting approach:

19  
20 "While there is an argument for the practice, the net result is that costs  
21 now being incurred are not reflected in rates until years, in fact decades,  
22 later, meaning the current generation of ratepayers leave the results for  
23 the generations that will follow to meet"<sup>3</sup>.

24  
25 The above excerpt summarizes the incorrect view that the "costs now being incurred"  
26 should somehow be paid for out of current rates, even through these costs are properly  
27 linked to future development. Mr. Bowman set out in Section 2.2 of the pre-filed  
28 testimony (particularly Section 2.2.4) the rationale as to why it is proper and principled  
29 utility ratemaking to match the financial impact of these costs with the economic benefits  
30 of the underlying assets they produce.

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<sup>1</sup> The Board noted that "...there is an argument for MH's current approach..." but that "if the approach was to change" this would "result in current and future ratepayers being billed for costs reflective not only of current costs but also cost burdens avoided by past ratepayers as a result of the current process of deferral and capitalization.", page 94.

<sup>2</sup> "MH had total operating and administrative expenses before capitalization of \$543 million in 2003/04, which grew to over \$688 million in 2010 and is forecast to be \$703.8 million in 2010/11 and \$714.1 million in 2011/12, before capitalized activities and overhead. In 2003/04 MH capitalized approximately 28% of labour and benefits. The amount of labour and benefits capitalized has increased since then, where MH now capitalizes over 32% of its labour and benefits. The increase in amounts capitalized mutes the growth in O&A expense recorded on an annual basis." Board Order 116/08 page 93.

<sup>3</sup> Board Order 116/08, page 92-93.

1 The same assessment can be made on a retrospective basis with regard to the plants  
2 presently in service. For example, with reference to the output of earlier plants such as  
3 Long Spruce (1979) and Limestone (1990), these plants have production costs  
4 estimated earlier at 1.14 cents/kW.h (Long Spruce) and 2.21 cents/kW.h (Limestone)<sup>4</sup>.  
5 These plants are now roughly one-fifth to one-quarter of the way through their lifespan,  
6 and produce power at all-in prices that are very favourable for today's ratepayers (major  
7 plants that are even older typically have more favourable all-in costs, such as Kettle and  
8 Kelsey). The question becomes whether there is an excessive burden being imposed  
9 today due to previous generations having excessively capitalized project development  
10 costs or overheads. This would not appear to be the case. For today's ratepayers, a  
11 small percentage change in the output costs of Limestone, due to 1970s or 1980s  
12 ratepayers having been burdened with a greater or lesser percentage of the overhead  
13 costs of building the plant, would appear almost irrelevant to overall system power costs.  
14 There is no evidence of any intergenerational burden having been handed down to  
15 today's ratepayers from the methods that were applied by Hydro in accounting for these  
16 older plants. There is no reason to expect a similar relationship would not hold for  
17 Conawapa or Keeyask.  
18  
19 Please also see PUB/MIPUG-I-12.

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<sup>4</sup> Per TREE/MH-I-5(h) from the 2002 Status Update filing.



1 **REFERENCE: Page 4-1, lines 11 to 23**  
2 **Pre-Filed Testimony of P. Bowman**  
3

4 **QUESTION:**  
5

- 6 a) Please explain the basis of Mr. Bowman's conclusion that a \$60 million reduction  
7 to Manitoba Hydro's projected net income is an offsetting factor to the impact of a  
8 \$250 million projected reduction in export revenues in 2013/14 between IFF09  
9 and IFF11-2.  
10

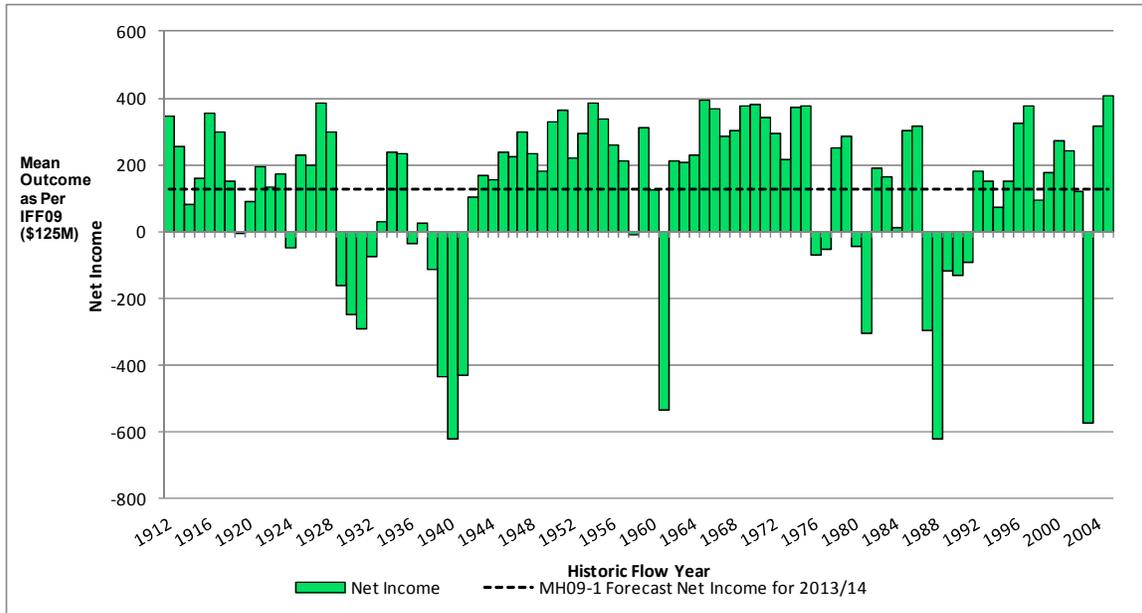
11 **ANSWER:**  
12

13 **(a)**  
14

15 Manitoba Hydro's exposure to natural gas prices and related export market prices is  
16 partially internally offsetting or "naturally hedged". This is because as natural gas prices  
17 and export market prices drop, Hydro experiences three related effects: 1) lower  
18 revenues from some export sales (largely opportunity sales); 2) lower costs for  
19 purchased power and fuel across all scenarios averaged into the IFF (droughts and  
20 floods); and 3) less severe financial losses during droughts. While items #2 and #3 are  
21 related, there are in fact distinct financial and risk profiles associated with each effect.  
22

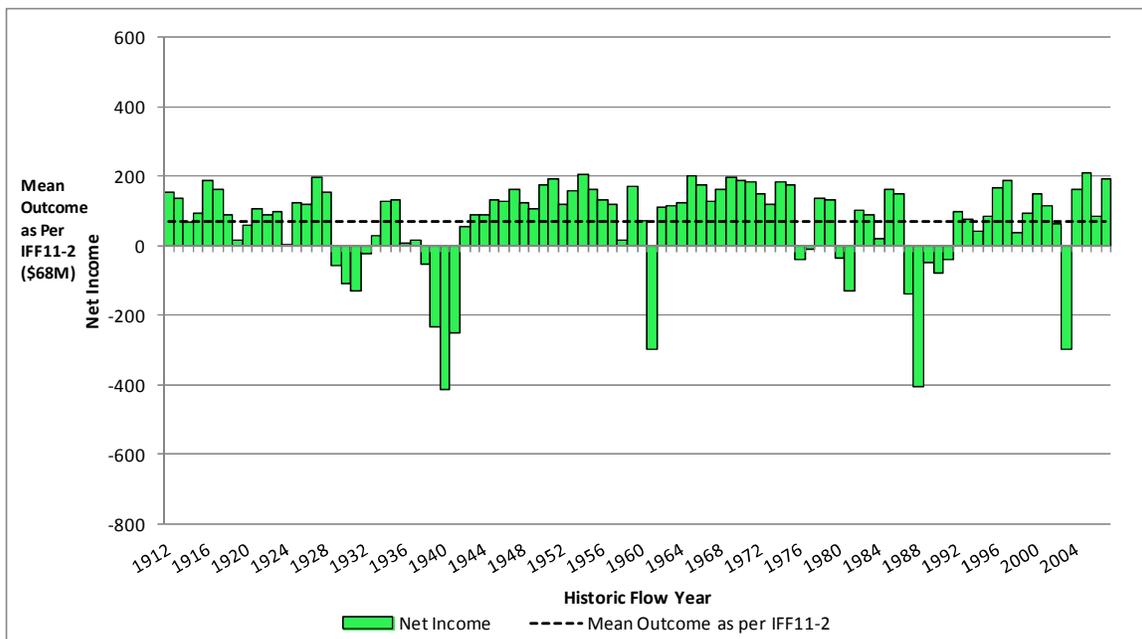
23 A good illustration of the concept is shown in three figures, set out below. Figure 1 is  
24 from data contained in the previous GRA (IR response PUB/MH-I-81(a)) indexed to the  
25 2013/14 IFF year from the IFF09-1 (the basis of the previous GRA), and Figure 2 is a  
26 repeat of Figure 2-3 from Mr. Bowman's pre-filed testimony with the axes made  
27 consistent with Figure 1 directly above it. As such, both figures represent 2013/14  
28 forecasts, but with differing vintages of export/drought price risk factored in (one from the  
29 previous GRA, one from this GRA). As shown in Figures 1 and 2, the risk exposure  
30 (illustrated by the height of the various bars) has been materially reduced in this GRA,  
31 and despite a lower forecast net income (the mean of all of the bars - totaling \$125  
32 million in IFF09-1 and \$68 million in IFF11-2) the risk profile is in fact improved (less  
33 years that lead to absolute losses, and smaller absolute losses when they occur).

1 **Figure 1: 2013/14 Net Income Distribution from IFF09-1 and the 2010-12 GRA**



2  
 3  
 4

**Figure 2: 2013/14 Net Income Distribution from IFF11-2 and the 2012/14 GRA**

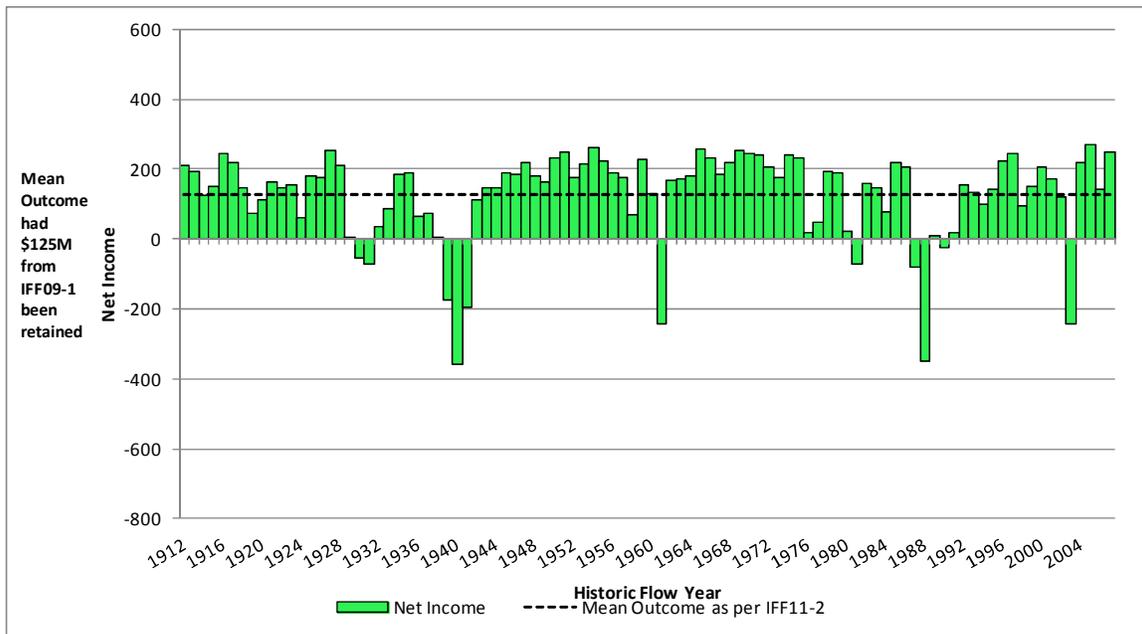


5

1 In contrast, had the previous target net income of \$125 million for 2013/14 been  
2 retained, the situation for 2013/14 would be as set out in Figure 3 below:

3  
4  
5

**Figure 3: 2013/14 Net Income Distribution for the Current GRA, had the \$125 Million Target Net Income from IFF09-1 been Retained**



6  
7

8 The distribution of risk and net revenue in Figure 3 is materially shifted as compared to  
9 Figures 1 and 2. In particular, Figure 3 shows that had the \$125 million target net income  
10 been retained, there would be no further relevance to even discussing 5 year droughts,  
11 as the longest period of net losses in the historic record would be only 3 years (a repeat  
12 of 1939 to 1941 flows) and would total less than \$750 million in net losses, which would  
13 be fully made up within the 5 subsequent years without any new rate increases. The  
14 massive 2003/04 drought net losses would have been made up in basically 1 year even  
15 with no rate increases. In the entire 96 year flow record, there would be a total of only 11  
16 instances of annual net losses for the Corporation. Using the ratemaking principles set  
17 out in Section 2.2 of Mr. Bowman's evidence, there would be no regulatory rationale for  
18 targeting such an excessively high net income or reserve build-up persistently across  
19 almost all water flow conditions.



1 **REFERENCE: Page 4-8, line 1-2**  
2 **Pre-Filed Testimony of P. Bowman**  
3

4 "This approach [the ELG Procedure] is more aggressive in that for the  
5 same asset more of the costs are depreciated in the early years of the  
6 asset's life."  
7

8 **QUESTION:**  
9

10 a) Does Mr. Bowman view that the ELG procedure is a straight line method of  
11 depreciation? Please explain.  
12

13 **ANSWER:**  
14

15 **(a)**  
16

17 Yes, ELG is technically considered one of the "straight-line" methods of depreciation.  
18

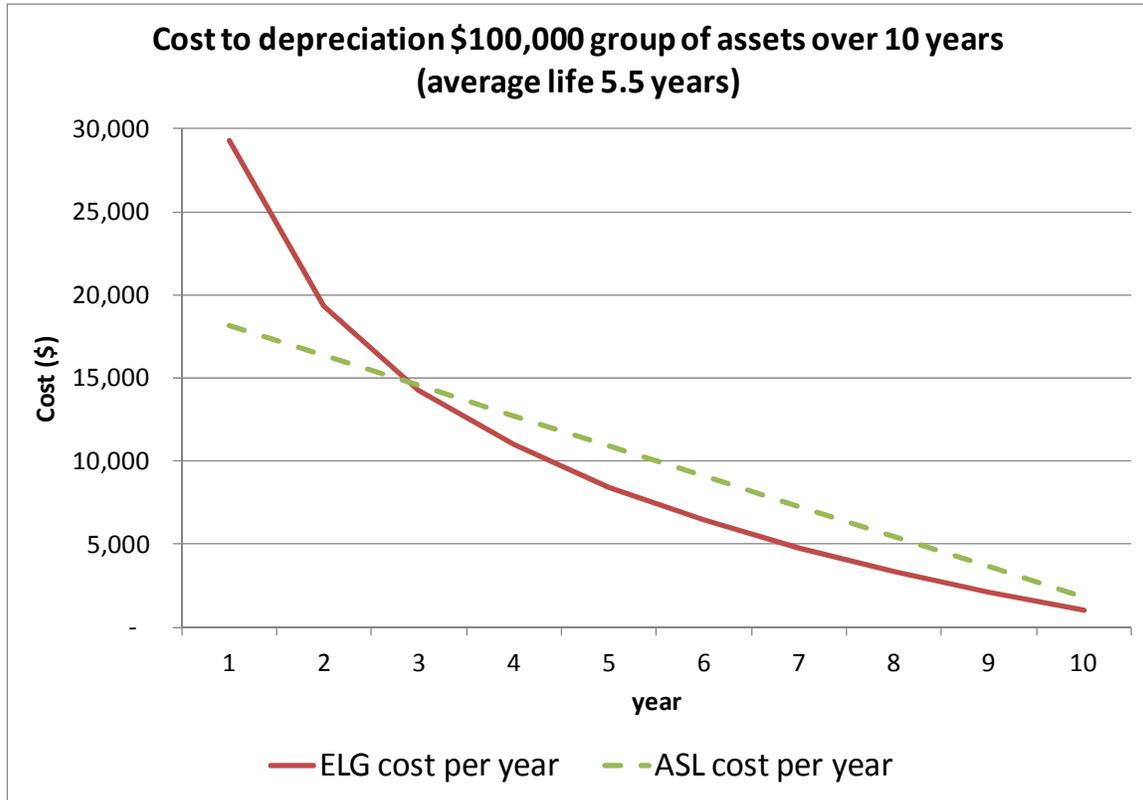
19 The mathematics, however, are such that it does not result in the typical intuitive  
20 straight-line profile of the more easily understood Average Service Life (ASL) approach.  
21

22 For example, the mathematics for a \$100,000 investment in a group of like assets with  
23 an average life of 5.5 years and a simple step-function survivor curve (i.e., \$10,000 of  
24 gross plant retired each year) would normally be understood to yield an annual  
25 depreciation of  $\$100,000 / 5.5 \text{ years} =$  a rate of 18.181 percent, or \$18,181 in  
26 depreciation expense in the first year. The depreciation in each subsequent year would  
27 be the remaining gross book value of the class, times 18.181%. Under an ELG  
28 approach, the actual first year depreciation on this group of assets is \$29,290 (a 29.29%  
29 rate), which then decreases each year through the 10<sup>th</sup> year when the rate applied is  
30 10.00%<sup>1</sup>.

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<sup>1</sup> National Association of Regulatory Utility Commissioners, *Public Utility Depreciation Practices*, August 1996, Chapter XII: Equal Life Group Depreciation Rates.

1 The net cost to ratepayers is shown in the following graph:  
2



3  
4  
5 As a result, it has been Mr. Bowman's experience that when discussing rate impacts of  
6 depreciation methods, a general reference to "straight-line" approaches is understood to  
7 be synonymous with the intuitive mathematics (such as a 20 year average life yielding a  
8  $1/20^{\text{th}}$ , or 5% rate) consistent with the Average Service Life approach.

1 **REFERENCE: Page 4-12, line 6 through 11**  
2 **Pre-Filed Testimony of P. Bowman**  
3

4 Mr. Bowman provides a list of Canadian Crown Utilities that do not  
5 use the ELG Procedure in calculating depreciation rates.  
6

7 **QUESTION:**  
8

9 a) Please provide Mr. Bowman's understanding of the manner in which the  
10 depreciation rates (or average service life estimates) are applied for the following  
11 utilities. Specifically please identify if the following utilities use a group accounting  
12 approach or a unit accounting approach:

- 13 • BC Hydro;
- 14 • Newfoundland and Labrador Hydro; and
- 15 • SaskPower.

16  
17 b) For each Crown Corporations listed in the evidence of Mr. Bowman at page 4-12,  
18 please indicate Mr. Bowman's understanding of how gains and losses on  
19 retirement are treated for both regulatory accounting and financial reporting  
20 purposes.  
21

22 **ANSWER:**  
23

24 **(a)**  
25

26 It is Mr. Bowman's general understanding that the 3 cited utilities (Newfoundland and  
27 Labrador Hydro (NLH), BC Hydro, and SaskPower) now use a similar "group  
28 accounting" approach. However, as set out below, there appears to be significant  
29 disagreement among the depreciation expert community whether this is indeed the case.  
30

31 Mr. Bowman's primary understanding comes from NLH's recent Depreciation  
32 Methodology Review, which sought approval as follows:  
33

34 "7. Hydro therefore applies for an Order approving the change to its  
35 depreciation being calculated with **group accounting methods** using the  
36 average service life procedure and applied on a remaining life basis and

1 that the financial effects of these changes be included in customers' rates  
2 resulting from Hydro's next General Rate Application"<sup>1</sup> (emphasis added).

3

4 Mr. Bowman's understanding is that this Application has now been negotiated between  
5 the parties, and that the method of depreciation and accounting proposed by NLH in its  
6 Application has been accepted.

7

8 During that review of NLH's depreciation methodologies, the company submitted  
9 evidence that the approach it was proposing was also used in BC and Saskatchewan<sup>2</sup>.

10

11 It is worth noting however that as part of that proceeding, expert testimony supplied by  
12 each of the NLH depreciation expert, the Industrial Customers, the Consumer Advocate  
13 disputed whether the approach NLH was proposing was indeed a "group accounting"  
14 approach, as follows:

15

16 Pre-filed testimony prepared on behalf of the Industrial Customers (Pat Lee) noted:

17

18 [T]he company plans to apply the group depreciation rate to each unit of  
19 property within the group account. This is fundamentally inconsistent with  
20 the meaning of the group depreciation procedure. *[Newfoundland]* Hydro  
21 incorrectly ceases depreciation on an individual asset when it becomes  
22 fully depreciated regardless if the total account reserve is fully  
23 depreciated. Under the group depreciation procedure, individual assets  
24 within the group should continue to be depreciated until the reserve for  
25 the total account is fully depreciated<sup>3</sup>.

26

27 The Consumer Advocate Pre-filed testimony (Jacob Pous) noted:

28

29 [R]ather than developing depreciation rates for individual items,  
30 *[Newfoundland]* Hydro has grouped many assets into 136 categories and  
31 has developed 136 different depreciation rates. While group depreciation  
32 requires the application of a depreciation rate derived on a group basis to  
33 the group from which it was calculated, *[Newfoundland]* Hydro proposes

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<sup>1</sup> Newfoundland and Labrador Hydro 2012 Depreciation Methodology Application. Page 3.  
<http://www.pub.nf.ca/applications/NLH2012Depreciation/files/applic/NLH2012DepreciationApplication.pdf>.

<sup>2</sup> Ibid.

<sup>3</sup> Patricia S. Lee, BCRI Valuation Services on behalf of the Island Industrial Customers – Direct Testimony provided for the Newfoundland and Labrador Hydro 2012 Depreciation Methodology. Page 6. (October 3, 2012).  
<http://www.pub.nf.ca/applications/NLH2012Depreciation/files/reports/IC-ExpertReport-Oct3-12.pdf>.

1 to take the 136 different group depreciation rates and apply them on an  
2 individual asset basis within each of the 136 different groups. This creates  
3 a significant inconsistency and should not be adopted<sup>4</sup>.

4

5 NLH's depreciation expert (Larry Kennedy) noted as follows:

6

7 Please refer to the response to IC-NLH-51, where it is indicated that  
8 Hydro is not proposing group accounting. ... Mr. Kennedy notes that the  
9 most significant difference from group accounting to the implementation  
10 procedure being proposed is the ceasing of depreciation expense when  
11 an individual asset becomes fully depreciated, and the charging of losses  
12 on retirement to the income statement. Overall, Mr. Kennedy notes that  
13 this proposed unit depreciation approach will reduce the depreciation  
14 amount as depreciation stops when the assets are fully depreciated.  
15 However, the reduction will be offset in the proposed approach due to the  
16 inclusion of the losses on retirement to be included in the revenue  
17 requirement.

18

19 **(b)**

20

21 The situation reflects a mix of both major approaches – i.e., recognize gains and losses  
22 on retirement in the income statement in the year they arise, or reflect gains and losses  
23 as part of accumulated amortization. Please see the following:

24

25 **Yukon Energy Corporation**

26

27 Yukon Energy Corporation (Yukon Energy) presently uses the same approach to  
28 regulatory and financial reporting purposes. Gains and losses on disposal in effect  
29 become part of the Accumulated Amortization category and are not recognized in the  
30 year they arise. The exception is for land and vehicles, where gains and losses on  
31 retirement are recognized in the income statement in the year they arise<sup>5</sup>.

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<sup>4</sup> Direct Testimony of Jacob Pous on behalf of the Consumer Advocate of Newfoundland and Labrador for the matter of the 2012 Newfoundland and Labrador Depreciation Methodology. Page 20-21. (October 3, 2012).  
<http://www.pub.nf.ca/applications/NLH2012Depreciation/files/reports/CA-ExpertReport-Oct3-12.pdf>

<sup>5</sup> Yukon Energy Corporation 2011 Annual Report. Pg 45.

1 It is understood that this approach may not be used for financial reporting if the utility  
2 converts to IFRS, where gains and losses on retirement would be recognized in the year  
3 they arise.

#### 4 5 **Northwest Territories Power Corporation**

6  
7 Northwest Territories Power Corporation (NTPC) presently uses the same approach for  
8 regulatory and financial reporting purposes. The approach is the same as that used by  
9 Yukon Energy (above). Similar to Yukon Energy, the financial reporting approach after  
10 the utility converts to IFRS will likely be based on gains and losses on retirements being  
11 recorded in the income statement in the year they arise<sup>6</sup>.

#### 12 13 **Newfoundland and Labrador Hydro**

14  
15 It is Mr. Bowman's understanding that NLH intends to use the same approaches for  
16 regulatory purposes as for financial reporting. NLH's 2012 depreciation application  
17 indicates NLH will recognize gains and losses in the year in which they occur to the  
18 income statement<sup>7</sup>.

#### 19 20 **SaskPower**

21  
22 SaskPower's 2013 Rate Application recognizes and forecasts gains and losses on asset  
23 retirements within the 'Other Expenses' category of costs for regulatory accounting  
24 purposes<sup>8</sup> and also in financial reporting<sup>9</sup>. It is not clear if this relates to all asset classes  
25 or only to specific classes.

#### 26 27 **Qulliq Energy Corporation**

28  
29 Qulliq Energy Corporation (QEC) converted from CGAAP to Public Sector Accounting  
30 rather than converting to IFRS. From the QEC 2011 GRA<sup>10</sup> Schedule 5.1 and the

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<sup>6</sup> NTPC 2012/13 and 2013/14 General Rate Application. Appendix D: Table of Signification Items and Comparison Treatment under IFRS (Financial Statement) versus Regulatory pg. D-3 & D-4.  
<http://www.ntpc.com/documents/GRAApplication2012.pdf>.

<sup>7</sup> 2012 Newfoundland and Labrador Hydro Depreciation Methodology Review. Response to Information Request IC-NLH-52 <http://www.pub.nf.ca/applications/NLH2012Depreciation/files/rfi/IC-NLH-052.pdf>.

<sup>8</sup> SaskPower Rate Application. Pg. 29. (June 2012). [http://www.saskratereview.ca/images/docs/saskpower-2012/2013\\_rate\\_application.pdf](http://www.saskratereview.ca/images/docs/saskpower-2012/2013_rate_application.pdf).

<sup>9</sup> SaskPower Second Quarter Report 2012, Pg 8.  
[http://www.saskpower.com/news\\_publications/assets/quarterly\\_reports/2012\\_q2\\_report.pdf](http://www.saskpower.com/news_publications/assets/quarterly_reports/2012_q2_report.pdf).

<sup>10</sup> Schedule 5.1 at page 5-4.  
[http://www.nunavutpower.com/home/index.php?option=com\\_docman&task=doc\\_download&gid=542](http://www.nunavutpower.com/home/index.php?option=com_docman&task=doc_download&gid=542).

1 2011/12 financial statements<sup>11</sup> it appears gains and losses on disposal are recorded in  
2 the year that they arise<sup>12</sup>.

3  
4 **BC Hydro and BC Transmission and Corporation**

5  
6 Mr. Bowman's understanding is that BC Hydro and BCTC use the same approach for  
7 regulatory accounting as for financial reporting. In the 2012 to 2014 Amended Revenue  
8 Requirement Application BC Hydro states:

9  
10 BC Hydro's current practice under CGAAP is to recognize gains and  
11 losses for assets that are tracked on an individual basis. For assets that  
12 are tracked on a pooled basis (for example, distribution poles,  
13 transformers and meters), BC Hydro does not record any gains or losses  
14 except when entire pools or a substantial portion of an asset pool is  
15 retired prior to being fully amortized. Under IFRS, BC Hydro will need to  
16 record gains and losses on the retirement of pooled assets on an ongoing  
17 basis<sup>13</sup>.

18  
19 And further:

20  
21 BC Hydro records both gains and losses on retirement of assets in other  
22 operating expenses except losses associated with the physical retirement  
23 of mass assets. BC Hydro does not de-recognize the cost and  
24 accumulated depreciation of mass assets in the accounting records when  
25 the assets are physically retired. BC Hydro amortizes mass assets over  
26 their expected useful life until they are fully depreciated<sup>14</sup>.

27  
28 BC Hydro will not be recording gains for those assets that are retired after  
29 the median/average life unless there are proceeds (salvage proceeds) at  
30 the time of retirement. The net book value of asset retired beyond the

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<sup>11</sup> See page 42 re: disposal values from capital assets and from accumulated amortization.

[http://www.nunavutpower.com/home/index.php?option=com\\_docman&task=doc\\_download&qid=868](http://www.nunavutpower.com/home/index.php?option=com_docman&task=doc_download&qid=868).

<sup>12</sup> Qulliq Energy Corporation 2010/11 Annual Report. Pg 52. Line: (Gains)/Losses on Disposal of Assets. 2011/12 Annual Report. Pg. 32. Line: 'Loss on Disposal of Assets'. Both Reports available here:

[http://www.nunavutpower.com/home/index.php?option=com\\_content&task=view&id=88](http://www.nunavutpower.com/home/index.php?option=com_content&task=view&id=88).

<sup>13</sup> BC Hydro F2012 -2014 Amended Revenue Requirement. Exhibit B-1-3. Pg. 8-23.

<sup>14</sup> In response to the question "Under BC Hydro's current depreciation policy are both gains and losses recorded in the accumulated depreciation account?". 2012 to 2014 Revenue Requirement Proceeding. Exhibit B-15: Responses to Intervener IRs 1. BCUC 1.301.1.

- 1 average life of the class of assets is zero. Any salvage proceeds received
- 2 at the time of retirement would result in a gain<sup>15</sup>.

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<sup>15</sup> 2012 to 2014 Revenue Requirement Proceeding, Exhibit B-25: Responses to Intervener IRs 2. Number 2.96.1.  
[http://www.bcuc.com/Documents/Proceedings/2012/DOC\\_30309\\_B-25\\_BCH\\_Responses\\_Intervener\\_IRs-2.pdf](http://www.bcuc.com/Documents/Proceedings/2012/DOC_30309_B-25_BCH_Responses_Intervener_IRs-2.pdf).

1 **REFERENCE: Page 4-12, line 23 to 24**  
2 **Pre-Filed Testimony of P. Bowman**

3  
4 “The ELG standard reflects a perspective linked to asset depletion.”

5  
6 **QUESTION:**

7  
8 a) Please provide a reference on utility depreciation from a textbook or other  
9 authoritative source that provides the basis of the above claim, or alternatively  
10 provide a detailed illustrative example supporting the claim.

11  
12 b) Would Mr. Bowman agree that the commonly used method of depreciation used  
13 to recognize a depletion based approach is the “Unit of Production (or Unit of  
14 Use)” method? Please explain.

15  
16 **ANSWER:**

17  
18 **(a) and (b)**

19  
20 In technical terms, the ELG method is not formally a “depletion based approach”. That  
21 concept describes approaches where a fixed value of investment is assigned to a finite  
22 extraction of natural resources, and the expense incurred with each unit of the natural  
23 resource harvested (such as the “Unit of Production” approach)<sup>1</sup>.

24  
25 The contrast to these approaches (either ELG or Unit of Production, which focus on  
26 either the consumption of the “bricks and mortar”, or the consumption of a non-  
27 renewable underlying resource) is that a hydro plant has an underlying renewable  
28 resource, has large parts of its notional “value” in the site and rights to use the  
29 topography of the site to produce power, and has constructed assets which are very long  
30 lived. The aggressive consumption-focused approaches fail to consider in any way the  
31 situation facing ratepayers, which is better described by the IFRS concept that  
32 depreciation should “reflect the pattern in which the asset’s future economic benefits are  
33 expected to be consumed by the entity” (IAS16, as set out in CAC/MH-I-47(a); emphasis  
34 added). The above noted approaches may work well in theory for a coal mine (where  
35 each unit of coal is loaded with a “depletion” cost consisting of a share of the original

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<sup>1</sup> However, as noted in NARUC’s “Public Utility Depreciation Practices” manual (1996, page 44): “In practice, depletion and depreciation are sometimes treated jointly in the accounts with a consequent disappearance of, or disregard for, the technical distinction between the terms.”

1 costs of developing the mine) or a coal power plant (where the plant will keep being  
2 usable so long as expensive coal is purchased, and so long as the boiler pipes have not  
3 been “consumed”). These approaches however do not track well for the economic  
4 benefits of a hydro plant, which has basically no fuel cost once the requisite dams and  
5 dikes have been built, and has steady or increasing economic value into the future rather  
6 than a depleting value.

1 **REFERENCE: Page 5-4, lines 5-23**  
2 **Pre-Filed Testimony of P. Bowman**  
3

4 **QUESTION:**  
5

6 a) Please specify the period of time over which this long-term value is to be  
7 achieved?  
8

9 b) To Mr. Bowman's knowledge, are there additional undertakings that potential  
10 curtailable customers are prepared to provide to Manitoba Hydro to assure that  
11 the long-term value will be realized. If so, please identify.  
12

13 **ANSWER:**  
14

15 **(a)**  
16

17 The time period is the same time period ascribed to other Demand Side Management  
18 (DSM) investments, as set out in the Power Resource Plan.  
19

20 In Manitoba Hydro's 2011/12 Power Resource Plan<sup>1</sup>, MH indicates that the total capacity  
21 available in MH's system includes projected DSM through the end of the planning period  
22 2046/47.  
23

24 **(b)**  
25

26 Mr. Bowman is not aware of other undertakings that the curtailable participants would be  
27 willing to provide.  
28

29 Mr. Bowman does not view additional customer undertakings or commitments as being  
30 required for Manitoba Hydro to be able to plan for the long-term continuation and  
31 success of the CRP program, as even without such undertakings in the past the program  
32 has now been in place for almost 20 years with continual and generally growing  
33 participation by customers. There would appear to be no reason to expect that Manitoba  
34 Hydro could not count on this program being reasonably likely to be available as needed  
35 in future as a power resource option.

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<sup>1</sup> Manitoba Hydro's Submission for Interim Rates Effective September 1, 2012 & Response to Request for Additional Information, Attachment 3, page 7.



1 **REFERENCE: Pre-Filed Testimony of P. Bowman**

2

3 **QUESTION:**

4

5 a) Please provide a concise summary of the recommendations that Mr. Bowman is  
6 making to the PUB with regard to depreciation.

7

8 **ANSWER:**

9

10 **(a)**

11

12 Mr. Bowman's recommendations to the PUB with respect to depreciation are as follows:

13

14 1) Electricity rates should be set on the basis of depreciation rates, approaches and  
15 policies appropriate for determining fair and reasonable allocations to today's  
16 ratepayers. If Hydro's financial reporting uses depreciation rates that meet this  
17 test, then those depreciation rates should be used for electricity rate-setting. If  
18 not, then the Board should specify the depreciation rates to be used for electricity  
19 rate setting and ensure Hydro provides, in its GRA filing, a revenue requirement  
20 consistent with those PUB-directed depreciation rates.

21

22 2) Hydro's depreciation rates for electricity rate setting should not include net  
23 salvage, including for the test years.

24

25 3) Hydro's depreciation rates for electricity rate setting should be based on the ASL  
26 approach to calculating depreciation rates, not the ELG approach.

27

28 4) The Board should carefully consider the lives adopted for asset category 000A  
29 Dams Dikes and Weirs (Appendix 16, page 2 of 192), and asset category 000D  
30 Spillways (Appendix 16, page 10 of 192) to consider whether the proposed asset  
31 lives are sufficiently long given Hydro's own retirement data.

32

33 5) The Board should carefully consider the lives adopted for asset categories such  
34 as 4000J and 4000L (Metal Towers and Overhead Conductors) (Appendix 16,  
35 pages 121 of 192, and 124 of 192) to consider whether the proposed asset lives  
36 are excessively long given Hydro's own retirement data.



1 **REFERENCE: Appendix A - Resume**  
2 **Pre-Filed Testimony of P. Bowman**  
3

4 **QUESTION:**  
5

6 a) For the proceedings referenced in his resume, please identify those in which  
7 Mr. Bowman has acted as an Expert Witness on Utility Depreciation.  
8

9 b) For any proceedings identified in part a), please provide references to and copies  
10 of any evidence filed by Mr. Bowman.  
11

12 **ANSWER:**  
13

14 **(a) and (b)**  
15

16 Mr. Bowman has not conducted depreciation studies nor acted as an expert witness on  
17 conducting depreciation studies in any utility proceeding.  
18

19 Mr. Bowman has acted as an expert on the appropriate regulatory approach to reflecting  
20 the outcome of depreciation studies in revenue requirements and rates. In addition to  
21 being a routine and normal part of each revenue requirement review noted in Appendix  
22 A to the pre-filed testimony, this issue has been of specific interest in the following  
23 proceedings in which Mr. Bowman has provided advice and testimony on the impacts of  
24 depreciation expenses and methods on rate requirements: the 2005 Yukon Energy  
25 Required Revenues and Related Matters proceeding (provided testimony), the 2006/08  
26 Northwest Territories Power Corporation GRA (provided testimony on depreciation  
27 generally; specific study was only completed to draft stage for that GRA), the 2012/13  
28 and 2013/14 Northwest Territories Power Corporation GRA (provided testimony), and  
29 two additional hearings where Mr. Bowman acted as an advisor but did not appear - the  
30 2012/13 Yukon Energy GRA (assisting in directing the work of KPMG) and the 2012  
31 Newfoundland Hydro depreciation review (assisting in reviewing the utility application on  
32 behalf of the Industrial Customers of Newfoundland Hydro).  
33

34 Mr. Bowman has also been involved with utility clients in assisting in directing the work  
35 of depreciation consultants, including advising on utility decisions regarding depreciation  
36 policy and study approach (e.g., Yukon Energy and NTPC).

- 1 As part of the above assignments, Mr. Bowman has reviewed evidence on depreciation
- 2 from multiple jurisdictions in Canada, reviewed relevant literature on depreciation
- 3 impacts on ratemaking, and reviewed the impacts on rates of competing depreciation
- 4 approaches with a wide range of ratemaking and depreciation professionals.