

NEEDS FOR AND
ALTERNATIVES TO (NFAT)
REVIEW OF MANITOBA
HYDRO'S PROPOSAL FOR THE
KEYYASK AND CONAWAPA
GENERATING STATIONS

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This report contains information that has been deemed Commercially Sensitive Information and is, therefore, subject to a protective order.

PREPARED FOR

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Supplemental Report A – Updated Figures from TA 9A, TA 9B and TA 10A

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I. Introduction

La Capra Associates filed its main report for the NFAT review in two parts, Part A on January 24, 2014 and Part B on February 28, 2014. The La Capra Associates reports were supported by the filing of ten Technical Appendices, including Technical Appendix 9 – Review of Economic Analysis and Technical Appendix 10 – Review of Financial Analysis, which were also filed in two parts, A and B. In addition, as new information emerged on the capital cost estimates for the Keeyask and Conawapa Hydroelectric Stations, La Capra Associates filed an Addendum to TA 9A and TA9B to capture the higher capital costs impacts.

Manitoba Hydro simultaneously conducted an analysis of DSM program potential and economics during the NFAT review process. Manitoba Hydro has endorsed a substantial increase in its DSM Program spending and comprehensiveness. Manitoba Hydro refers to this new DSM initiative as DSM Level 2. The Manitoba Hydro economic analysis of DSM Level 2 concluded that it would be an economic benefit to add DSM Level 2 resources to all potential resource development plans. As a result, Manitoba Hydro provided significant information on several resource development plans in order to capture how these plans would change with DSM Level 2. In this modeling, Manitoba Hydro included the updated capital cost estimates for Keeyask and Conawapa for the reference scenario assumptions used in the 2013 Update section that was part of the NFAT Application filed in August, 2013. The Plans updated include 4, 5, 6, 12 and 14.

In response to these updates, the NFAT Review Panel has requested that La Capra Associates update specific figures from the figures shown in TA 9A and 10A. This Supplemental Filing Part A provides the updated figures.

La Capra Associates is also preparing a Part B which will summarize and observations and recommendations made in the La Capra Associates' main report Part A and Part B, discussed above. Part B is expected to be available during the week of May 26th.

II. Information Sources

In order to update the requested figures, La Capra Associates relied on Manitoba Hydro's detailed annual costs for Plans 4, 5, 6, 12, and 14 included in their economic analysis. Some of the financial TA 10 Figures below include original information from our reports as well as new information labeled "Main Submission", a designation used by Manitoba Hydro in their updated spreadsheets.

The figures below are derived from data and analysis provided in MH exhibits 104-4, 104-6, 104-4-3, 104-4-4, including Plan 4 and Plan 12 information filed on May 1, 2014. Our understanding is that these plans incorporate the following scenario:

- Reference Scenario Only - 2013 modeling assumptions for discount, energy prices, load forecast (prior to DSM adjustment) as used by MH in their 2013 Update Analysis within the August 16, 2013 NFAT Application.
- The Plans all include the cost and load reduction effects of DSM Level 2 as modeled by Manitoba Hydro.
- The Plans have the new March, 2014 vintage updated capital cost estimates for Keeyask and Conawapa.
- The timing of resource additions may have been changed by Manitoba Hydro in the some Plans due to lower Peak Load and Dependable Energy requirements from DSM Level 2.

III. Updated Figures from Technical Appendices 9A and 9B

The first figures shown below are updated versions of Figure 9-15 and Figure 9-21 from the original TA 9A, now labeled Figure 9-15S and Figure 9-21S respectively below. La Capra associates uses the letter designation “S” for all the figures in this supplemental report. The economic analysis is shown on a year by year basis from a cumulative present value perspective. Figure 9-21S shows in tabular form information that could be read off of Figure 9-15S. The updated analysis for these plans shows a significantly lower 78-year NPV, especially for Plan 14 MH’s Preferred Development Plan.

The next two figures requested by the PUB NFAT Review Panel are Figure 9-98S and Figure 9-99S, which are also shown below. These figures were focused on showing the economics of adding each of the components of the Plan 14 (PDP) in a building block approach. The first item to point out is that not all the comparisons shown in the original Figures 9-98 and 9-99 were updated. These omitted comparisons would require additional information from Manitoba Hydro; Manitoba Hydro did not update all plans for Level 2 DSM and the new capital cost estimates for Keyask and Conawapa.

The change in value of the PDP component blocks is quite substantial. The addition of Keyask to the All Gas Plan is negative over the 78 year NPV period, meaning adding Keyask would increase costs on a cumulative present value basis, where it had been a positive \$634 million. The value of then adding the 250 MW transmission line and the MP250 sale of energy is \$641 million. The steps of moving to the 750 MW transmission line and then Conawapa increase costs from MH’s updated analysis to \$218 million and \$404 million respectively. Finally, the addition of the WPS contract and investment lowers costs by \$63 million, resulting in a final 78-year NPV benefit of Plan 14 of \$45 million as compared with the 2012 Reference Analysis of \$1,696 million.

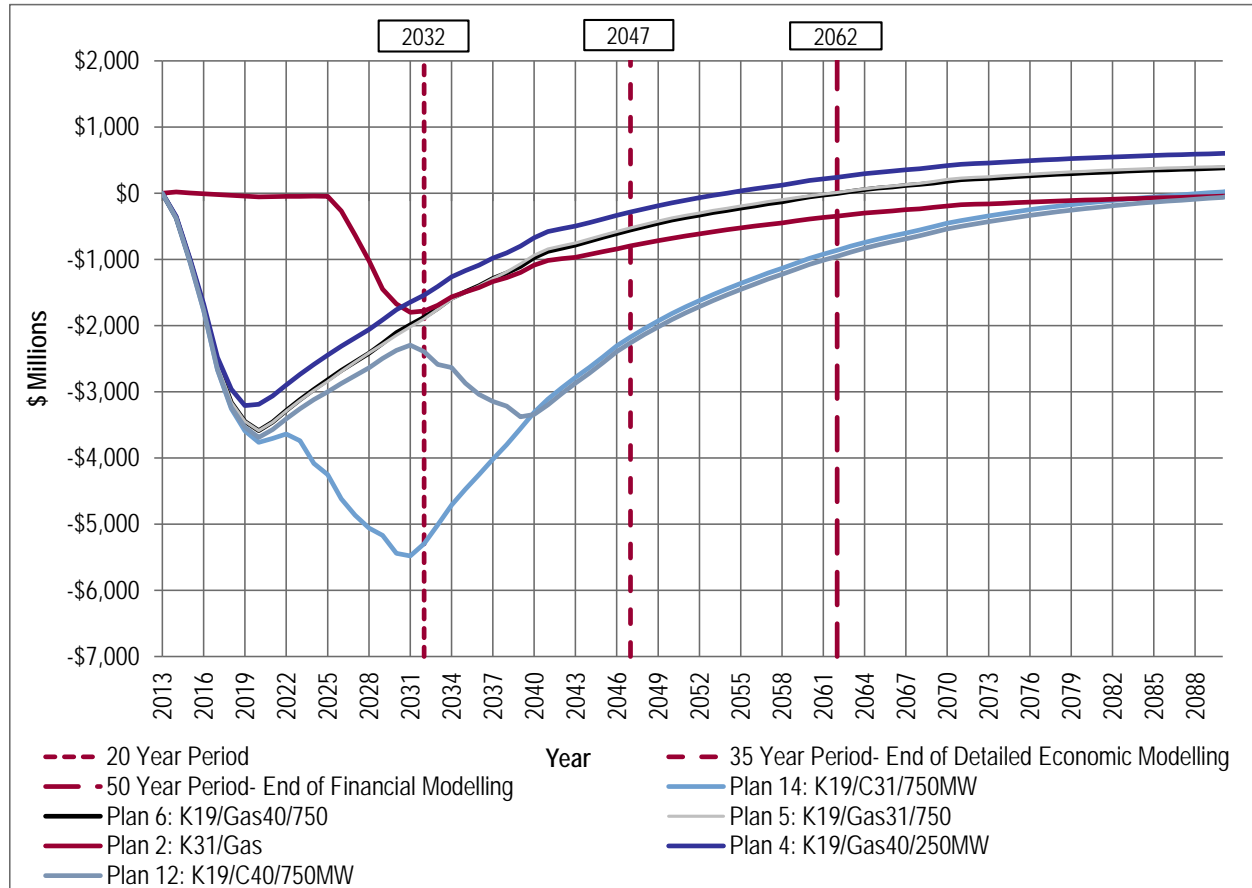


Figure 9-15S: Cumulative Incremental Cash Flow Difference for Plans 2, 4, 5, 6, 12 and 14 as Compared to the All Gas Case - Millions of 2014 Present Value Dollars

Plans	78 Year CPV of					78 Year IRR	Break Even Year (All Gas) Base Case
	Total Capital	78 NPV	50 CPV	35 CPV	20 CPV		
1 All Gas	\$2,764	\$0	\$0	\$0	\$0	N/A	N/A
2 K31/Gas29	\$4,429	(\$38)	(\$349)	(\$798)	(\$1,781)	5.28%	N/A
4 K19/Gas40/250MW	\$5,774	\$604	\$239	(\$284)	(\$1,541)	6.26%	2055
5 K19/Gas31/750MW (WPS)	\$6,215	\$410	\$10	(\$523)	(\$1,899)	5.92%	2062
6 K19/Gas40/750MW	\$6,175	\$386	(\$5)	(\$555)	(\$1,876)	5.90%	2063
12 K19/C40/750MW	\$8,421	(\$18)	(\$954)	(\$2,261)	(\$2,395)	5.36%	N/A
14 K19/C31/750 (WPS)	\$9,528	\$45	(\$863)	(\$2,173)	(\$5,298)	5.42%	2089

Figure 9-21S: Summary- CPVs as Compared to All Gas Plan at the end of Various Periods, Break-Even Year, 78 year IRR and 78 Year CPV of Total Capital – Millions of 2014 Present Value Dollars

Change Case	Base Plan	35 Years All Reference	50 Years Reference	78 Years All Reference
Economics of Adding Keyask G.S.				
2 K31/Gas29	1 All Gas	(\$798)	(\$349)	(\$38)
Economics of Adding 250 MW Transmission Line and MP 250				
4 K19/Gas40/250MW	2 K31/Gas29	\$514	\$588	\$641
Economics of Adding 750 MW Transmission Line				
6 K19/Gas40/750MW	4 K19/Gas40/250MW	(\$271)	(\$243)	(\$217)
Economics of Adding Conawapa G.S.				
12-K19/C40/750	6 K19/Gas40/750MW	(\$1,706)	(\$949)	(\$404)
Economics of Adding WPS				
14 K19/C31/750 (WPS)	12-K19/C40/750	\$88	\$90	\$63

Figure 9-98S: Summary of economic analysis results of components of the Preferred Development Plan

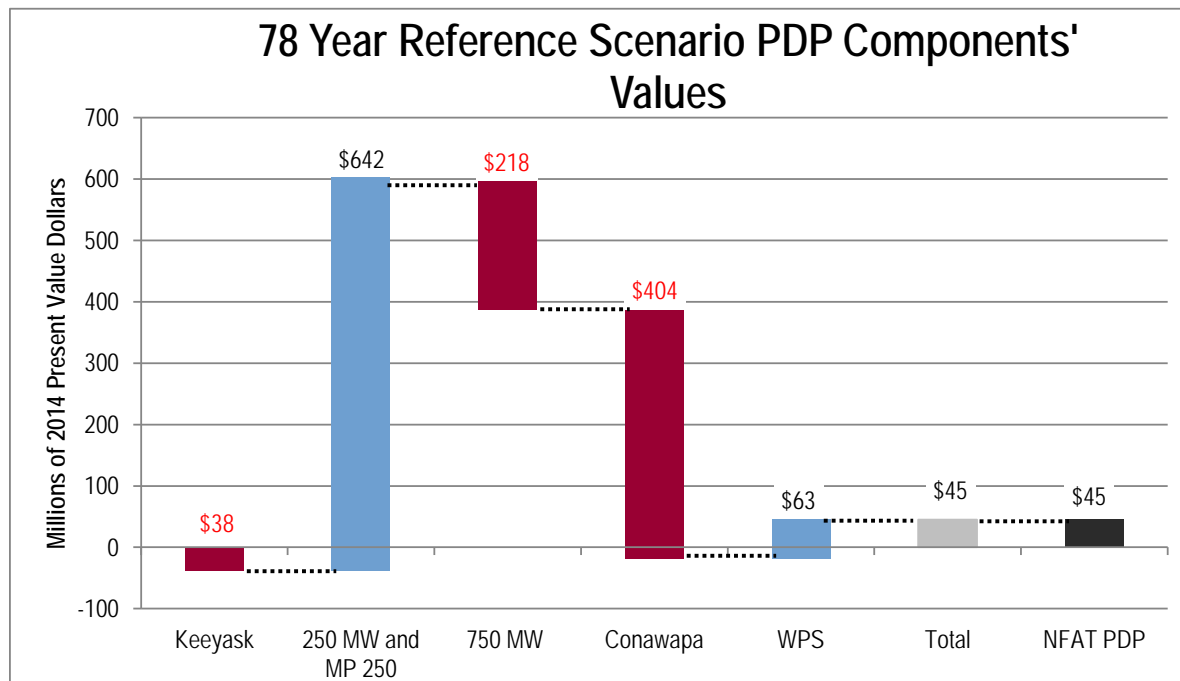


Figure 9-99S: Value of PDP Components - 78 Year NPV vs. All Gas

IV. Updated Figures from Technical Appendix 10A

The PUB NFAT Review Panel also requested that three figures be updated from the LCA TA 10A - Review of Financial Analysis. These figures are provided below showing the values from the original TA 10A figures as well as the updated cases available. The first figure, Figure 10-10S shows the NPV of the annual rate increases modeled by MH over four time periods. The biggest change occurred in Plan 1, the All Gas Plan. All plans have shown a lower level of NPV increases when DSM Level 2 is added and then that benefit is negated if higher capital cost estimates for Keeyask and Conawapa are included. This is shown in the Plan labeled High Capital (DSM 2) Main Submission.

The second figure, Figure 10-12S shows that the addition of DSM Level 2 provides strong reductions in typical monthly bills for residential customers consuming 750 kWh.

Similarly Figure 10-42S shows lower Even-Annual Rate Increases when DSM Level 2 is used in the resource development plans.

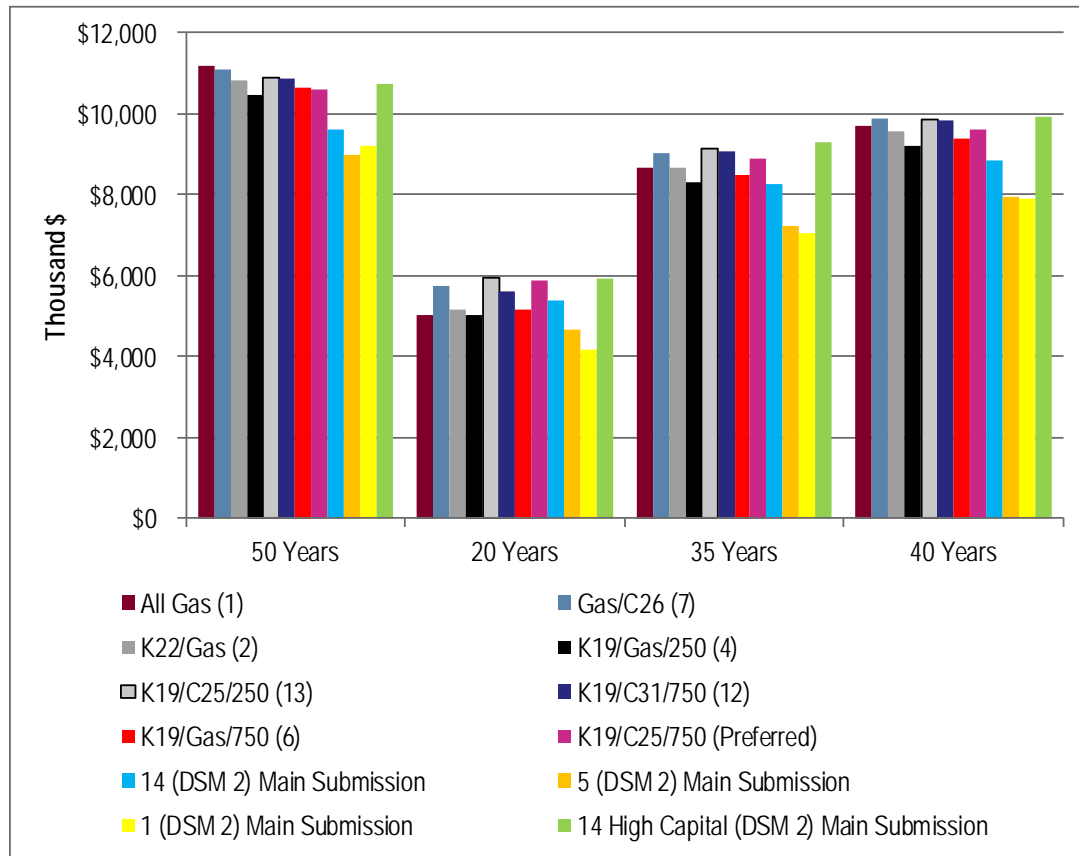


Figure 10-10S: NPV of Rate Increases by Development Plan

Development Plan	2013	2032	2042	2052	2062	NPV 2013-2062
All Gas (1)	\$60.96	\$115.72	\$119.21	\$143.32	\$168.50	\$1,218
Gas/C26 (7)	\$60.96	\$124.69	\$109.96	\$128.65	\$142.89	\$1,222
K22/Gas (2)	\$60.96	\$117.05	\$115.46	\$134.58	\$146.44	\$1,209
K19/Gas/250 (4)	\$60.96	\$115.58	\$112.42	\$131.55	\$148.33	\$1,196
K19/C25/250 (13)	\$60.96	\$127.28	\$106.89	\$120.03	\$128.65	\$1,217
K19/C31/750 (12)	\$60.96	\$123.43	\$110.55	\$121.69	\$128.94	\$1,214
K19/Gas/750 (6)	\$60.96	\$117.16	\$112.24	\$131.86	\$148.10	\$1,202
K19/C25/750 (14)	\$60.96	\$126.65	\$104.92	\$118.28	\$125.59	\$1,208
14 (DSM 2) Main Submission	\$60.96	\$129.00	\$104.93	\$110.16	\$113.28	\$1,196
5 (DSM 2) Main Submission	\$60.96	\$118.31	\$104.61	\$123.35	\$137.80	\$1,168
1 (DSM 2) Main Submission	\$60.96	\$111.11	\$110.78	\$137.97	\$158.89	\$1,171
14 High Capital (DSM 2) Main Submission	\$60.96	\$136.88	\$111.89	\$114.52	\$116.21	\$1,237

Figure 10-12S: Monthly Bills for 750 kWh Residential Customer

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Supplemental Report A – Updates to Figures in
Technical Appendices 9^a, 9B and 10A

Plan #	Development Plan Short Name	Even-Annual Rate Increases (2012/13 to 2032)	Even-Annual Rate Increases (2012/13 to 2061/62)	Cumulative Nominal Rate Increases at 2031/32	Cumulative Nominal Rate Increases at 2061/62
1	All Gas	3.43%	2.07%	90%	176%
7	Gas/C26	3.86%	1.72%	105%	134%
2	K22/Gas	3.49%	1.77%	92%	140%
4	K19/Gas/250	3.42%	1.80%	90%	143%
13	K19/C25/250	3.98%	1.50%	109%	111%
12	K19/C31/750	3.80%	1.50%	102%	111%
6	K19/Gas/750	3.50%	1.79%	92%	143%
14	K19/C25/750 Preferred Plan	3.95%	1.44%	108%	106%
--	LCA No New Generation	3.35%	1.87%	87%	148%
14 (DSM 2)	Main Submission	4.27%	1.27%	112%	86%
5 (DSM 2)	Main Submission	3.74%	1.68%	94%	126%
1 (DSM 2)	Main Submission	3.36%	1.97%	82%	161%
14 High Keyask and Conawapa (DSM 2)	Main Submission	4.63%	1.33%	125%	91%

Figure 10-42S: Rate Increases by Development Plan under Reference Conditions

V. Observations

Overall, the updates provided by Manitoba Hydro provide significant information in time to be incorporated into La Capra Associates overall review of the NFAT filing. There are several observations that can be made.

1. The substantial increase of DSM program expenditures and activities will provide positive economic benefits to MHs customers.
2. The Preferred Development Plan (Plan 14) economics have eroded to essentially break-even with the All-Gas Plan, even over the 78 year study period.
3. Several resource development plans, Plans 4, 5 and 6) that do not include Conawapa have economic benefits over 78-year NPV basis of about \$400 to \$600 million as compared to the Preferred Development Plan.