

**NWTPC General Rate Application 2006/07 and 2007/08
Responses of Hydro Communities (HC)
To Board Information Request No 1**

BR-HC 1

Topic: Capital Structure

Reference: Page 31

Preamble

“On balance, our view is that the business risk faced by NTPC is somewhat higher than that faced by the average integrated electric company or the average utility in Canada.”

Requests:

a) Please provide the S&P business risk rankings of each of the utilities listed in Schedule 3.2 and provide the estimated business risk ranking for NWTPC with supporting reasons.

Response

Drs. Kryzanowski and Roberts do not employ S&P business risk rankings in their analysis and do not subscribe to S&P. For this reason, we regret that we are unable to provide the requested information. However, we have no reason to believe that the 8 utilities in Schedule 3.2 would be ranked lower or higher than Ms McShanes’s major Canadian utilities for which she provided S&P rankings.

BR-HC 2

Topic: Capital Structure

Reference: Page 36

Preamble

“Third, the likelihood that a utility, such as NTPC, would breach a 1.0 coverage ratio within a one-year period is very, very small.”

Requests

a) Please provide the interest coverage ratios for the test years as per the HC proposals and as per the corporation’s proposals.

Response

We calculate the interest coverage ratios as per HC proposals as follows. We begin with the recommended equity ratio of 42%. We maintain the capital lease obligation and no

cost capital at the percentages recommended by the corporation. We add the resulting differential to long-term debt giving a percentage for this source of capital as 48.06%.

Turning to the 2006/07 test year, the component costs come from the evidence of Drs. Kryzanowski and Roberts as follows: 6.75% for equity, 8.29% for debt, 8.19% for the capital lease and 0% for no cost capital. The mid-year rate base is taken from Schedule 3.5 as \$191,594. Based on these inputs, we calculate the returns on each capital component as shown in the following table.

For 2006/07:

	<u>Capital Ratio</u>	<u>Rate Base</u>	<u>Cost</u>	<u>Return</u>
Common Equity	42.00%	80,469	6.75%	5,432
Long term debt	48.06%	92,080	8.29%	7,633
Capital lease	10.86%	20,807	8.19%	1,704
No cost capital	-0.92%	(1,762)	0.00	-
	100.00	\$191,594	7.71%	14,769

For 2007/08, we follow the same methodology to obtain:

	<u>Capital Ratio</u>	<u>Rate Base</u>	<u>Cost</u>	<u>Return</u>
Common Equity	42.00%	84,741	7.20%	6,101
Long term debt	48.06%	96,968	8.31%	8,058
Capital lease	10.86%	21,912	8.24%	1,806
No cost capital	-0.92%	(1,856)	0.00	-
	100.00	\$201,765	7.91%	15,965

We calculate the coverage ratios for HC's proposals from the schedules above as follows: Return on Rate Base - Mid Year / Return on Long-term Debt. The ratios are 1.93 and 1.98 for 2006/07 and 2007/08, respectively.

We calculate the coverage ratios for the corporation's proposals from Schedule 3.6 as follows: Return on Rate Base - Mid Year / Return on Long-term Debt. The ratios are 2.24 and 2.37 for 2006/07 and 2007/08, respectively.

We note that the coverage ratios for the HC proposal compare favourably with interest coverage ratios of Crown corporations as listed in the following table:

Interest-rate coverage ratios of Crown corporations:

	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997
Manitoba Hydro										
IC	1.77	1.25	0.17	1.14	1.42	1.62	1.35	1.23	1.25	1.23
DR	0.81	0.85	0.87	0.80	0.77	0.80	0.83	0.84	0.86	0.88
BC Hydro										
IC	1.06	1.56	1.22	1.75	1.43					
Quebec Hydro										
IC	1.89F	1.95	1.77	1.70	1.61	1.44				

Interest Coverage (IC) represents net income plus interest on debt divided by interest on debt. Debt Ratio (DR) represents debt (long-term debt plus notes payable minus temporary investments) divided by debt plus retained earnings plus contributions in aid of construction.

The Manitoba Hydro-Electric Board *55th Annual Report* for the year ended March 31, 2006, p. 84.

2006 BC Hydro *Annual Report*, p. 103, for the years ended or as at March 31.

Hydro-Quebec *Financial Profile*, 2005-2006, p. 6. Forecast for 2006/

b) Please provide the interest coverage ratios for NWTPC that resulted from past Board Decisions as set out in Schedule 3.6.

Response

We calculate the interest coverage ratios as per past Board decisions drawing the actual capital structure numbers for 2004/05 and 2005/06 from Schedule 3.6 and summarized in Schedule 3.5 as requested. We calculate the coverage ratios as follows: Return on Rate Base- Mid Year / Return on Long-term Debt. The ratios are 2.19 and 2.36 for 2004/05 and 2005/06, respectively.

c) Please provide the actual interest coverage ratios for NWTPC in the past 5 years.

Response

The coverage ratios are calculated from annual reports on NTPC.com based on the following formula: Interest coverage ratio = EBIT / Interest expense, where EBIT is Net income before Interest expense.

Year	EBIT	Interest Expense	Interest Coverage Ratio
2001/02	16,832	9,950	1.69
2002/03	17,785	10,060	1.77
2003/04	16,775	9,596	1.75
2004/05	16,275	9,846	1.65
2005/06	16,178	8,986	1.80

Comparing these numbers with the higher coverage ratios projected by the company suggests that the nonregulated part of NTPC has a lower interest coverage ratio than the regulated part. Since nonregulated operations are generally considered to be riskier, this reinforces our argument that the coverage ratios projected by the company are unnecessarily high.

BR-HC 3

Topic: Market Equity Risk Premium

Reference: Page 45

Preamble

The lower non-diversifiable risk of our average risk utility relative to that for the diversified market portfolio necessitates a downward adjustment in the risk premium added to the forecasted long-term riskfree rate to calculate the cost of equity for our average-risk utility. [Page 45]

Requests:

a) Please explain how the lower non-diversifiable risk of an average risk utility relative to that for the diversified market portfolio was factored into the recommended MERP for the average utility

Response:

Our recommended ERP for the average-risk utility is 2.45%. This is obtained by multiplying the MERP estimate of 4.90% (our estimate of input #2 in the cost of equity calculation) by our estimate of the measure of relative risk of 0.50 (our estimate of input #3 in the cost of equity calculation). The measure of relative risk of 0.50 is reasonable where we use non-diversifiable risk or total risk as the measure of risk.

BR-HC 4

Topic: Market Equity Risk Premium

Reference: Page 59

Preamble

In the interest of being conservatively high, we estimate that the MERP going forward is 4.9%.

Requests:

a) The weighted average column in Schedule 4.3 indicates the MERP for all periods except the 1900 to 2006 period are lower than the recommended 4.9%. Given HC's view that MERP is declining going forward please rationalize the recommended 4.9% (although it is considered conservatively high) in light of the historical trend provided in Schedule 4.3

Response:

As we state on page 129 of our evidence, we (like Ms. McShane) use the arithmetic mean MERP in obtaining our going-forward MERP estimate. However, we also use a conservative approach in which we use a weighted average of the arithmetic and geometric means as a further benchmark in determining how conservatively high our estimate is. Thus, since we use the arithmetic mean MERP in obtaining our going-forward MERP estimate, there are three periods in schedule 4.3 for which the realized MERPs based on both nominal and real returns exceed our recommended 4.9%. Of course, they are the longest time periods of 1900-2006, 1924-2006 and 1936-2006. Since the historical trend in the MERP is downward, our assessment of past realized returns and future expected returns results in a recommended forward-looking MERP of 4.9%.

b) Please explain how the adjusted mean column in Schedule 4.6 was arrived at.

Response:

This is based on the logic underlying the capital market line concept in asset pricing. We solve for the mean MERP for the US if it had the same risk as the Canadian market over each estimation period. We now illustrate the calculation for the first value in the adjusted mean column. Since the standard deviation of returns of 20.08% for the US is higher than the standard deviation of returns of 17.89% for Canada, this results in a downward adjustment in the mean for the US. The value is obtained by multiplying the US mean of 6.56% by the ratio of 17.89% to 20.08% (i.e., the ratio of their standard deviations). The underlying logic is that you can only compare MERPs across markets if you adjust for any differences in the risks of the markets being compared.

BR-HC 5

Topic: Market Equity Risk Premium

Reference: Page 60

Preamble:

Based on consensus expectations, the expected MERP based on the S&P/TSX Composite and 30-year Canada's is 2.1% short-term (2007), 3.2% mid-term (2008-11) and 2.9% long-term (2012-2021).

Requests:

a) Please provide an assessment of the quality of the data and other inputs that go into the consensus expectations results and explain generally, how the results are validated

Response:

Canadian regulatory boards have generally adopted consensus estimates of the yield on long Canada's that are obtainable from Consensus Economics. The underlying rationale for doing so is that the forecasts are made by various knowledgeable professionals and there is no reason to expect that they (knowingly) make biased forecasts. In contrast, and unlike Boards in the UK, Canadian regulatory boards have not yet disclosed that they place any weight on the return forecasts of a similar group of knowledgeable professionals (as collected by Watson Wyatt or Mercer, for example) for which we have no reason to expect that these professionals knowingly or unknowingly make biased forecasts. In contrast, some Canadian regulatory boards have placed some weight on MERP estimates derived from the DCF model using the forecasts of financial analysts for individual firms, although the preponderance of the empirical evidence indicates that the earnings forecasts of (especially sell-side) financial analysts are biased upwards.

The price of a security (stocks and bonds in the case of the MERP) at any point in time is based on the estimate of the consensus investor of the future prospects for that security. The price returns from an investment in a security are based on the changes in the prices of a security over time. Thus, the most direct approach to obtain a consensus estimate of the returns on the market is not to derive the discount rate from the application of a DCF model using estimates of earnings or dividends measured with error and upward bias but to obtain the return estimates directly from knowledgeable market professionals.

The sample sizes for the return estimates for the surveys on equity and bond returns are larger than the ones used by Consensus Economics and they appear to be more international. For example, the sample that provided estimates of the 10-year Government Bond Yields for Canada, which were reported in the September 2006 edition of Consensus Economics, consisted of 16 firms. In contrast, the return forecasts for stocks and bonds in the Wyatt survey are based on the responses from "leading economics and portfolio managers from 42 organizations...". Similarly, the 2007 Fearless Forecast is based on the views of 51 Canadian and Global portfolio managers. Even when nonresponses are accounted for, the sample sizes are greater than those in Consensus Economics for the Wyatt survey where such data are available.

b) Please provide the sensitivity analysis that resulted in the 5.7% MERP expectation over the long term.

Response:

The publication provides the following summary statistics for the two series that we need to calculate the MERP estimate for the long-term (2012-2021) from the Wyatt survey:

Returns on:	Percentile				
	10 th	25 th	50 th or Median	75 th	90 th
S&P/TSX Composite Index	6.00	7.30	8.00	9.50	10.0
30-year Canada bonds	4.30	4.70	5.10	5.50	6.30
MERP	1.70	2.60	2.90	4.00	3.70

As we state in our evidence, another way of demonstrating the conservatism in our MERP estimate of 4.9% is to compare our estimate against the MERP derived using the most optimistic scenario drawn from the Wyatt survey. This is to obtain a MERP by subtracting the bolded 90th percentile estimate of the S&P/TSX Composite return of 10.00% (i.e., the return that has a 90% chance of being lower) from the bolded 10th percentile estimate of the 30-year Canada's of 4.30% (i.e., the yield that has a 90% chance of being higher). Doing such, we obtain MERP estimates of 5.7% long-term. Of course, the likelihood of this occurring based on the forecasts of this sample of professionals is very low. If instead, we use the 75th percentile estimate of the S&P/TSX Composite return of 9.50% (i.e., the return that has a 75% chance of being lower) from the 25th percentile estimate of the 30-year Canada's of 4.70% (i.e., the yield that has a 75% chance of being higher), we obtain a MERP estimate of 4.80%. Our MERP recommendation is 4.90%.

BR-HC 6

Topic: Regression of Betas

Reference: Page 79

Preamble

Requests:

Please provide a copy of M.E. Blume, Betas and their regression tendencies, *Journal of Finance* 30 (June 1975), pp. 785-796.

Response:

This article is copyrighted material. To provide the Board with a copy may infringe the copyright.

However, a copy is available for review at the Offices of Brownlee LLP. Further we understand that libraries have special protection from copyright laws and that a copy of the article in question can be obtained by contacting a local library and requesting a copy. We understand that if the library does not have the article in its own collection, it could

obtain it by means of an interlibrary loan. The article can also be obtained by accessing an electronic database (such as JSTOR), which again is available at many libraries.

BR-HC 7

Topic: Sinking Fund

Reference: Page 107

Preamble

“Yes, we would recommend that the Board consider some cost sharing between the rate payers and shareholders of NTPC that recognizes the ongoing excessive costs associated with the three earlier debentures with sinking funds and with earlier management of the investment policy of the sinking fund in addition to our recommendations at page 107.”

Requests

a) Has the HC considered the implications of the recommended cost sharing from the point of view of the regulatory compact that has been in place up to this point. Provide reasons why HC believes any sharing will not be an undue violation of the regulatory compact respecting treatment of yields and gains and losses on sinking funds.

Response:

For our response, we have take the following definition of “regulatory compact” from the Energy Dictionary (available at: http://www.energyvortex.com/energydictionary/regulatory_compact.html): “A common but controversial form of agreement between regulatory agencies and utilities that essentially grants utilities the right to make a given level of return on investment in return for providing energy services within a given area”.

To begin, we must point out, as discussed further in NTPC.HC-25, that the apparent “regulatory compact” prior to the 2001/02/03 GRA, was that sinking fund interest and balances did not form part of the regulatory compact. We do not consider that the Negotiated Settlement which was entered into without prejudice by all parties altered that compact. Therefore, we do not consider any sharing to be an undue violation of the regulatory compact (if one so exists) between this Board and NTPC respecting the treatment of yields and gains and loses on sinking funds.

In general, any decision by a Board should be subject to change given new evidence that the initial decision has not withstood the passing of time. Otherwise, the Board can be subject to regulatory capture where the utility uses the Board to lock-in the consequences of managerial decisions even if they are harmful to ratepayers but were not adequately addressed by ratepayers at the time of the initial decision by the Board.

Furthermore, in our view, there are a number of implicit conditions attached to any regulatory compact (if it exists) between a regulatory board and the regulated entity. The first is that the entity should operate in an efficient manner. Thus, in the case of NTPC, this would involve the prudent management of the sinking fund investments. The second is that the shareholders or owners of the regulated entity reap the benefit of efficiency gains between regulatory hearings, and conversely suffer the consequences of not being efficient between regulatory hearings. Thus, in the case of NTPC, the ratepayers and not the owner of NTPC bore and are being asked by NTPC to continue to bear the risks associated with the nonsymmetrical benefits and losses associated with the debentures with sinking funds. This was the case even though the owner dictated the sinking fund's strategic investment policy.

As a further illustration, any so-called regulatory compact on the treatment of yields and gains and losses on sinking funds (if it exists) will result in very high costs of debt for some issues (see page 93 of our evidence). The debt costs calculated by NTPC for its 11% sinking fund debentures issued on 9 March 1989 should be, for example, 215.57% based on NTPC's forecasts for 2006/07. This rate would give the appearance of being usurious.

b) Please provide a schedule showing an example (including calculations) of how the cost sharing could be achieved for the two test years.

Response:

We recommend that the average cost of debt for the two test years be set at 8.29% and 8.31%, respectively. However, if the Board considers it appropriate to share the sinking fund costs between rate payers and shareholders, and depending upon the degree of sharing, the impact on the cost of debt would lie between the higher costs calculated by NTPC and the costs that we calculate and report on page 108 of our evidence.

c) Please identify any measures that can be adopted by the Corporation for the test years and beyond in order to mitigate sinking fund investment risks and costs to rate payers.

Response:

To reiterate, as discussed further in NTPC.HC-25, sinking fund interest and balances did not form part of any regulatory compact between this Board and NTPC. We do not consider that the Negotiated Settlement which was entered into without prejudice by all parties altered that compact. Therefore, we do not consider any sharing to be an undue violation of the regulatory compact (if one so exists) between this Board and NTPC respecting the treatment of yields and gains and losses on sinking funds. Given this context, we now address this question below.

By most of its actions during the past year or so, NTPC has essentially preempted or made more costly measures that would have mitigated the sinking fund investment risks and costs to rate payers. Please see the discussion at the top of page 105 of our evidence.

To reiterate one of the arguments made there, NTPC has added immunized investments consisting of \$11.239 million in Federal government guaranteed securities yielding 4.10% to its sinking fund during fiscal 2006, which NTPC intends to hold to maturity. While this lowers the risk to the management of NTPC, it locks in a negative return differential of 6.9% that will be charged to rate payers under the formula proposed by NTPC for calculating the embedded cost of debt for debentures with sinking funds for the 2006/07 and 2007/08 test years. This locks in an added annual cost of about \$775,000 to rate payers. In fact, under the new method of calculating the embedded cost of debentures with sinking funds included in NTPC's application (for its non-conformity with Board Decision 1-91 please see HC's response to NTPC.HC-25), the management of NTPC has an incentive to "low-ball" the forecasted return on sinking fund investments for the two test years since any realized returns above expectations are retained by the Corporation.

When the negative consequences of sinking fund management are shifted entirely to ratepayers, there is little incentive for management to be efficient in terms of sinking fund management. Thus, NTPC should be liable for any shortfall in investment returns between the realized returns on the sinking funds over the two test years and a benchmark that reflects its potential investment universe of equities and fixed income securities, and should share any returns above the benchmark with rate payers. This would also include the investments that are immunized.

BR-HC 8

Topic: Cost of Capital Lease

Reference: Page 112

Preamble

"By entering into the capital lease, NTPC gains in the regulatory process by being able to include the **interest portion** of the annual cost of its operating lease (i.e., the portion of the annual lease payment that is essentially a pure financing cost) in its capital costs and also from including the full amount of the annual amortization expense in its operating cost structure. Thus, the cash-flow implication of the annual amortization expense associated with the capital lease is one where NTPC's implicit tax rate is 100%."

Requests:

a) Please provide an example illustrating how NTPC gains in the regulatory process by being able to include the interest portion of the annual cost of its operating lease in its capital costs and also from including the full amount of the annual amortization expense in its operating cost structure. Please indicate whether or not HC believes there is any double counting of lease payments in the forecast revenue requirement and, if so, indicate where such double counting occurs.

Response:

The arrangement allows the consolidated company to get a cash inflow equal to the full annual amortization expense because the arrangement passes the amortization expense to the regulated and not to the nonregulated part (NWT Energy Corporation Ltd.) of the consolidated Corporation. The amortization expense is then included in the cost base for the regulated part of the consolidated Corporation for rate setting purposes. If the annual amortization expense had been passed on to the nonregulated part of the consolidated Corporation through the capital lease arrangement, there would have been no cash inflow to the nonregulated sub of the consolidated Corporation from the amortization expense since the nonregulated sub is nontaxable and amortization is a noncash expense. If the nonregulated sub is assumed to be taxable, then the amortization expense would provide a shield against taxes, and the annual tax shield would be equal to the annual amortization expense times the tax rate paid by the nonregulated sub. This arrangement is an example of regulatory arbitrage which benefits the consolidated Corporation at the expense of the rate payers of the regulated part of the consolidated Corporation. Furthermore, NWT Energy Corporation Ltd. supposedly issued debt to finance its loan to Dogrib Power Corporation. This debt needs to be identified along with the time of issue, because it must have included some portion of the debentures with sinking funds, and needs to be explicitly carved out in the calculations of the embedded cost of debt for the regulated part of NTPC in this GRA.

An important part of our argument is that the reference in the Power Acquisition Agreement between the Dogrib and NWT Energy that the ROE should be 25 points less than the regulated return is a commercial arrangement between these two parties. The Board needs to set a rate that is consistent with the risk attributable to the lease. This would be the rate on 100% debt, as per page 112 of the evidence of Drs. Kryzanowski and Roberts.

BR-HC 9

Topic: Cost of Capital Lease

Reference: Page 110

Preamble

The Board wishes to understand the implications of HC's recommendations respecting the capital lease.

Requests:

a) Please indicate whether any contractual obligations to NWT Energy Corporation Ltd or other third parties would be violated if the HC recommendations to adjust the debt rate were accepted. If so explain how this matter should be addressed.

Response:

We did not address the issue of whether or not any contractual obligations to NWT Energy Corporation Ltd or other third parties would be violated if the HC

recommendations to adjust the debt rate were accepted. However, since NWT Energy Corporation Ltd is a nonregulated entity of NTPC, any contractual obligations are likely to be entered into for the benefit of the consolidated Corporation and not necessarily for the benefit of the regulated part of the consolidated Corporation.

b) Please indicate whether HC has examined the reasons why the capital lease was structured with an equity component at the time the Corporation entered into the capital lease. If so please comment on the validity of the reasons.

Response:

HC would have done so if NTPC had responded more fully to information request, **HC-NTPC.21**, where HC asked for: details of debt covenants and other relevant documents that deal with the cost of the capital lease (part c); documentation that substantiates the “continuing obligations in respect of the Snare-Cascades project to the Dogrib Power Corporation” that are reflected in the costs of the capital lease (part e); description of all the financial arrangements between NTPC, the NWT Energy Corporation and the Dogrib Power Corporation as they relate to the Capital Lease Obligation (Snare Cascades Project) (part f); and the provision of the cash flows between these three entities for the period 2002/03 through 2007/08 (part g). In conclusion, NTPC did not provide the requested information.

c) Please indicate whether the treatment of a certain portion of the capital lease as equity financing would be appropriate if there are minority interests outside of the NWTPC Corporation that are providing a portion of the capital lease financing.

Response:

No, it would not be appropriate because the risk of receiving lease payments is no greater (and more likely less) than the risk of receiving payments on secured debt.

d) Please explain why a 25 basis downward adjustment to the equity return applicable to the capital lease is considered appropriate. Identify the components of risk that are captured by this reduction

Response:

NTPC’s equity rate of return is based on its risk level. As such, the equity rate of return for NTPC is the appropriate hurdle rate for assessing or costing financial arrangements that have risks equal to the average risk of NTPC. The rate needs to be increased for financial arrangements that are more risky, and needs to be decreased for financial arrangements that are less risky. Since the risk of a capital lease is no higher (and should be lower) than the risk of secured debt (which should be lower than the cost of equity), the equity rate of return for NTPC applicable to the capital lease needs to be adjusted downwards to reflect this lower risk. This appears to be reflected somewhat in the NTPC 2001/03 GRA Negotiated Settlement on page 3 where the ROE for NTPC was adjusted to

9.5% for both 2001/02 and 2002/03 and the ROE for the equity component under the Dogrib lease obligation was adjusted to 9.25% for both 2001/02 and 2002/03. Furthermore, the 25 basis point downward adjustment to the equity return applicable to the capital lease is insufficient given the credit quality of NTPC and the very secure nature of the financial (lease financing) arrangement.