

BC HYDRO
2008
LONG TERM ACQUISITION PLAN (LTAP)

JOINT INDUSTRY ELECTRICITY
STEERING COMMITTEE
(JIESC)

FINAL ARGUMENT

April 27, 2009

TABLE OF CONTENTS

1. INTRODUCTION.....	1
1.1 JIESC Perspective - A Reasonable Plan for the Long Term.....	1
1.2 Evidentiary Overview.....	2
1.3 Summary of JIESC recommendations	3
2. RESPONSE TO COMMISSION QUESTIONS.....	6
2.1 Ability to reject “part” of the BC Hydro LTAP	6
2.2 Considerations regarding “cost effectiveness”	7
2.3 FNU3 and “government energy objectives”?.....	7
2.4 FNU3 compliance with Sec. 44.1(2).....	8
2.5 Electric Vehicles	8
2.6 Burrard	9
2.7 Project Thresholds	10
3. LTAP AND DSM APPROVAL PROCESSES AND TIMING	10
3.1 Future LTAP Filing Regulatory process	10
3.2 Future DSM Expenditure Approvals.....	11
4. PROVINCIAL POLICY.....	11
4.1 Electricity/Natural Gas Fuel Selection	11
5. LOAD RESOURCE BALANCE	11
5.1 Load Forecast	11
5.2 Major new industrial load.....	14
5.3 Load Resource Gap	14
5.4 Principle Sources of Uncertainty in Forecasts.....	15
5.5 Consequences of being “short” or “long”	16
6. DSM ISSUES	19
6.1 Cost-effectiveness.....	19
6.2 Lack of industrial programs	23
6.3 Voltage Optimization is not DSM.....	26
6.4 Smart meters.....	26
6.5 DSM Reporting.....	27
6.6 Milestones and Risk Mitigation.....	27
6.7 Use of RIM test.....	30
7. SUPPLY SIDE ISSUES	31
7.1 IPP Purchases.....	31
7.2 Attrition	32
7.3 Alcan	32
7.4 CFT Size	32
7.5 Burrard Energy Reliance	33

7.6	Insurance.....	33
7.7	Fort Nelson - Horn River Basin	34
7.8	ICP Dispatchability	35
8.	RESOURCE SMART	35
8.1	Mica Units 5&6	35
8.2	Site C.....	36
9.	CONTINGENCY RESOURCE PLANS	36

1
2
3
4
5
6
7
8
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11
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BC HYDRO

2008

**LONG TERM ACQUISITION PLAN (LTAP)
JIESC ARGUMENT**

1. INTRODUCTION

1.1 JIESC Perspective - A Reasonable Plan for the Long Term

The JIESC is pleased to have the opportunity to make submissions in this matter. This is the first review by the Commission of BC Hydro's LTAP following the issuance of the 2007 Energy Plan, an important turning point in energy and GHG policy in British Columbia and will undoubtedly set the tone for years to come.

BC Hydro has gone to unprecedented lengths to investigate issues of concern raised by the Commission in its last LTAP Decision and arising out of the 2000 Energy Plan. While there will undoubtedly be challenges by stakeholders, including JIESC, with respect to the adequacy in particular areas, JIESC believes that BC Hydro has done an excellent job in assembling the information provided in this proceeding, which is above all a planning exercise. The hearing record, if anything, is excessive in that the volume of material suggests a degree accuracy to the forecasts that is not achievable in today's rapidly changing world.

We are in a time of unprecedented uncertainty for all, and peril for some customers. It is important to do what needs to be done to meet Provincial goals, to protect the system, and to provide reliable low cost electricity to BC Hydro's customers, but it is also important not to push too far on speculation and uncertainty.

It is important to remember that the document before the Commission is a twenty year plan. In a very real sense it is a living, evolving document that needs to be revisited, and will be revisited, every couple of years. Recent history has shown that "experts" can be dramatically wrong in short to mid-term forecasts let alone long term twenty year forecasts.

1 It is essential that the Commission see this LTAP as only an initial plan to navigate an
2 uncertain future, and not visualize it as a blueprint for the construction of a certain future.
3 Many of the future projections you read or hear in the course of this hearing will be
4 wrong. In JIESC's submission the test of a good LTAP is whether the projections are
5 reasonable and balanced, and as importantly, how variations over time will be handled.
6 The decision to accept or reject the LTAP and its elements should, in large part, be
7 based on the answers to the following questions:

- 8 • On balance is it a reasonable long term plan?
- 9 • Is there sufficient flexibility in the basic resource plan (BRP) and the contingency
10 resource plans (CRP) to cope with the future, including balancing uncertainty and
11 risks?
- 12 • Has BC Hydro diversified its options reasonably and avoided locking into long
13 term solutions unnecessarily?
- 14 • Does BC Hydro have a reasonable proposal for reviewing and updating the plan
15 in order to keep it current and ensure it will meet future needs?

16 JIESC believes, subject to a number of specific concerns that will be addressed later,
17 that BC Hydro has in fact achieved a reasonable degree of overall balance in the 2008
18 LTAP and deserves the general support of the BC Utilities Commission. Unfortunately,
19 there are some elements that need fixing and the "accept" or "reject" options given the
20 Commission under the Utilities Commission Act (UCA) require that elements of the
21 LTAP be rejected with guidance or suggestions to BC Hydro on the changes that would
22 make them acceptable.

23 **1.2 Evidentiary Overview**

24 In this hearing we have an unusual advantage in that key elements of the record were
25 updated in a meaningful way, just prior to the commencement of the hearing. The
26 Evidentiary Update included significant changes over a very short period to what had
27 been thought to be relatively stable trends. In providing this Update, BC Hydro
28 demonstrated the volatility and uncertainty inherent in the current economy. Clearly,
29 neither BC Hydro nor anyone else knows exactly where the economic downturn is going,

1 how long it will last, or what its permanent impact will be. What is clear however, is that
2 in the current recession, operating and planning flexibility is more important than ever
3 before.

4 In general, this LTAP provides such flexibility and ensures customer requirements are
5 being planned for appropriately. Looking at the LTAP generally, BC Hydro has planned
6 supply side, Resource Smart and DSM resource additions that will:

- 7 • meet Provincial self-sufficiency requirements;
- 8 • put Demand Side Management (DSM) first, ahead of all other resource
9 acquisitions;
- 10 • acquire needed IPP resources;
- 11 • place it in a position to bring on cost-effective Resource Smart projects if and
12 when required; and
- 13 • ensure through strong Contingency Resource Plans (CRP) that customer needs
14 will be reliably met, even in the event of the unexpected.

15 **1.3 Summary of JIESC recommendations**

16 For the reasons set out in this Argument JIESC recommends that:

- 17 • the LTAP generally be recognized as being a reasonably balanced approach to
18 long term planning;
- 19 • the Load Forecast filed with the Evidentiary Update be accepted;¹
- 20 • for planning purposes the Clean Power Call be approved at 3,000 GWh/year or
21 2,100 GWh post-attrition, the Bio-Energy Call Phase 1 at 580 GWh and the Bio-
22 Energy Call Phase II at 1,000 GWh/year, all subject to sufficient cost effective
23 energy being offered up and final BCUC approval;

¹ JIESC Argument, page 11

- 1 • BC Hydro's choice to proceed with DSM Adjusted Option A rather than an
2 Adjusted Option B be confirmed;
- 3 • the following DSM programs be rejected, without suggestion that BC Hydro re-file
4 for later approval, because they are more expensive² than alternate supply side
5 options and thus not cost-effective;³
- 6 ○ Residential Renovation Rebate
- 7 ○ Residential Sustainable Community
- 8 ○ Commercial Sustainable Community
- 9 ○ Residential Load Displacement
- 10 • the remaining DSM programs listed in the table in Exhibit B-83 be rejected on the
11 grounds there are no discernable milestones or mitigation plans, in spite of
12 BC Hydro's promises of both, with the option for BC Hydro to develop such plans
13 and refile the programs within 2 months;⁴
- 14 • Voltage Optimization be removed from the DSM plan on the grounds it is not
15 DSM but rather is a transmission efficiency expenditure and should be dealt with
16 in the normal capital plan process;⁵
- 17 • BC Hydro be directed to immediately put in place transmission class industrial
18 DSM incentives with the incentives set at a level that better recognizes other
19 DSM expenditures and the cost of supply side energy, including avoided
20 transmission;⁶
- 21 • BC Hydro hold a Call for Tenders or a Call for proposals to acquire industrial
22 DSM in much the same way it acquires supply side resources;⁷

² Exhibit B-83

³ JIESC Argument, page 19

⁴ *Ibid*, page 27

⁵ *Ibid*, page 26

⁶ *Ibid*, page 23

⁷ *Ibid*, page 23

- 1 • BC Hydro be required to provide quarterly reports to the Commission on DSM
2 expenditures and progress. These reports should specifically include progress in
3 getting DSM incentive plans for industrial customers in place;⁸
- 4 • any variation between actual and allowed DSM revenue requirement impacts be
5 accrued in a deferral account;
- 6 • BC Hydro's proposal to include Burrard in the LTAP at 3,000 GWh be accepted;⁹
- 7 • BC Hydro be required to present a plan to make ICP dispatchable or explain why
8 it would not be prudent to do so;¹⁰
- 9 • The requested Site C expenditures be approved with a warning that requests for
10 approval of further major expenditures for this project should show a serious
11 need for the expenditures and/or a reasonable likelihood the project will
12 proceed;¹¹
- 13 • The CRPs be approved as robust and reasonable contingency plans;¹²
- 14 • The requested expenditures for FNU3, Mica Units 5 & 6 and Revelstoke 6 be
15 approved;¹³
- 16 • Future updates and authorization of DSM expenditures take place in the RRA
17 hearings and long-term DSM plans remain in the LTAP; and¹⁴
- 18 • BC Hydro be required to file its next LTAP application within two years of the
19 Commission Decision in this proceeding.¹⁵

⁸ *Ibid*, page 27

⁹ *Ibid*, page 33

¹⁰ *Ibid*, page 35

¹¹ *Ibid*, page 36

¹² *Ibid*, page 36

¹³ *Ibid*, page 34 and 35

¹⁴ *Ibid*, page 11

¹⁵ *Ibid*, page 10

1 **2. RESPONSE TO COMMISSION QUESTIONS**

2 In a letter dated April 2, 2009, the Commission requested the Intervenors comment on
3 the following issues. This section of the Argument provides a concise response to each
4 of those questions. In many cases support for, or elaboration of, the points made will be
5 found in the main body of the argument.

6 **2.1 Ability to reject “part” of the BC Hydro LTAP**

7 1. Section 44.1(7) of the Act states that the Commission's may accept or reject a "part" of a public
8 utility's plan. In light of the fact that "part" is not a defined term under the Act, the Commission
9 Panel seeks clarification of the views of the Parties as to what might constitute a "part" of the
10 2008 LTAP. In their submissions the Parties should address the ability of the Commission to
11 reject a part of a public utility's plan while still accepting it as a plan.

12 JIESC accepts BC Hydro's view that "*both subsection 44.1(7) and subsection 44.2(4)*
13 *(discussed below) of the UCA provide the answer by confirming that the Commission*
14 *may accept or reject a part of the plan and/or expenditures set out in the 2008 LTAP,*
15 *including a part of DSM-related plan or expenditures*"¹⁶ and BC Hydro's submission that
16 "*each of or a combination of the individual expenditure determination requests forming*
17 *part of the 2008 LTAP requested Order, and each of the combination of the*
18 *endorsements sought, are “parts” of the 2008 LTAP that the Commission can accept or*
19 *reject*"¹⁷ and "*the Commission can find the DSM plan to be in the public interest, but*
20 *reject individual programs on the basis that they are not cost effective.*"¹⁸

21 While the options of the Commission to accept or reject appear black and white there is
22 room for Commission guidance and input. Section 44.1(7)(a) of the UCA provides "*if the*
23 *Commission rejects a part of the plan, (a) the public utility may resubmit the part within*
24 *the time specified by the commission*".

25 If the Commission does not feel that a part or all of the DSM plan is acceptable, it is
26 appropriate for the Commission to exercise its option to reject with guidance and an
27 invitation to BC Hydro to re-file that part of the Plan within a certain defined period in
28 order to obtain approval.

¹⁶ BC Hydro Argument, page 21

¹⁷ *Ibid*, page 22

¹⁸ *Ibid*, page 22

1 **2.2 Considerations regarding “cost effectiveness”**

2 2. *In light of the parameters for assessing "cost effectiveness" as spelled out at Section 4 of DSM*
3 *Regulation Order M271, to what degree, if any, is the Commission's discretion fettered in its*
4 *review of the utility's DSM proposals?*

5 JIESC accepts the descriptions of the limitations on the Commission regarding cost-
6 effectiveness determinations, which are quite targeted and limited, set out in BC Hydro's
7 Argument on page 18.

8 In particular, JIESC accepts BC Hydro's submission that *“subsection 4(1) allows the*
9 *Commission to consider the cost-effectiveness of DSM measures individually, as a*
10 *group or as an overall portfolio. This perpetuates the status quo whereby the*
11 *Commission has the discretion to decide at what level to scrutinize DSM. Portfolio level*
12 *scrutiny is required with respect to public awareness, education, training, community*
13 *engagement and technology innovation programs (see below), and therefore*
14 *assessment of the overall cost-effectiveness of the DSM plan at a portfolio level is*
15 *required.”*

16 With the exception of those limited areas where portfolio level scrutiny is mandated the
17 Commission should determine the cost effectiveness of Demand Side Measures or
18 programs individually and determine their cost effectiveness in comparison to supply
19 side or Resource Smart alternatives. As will be shown later in this argument there are
20 several programs that are clearly not “cost-effective”.

21 **2.3 FNU3 and “government energy objectives”?**

22 3. *Section 44.1(8) of the Act states that "in determining under subsection (6) whether to accept a*
23 *long term resource plan, the commission must consider (a) "the government's energy objectives",*
24 *which are defined as including "to encourage public utilities to reduce greenhouse gas*
25 *emissions". In light of this would the approval by the Commission of FNU3 contravene such an*
26 *instruction?*

27 JIESC accepts BC Hydro's position set out at page 187 of its Argument.

28 The JIESC submits that approval by the Commission of FNU3 would not contravene the
29 instruction contained in section 44.1(8) of the UCA.

1 This position is based on the following:

- 2 • the instruction contained in section 44.1(8) of the *Act* is to “encourage public
3 utilities to reduce greenhouse gas emissions”. It is not an absolute prohibition on
4 natural gas generation or additional GHG emissions;
- 5 • the JIESC understands that FNU3 is designed in a manner that will create
6 minimal GHG emission increases; and
- 7 • Fort Nelson is experiencing load increases that require additional generation and
8 FNU3 is the most cost effective and timely manner of serving this load, even
9 when the full cost of GHG offsets are included.

10 **2.4 FNU3 compliance with Sec. 44.1(2)**

11 *4. Does BC Hydro's Fort Nelson Resource Plan comply with the requirements of section 44.1 (2)*
12 *of the Act? In making its determination in respect of that Plan, on what basis, if any, should the*
13 *Commission Panel grant the exemption set out in section 44.1.(9) (a)?*

14 The JIESC takes no position on whether the Fort Nelson resource plan complies with
15 section 44.1(2) of the *Act* of the UCA.

16 The JIESC does not see the benefit of what BC Hydro describes as the FNRP being a
17 “CPCN-like”¹⁹ filing made under the subsection 44.2(1) (b) of the UCA if the same
18 information is filed as would be for a CPCN and would discourage such applications in
19 the future. The filing in this manner appears to be an inappropriate use of section 44.2
20 and provides little benefit over filing pursuant to section 45(1) for a Certificate of Public
21 Convenience and Necessity.

22 **2.5 Electric Vehicles**

23 *5. The subject of BC Hydro's contemplation of the potential demand arising from electric vehicles*
24 *was canvassed at some length in the review to date (T4:470-74), with BC Hydro's position stated*
25 *as essentially being one of "monitoring developments". Shortly thereafter BC Hydro announced*
26 *its participation in a BC Government led program in respect of electric vehicles, and BC Hydro's*
27 *engagement of consultants, pursuant to a call for proposals, to detail the necessary actions for*
28 *deploying electric vehicle charging infrastructure, with a report to be filed by the end of April 2009.*

¹⁹ BC Hydro Argument, page10

1 *Given these developments, should the evidentiary record be re-opened to admit this evidence,*
2 *and, if so, should Parties be given the opportunity to examine it and make submissions as*
3 *appropriate, and if so, by what process?*

4 JIESC opposes the reopening of the record to admit evidence with respect to electric
5 vehicles and BC Hydro's engagement of consultants pursuant to a call for proposals to
6 detail necessary actions for deploying electric vehicle charging infrastructure.

7 JIESC is of the view that the potential demand arising from electric plug-in vehicles
8 (EPVs) was canvassed at some length and it is clear from that evidence that
9 understanding the market for EPVs, and defining what is needed to accommodate them,
10 is still at a very early stage of development. The JIESC supports BC Hydro's position
11 that any shift to electrification will present signposts with sufficient early warning to plan
12 for any impact on the load forecast, and that BC Hydro is taking appropriate and
13 responsible steps to monitor the situation²⁰.

14 Clearly this is an issue that should be canvassed as part of the next LTAP proceeding,
15 but not now.

16 **2.6 Burrard**

17 *6. In order to determine if BC Hydro can rely on Burrard for planning purposes for 900 MW of*
18 *capacity and either of 600 GWh, 3,000 GWh or 6,000 GWh of energy would the Commission*
19 *have to find that the capital expenditures in excess of \$300 million for each scenario that AMEC*
20 *stated would be required (Exhibit B-I-I, Appendix J1, p.94) were cost-effective?*

21 JIESC is of the view that capital expenditures in the range of \$300 million appear
22 essential, and cost effective, to maintain Burrard subject to proof in a formal application
23 to be filed at some time in the future. Burrard is required for planning purposes and for
24 ongoing reliability and stability for up to 900 MW of capacity, at least until ILM is
25 constructed, and accordingly the 3,000 GWh of proposed energy is a very cost effective
26 additional benefit arising from expenditures that must be made in any event.

27 In JIESC's submission the level of need, justification and cost estimates BC Hydro has
28 presented should be enough for approval for planning purposes at this time.

²⁰ BC Hydro Argument, page 60

1 **2.7 Project Thresholds**

2 7. *In Section 4.3 of Exhibit B-10, BC Hydro proposes a threshold for major project applications.*
3 *Parties are requested to make submissions on BC Hydro's definition of a threshold by addressing*
4 *situations where a number of projects might constitute a program which in total would exceed the*
5 *threshold but the elements of which would not individually exceed the threshold.*

6 JIESC accepts \$50 million as an appropriate threshold for a major capital project or
7 CPCN review with the exception of building and IT projects which JIESC submits should
8 be subject to a \$10 million review threshold. JIESC is particularly concerned that scope
9 and cost estimates for IT projects have expanded significantly after projects have been
10 commenced in the past without commensurate consideration or measurement of
11 benefits and accordingly deserve early and ongoing examination.

12 JIESC is also concerned that capital programs not be broken into a number of individual
13 projects to avoid review. Accordingly, JIESC is of the view that a program that consists
14 of a number of capital projects with total costs over \$50 million (within a three year
15 period) should be subject to a major project or CPCN review.

16 **3. LTAP AND DSM APPROVAL PROCESSES AND TIMING**

17 **3.1 Future LTAP Filing Regulatory process**

18 BC Hydro has proposed that future LTAP plans be filed approximately two years
19 following the Commission's decision on the most recent LTAP plan. In general, JIESC
20 supports two years as an appropriate interval to reflect a meaningful change, gain
21 increased insight into future trends, and allow BC Hydro to understand and respond to
22 the most recent Commission LTAP Decision and Provincial policy changes. However,
23 JIESC is of the view that "approximately two years" is too uncertain and is fearful that
24 "approximately two years" might stretch into three or four years which is not acceptable
25 at this time. Accordingly, JIESC proposes that the Commission require future LTAPs to
26 be filed within twenty-four months of its most recent LTAP decision, or if some leeway is
27 to be given, that it be explicit by providing that the next LTAP plan is to be provided
28 within, say, twenty-six months of the last Commission LTAP Decision.

1 **3.2 Future DSM Expenditure Approvals**

2 JIESC supports moving the DSM expenditure approval process to BC Hydro's Revenue
3 Requirement Application proceedings with the long term DSM Plan being approved in
4 the LTAP process. This will avoid the current situation where finalizing the RRA
5 Decision is awaiting the outcome of the LTAP proceeding, a process that is difficult in
6 the context of the current timing and would be impossible if the RRA and LTAP
7 proceedings were not held in close proximity to one another.

8 **4. PROVINCIAL POLICY**

9 **4.1 Electricity/Natural Gas Fuel Selection**

10 BC Hydro has devoted a substantial part of its Argument to government policy with
11 respect to electricity/natural gas and fuel selection in three areas: electrical plug-in
12 vehicles, residential space heating and water heating, and oil and gas facilities.

13 JIESC expects Terasen will be equally comprehensive in dealing the residential space
14 heating issue. While the debate is interesting and will undoubtedly play a large roll in
15 future LTAP proceedings, in JIESC's submission it is premature at this time. If the
16 government wanted to declare natural gas or electricity as the fuel of choice for a
17 particular use or application it is reasonable to expect it would do so in the Energy Plan
18 or otherwise. Until the government declares its views, neither BC Hydro nor the
19 Commission should deliberately promote one fuel over the other.

20 JIESC supports the suggestion of Mr. Elton²¹ that electric plug-in vehicles, residential
21 space heating, water heating and oil and gas facilities, all be considered for study and
22 potential inclusion in future load forecasts when the loads become more visible and
23 quantifiable.

24 **5. LOAD RESOURCE BALANCE**

25 **5.1 Load Forecast**

26 JIESC is of the view that the Evidentiary Update Load Forecast is subject to
27 considerable uncertainty and is likely on the high side. What is clear in examining the
28 differences between the original and updated forecasts is that there has been significant

²¹ Transcript Vol. 3, page 251

1 load reduction in the industrial sector. What is not clear is how much of that reduction is
 2 structural, that is, it will not return, and how much is temporary or cyclical and likely to
 3 return with more normal economic conditions.

4 The serious state of the forest industry in October of 2008 was clearly recognized by
 5 BC Hydro's consultants in Exhibit B-12 response to BCUC IR 38.238.2 public
 6 attachments 4 to 9 found at pages PDF 218 – 507 of that Exhibit. As indicated in the
 7 JIESC opening those documents set out the plight of the industry in British Columbia
 8 and in many cases on a company by company, or even plant by plant, basis in
 9 gruesome detail. JIESC urges the Commission to read those documents in full,
 10 particularly if the Commission has any doubts that part of the 2008 – 2009 load reduction
 11 is structural and will never return.

12 October 1st Temanex Report Ex. B-12 BCUC IR 3.238.2
 13 P. 8 of 111 and PDF 353 of 1106

14 ***Special Added Note For This Presentation***

- 15 • *Two to three months (from July's forecast to today's*
 16 *presentation) can make a big difference in economic*
 17 *outlook*
 18 – *Market volatility escalated to shocking and disturbing levels*
 19 – *Economic growth outlook for North America, Europe, Japan,*
 20 – *and even emerging Asia has deteriorated significantly*
 21 – *US liquidity crisis/fiasco a major short to medium term threat*
 22 • *Short term economic growth outlook even worse than*
 23 *the July forecast summarized next – does not bode*
 24 *well for an already battered forest industry*

25 Page 53 of 111 PDF 398 of 1106

26 ***Special Comments On Ongoing Structural***
 27 ***Shifts In Forecast Outlook***

- 28 • *Most BC forest products companies have taken a*
 29 *beating during the last few years*
 30 – *Precipitous decline in market demand for major products*
 31 • *Newsprint since 1999-2000*
 32 • *Lumber since 2005*
 33 – *Huge escalation in Canadian vs. US dollar strength*
 34 • *Some companies have not had a profitable year since*
 35 – *2001*
 36 • *Increased supplier concentration and shutdown of*

1 *marginal competitiveness capacity ongoing*

2 Page 55 of 111 and PDF 400 of 1106

3 **Summary**

- 4 • *The BC forest industry will continue to face obstacles*
5 *to its hoped for return to profitability*
6 • *These obstacles, notably ongoing demand decline,*
7 *strong Canadian dollar, fibre constraints, low cost*
8 *overseas competitors, and so on, are expected to*
9 *accelerate capacity shutdowns.*

10 Bad as the situation described in Exhibit B-12 is, that material is based on the situation
11 in late 2008 and is now outdated. Unfortunately, circumstances have deteriorated
12 further and signs of recovery appear are still not apparent.

13 In its Argument BC Hydro states:

14 *“Mr. Ince also stated his expectations that ‘we’d see a recovery in 2010’, and*
15 *further stated that current expectations are that, notwithstanding the current*
16 *worsening of economic conditions, the economy was forecast to recover to*
17 *similar levels as those that were forecast in the Evidentiary Update. Therefore,*
18 *BC Hydro’s expectation at the hearing was that the Mid-to long-term economic*
19 *expectations remained substantially the same as that presented in the*
20 *Evidentiary Update.”²²*

21 In JIESC’s submission Mr. Ince is optimistic, but the fact is that no one knows.

22 Notwithstanding the preceding comments JIESC accepts that the Load Forecast
23 provided in the evidentiary update is a suitable forecast for long term planning purposes.
24 Not because it is “correct”, but because in the current climate of uncertainty no one can
25 prepare a “correct” forecast and the current one is sufficient until a better forecast can be
26 prepared. Hopefully that will be with the next LTAP filing.

27 The Commission should recognize that there is considerable down-side risk associated
28 with the Evidentiary Update load forecast with respect to future domestic loads, and in
29 particular, industrial volumes. This uncertainty can not be resolved now and accordingly

²² BC Hydro Final Argument, page 87

1 does not form a reason to delay the current LTAP Decision, but is a good reason for
2 exercising caution in making decisions.

3 **5.2 Major new industrial load**

4 Dr, Shaffer raised the issue of significant new industrial load potentially impacting rates
5 and load forecasts²³. The JIESC submits this evidence was speculative and did not
6 recognize the actual situation facing BC Hydro.. There has been no net significant new
7 industrial load in many years, there is none forecast by BC Hydro or others in this
8 proceeding, and in fact total industrial load has been dropping consistently while
9 residential and commercial loads are increasing.

10 In response to Dr. Shaffer's evidence BC Hydro presents a fairly detailed analysis of its
11 view of its duty to serve and the terms under which it would serve significant new load in
12 its response to COPE IR 3.4.1²⁴. JIESC has decided not to reply to that argument
13 believing such an argument is not necessary to determine the issues in this hearing and
14 should not be made in a vacuum, but rather should be advanced when and if such a
15 situation ever occurs. JIESC submits that the Commission should not make any ruling
16 on the terms and conditions under which substantial new load would be served.

17 **5.3 Load Resource Gap**

18 BC Hydro concludes at page 173 of its Argument that the "BRP results in BC Hydro
19 meeting its energy and capacity load/resource gap up to and including F2017, the first
20 fiscal full year of the self-sufficiency requirement."

21 That estimate is correct but also very conservative. The evidence supports the
22 conclusion that BC Hydro will more than meet its energy and load resources gap due to:

- 23 • BC Hydro's overestimation of load due to the underestimation of likely structural
24 changes;
- 25 • BC Hydro's conservatism with respect to the 3000 GWh reliance on Burrard;
- 26 • BC Hydro's conservatism with respect to achievable DSM by utilizing Option A A
27 not Option B; and

²³ Exhibit C-16-6, page 7

²⁴ Exhibit B-12

- 1 • BC Hydro's under-estimation of likely energy available from Alcan due to delays
2 in the Alcan Plant Modernization Project.

3 In spite of BC Hydro's conservatism in estimating the load resource gap, JIESC accepts
4 BC Hydro's projections for the purpose of this LTAP. JIESC hopes that future LTAPs
5 will take place in a time of greater stability, leading to greater confidence in forecasts and
6 greater consensus on future trends.

7 **5.4 Principle Sources of Uncertainty in Forecasts**

8 **(a) Load**

9 BC Hydro's forecast is subject to significant uncertainty due to three principle factors, the
10 industrial load decline, estimated future use of electric plug-in vehicles and natural gas to
11 electricity fuel switching.

12 In case of electric load, JIESC submits that BC Hydro is, if anything, too optimistic but is
13 unable, as previously mentioned, to quantify the degree of such optimism.

14 With respect to IPP's assertion that electrification is imminent, JIESC accepts
15 BC Hydro's position that it is too early to reasonably plan for electrical vehicles or fuel
16 switching. Both are subject to a high degree of early speculation, will not occur rapidly
17 and need to be the subject of much more evidence and study before they can
18 meaningfully be brought into a forecast. There are no mass market EPVs at this time
19 and it is not clear when such vehicles will be introduced in sufficient quantity to have any
20 meaningful effect on the electric load forecast. Similarly, the government has not made
21 a policy that would encourage natural gas users to switch to electric for heating or hot
22 water use or electric users to switch to natural gas, and there is no significant evidence
23 when, or if the government will implement such a policy and what its impacts would be.

24 **(b) Supply side and Demand Side Resources**

25 Uncertainty in resources principally arises from uncertainties with regard to the amount
26 of achievable DSM, CFT attrition and the availability of Alcan resources due to delay in
27 the Alcan Modernization Project.

28 In JIESC's submission all three point to more resources, rather than less, being
29 available.

1 BC Hydro has been conservative in relying on Adjusted Option A with an achievable
2 potential of 9,600 GWh/year.²⁵ Option B which is more aggressive, was estimated to
3 provide approximately 2,200 GWh/year over the original Option A²⁶. By choosing
4 Adjusted Option A over Option B, or an Adjusted Option B, BC Hydro has left some
5 room to augment or increase planned DSM measures, should it fail to achieve some of
6 the Option A DSM at higher marginal cost and delivery risk.

7 Similarly, BC Hydro's 30% attrition rate for the clean power call is reasonable. While
8 there have been higher attrition figures in past calls, most notably the 2003 Call and the
9 2006 Call, both were in very different circumstances. The 2003 Call contained a price
10 cap in the \$50 range and the 2006 Call took place initially in a time of rapidly rising
11 construction costs, changing eligibility rules that eliminated coal plants, and finally the
12 financial system crash. It is not surprising that attrition rates for the 2006 Call were high.

13 **5.5 Consequences of being "short" or "long"**

14 JIESC supports BC Hydro's three basket approach, drawing on cost effective resources
15 from DSM, IPPs and Resource Smart by BC Hydro is appropriate. JIESC accepts that
16 the proposed call or tenders should proceed at 3,000 GWh gross and 2,100 GWh net
17 even though it feels that strong and valid arguments could be made that the full amount
18 is not required to meet 2016 self-sufficiency targets, and may not be required for some
19 time thereafter, due to other conservative BC Hydro assumptions.

20 JIESC submits that the risks of falling short of electricity under the filed LTAP are non-
21 existent to minimal due to conservative nature of BC Hydro's Basic Resource Plan
22 (BRP), the large number of firm resources available to BC Hydro and the robust
23 resource rich Contingency Resource Plans (CRP) in place.

24 On the other hand, JIESC is very concerned that if BC Hydro were to buy too much
25 power that it would create very expensive long term fixed price obligations that would
26 pose substantial risk for BC Hydro's customers.

27 This issue was raised in the JIESC opening statement, has been pursued during the
28 hearing and remains a concern, particularly in light of apparent suggestions that more

²⁵ Exhibit B-10, BC Hydro Evidentiary Update, page 18

²⁶ BC Hydro Final Argument, page 118

1 IPP purchases are always better. The principle concerns are about arguments for
2 increased purchases in three areas:

- 3 (a) increasing the clean power call;
- 4 (b) obtaining 3000 GWh of insurance supply prematurely;
- 5 (c) replacement of Burrard Energy.

6 When one examines these demands individually, the cost and risk to ratepayers rapidly
7 become very clear.

8 **(a) Increase in the Clean Power Call**

9

10 BC Hydro originally proposed to acquire 5,000 GWh (3,500 GWh net) per year of firm
11 energy from IPPs through the Clean Power Call in order to meet an expected energy
12 shortfall in F2017.²⁷ This was reduced to 3,000 GWh (2,100 GWh net) in the December
13 22, 2008 Evidentiary Update.

14

15 If the BC Hydro load forecast is conservative, as customers believe, and only 3,000
16 GWh (2,100 net) per year are required at most, increasing the Clean Power Call will lead
17 to net annual purchases in excess of need, after attrition, of 1,400 GWh at an average
18 levelized price of \$120/MWh²⁸. These unnecessary purchases by BC Hydro would cost
19 in the range of \$168 million per year, electricity that could likely end up being sold in the
20 spot market for a loss of \$84 million/year.²⁹ It should also be noted that acquiring the
21 same amount of power through DSM, at the average cost of DSM; would cost
22 approximately $\$41 \times 1400 = \57.4 million per year instead of \$168 million.

23 **(b) Acquiring 3000 GWh of “Insurance” Supply by 2026**

24 The BC Energy Plan and Special Direction No. 10 provide that by 2026, BC Hydro must
25 acquire an additional 3,000 GWh per year of supply in addition to its firm energy
26 requirements as “insurance”. By its very nature, “insurance” supply is energy that

²⁷ BC Hydro 2008 LTAP Proceeding Exhibit B-10, page 26.

²⁸ BC Hydro 2008 LTAP Proceeding, Transcript Vol. 4, page 338

²⁹ These illustrative amounts were calculated using BC Hydro’s “proxy price” for the clean power call of \$120/MWh and a \$60 export price based on a rough estimate of the export price illustrated in Exhibit B-1, Figure 4-6

1 BC Hydro and its customers will probably not require but must have available.
2 Accordingly, when it is not required it will most likely be sold in the export spot market.

3 The cost of this electricity based on the LTAP “proxy” for the Clean Power Call of \$120/
4 MWh is \$360 million per year. If the surplus is sold in the market at currently projected
5 prices of \$60 per MWh the annual net loss would be \$180 million per year. In
6 customers’ minds there is no good reason to take on such a risk, particularly at this time,
7 for “insurance” that is not likely to be required until 2026, if ever.

8 **(c) Replacement of Energy from Burrard Generating Station**

9 BC Hydro has included Burrard Generating Station in the LTAP as providing 3,000
10 GWh/year of firm capacity within the province, although actual generation on Burrard
11 would be closer to the 600 GWh/year required for system stability. The other 2,400 of
12 energy forecast from Burrard will, if not produced at Burrard, most likely come from
13 hydro energy available due to the difference between average water conditions and
14 critical water conditions, non-firm purchases from IPPs, or market purchases at around
15 \$60/MWh. In the remote chance that BC experiences a critical water period, Burrard
16 can generate the 2,400 MW securely and reliably at a variable cost of \$71/MWh at
17 forecast natural gas prices.³⁰ If the Commission were to order BC Hydro to replace
18 Burrard energy with IPP contract energy, it would come at a cost of \$288 million/year³¹.
19 If this excess energy is ordered, it could end up being sold in the export market for a loss
20 of about \$144 million/year³².

³⁰ BC Hydro 2008 LTAP Proceeding, Exhibit B-30. At current natural gas prices the cost of generating electricity at Burrard is around \$46/MWh.

³¹ Based on the BC Hydro “proxy price” for the Clean Power Call of \$120. MWh

³² Based on the export prices shown in Exhibit B-1 of approximately \$60. MWh

1 **(d) Summary of Customer Exposure**

2 Customer exposure from the above purchases of excess supply can be summarized as
3 follows:

4

		Purchase Cost (million/year)	Loss on resale at \$60 MWh (million/year)
Increase in Clean Power Call	1,400 GWh	\$168	\$84
Insurance Supply	3,000 GWh	\$360	\$180
Replacement of Burrard	<u>2,400 GWh</u>	<u>\$288</u>	<u>\$144</u>
Total excess purchases	6,800 GWh	\$816	\$408

5

6 If purchased under 20 year contracts the Customer exposure amounts to over \$8 billion,
7 all for power customers may not need.

8

9 It is important to emphasize again that the listed purchases are in addition to BC Hydro
10 pre-attrition planned purchases totalling 4,580 GWh/year³³ and worth \$549 million/year
11 at BC Hydro's \$120 proxy price through supply calls currently underway. Calls the
12 customers believe will, with planned DSM expenditures, more than meet their needs to
13 at least 2017.

14 **6. DSM ISSUES**

15 **6.1 Cost-effectiveness**

16 The JIESC fully supports implementation of all cost-effective DSM.

17 As indicated in section 2.2 , JIESC is of the view that the Commission discretion as to
18 the cost effectiveness of DSM remains unfettered in the case of a large majority of DSM
19 Programs in spite of section 4 of DSM regulation order M271. Accordingly, the
20 Commission can approve or reject parts of the DSM plan on the basis of cost-
21 effectiveness, with only limited exceptions.

³³ Broken down as follows: CFT - 3000 GWh, Bioenergy Call Phase II - 1000 GWh, Bioenergy
Call Phase I – 580 GWh.

1 The JIESC submits that all programs except those where Commission discretion is
2 fettered by the DSM regulation must be individually evaluated for cost-effectiveness by
3 comparison to all available Resource Smart and IPP alternatives. It does not make
4 sense to compare the average cost of Option A programs (\$72/MWh) to the new cost of
5 individual IPP purchase contracts or even average call prices. Individual DSM programs
6 should have to stand on their merits in the same way an IPP contract bid into the Clean
7 Power Call has to stand on its own merits.

8 BC Hydro filed two very telling exhibits in this case, Exhibit B-68 and Exhibit B-83, after
9 the conclusion of the hearing. The following table from Exhibit B-83 shows very clearly
10 the total resource cost on a levelized basis in dollars/MWh for the key DSM programs at
11 both 100% of original program savings and 78% of original program savings. In JIESC's
12 submission, the 78% column is the appropriate column for judging cost-effectiveness as
13 it reflects the changes to the application and to energy savings arising from the 2008
14 LTAP Evidentiary Update. When BC Hydro reduced the target volume of energy in the
15 Evidentiary Update but kept the cost the same, the unit cost of DSM increased
16 dramatically.

BC Hydro 2008 LTAP Hearing

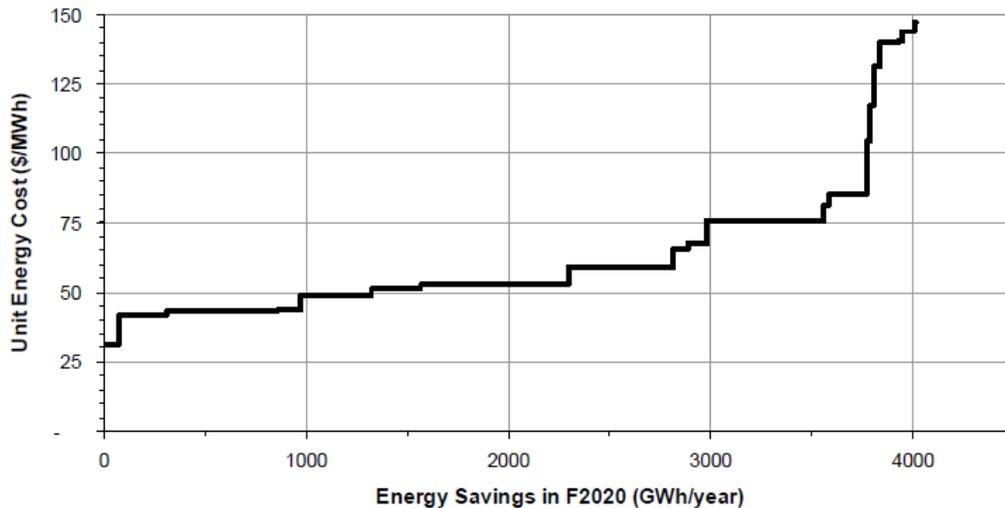
DSM Programs	100% of Original Program Savings		78% of Original Program Savings	
	Energy Savings at F2020 (GWh/yr)	Total Resource Cost Levelized Cost (\$/MWh)	Energy Savings at F2020 (GWh/yr)	Total Resource Cost Levelized Cost (\$/MWh)
Residential Refrigerator Buy-back	91	\$24	71	\$31
Residential Voltage Optimization	231	\$33	180	\$42
Commercial Voltage Optimization	77	\$33	60	\$42
Industrial Power Smart Partner - Distribution	698	\$34	545	\$43
Residential Lighting	148	\$34	116	\$44
Commercial Product Incentive	448	\$38	349	\$49
Residential Behaviour	309	\$40	241	\$52
Industrial Mechanical Pulping	941	\$41	734	\$53
Commercial Power Smart Partner	666	\$46	520	\$59
Industrial Load Displacement	93	\$51	73	\$66
Industrial New Plant Design	118	\$53	92	\$68
Industrial Power Smart Partner - Transmission	742	\$59	579	\$76
Residential Appliances and Electronics	35	\$64	27	\$81
Commercial High Performance Building	238	\$66	185	\$85
Commercial Load Displacement	25	\$81	19	\$104
Residential Renovation Rebate	23	\$92	18	\$117
Residential New Home	35	\$103	27	\$131
Residential Sustainable Community	114	\$109	89	\$140
Commercial Sustainable Community	28	\$110	22	\$141
Residential Low Income	73	\$112	57	\$144
Residential Load Displacement	11	\$115	9	\$147

1

2 While the majority of the programs, and a substantial majority of the energy savings
3 listed for the DSM programs are cost-effective, several are clearly not. JIESC submits
4 that all DSM programs with a Total Resource Cost (levelized dollar/MWh) greater than
5 \$110 will not be cost-effective and accordingly should be terminated. JIESC chose
6 \$110/MWh as the cost-effectiveness cut off point because it is equal to the levelized cost
7 of bids recently accepted in the Bio Energy Call.

8 Exhibit B-83, a graph showing a supply curve for DSM programs, assuming 78% of
9 original program savings, clearly illustrates that all DSM programs are not equal and
10 there are only about 3,8000 GWh/year of energy program savings available before the
11 cost of DSM spikes to a level well beyond that of IPP alternatives.

Supply curve for DSM programs, assuming 78% of original program savings



1

2

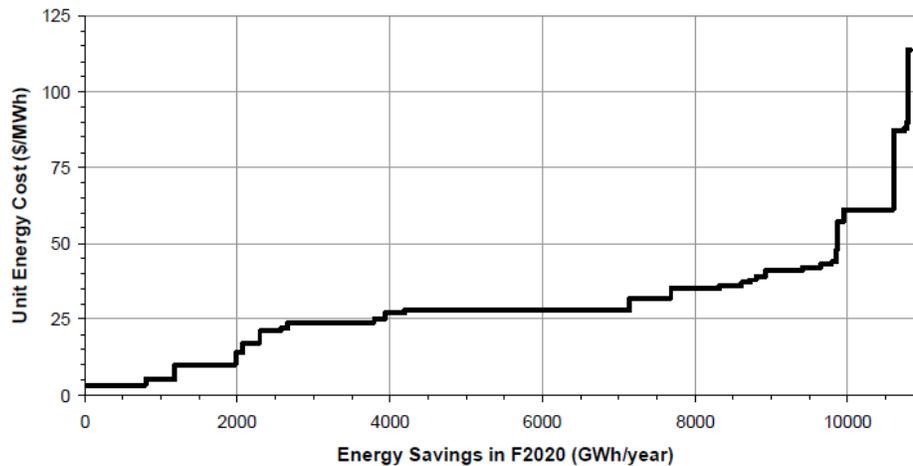
3 This graph demonstrates that there is a very real hard limit to the amount of cost-
 4 effective DSM that can be achieved from DSM programs. A reasonable interpretation of
 5 the graph is that at about 3,800 GWh/year one goes from cost-effective DSM at roughly
 6 \$80 MWh to cost-ineffective DSM at \$140 MWh plus. Clearly at this point alternatives to
 7 DSM programs must be found, be they codes and standards, rate structures within the
 8 DSM family or new resource acquisitions brought in through Resource Smart Projects
 9 for IPP calls.

10 This chart also shows why proper milestones and monitoring are essential to objectively
 11 measure whether DSM goals are being achieved, and the necessity for having
 12 appropriate mitigation or exit plans where they are not being achieved. When the
 13 program savings are exhausted throwing more money at them is unlikely to be
 14 worthwhile, particularly for the high cost programs.

15 A second important graph is found in Exhibit B-68. The following chart justifies
 16 BC Hydro's reluctance to proceed with DSM Option B as the main plan.

BC Hydro 2008 LTAP Hearing

Supply Curve for DSM Option A



1

2 Clearly Option A takes up most of the cost effective DSM opportunities available to BC
3 Hydro at this time.

4 **6.2 Lack of industrial programs**

5 JIESC is very concerned that attractive industrial DSM incentive programs are not in
6 place in spite of the fact that about 50% of the targeted DSM program savings are to
7 come from the industrial sector.

8 Unfortunately, Industrial DSM Incentive programs, while acknowledged to be important
9 by Ms. Van Ruyven³⁴, do not appear to be a matter of urgency or priority at the executive
10 level. Mr. Hobson was left to give all the substantive responses on industrial incentives
11 and he too was very short on specifics.

³⁴ Transcript Vol. 4, pages 355 to 358

1 Mr. Hobson confirmed that roughly 50% of targeted DSM program savings³⁵ are
2 anticipated to come from industrial customers and that industrial incentives are
3 budgeted at \$61.9 million over the three year plan.

4 Transcript Vol. 11 page 2067

5 *MR. WALLACE: Q: And a large portion of the DSM savings come from the*
6 *industrial section, sector, ...*

7 *MR. HOBSON: A: You're speaking specifically of the programs?*

8 *MR. WALLACE: Q: Yes.*

9 *MR. HOBSON: A: Yes. ... of the program component, industrial would make up a*
10 *significant portion, about half of the program component.*

11

12 Transcript Vol. 11, page 2069

13 *MR. WALLACE: Q: Okay. On Table 4 you show B.C. -- page 107, you show B.C.*
14 *Hydro incentive costs, and for the industrial sector you show over the three-year*
15 *total, fiscal 2009 to 2011, a total of \$62 million.*

16 *MR. HOBSON: A: Let me just catch up with you, Mr. Wallace. Table 4, page*
17 *107?*

18 *MR. WALLACE: Q: Page 107, the cumulative for the industrial sector, three-year*
19 *total \$61.9 million?*

20 *MR. HOBSON: A: Yes, I see that.*

21 Mr. Hobson also confirmed that the currently offered industrial incentive programs are
22 not attractive to industrial customers and are not being taken up by large industrial
23 customers.

24 Transcript Vol. 11, page 2070

25 *MR. WALLACE: Q: And would it be fair to say at this point you do not have*
26 *incentive programs that are attractive and being taken up by industrial*
27 *customers?*

28 *MR. HOBSON: A: For transmission services rates, I think that's true. ...*

29

³⁵ Exhibit B-48

1 MR. WALLACE: Q: And what I would like to know is, first, I think you've
2 confirmed for me that you do not have effective incentive programs in place that
3 are being taken up by transmission rate customers at this time.

4 MR. HOBSON: A: Well, I think where we're at is, we've got an incentive offer
5 that's gotten back into marketplace. We've received a lot of feedback. We don't
6 have a lot of take-up on the offer, I would acknowledge that and agree with that.

7 ...

8 It is quite easy to understand why BC Hydro is not getting much interest in its incentive
9 industrial DSM programs. The incentives are unattractive.

10 Transcript Vol. 11, page 2072

11 MR. WALLACE: Q: Okay. Now, the programs you have out there, am I correct, at
12 an incentive level of \$20 a megawatt hour, levelized by B.C. Hydro?

13 MR. HOBSON: A: That's correct. For the transmission services for PowerSmart
14 Partners.

15 Twenty dollars is between a third and a quarter of BC Hydro's average DSM program
16 cost of \$72. It is about 1/5 of the cost of BC Hydro contracts under the Bio-Call Phase 1.
17 It is 1/6 of what BC Hydro's proxy price for the bids under the Clean Power Call. Twenty
18 dollars is unreasonably and unacceptably low. It is difficult to understand how BC Hydro
19 can say it is taking all cost effective DSM measures when it is offering Industrial
20 customers incentives of \$20/MWh while at the same time signing long term contracts
21 with IPPs for \$100 – 110/MWh³⁶.

22 BC Hydro needs industrial DSM if it is going to meet its DSM program goals. Industrials
23 need incentives if they are going to be able to make their operations more energy
24 efficient. The Commission must direct BC Hydro to immediately make available
25 reasonable industrial DSM incentives, that is incentives up to the cost of IPP purchases.
26 The Bio Energy Call results and the Clean Power Call proxy price, would suggest this is
27 somewhere in the range of \$110 – 120./MWh. JIESC believes if this done there are very
28 significant DSM opportunities available.

29 JIESC also recommends the Commission direct BC Hydro to hold a Call For Tenders for
30 Industrial DSM. The results of such call would clearly demonstrate the amount of cost
31 effective DSM available in the industrial sector and provide a good comparison between
32 DSM incentives and supply side measures

³⁶ Exhibit B-15, BC Hydro Bio Energy Phase 1 Call Report, Table 2-2, page 15

1 **6.3 Voltage Optimization is not DSM**

2 Categorizing Voltage Optimization as Demand Side measure is inappropriate.

3 Demand Side measure is defined in the UCA as:

4 **"demand-side measure"** means a rate, measure, action or program undertaken

5 (a) to conserve energy or promote energy efficiency,

6 (b) to reduce the energy demand a public utility must serve, or

7 (c) to shift the use of energy to periods of lower demand;

8 While one could argue that the DSM definition can be stretched to include Voltage
9 Optimization, if one does that most other improvements to the Transmission System
10 could also be included. In JIESC's submission, before something can properly be
11 considered to be DSM it has to have something to do with the "Demand-side" or
12 customer side of the business. Voltage Optimization does not.

13 Voltage Optimization is a Transmission System efficiency improvement. As such it may
14 be very worthwhile, but it has no customer involvement and no place in DSM programs.

15 **6.4 Smart meters**

16 The JIESC is very concerned by the contrast between the potential estimated
17 expenditure on smart meters and the limited DSM savings to be achieved at a time when
18 rate-payers are facing substantial repetitive increases at rates two to three times the rate
19 of inflation. In JIESC's view such high expenditures cannot be justified.

20 The SMI initiative projects savings of approximately 320GWh/year by F2028³⁷. This is
21 simply inadequate for a program that will cost in the range of \$730 – 930 million.³⁸

22 The JIESC recognizes that the Commission's options with respect to the SMI programs
23 are limited but urges the Commission to have BC Hydro file a business case, and if that
24 business case is not persuasive, to direct BC Hydro to review the wisdom of proceeding
25 with SMI with its Shareholder, in much the same way the Commission requested

³⁷ Exhibit B-4-3, JIESC IR 2.23.3

³⁸ Exhibit B-3, Response to COPE IR 1.7.5

1 BC Hydro to discuss the cap on Trade Revenue with the Shareholder in its recent RRA
2 Decision.³⁹

3 **6.5 DSM Reporting**

4 BC Hydro has proposed that current requirements to report on DSM be reduced to an
5 annual basis. The JIESC opposes this request and sees no reason that DSM Reports
6 cannot be provided quarterly. This is a major program with expenditures in excess of
7 \$400 million over three years. The reports being sought are nothing more than should
8 be provided to BC Hydro management on a regular basis.

9 **6.6 Milestones and Risk Mitigation**

10 In its final argument at page 124 BC Hydro stated “BC Hydro will closely monitor the
11 performance of its DSM activities by tracking energy and capacity savings as well as
12 develop and maintain a number of milestones and indicators to anticipate shortfalls or
13 trends that may trigger the need for adjustments to the DSM Plan.”

14 These general statements are overstated and simply not supported by the record, any
15 more than allegations of concern with cost containment in the RRA proceedings were.⁴⁰

16 During the JIESC cross examination of BC Hydro at Transcript Vol. 11 pages 2084 to
17 2099, counsel pursued details of milestones and any specific mitigation measures that
18 BC Hydro had in place at this time going forward. The result was a clear demonstration
19 that there are no program specific milestones, much less mitigation measures. Some
20 examples of BC Hydro’s admitted failure to develop milestones and mitigation plans
21 follow.

22 Transcript Vol. 11, page 2086

23 *MR. MATHESON:*

24 *What we wanted first to do was outline the broad program, speak to what we*
25 *considered to be, as you put it, the achievable level of DSM, understanding that*
26 *there are delivery risks associated with that, and that once we got Commission*
27 *approval to go ahead and make these expenditures and work toward this plan,*

³⁹ BCUC BC Hydro F2009-F2010 RRA Decision, page 68

⁴⁰ BCUC BC Hydro F2009-F2010 RRA Decision, page 220 - 221

1 that we would then need to very carefully outline those point-in-time milestones
2 and what strategies we would then employ as far as other, for instance, supply
3 options that we'd need to undertake if we didn't reach those savings by a certain
4 point in time. I can't give you the specifics, Mr. Wallace of that right now because
5 we simply don't have them, but we're looking very carefully at them right now.
6 *Emphasis added.*

7 Transcript Vol. 11, page 2087

8 MR. WALLACE: Q: *Okay. So when you say at page 6.8:*

9 *"B.C. Hydro will manage and mitigate deliverability risk to the extent practicable*
10 *by tracking a number of key milestones and indicators and implementing several*
11 *mitigation strategies."*

12 *How you will manage that and how you will mitigate has not yet been*
13 *determined.*

14 MR. MATHESON: A: *Not to the degree of identifying a point in time, for instance*
15 *a year, where we would expect to have a certain level of savings and if we didn't*
16 *have it, then we would employ other strategies, that's correct.*

17 MR. WALLACE: Q: *Okay. When do you expect to have that overall one, in*
18 *particular, in place?*

19 MR. MATHESON: A: *My expectation is that we'll have something concrete within*
20 *this year. (Emphasis added.)*

21 Transcript Vol. 11, page 2089

22 MR. WALLACE: Q: *How frequently -- well, how frequently does B.C. Hydro -- are*
23 *your milestones set out year by year, or month by month, or how frequent are*
24 *those milestones?*

25 MR. HOBSON: A: *Are you talking about the program?*

26 MR. WALLACE: Q: *Let's first take overall.*

1 MR. MATHESON: A: Well, I don't -- I think overall it would be -- I don't think it
2 would be that useful, overall, to set month-by-month indicators. I think this
3 demand-side management program is new enough and big enough for our
4 company that doing that could be misleading and would cause us to do things
5 that it might turn out that we didn't need to do, or in fact went in a wrong direction.
6 So I would suggest to you that we should set milestones that conform to a year,
7 and probably to begin with we need to give ourselves a couple of years to see
8 how these programs are going to take, and the other components of the plan are
9 going to take, and then decide equally as importantly at what point in time do we
10 need to begin to employ other measures if the deliverability risks turn out to be
11 the case, and we aren't believing that we can get to this level of demand-side
12 management savings, and by that, I mean, obviously, the year 2016 will be
13 important to us, because that's the year we need to become self-sufficient, and
14 so we'll need to back up and figure out at what point in time we need to begin to
15 look at other options to make sure that we achieve self-sufficiency if the demand-
16 side management isn't tracking to the degree that we think it needs to.

17 MR. WALLACE: Q: Haven't you done that yet?

18 MR. MATHESON: A: Well, we haven't -- have we not put in place our mitigation
19 strategies?

20 MR. WALLACE: Q: Have you not put in place your milestones so that you will
21 know when you're offtrack?

22 MR. MATHESON: A: No, we haven't. And I'd suggest to you that we're starting
23 out this demand-side management program looking to the Commission to
24 endorse the level of savings we need to have. We've got contingency resource
25 plans already put in our long-term plan that we can employ on a relatively short-
26 term basis if we need to. No, we haven't developed them. Emphasis added.

27 From the previous quotes it would appear clear that what BC Hydro is proposing to do
28 with respect to milestones is to first implement its programs, see what results it obtains,
29 then set the milestones and if they all don't add up to enough to meet the forecast total
30 for all DSM program, consider mitigation.

1 BC Hydro's DSM plan is an aggressive and costly \$400 million plus program that must
2 meet customer needs but does not have milestones or mitigation plans. In JIESC's
3 submission this amounts to an unacceptable failure to manage. The Commission
4 must reject the DSM plan as presented and give BC Hydro two months to re-file it with
5 reasonable annual program specific milestones and proposed mitigation measures,
6 including shifting program resources and alternative supply options for each program.

7 **6.7 Use of RIM test**

8 BC Hydro states "*in BC Hydro's view, the Commission cannot require BC Hydro to file*
9 *for approval of DSM programs with a RIM benefit/cost ratio of less than 0.8 because*
10 *such a requirement would contravene subsection 4(6) of the DSM Regulation.*
11 *Subsection 4(6) of the DSM Regulation provides 'The commission may not determine*
12 *that a proposed demand-side measure is not cost-effective on the basis of the result*
13 *obtained by using a ratepayer impact measure test to assess the demand-side*
14 *measure'. If the Commission were to require BC Hydro to file for approval DSM*
15 *programs with the RIM benefit/cost ratio of less than 0.8, and subsequently it was to*
16 *deny approval, BC Hydro submits the Commission would be applying RIM to determine*
17 *the DSM program was not cost-effective and thereby contravening the DSM*
18 *Regulation.*"⁴¹

19 If one did not know better, one would suspect that BC Hydro did not understand what the
20 RIM test measures. RIM stands for rate-payer impact measure and measures the
21 relative impact of a DSM program on non-participants. It is not a measure of cost-
22 effectiveness. BC Hydro has renamed the RIM test the Non-Participant Test so it clearly
23 does recognize the purpose of the RIM test.

24 In JIESC's submission it remains appropriate for the Commission to require BC Hydro to
25 file for approval of all programs which could impose an undue burden on non-participant
26 ratepayers, i.e. those with a RIM test ratio of less than 0.8, and to review those programs
27 to ensure they are fair before approving them to proceed. Refusal to approve would not
28 be an indication that a program was not cost-effective, but rather would be an indication
29 that a program was not fair or in the public interest.

⁴¹ BC Hydro Final Argument, page 127

1 JIESC requests that the Commission order BC Hydro to continue to calculate and report
2 RIM test values for all DSM programs and to file for approval all proposed DSM
3 programs with a RIM test value of less than 0.8.

4 **7. SUPPLY SIDE ISSUES**

5 **7.1 IPP Purchases**

6 JIESC supports IPP purchases by BC Hydro provided the volumes of energy and
7 capacity being acquired are required by customers, and are acquired at a price that is
8 cost-effective in comparison other alternatives such as resource smart and available
9 DSM measures. The JIESC is opposed to acquiring IPP, or any other resources, for any
10 purpose other than serving domestic load.

11 JIESC supports BC Hydro's plan to acquire 3,000 GWh gross and 2,100 GWh net in the
12 Clean Power Call at this time. The JIESC does not support delaying the Clean Power
13 Call.

14 The JIESC recognizes that there are strong arguments that this amount of capacity and
15 energy is not justified at this time given reduced load forecasts and the availability of
16 other alternatives such as planning for 4,000 GWh at Burrard. In spite of this, and with
17 some hesitation, JIESC supports BC Hydro's plans for the current call for the following
18 reasons:

- 19 • there is considerable uncertainty with respect to the load forecasts and DSM
20 capability. Until more is known about load recovery and until DSM assumptions
21 are confirmed JIESC believes that it is wise to procure a variety of resources.
- 22 • a significant number of IPPs have entered into the Clean Power Call process in
23 good faith on the understanding that there will be contracts awarded. While the
24 IPPs knew the final amount could be varied, to terminate the CFT fully at this
25 time could detrimentally affect BC Hydro's ability to hold future CFTs and obtain
26 competitive bids.
- 27 • 2,100 GWh represents a substantial commitment to IPPs, but appears to be an
28 amount that over time will be required by customers even if there are structural
29 changes in demand. If load grows faster than anticipated a further call can be

1 held. If BC Hydro is correct with respect to success of its DSM programs or load
2 does not develop as fast as anticipated, then future calls can be held off until the
3 clean power volumes have been fully assimilated.

4 **7.2 Attrition**

5 JIESC supports BC Hydro's assumption of a 30% attrition rate. While it is hard to
6 anticipate what an attrition rate will be in the future, or for any particular call, increased
7 experience and growing sophistication of bidders, JIESC anticipates that the clean
8 power calls should have an attrition rate lower than the 2006 non-coal experience of
9 close to 40%.⁴²

10 **7.3 Alcan**

11 In Exhibit B-12 BCUC IR 3.270.1 BC Hydro sets out the increased energy that may be
12 available from Kemano if the Modernization project were delayed one, two and three
13 years. The energy is substantial, particularly in the case of a three year delay the
14 incremental energy available would be F2012-760 GWh, F2013-630 GWh, F2014-
15 300 GWh and 70 GWh per year in each of the following three years. Presumably if the
16 delay were longer the amounts would be greater.

17 These are amounts of energy that will likely be available, to serve load, displace Burrard
18 generation or be sold. Essentially they bolster already conservative forecasts by
19 BC Hydro.

20 **7.4 CFT Size**

21 The JIESC only supports a CFT the size of 3,000 GWh gross or 2,100 net.

22 The JIESC opposes any proposal to increase the size of the call to 5,000 GWh and is
23 concerned about acquiring any volume above 2,100 GWh.

24 The evidence simply does not justify increasing the post-attrition firm energy from 2,100
25 GWh/year to 3,500 GWh/year. The cost on an annual basis for that firm component is
26 estimated by BC Hydro at \$173 million per year in F2017 and increasing thereafter.⁴³
27 Assuming a 30 year life to the contracts, and no price escalation, the incremental 1,400

⁴² Exhibit B-12, BCUC IR 3.266.1

⁴³ Exhibit B-12, JIESC IR 3.29.2

1 GWh would involved a firm commitment by BC Hydro of over \$5 Billion. Clearly the
2 evidence in this proceeding comes nowhere near close to supporting such a
3 commitment.

4 **7.5 Burrard Energy Reliance**

5 The JIESC accepts that Burrard is a critical facility for 900 MW of capacity for the
6 foreseeable future. In these circumstances it only makes sense to include Burrard for
7 planning purposes in meeting the self-sufficiency energy requirements. Those
8 requirements are that BC Hydro be capable of meeting its electricity supply obligations
9 solely from electricity generating facilities within the province. JIESC submits that there
10 is no question Burrard meets this definition and that the 3,000 GWh level is an easily
11 achievable level. JIESC recognizes that the 3,000 GWh level is somewhat arbitrary and
12 that there are strong arguments in favour of a higher level at 4,000 or even 6,000 GWh
13 but is, for the time being, prepared to accept BC Hydro's 3,000 GWh as reasonable.

14 That being said, JIESC does not believe Burrard will ever generate at a level near 3,000
15 GWh. JIESC expects that the energy that could be delivered from Burrard will be
16 delivered from the non firm heritage resources which will deliver, in an average water
17 year, 4,200 GWh of energy above critical water levels used for the definition of self-
18 sufficiency, and are capable of delivering as much as 11,000 GWh above critical water
19 during a peak year.⁴⁴ In addition, BC Hydro will have available to it 1,600 GWh of non-
20 firm IPP energy in an average year. Finally, if none of the non-firm energy listed above
21 is available to BC Hydro it would still have the opportunity to run Burrard or purchase
22 market energy on the basis of which is most economic. The JIESC's expectation is that
23 it is highly unlikely, given Burrard's heat rate that there will be circumstances where it is
24 more economic to run Burrard than to purchase generation in the market at the prices
25 projected in the Application in Figure 4-6.

26 **7.6 Insurance**

27 The JIESC supports BC Hydro's argument opposing any obligation on it to purchase all
28 or part of 3,000 GWh/year of energy to meet the insurance requirements set out in SD10
29 at this time. The JIESC concurs that there is no evidence that would suggest that it

⁴⁴ BC Hydro Argument, page 108

1 would be cost-effective to do so at this time and agrees with the following response of
2 Ms. Van Ruyven:

3 Transcript Vol. 04 page 452

4 *MR. AUSTIN: Q: And this is not meant to be a legal interpretation, but why is*
5 *B.C. Hydro not capable of attaining a 3,000 GWh level prior to 2026?*

6 *MS. VAN RUYVEN: A: We could acquire that surplus sooner. If you read Special*
7 *Direction No. 10, it actually uses the word "practicable". And we think practicable*
8 *has a cost-effectiveness test to it, and we think we need to do a lot more analysis*
9 *before we determine when it's practicable to bring on the 3,000 gigawatt hours of*
10 *insurance. How much would it cost, what could you sell it for in the market and,*
11 *importantly, do you have the transmission to actually get the insurance out of the*
12 *province? For example, in a high water year, we could have as much as 13,000*
13 *gigawatt hours of surplus, and right now the transmission capability is more like*
14 *10,000 gigawatt hours. There's a lot of important questions that need to be asked*
15 *and answered and analyzed before I think we'd be in a position to make a*
16 *decision on when it's practicable to bring on the insurance. (emphasis added)*

17 Further details as to why it would not be cost effective to acquire the "Insurance" energy
18 at this time are found in Exhibit B-3 BCUC IR 1.143.1 and Exhibit B-12 Naikun Wind IR
19 3.1.0(h).

20 **7.7 Fort Nelson - Horn River Basin**

21 JIESC supports the FNU3 project to increase the capability of BC Hydro to serve
22 existing and known potential customers in the Fort Nelson area. JIESC recognizes that
23 the Horn River Basin may have substantial future load but does not believe arguments
24 that a load forecast should be increased at this time to recognize Horn River Basin
25 requirements are justified. More importantly, JIESC does not accept that it is prudent for
26 BC Hydro to acquire resources to service Horn River Basin under long term 20-40 year
27 contracts at this time in the absence of firm customer commitments and evidence of long
28 term demand. The size and other characteristics of the load in the Horn River Basin,
29 and the amount that will be served by BC Hydro are still highly uncertain. Furthermore,
30 the capability of BC Hydro to service a substantial new load at Fort Nelson is uncertain.

1 To date, there is no requirement on natural gas-driven compression to offset GHG, and
2 there is no transmission located in BC to get the electricity to Fort Nelson

3 **7.8 ICP Dispatchability**

4 Exhibit B-1 page 5-17 of the Application states “(f)rom an operations perspective, based
5 upon current forecasts of market prices, natural gas fired generation located in B.C.
6 would never be dispatched unless there was peak period capacity shortfall or a market
7 access restriction.”

8 JIESC understands that quote and believes it makes good economic sense.
9 Accordingly, JIESC was disappointed to find that Exhibit B-34 shows that generally
10 speaking the Island Co-Gen Plant is being operated at or near 250 MW, or full capacity.
11 Mr. O’Riley’s lack of familiarity on cross-examination⁴⁵ with what was happening at
12 Island Co-Gen was extremely discouraging as there should be valuable cost-saving
13 opportunities available to BC Hydro by operating this plant differently; opportunities
14 which clearly are not being taken advantage of or even investigated.

15 Mr. O’Riley provided vague suggestions that full operation was due to contractual
16 issues. While that may in fact may be the case, JIESC believes that those contractual
17 issues should be capable of resolution as the steam host facilities of Catalyst, served by
18 the Island Co-Gen project, are no longer operating.

19 JIESC requests that the Commission direct BC Hydro to provide a report indicating why
20 the plant is operating in a manner so contrary to the expectations set out in the
21 preceding quotation from the Application, and explain what efforts are being undertaken
22 to make this facility a dispatchable facility as soon as possible.

23 **8. RESOURCE SMART**

24 **8.1 Mica Units 5&6**

25 The JIESC supports ongoing work with respect to MICA Units 5&6 and Revelstoke 6 as
26 this capacity will likely be necessary to support intermittent and fluctuating IPP
27 purchases.

⁴⁵ Transcript Vol. 7, page 1035-1037

1 The JIESC accepts that the generation of energy is only incidental to these projects and
2 that calculating an average cost per MWh of generation would not be helpful, or
3 representative of the cost of these projects, without a heavy attribution of the project
4 costs to capacity. In these cases the attribution would have to be virtually the total cost
5 and accordingly the JIESC does not see any benefit to making an average generation
6 cost calculation in the first place.

7 **8.2 Site C**

8 JIESC generally supports Site C, subject of course to it being demonstrated to be cost-
9 effective.

10 The Site C Project has a great deal going for it in terms of firm capacity and energy as a
11 result of the utilization of the large Williston Reservoir.

12 JIESC supports the \$41 million requested in the Application to complete Stage 2 of the
13 Site C project. However, JIESC is concerned that high level expenditures not continue
14 on indefinitely without a higher level of commitment to proceeding to construction. In the
15 current LTAP Site C only appears as a contingency resource in one of two CRPs.
16 JIESC hopes that when the Stage 2 report is finalized that the cost of this project will be
17 better understood and the factual underpinnings for any further expenditures will be
18 clear.

19 **9. CONTINGENCY RESOURCE PLANS**

20 JIESC supports BC Hydro's Contingency Resource Plans and submits that for the
21 reasons set out in Section 6.7 of BC Hydro's Final Argument that they are more than
22 adequate for their purpose and should be approved.

23

24 All of Which Is Respectfully Submitted



R. Brian Wallace

25 Counsel for the Joint Industry Electricity Steering Committee