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November 2, 2016

BY EMAIL

British Columbia Utilities Commission
6th Floor, 900 Howe Street
Vancouver, BC V6Z 2N3

Attention: Ms. Laurel Ross, Acting Commission Secretary and Director

Dear Sirs/Mesdames:

**Re: FortisBC Inc. Application for Acceptance of Demand Side
Management Expenditures for 2017**

Please find enclosed the Reply Argument of FortisBC Inc., dated November 2, 2016, with respect to the above noted matter.

Yours truly,

FARRIS, VAUGHAN, WILLS & MURPHY LLP

Per:

Nicholas T. Hooge

NTH/bd

Enclosure

c.c.: Registered Interveners
Client

BRITISH COLUMBIA UTILITIES COMMISSION

IN THE MATTER OF
the *Utilities Commission Act*, R.S.B.C. 1996, Chapter 473

and

FortisBC Inc. Application for Acceptance of
Demand Side Management Expenditures for 2017

**REPLY ARGUMENT
OF FORTISBC INC.**

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INDEX

A. INTRODUCTION.....	2
B. THE PROPER APPROACH TO FBC’S DSM PLANNING IN 2017	4
(i) Intervener Submissions	4
(ii) FBC Reply – Interveners are Proposing Significant Changes to DSM in 2017	5
(iii) The BC CPR is an Important Input, Not the Defining Factor for FBC’s DSM Targets.	6
C. APPROPRIATE DSM FUNDING LEVEL FOR 2017	9
(i) The Commission’s 2015-16 DSM Decision	9
(ii) Increasing the Overall 2017 DSM Budget is not Warranted	9
(iii) Risk of DSM Budget Under Spend.....	11
(iv) Sector-Level DSM Spending	12
(v) Strong Cost Effectiveness Results Do Not Justify Increased DSM Spending.....	13
D. OTHER ISSUES FOR REPLY	14
(i) Industrial DSM Incentives	14
(ii) Other ICG Submissions	17
(iii) Celgar Submissions.....	19
(iv) BCOAPO Questions and Concerns	19
E. CONCLUSION	21

A. INTRODUCTION

1. FBC sets out below its reply to the Final Arguments submitted by the various interveners on October 26, 2016, pursuant to the Commission's Procedural Order in this proceeding.¹ Capitalized terms used in this Reply Argument are as defined in FBC's Final Argument, dated October 14, 2016.

2. FBC continues to rely on its Final Argument, the Application and related appendices, and the evidence in this proceeding as a whole. To the extent any points made by interveners in their Final Arguments are not specifically addressed in this Reply Argument, they should not be taken as agreed to by FBC.

3. The following is a summary of what FBC understands the interveners' respective positions to be on the Commission order sought in this proceeding:

(a) Industrial Customers Group (**ICG**) does not take issue with the overall funding level in the 2017 DSM plan and does not otherwise suggest that FBC's proposed DSM expenditures for 2017 should not be accepted by the Commission. ICG's submissions also state that it "agrees with FBC that the proposed budget and targeted energy savings in the 2017 DSM Plan are achievable".² However, ICG does seek an increase in the industrial incentive rate to \$0.30/kWh.

(b) Commercial Energy Consumers Association of British Columbia (**CEC**) submits that FBC's 2017 DSM Plan is inadequate and that the Commission should deny approval of the plan, as filed by FBC. CEC's position is that the Commission should direct FBC to file a DSM plan for 2017 that "more adequately pursues all cost effective DSM measures".³ CEC submits that FBC's DSM budget for 2017 "should be at least 20% higher".⁴

¹ BCUC Order G-135-16

² Final Submissions of the ICG, para. 8

³ CEC Final Submissions, para. 93

⁴ CEC Final Submissions, para. 18

(c) Zellstoff Celgar Limited Partnership (**Celgar**) does not take any position as to whether the 2017 DSM plan should be approved by the Commission.

(d) BCOAPO concludes that, despite certain identified concerns, FBC's requested DSM expenditures for 2017 are in the public interest and BCOAPO is generally not opposed to the Commission's approval of FBC's proposed 2017 DSM expenditure schedule, as filed.⁵ Specific questions and concerns raised by BCOAPO in its submissions are addressed by FBC in this Reply Argument.

(e) BCSEA supports CEC's position that FBC's 2017 DSM expenditures should be 20% higher than proposed; however, in the alternative, BCSEA submits that the Commission should accept FBC's 2017 DSM expenditures in the amount proposed in the 2017 DSM Plan.⁶

4. Generally speaking, the interveners' written submissions do not object to the Commission's acceptance of FBC's 2017 DSM Plan on any grounds other than the appropriateness of the budgeted spending level. The main focus of this Reply Argument is, accordingly, the submissions made by CEC and BCSEA that the funding level contemplated by the 2017 DSM Plan is not high enough and that FBC should be spending 20% more on DSM measures in 2017. Also addressed in this Reply Argument is the related issue of how FBC's DSM programming and spending levels should be approached in the "bridge" year pending completion of the BC CPR and with the filing and review of FBC's LTERP and LT DSM Plan imminent.

5. FBC's position is that, in these circumstances, the increased 2017 DSM spending CEC and BCSEA advocate would be a significant and imprudent departure from the general levels of DSM budgets FBC has used and the Commission approved in recent years.

6. A number of other miscellaneous issues raised in intervener written submissions are also addressed below.

⁵ BCOAPO Final Submissions, paras. 5, 32

⁶ BCSEA Final Submissions, p. 7 of 7

B. THE PROPER APPROACH TO FBC'S DSM PLANNING IN 2017

(i) Intervener Submissions

7. FBC has approached 2017 as a bridge year for DSM planning purposes. This approach is consistent with the Commission's comments in its 2015-16 DSM Decision, which recognized that a shorter one year expenditure schedule for 2017 would potentially be necessary to "bridge the gap" between the 2015-2016 DSM Plan and the Commission's decision on the Company's next long term resource plan filing.⁷ BCSEA, in its submissions, agrees with FBC "that 2017 is effectively a 'bridge' year" to the forthcoming LTERP and LT DSM Plan.⁸

8. Nonetheless, some interveners suggest significant changes to FBC's established spending levels for DSM in 2017 despite the fact that the final BC CPR results have not been analyzed and incorporated into FBC's long term planning processes, which are on the immediate horizon. As of the date of this Reply Argument, it is less than one month to the filing of FBC's 2016 LTERP and associated LT DSM Plan.

9. Perhaps the most significant proposed change is the suggestion that planned 2017 DSM spending be set at an amount that is 20% higher than budgeted in the 2017 DSM Plan, as filed. CEC also submits that waiting for the outcome of the BC CPR and FBC's long term planning "is not essential" to the development of a combined FBC/FEI fuel switching program.⁹

10. In addition, BCSEA argues that the 2017 DSM Plan should reflect "the higher levels of potential savings expected to be reported in the BC CPR".¹⁰ In effect, BCSEA argues that the BC CPR results should be taken as determinative of FBC's DSM targets and spending and that FBC should be ramping up DSM now, notwithstanding that the LTERP and LT DSM Plan have not been filed and the Commission's review may not support that outcome.¹¹

⁷ 2015-16 DSM Decision, p. 33

⁸ BCSEA Final Submissions, p. 2 of 7

⁹ CEC Final Submissions, para. 95

¹⁰ BCSEA Final Submissions, p. 3 of 7

¹¹ BCSEA Final Submissions, p. 7 of 7

(ii) FBC Reply – Interveners are Proposing Significant Changes to DSM in 2017

11. FBC disagrees with the approach of significantly departing from its recent DSM spending levels in 2017, which the Commission described as a “bridge” year, and with a proceeding about to commence at the Commission in respect of the LTERP and LT DSM Plan. A 20% increase in planned DSM spending, which BCSEA advocates and which CEC says should be the bare minimum, would be a significant change from FBC’s actual and planned spending levels in recent years. A 20% increase would result in a DSM budget of approximately \$9.1 million for 2017. That is roughly \$2.3 million more than current projections of FBC’s actual DSM spending for 2016¹² and \$1.5 million more than the planned budget for 2017. In addition, the Commission has accepted DSM budgets for FBC over the last five years that average \$6.74 million per year.¹³ An increase of 20% in 2017 would also result in a budget that would be over \$2 million higher than the five year average. In FBC’s submission this represents a significant and unwarranted change that is not appropriate in the present circumstances.

12. Moreover, the Commission acknowledged, in its reasons approving the 2012 Long Term DSM Plan, that maintaining the same level of DSM funding over the current period was acceptable:

The Commission Panel recognizes that this acceptance means that FortisBC may simply maintain current levels of DSM spending over the next five years, subject to future DSM expenditure schedules filed for approval with the Commission. However, as discussed in relation to FortisBC's section 44.2 expenditure schedule request (below), FortisBC received approval to spend approximately twice the amount on DSM in 2011 over 2010 and was unable to spend to the higher approved level. As well, the Commission Panel acknowledges that the Company is implementing new programs that will take time to gain participants. The Panel is also persuaded that FortisBC can employ other best practises to achieve additional savings without adding to its budgeted spend.¹⁴

¹² FBC Final Argument, para. 14

¹³ Ex. B-2, p. 8-9 (Response to BCUC IR 1.3.2)

¹⁴ 2012 RRA/ISP Decision, p. 133

13. At the time of that Commission decision in 2012, FBC was directed to file its next long term resource plan by June 2016.¹⁵ In FBC's submission, the Commission was therefore contemplating that, and indicating its acceptance of, approximately the same level of annual DSM spending until the Company's next LT DSM Plan was submitted for review.

14. FBC's proposed DSM budget of \$7.6 million for 2017 is consistent with that decision and appropriate given the timing and other circumstances.

(iii) The BC CPR is an Important Input, Not the Defining Factor for FBC's DSM Targets

15. FBC also disagrees with BCSEA's suggestion that the completion of the BC CPR justifies a significant change from the status quo and an early ramp-up in DSM spending. The finalized BC CPR results must be analyzed and incorporated into FBC's LTERP and LT DSM Plan to determine FBC's optimum DSM level, which must then be reviewed by the Commission and interveners. FBC made clear in its response to an IR from BCSEA that, although the BC CPR is a key input for DSM planning, it does not drive FBC's DSM targets, which are determined in the LT DSM Plan in conjunction with the Company's planning for its long term resource needs.¹⁶

16. The potential for increased conservation potential in FBC's service territory or higher benefit/cost ratios indicated by the BC CPR would not necessarily translate into increased DSM expenditures. FBC will be filing a DSM expenditure plan(s) for future years following a Commission decision on the LTERP. If the LTERP process does indicate a ramp-up of DSM savings and expenditures is required, then FBC will, at that time, determine whether a supplemental expenditure request for 2017 is necessary.¹⁷

17. FBC's intended path forward is supported by the Commission's discussion, in its 2015-16 DSM Decision, of the relationship between a long term resource plan, filed under s. 44.1 of

¹⁵ The deadline for FBC's LTERP was subsequently extended to November 30, 2016 by Commission Order G-43-16.

¹⁶ Ex. B-4, p. 19 (Response to BCSEA IR 1.8.6)

¹⁷ *Ibid.*

the UCA, and a DSM expenditure schedule, filed under s. 44.2. The Commission stated there that, “ideally, a utility should first file a LTRP with a DSM Plan under section 41(8)(c) and then file a DSM expenditure schedule. This will allow the utility to receive guidance regarding the overall size and approach of the DSM funding proposal prior to filing the detailed DSM expenditure schedule”.¹⁸ The Commission noted that this “preferred order of filing is reflected in the UCA”, which requires consideration of a utility’s most recent long term resource plan in determining whether a DSM expenditure schedule should be accepted “and not vice versa”.¹⁹

18. On the basis of this discussion, FBC considers it inappropriate to assume in advance that the Commission will approve, or that interveners will support, its proposed implementation of the BC CPR results pursuant to the LTERP/LT DSM Plan. Significant changes to FBC’s DSM measures, savings targets, or spending level in 2017 should not be based on such assumptions.

19. FBC also notes that the Application was filed on August 8, 2016 and the 2017 DSM Plan was developed well in advance of the filing. Interim results of the BC CPR were available at the time IRs were addressed; however, FBC cautioned that they were not then final and were subject to change.²⁰ Any attempt to increase 2017 DSM spending on the basis of draft BC CPR results for the purposes of this Commission proceeding would have been imprecise guess work. FBC submits that its proposal to potentially file a supplemental DSM expenditure request for 2017 based on the Commission’s review of the LTERP is the more prudent course to take and should be preferred to the interveners’ suggestion.

20. For similar reasons, FBC disagrees with CEC’s submission that waiting for the completion of the BC CPR and the review of the LTERP/LT DSM Plan is not “essential” for a fuel-switching program to be pursued. The BC CPR (additional scope services) is specifically examining fuel switching potential and its cost effectiveness and the results are not expected to be known until later in 2016.²¹

¹⁸ 2015-16 DSM Decision, p. 33 (underlining added)

¹⁹ *Ibid.*

²⁰ Ex. B-4, p. 18 (Response to BCSEA IR 1.8.3)

²¹ Ex. B-2, p. 12 (Response to BCUC IR 1.4.2); Ex. B-4, p. 14 (Response to BCSEA IRs 1.6.3 and 1.6.4.1)

21. Waiting to investigate whether and how a fuel switching program could or should be implemented is prudent and appropriate in the circumstances. Moving ahead with the implementation of a fuel switching program regardless of what the BC CPR might say on this topic, or how it factors into FBC's long term planning would not be.

22. FBC also reiterates that fuel switching is a load building activity and not necessarily a DSM measure. The demand for energy FBC must seek to reduce through DSM is the demand for electricity, not the demand for other heating fuels. This is consistent with the Commission's discussion of FEI's Switch and Shrink Programs in its decision regarding the FortisBC Energy Utilities 2012-2013 Revenue Requirements and Rates, where a fuel switching offer was concluded to be load building and therefore its costs "should be maintained separate and distinct from load-reducing DSM programs".²² FBC therefore questions whether CEC's suggestion of a combined FBC/FEI fuel switching program would be appropriate given the companies' respective DSM obligations. In any event, FEI is not a party to this proceeding and discussion of its DSM practices should be deferred to a more appropriate proceeding.

23. The Commission's 2015-16 DSM Decision directed FBC to provide an update on its investigation into potential fuel switching programs in its next DSM expenditure request.²³ FBC has done so pursuant to this Application and will, as stated, further investigate fuel switching starting with the completion of the BC CPR additional scope services. However, even if such a program is found to be economic that does not necessarily mean it is a DSM measure or that FBC will, based on full analysis, support the development of such a program.

²² BCUC, FortisBC Energy Utilities 2012-2013 Revenue Requirements and Rates Decision, dated April 12, 2012, p. 162; see also Ex. B-2, p. 10-11 (Response to BCUC IR 1.4.1)

²³ 2015-16 DSM Decision, p. 14

C. APPROPRIATE DSM FUNDING LEVEL FOR 2017

(i) The Commission's 2015-16 DSM Decision

24. In support of its argument for increased DSM spending in 2017, CEC notes that the Commission encouraged FBC to file supplemental expenditure schedules in its 2015-16 DSM Decision.²⁴ CEC is critical of FBC's failure to do so for the 2015-2016 period.²⁵

25. FBC has candidly acknowledged that its actual DSM performance in 2015 was well below planned levels of spending and savings. A detailed explanation of the various circumstances that led to that outcome was provided in FBC's 2015 DSM Annual Report as well as FBC's Final Argument in this proceeding.²⁶ In those circumstances, it would have made little sense for FBC to file a supplemental expenditure schedule seeking approval to *increase* a budget that was under-spent by half. Actual DSM spending in 2016 is markedly improved, but as explained previously, FBC has still been in a ramp-up phase from 2014 and anticipates being under budget by approximately 9% on its DSM spending this year.

26. CEC, in its submissions, accepts that FBC's DSM spending in 2015 "constitutes an anomaly".²⁷ CEC makes no particular argument that actual DSM spending should be higher in 2016. These positions contradict the argument that FBC should nonetheless have filed supplemental DSM expenditure schedules with respect to the 2015-2016 time period. Doing so would not have been practical or reasonable given the actual circumstances.

(ii) Increasing the Overall 2017 DSM Budget is not Warranted

27. CEC and BCSEA both argue for a substantial increase in FBC's 2017 DSM budget. As noted above, CEC submits that the budget "should be at least 20% higher" and BCSEA supports a 20% increase. Neither Intervener gives any detailed explanation of how the addition of roughly \$1.5 million to the budget should or would be spent in the context of FBC's existing

²⁴ CEC Final Submissions, para. 7

²⁵ CEC Final Submissions, para. 8

²⁶ Ex. B-2, App. B, p. 2-3 (2015 DSM Annual Report); FBC Final Argument, paras. 10-13

²⁷ CEC Final Submissions, para. 16

suite of DSM programs. It is unclear whether they anticipate new DSM programs or measures would be designed and immediately implemented or whether the value of existing incentives would simply increase.

28. CEC further submits that the higher level of expenditures in 2017 is needed so that FBC can “move towards achieving all cost-effective DSM”.²⁸ FBC submits that the position on DSM spending taken by CEC and, to some extent, BCSEA is not supported by the legislative scheme governing the Commission’s review of the 2017 DSM Plan. Their submissions suggest that the Commission can and should reject a public utility’s DSM expenditure schedule for the sole reason that it does not cover all available and cost-effective DSM measures. However, there is no requirement to that effect in the *UCA* or the *CEA*. The *CEA* says only that it is a BC energy objective “to take demand-side measures and to conserve energy”. It does not say that a public utility should or must take *all* possible cost-effective DSM measures and, other than with respect to BC Hydro, there is no legislated target for DSM savings.

29. FBC also notes, in reply to CEC’s recommendation that the Commission “direct FBC to file a DSM Plan which more adequately pursues all cost-effective DSM measures”, that the Commission has previously held that such an option is not available to it regarding an expenditure schedule filed under s. 44.2 of the *UCA*.²⁹

30. More importantly, the position taken by CEC and BCSEA on the proper DSM funding level also overlooks FBC’s evidence in this proceeding that it has evaluated all potentially cost-effective measures to develop the 2017 DSM Plan based on the opportunities identified in the 2013 CPR Update.³⁰ As was noted in the Commission’s 2015-16 DSM Decision, FBC’s 2016 DSM budget was designed to achieve 94% of the scenario 3 conservation potential identified in the 2013 CPR Update.³¹ The 2017 DSM Plan is fundamentally an extension of the 2016 DSM programs and spending levels. On the basis of this evidence, and in the absence of the new BC CPR being completed and addressed pursuant to the forthcoming LTERP proceeding, FBC

²⁸ CEC Final Submissions, para. 12 (underlining added)

²⁹ 2015-16 DSM Decision, p. 3-4

³⁰ Ex. B-2, p. 5-6 (Response to BCUC IRs 1.1.4 and 1.2.1)

³¹ 2015-16 DSM Decision, p. 10

submits that there are no grounds for a finding that it is not pursuing substantially all appropriate and justified DSM opportunities in the present circumstances. There are no material areas of validated conservation potential that would support the substantial DSM budget increase being proposed.

(iii) Risk of DSM Budget Under Spend

31. The proposed increase in 2017 DSM spending is also at odds with CEC's submission that it would not be appropriate to increase FBC's DSM budget significantly if there is a risk of that budget being under spent.³² Further, CEC itself acknowledges that simply increasing DSM spending does not necessarily increase DSM uptake and associated savings. CEC makes the following submission in this regard, with which FBC agrees:

... DSM uptake is highly dependent upon customer take-up, market forces, partner funding and other factors, such as codes and standards that raise the baseline technologies against which the efficient measures are compared and reduce the measure savings. Reductions in partner funding, or co-offers, in the residential market (e.g. LiveSmartBC) have reduced total incentives available to the customer and impacted their willingness to undertake DSM.³³

32. To reiterate, the spending level in the 2017 DSM Plan was set based on FBC's actual experience with DSM programs and the Company's expectation, based on that experience, of the expenditures necessary to fund the anticipated participation in its 2017 DSM Plan programs.³⁴ The \$7.6 million DSM budget also represents a realistically achievable spending target based on FBC's upward spending trajectory from 2015 through 2016.³⁵ Significantly increasing the 2017 DSM budget in these circumstances would create a material risk of both ineffective spending on measures or incentives that would yield limited customer take-up and the type of under spending CEC itself submits should be avoided.

³² CEC Final Submissions, para. 13

³³ CEC Final Submissions, para. 82

³⁴ Ex. B-2, p. 5 (Response to BCUC IR 1.4)

³⁵ Ex. B-4, p. 7-8 (Response to BCSEA IR 1.4.7)

33. FBC does not have the “long history of underspending the DSM budget” that CEC suggests.³⁶ CEC agrees that 2015 was an anomaly in this regard.³⁷ Furthermore, the table CEC provides at paragraph 14 of its argument shows that, in the other five years of the 2011-2016 period, FBC’s actual DSM spending was 95% of the budgeted amount in one year (2012), 90% in another (2016), and over budget in a third year (2014). Also, as the Commission recognized in the 2012 RRA/ISP Decision, but CEC does not mention in its submissions, FBC’s approved DSM spending amount in 2011 was double the 2010 level, which obviously contributed to the under spend in that year.³⁸

34. CEC also recognizes in its submissions that FBC does not earn a reward for under spending its DSM budget under PBR and that the significant under spend in 2015 resulted in only a “very minor benefit” for FBC.³⁹ FBC agrees with CEC that is better not to under spend the DSM budget in a material way. The funding level in the 2017 DSM Plan was, as noted, set as a realistically achievable target. FBC submits that the Commission should accept the planned overall spending level in the 2017 DSM Plan, as filed.

(iv) Sector-Level DSM Spending

35. The interveners proposing an increase in 2017 DSM spending do not give any concrete suggestion on how the 20% increase should be allocated among the sectors. CEC states that it is “satisfied with the FBC Commercial Programs” and does not appear to suggest additional DSM measures be pursued in that sector.⁴⁰ Although CEC does submit that FBC’s industrial program is capable of additional, cost-effective DSM, FBC’s planned industrial DSM spending for 2017 has already been increased by 48% compared to the 2016 plan and totals approximately \$0.3 million.⁴¹ Accordingly, by process of elimination, it appears that the DSM budget increase proposed by CEC and BCSEA would primarily be spent in the residential sector.

³⁶ CEC Final Submissions, para. 16

³⁷ *Ibid.*

³⁸ 2012 RRA/ISP Decision, p. 133

³⁹ CEC Final Submissions, paras. 15, 17

⁴⁰ CEC Final Submissions, para. 69

⁴¹ FBC Final Argument, para. 81

36. FBC notes that the residential sector is where the largest under spend compared to plan is projected in 2016 (78% of the planned amount).⁴² FBC has given detailed explanations for the issues that have affected customer take-up of residential DSM programs and in recent years and will not repeat those points here.⁴³ FBC submits that substantially increasing the residential DSM budget for 2017 is not warranted given recent experience and the practical limitations on spending in the residential sector at present.

37. BCOAPO suggests in its submissions that much of the explanation for projected 2016 underperformance in the residential sector, in particular the need to build/rebuild market awareness and interest in programs should be fully addressed by 2017.⁴⁴ While FBC agrees that these issues have been overcome to the extent that it is confident the targets in the 2017 DSM Plan are realistic, the circumstances do not warrant a further spending increase in this sector at present. FBC notes that a number of the other explanations for the variance in 2016 approved and projected savings in the residential sector, such as the lack of concurrent (stacked) rebate programs and associated province-wide marketing and higher performance standards for baseline products and new home construction, still apply in 2017.⁴⁵

(v) Strong Cost Effectiveness Results Do Not Justify Increased DSM Spending

38. Both CEC and BCSEA cite FBC's cost effectiveness test results in support of their position that additional DSM spending should be pursued in 2017. CEC submits that "benefit to cost ratios at this level above 1 indicates that not all cost-effective DSM is being pursued".⁴⁶ BCSEA notes that TRC ratios by program area for the 2017 DSM Plan are all 1.9 or higher and cites the estimated average cost of 2017 DSM savings as an "indication that the level of 2017 DSM should be higher".⁴⁷

⁴² Ex. B-3, p. 6 (Response to BCOAPO IR 1.4.1)

⁴³ See e.g. FBC Final Argument, paras. 10-13, 77; Ex. B-3, p. 9 (BCOAPO IR 1.4.3)

⁴⁴ BCOAPO Final Submissions, para. 29

⁴⁵ Ex. B-3, p. 9 (Response to BCOAPO IR 1.4.3)

⁴⁶ CEC Final Submissions, para. 50

⁴⁷ BCSEA Final Submissions, p. 3-4 of 7

39. FBC submits that this argument is based on an incorrect assumption that a benefit/cost ratio of greater than 1 means that increased DSM expenditures can or should be made. As stated above at paragraph 15 of this Reply Argument, FBC's DSM targets are based on resource needs as reflected in the Company's current long term resource plan that has been accepted by the Commission (in this case the 2012 LTRP). Resource needs for DSM are then determined and costed in an expenditure schedule like the current filing. The fact that the planned DSM expenditures for 2017 could be less cost effective and still pass the legislated tests does not mean that DSM targets should change or that FBC's has more need for DSM resources when the long term planning context is considered. It also does not mean that more conservation potential on which DSM expenditures could be cost effectively made actually exists.

40. The 2017 DSM Plan's strong cost effectiveness test results are to its credit and not a valid reason to question the proposed spending level.

D. OTHER ISSUES FOR REPLY

(i) Industrial DSM Incentives

41. ICG does not object to the Commission's acceptance of FBC's 2017 DSM Plan; however, ICG does request a three-fold increase of the industrial incentive rate from \$0.10/kWh to \$0.30/kWh.⁴⁸ FBC's budgeted DSM expenditures for the industrial sector in 2017 are based on an increase in the industrial incentive rate to \$0.15/kWh.

42. ICG submits that FBC has provided no evidence in support of a \$0.15/kWh industrial incentive rate.⁴⁹ ICG itself then makes the bald assertion, unsupported by any evidence that "the appropriate increase is from \$0.10/kWh to \$0.30 kWh, not from \$0.10/kWh to \$0.15/kWh".⁵⁰

43. First of all, ICG is mistaken that FBC's proposed industrial incentive rate is unsupported by evidence. At issue in this proceeding are FBC's proposed expenditures on DSM in 2017.

⁴⁸ Final Submissions of the ICG, para. 16

⁴⁹ Final Submissions of the ICG, para. 12

⁵⁰ Final Submissions of the ICG, para. 9

Those proposed expenditures are summarized by sector in Table A6-1 of the 2017 DSM Plan.⁵¹ The level of industrial sector expenditures FBC proposes to make in 2017, and for which it seeks Commission approval, is based on an increase in the industrial incentive rate to \$0.15/kWh. That increase is one of the reasons the industrial sector budget as a whole is proposed to increase by 48% compared to FBC's 2016 DSM budget.⁵² FBC has supported the increased DSM budget for the industrial sector as a whole through substantial evidence, including cost-effectiveness test results, and has answered numerous IRs regarding its industrial DSM spending and programs generally.⁵³

44. On the basis of that evidence, FBC submits that the proposed increase to the industrial incentive rate and the overall expenditures FBC has planned for industrial DSM are reasonable and should be accepted.

45. ICG, in support of the proposed increase, asserts that higher industrial program incentives will increase program savings and that "the objective evidence is that such energy savings will be cost-effective".⁵⁴ However, the reference ICG provides in support of the latter statement is to its own previous submissions in respect of FBC's 2015-2016 DSM Plan. Those prior submissions simply repeat the same statement regarding cost-effectiveness, unsupported by any evidence. In fact, the evidence in this proceeding is that increasing industrial DSM spending would tend to reduce the overall cost-effectiveness of FBC's 2017 DSM portfolio.⁵⁵ There is also evidence that increasing industrial DSM spending would be expected to increase rates for other customers, insofar as any increase in DSM expenditures has a rate impact.⁵⁶

46. ICG's only real basis for its proposed three-fold increase to the industrial incentive rate is a comparison to BC Hydro's equivalent incentive rate. FBC understands BC Hydro's industrial incentive rate to be a nominal \$0.30/kWh. However, BC Hydro's industrial incentive rate is calculated differently than FBC's incentive rate. The \$0.30 nominal rate is the highest possible

⁵¹ Ex. B-1, App. A, p. A16; See also FBC Final Argument, para. 2

⁵² FBC Final Argument, paras. 81-82

⁵³ See e.g. Ex. B-2, p. 27-29 (Response to BCUC IRs 1.7.1-1.7.2.3)

⁵⁴ Final Submissions of the ICG, para. 6

⁵⁵ Ex. B-2, p. 28 (Response to BCUC 1.7.2.2)

⁵⁶ *Ibid.*

incentive BC Hydro provides and only arises if a 10 year maximum measure life value is applicable to the project.⁵⁷ The nominal BC Hydro incentive is lower than \$0.30/kWh where a shorter measure life is involved. FBC notes that BC Hydro's industrial incentive is also capped at a higher percentage, 75% of project costs, than FBC's incentive, which is capped at 50% of project costs.⁵⁸ The disparity in incentives is therefore not as substantial as ICG suggests.

47. More importantly, the Commission has consistently rejected ICG's previous attempts to compare FBC's industrial DSM programs and spending with those of BC Hydro. In its 2012 RRA/ISP Decision, the Commission did not accept ICG's request to direct FBC to match BC Hydro's industrial incentives. The Commission provided the following reasons for this decision:

The Commission Panel acknowledges that BC Hydro does offer larger incentives to its industrial customers. However we are not persuaded that BC Hydro's level of incentive is necessarily optimal and that FortisBC should move to that level.

As noted earlier, in the Panel's view, BC Hydro and FortisBC are different utilities, operating in different contexts. The Commission Panel is not prepared to direct FortisBC to implement the same DSM programs as BC Hydro, particularly in the industrial sector where the customer base is very different.⁵⁹

48. The Commission supported this conclusion in its 2015-16 DSM Decision when it again rejected ICG's comparison of FBC and BC Hydro industrial DSM incentives.⁶⁰

49. In FBC's submission, ICG has provided no compelling reason for the Commission to depart from its previous decisions on this issue. FBC and BC Hydro are different public utilities, covering different service territories, with different customer bases and different circumstances for the services provided. Given the dissimilarities, it is logical and appropriate that FBC has different DSM programming and spending than BC Hydro, especially with respect to the industrial sector.

⁵⁷ Ex. B-6, p. 7 (Response to ICG IR 1.2.13)

⁵⁸ Ex. B-6, p. 5 (Response to ICG IR 1.2.8)

⁵⁹ 2012 RRA/ISP Decision, p. 139

⁶⁰ 2015-16 DSM Decision, p. 28

50. ICG also argues that the recently amended DSM Regulation “that requires the use of the same LRMC by both BC Hydro and FortisBC”, as well as the use of the “same CPR”, means that the utilities’ respective DSM programs “should be similar, if not identical”.⁶¹ FBC does not agree with ICG’s interpretation of the DSM Regulation, which itself makes a clear distinction between FBC’s LRMC and “the authority’s” LRMC in ss. 4(1.1)(b)(i) and (ii). Further, the BC Ministry of Energy and Mines’ *Guide to the Demand-Side Measures Regulation* (2014 Rev.) states that the LRMC value “may be different for each utility”.⁶²

51. ICG is also incorrect to assume that FBC and BC Hydro are both designing their respective DSM programs using the “same CPR”. While the BC CPR is a collaborative endeavour that also includes FEI, the participating utilities are to receive their own specific reports that will take into account the different territories and customer bases each utility serves. It is the FBC specific report extracted from the BC CPR that will inform the Company’s LT DSM Plan.⁶³

(ii) Other ICG Submissions

52. ICG makes a statement in its submissions when referring to the Commission proceeding for FBC’s 2015-2016 DSM Plan that, “The evidence in that proceeding supported the conclusion that FortisBC should enhance its program design in the industrial sector by increasing program incentives and providing more funding for energy efficiency studies”. ICG provides no reference in support of this statement. FBC disagrees with its characterization of the evidence in 2015-2016 DSM Plan proceeding.

53. The best indication of what the evidence in that proceeding supported is the Commission’s 2015-16 DSM Decision itself. The Commission’s decision did not require FBC to “enhance program design” by increasing DSM program incentives for the industrial sector and providing more funding for energy efficiency studies. Rather, the Commission’s decision:

⁶¹ Final Submissions of the ICG, para. 7

⁶² BC Ministry of Energy and Mines – Electricity and Alternative Energy Division, *Guide to the Demand Side Measures Regulation* (Revised July, 2014), p. 13

⁶³ Ex. B-2, p. 29 (Response to BCUC IR 1.7.2.3)

- (a) Directed FBC to investigate whether opportunities existed to expand industrial DSM funding to 2013 levels while continuing to obtain cost-effective savings;⁶⁴ and
- (b) With respect to study costs, FBC had already indicated as part of the 2015-2016 DSM Plan process that it intended to increase available funding; the Commission's decision merely directed FBC to provide an update on its proposal in its next DSM Annual Report.⁶⁵

54. Following the 2015-16 Decision, FBC has in fact increased industrial funding in its 2017 DSM Plan to 85% of the planned amount and 95% of actual spending in 2013.⁶⁶ FBC has also now implemented a funding increase on study costs.⁶⁷

55. ICG also makes submissions that are critical of FBC's communications with its industrial customers regarding DSM. ICG states that FBC "did not consult with industrial customers about the increase [to the industrial incentive rate] before seeking approval for the increase".⁶⁸ However, the IR response that ICG says makes this "clear" in fact describes how FBC's program manager met with approximately half of the Company's industrial customers in the past year and discussed with those customers a larger industrial incentive and changes to the timing in which the incentive is rendered.⁶⁹ In addition, ICG submits that FBC needs to "more effectively communicate" program design changes regarding energy efficiency studies to its industrial customers.⁷⁰ ICG notes FBC's evidence that it advised all of its industrial customers of these changes. ICG does not provide contrary evidence nor does it say why FBC's communications were ineffective or how they could have been improved.

56. Finally, ICG states in its submissions that it "does not accept" the TRC Benefit/Cost ratios that FBC presented in the Application in respect of its industrial programs.⁷¹ ICG believes

⁶⁴ 2015-16 DSM Decision, p. 26

⁶⁵ 2015-16 DSM Decision, p. 28

⁶⁶ See 2015-16 DSM Decision, p. 25, Table 11 (2013 planned and actual DSM expenditures)

⁶⁷ Ex. B-6, p. 3 (Response to ICG IR 1.2.2)

⁶⁸ Final Submissions of the ICG, para. 9

⁶⁹ Ex. B-6, p. 8 (Response to ICG IR 1.2.16)

⁷⁰ Final Submissions of the ICG, para. 14

⁷¹ Final Submissions of the ICG, para. 15

that the spreadsheets FBC provided in connection with IR responses include “unreasonable assumptions”. The only example ICG provides in support of its non-acceptance of FBC’s TRC calculations is the industrial rate referenced in cell G7 in the “Inputs” tab of Attachment 6.1 of the responses to ICG’s IRs.⁷²

57. The industrial rate referenced in cell G7 is calculated by dividing the electricity sales in 2015 by the electricity revenue in 2015 as filed in FBC’s Annual Information Form for the Year Ended December 31, 2015. This rate represents all costs to the average industrial customer (including monthly charges, demand charges, and usage charges) per kWh consumed for use in the participant cost test. (ICG is assuming industrial energy rate only). This rate has no impact on either the TRC or the UCT, which use avoided utility costs, not customer costs. FBC maintains that this rate is sound and useful for the participant cost test. This method is also used for the other rate classes and is consistent with previous filings.

58. ICG has provided no other examples supporting its position on FBC’s TRC calculations. It has not given any other explanation of the need for or scope of the detailed “DSM technical evaluation” it has requested the Commission to direct. In FBC’s submission, such a process is not warranted and there is no basis for the Commission to direct it to be held.

(iii) Celgar Submissions

59. Celgar also makes submissions regarding the nature of DSM programs and incentives for self-generation customers. Eligibility criteria for self-generation customer will be addressed in conjunction with the LTERP/LT DSM Plan. No issues regarding DSM eligibility or programs for self-generation customers arise in this proceeding. Celgar’s submissions in this regard are appropriately deferred.

(iv) BCOAPO Questions and Concerns

60. BCOAPO in its submissions raised a question regarding the LRMC FBC used in respect of the 2017 DSM Plan, specifically whether the \$112/MWh value referenced in the Application

⁷² Final Submissions of the ICG, f.n. 13

was assumed to be in 2011\$ or 2017\$.⁷³ FBC considers that this issue would have been more appropriate to raise as an IR, however, it can advise through counsel that the LRMC value used in the Application is the levelized price for BC clean and renewable resources that was determined at the time of the 2012 LTRP filing. Further details regarding the calculation of the \$112/MWh LRMC value were provided in FBC's response to CEC IR 1.2.3(a) in this proceeding and in the references provided therein.⁷⁴ The market curve developed by Midgard Consulting for the 2012 LTRP, which was in turn based on BC Hydro's 2011 SOP price, has not been re-calculated or adjusted for 2017 circumstances. However, the 2012 LRMC value was levelized based on a 30 year market curve that included an assumed inflation rate of 2%.⁷⁵ The market curve for the LRMC used in the 2012 LTRP indicated a price for BC new resources at a nominal \$107.94/MWh in 2017.⁷⁶

61. In any event, even if an adjustment in respect of 2017 raised the LRMC and resulted in higher benefit/cost ratios with respect to the 2017 DSM Plan, for the reasons stated above, that does not translate into additional or higher levels of DSM spending.

62. In its submissions, BCOAPO also raises a concern that FBC did not revisit the 2013 CPR Update to determine if there were other DSM measures that could be included in the 2017 DSM Plan.⁷⁷ The 2017 DSM Plan is, pursuant to s. 44.2(5)(b) of the *UCA*, predicated on FBC's most recent long term resource plan, the 2012 LTRP. The availability of cost effective DSM measures in connection with the 2013 CPR Update is accordingly based on the LRMC indicated by the 2012 LTRP. The 2017 DSM Plan includes all of the cost-effective measures and programs identified in the 2013 CPR Update, with the exception of consumer electronics.⁷⁸ FBC is updating its LRMC as part of the upcoming LTERP filing; however, it was not considered appropriate to revisit the 2013 CPR Update based on a new LRMC that is yet to be finalized or approved.

⁷³ BCOAPO Final Submissions, paras. 14-15

⁷⁴ Ex. B-5, p. 3-4

⁷⁵ Ex. B-5, p. 9 (Response to CEC IR 1.2.4(c))

⁷⁶ See FBC's 2015-2016 DSM Plan Application, FBC Response to BCUC IR 1.3.1, dated September 18, 2014, referenced in this proceeding at Ex. B-5, p. 3, f.n. 2 (Response to CEC IR 1.2.3(a))

⁷⁷ BCOAPO Final Submissions, para. 28

⁷⁸ Ex. B-3, p. 12 (Response to BCOAPO IR 1.5.1)

E. CONCLUSION

63. For the foregoing reasons, and for the reasons set out in FBC's Final Argument, dated October 14, 2016, FBC submits that the expenditures proposed in the 2017 DSM Plan should be accepted, as filed.

ALL OF WHICH IS RESPECTFULLY SUBMITTED.

November 2, 2016

Original signed by:

Nicholas T. Hooge,
Counsel for FortisBC Inc.

BOOK OF AUTHORITIES

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INDEX

1. BC Ministry of Energy and Mines – Electricity and Alternative Energy Division, *Guide to the Demand-Side Measures Regulation* (Revised July, 2014)



GUIDE TO THE DEMAND-SIDE MEASURES REGULATION

BC MINISTRY OF ENERGY AND MINES
ELECTRICITY AND ALTERNATIVE ENERGY DIVISION
REVISED JULY 2014

CONTENTS

1	Disclaimer	2
2	Introduction and History.....	2
3	Key Elements.....	3
3.1	Adequacy – <i>Section 3</i>	3
3.2	Use of Cost-Effectiveness Tests – <i>Section 4(1.1), (1.8), and (6)</i>	4
3.3	TRC and Modified TRC – <i>Section 4(1.1), and (1.9)</i>	4
3.3.1	The Avoided Cost of Electricity – <i>Section 4(1.1)(b)</i>	5
3.3.2	Zero-Emission Energy Alternative to Natural Gas – <i>Section 4(1.1)(a), (1.2) and (1.3)</i>	5
3.3.3	Non-Energy Benefits – <i>Section 4(1.1)(c) and (1.7)</i>	7
3.4	MTRC Impact Cap – <i>Section 4(1.5), (1.6), (1.7, and (1.9))</i>	8
3.5	Treatment of Low-Income Programs – <i>Section 4(2)</i>	10
3.6	Standards Attribution – <i>Section 4(1.4)</i>	10
3.7	Specified DSM and public awareness programs – <i>Section 4(4) and (5)</i>	11
3.8	Exemptions from the UCT – <i>Section 4(1.8)</i>	12
3.9	Evaluation Level – <i>Section 4(1)</i>	12
4	Frequently Asked Questions	12
	Appendix: Ministerial Order of Amendments.....	12

1 DISCLAIMER

This Guide contains the Ministry of Energy and Mines' interpretation of certain aspects of the Demand Side Measure Regulation. It is explicitly not intended to constitute advice with respect to the meaning of that regulation. Readers are advised to refer to the regulation itself, and seek their own advice with respect to its meaning and effect.

All examples in this guide are fictional and should not be construed as an endorsement of any specific demand-side measures.

2 INTRODUCTION AND HISTORY

Utility expenditures on energy efficiency and conservation (demand-side measures, or DSM) require acceptance from the British Columbia Utilities Commission (the commission) before rates can be set which recover those expenditures. The Demand-Side Measures Regulation (the regulation) sets out select rules that the commission must follow when assessing the adequacy and cost-effectiveness of proposed DSM expenditures.

The authority for the Demand-Side Measures Regulation comes from section 125.1(4) of the *Utilities Commission Act*:

The Minister may make regulations as follows:

(e) for the purposes of section 44.1 and 44.2:

- (i) prescribing rules for determining whether a demand-side measure, or a class of demand-side measures, is adequate, cost-effective or both,
- (ii) declaring a demand side-measure, or a class of demand-side measures, to be cost-effective and necessary for adequacy

The Regulation was enacted in the fall of 2008 as a part of the government's ongoing strategy to increase energy efficiency, reduce energy bills, and achieve provincial greenhouse gas emission reduction targets. Key elements included:

- a requirement for utilities to have programs for low-income households, rental accommodations, and schools (s. 3),
- a 30% adder to low-income program benefits, to account for non-energy benefits (s. 4(2))
- portfolio-level evaluation of education programs, energy efficiency training, community engagement, technology innovation programs, and effective public awareness programs, (sections 4(4) and 4(5)),
- a requirement that, in determining the cost-effectiveness of DSM by a bulk purchaser (a public utility purchasing electricity from BC Hydro for re-sale to its customers), the commission consider the benefit of avoided supply cost to be BC Hydro's long-term marginal cost of electricity (s. 4(3)),
- a stipulation that the commission cannot determine that a measure is not cost-effective on the basis of the Ratepayer Impact Measure test (s. 4(6)), and
- the ability for utilities to attribute a portion of savings from a regulated standard to a utility program that facilitates or advances the introduction of that standard (s. 4(7)).

In December 2011 an amendment to the Regulation was passed. It included:

- addition of sections 4(1.1) to (1.8),
- replacement of s. 4(7) with (1.4),
- replacement of s. 4(3) with (1.1)(b)(i),
- an addition to the list of “specified DSM” in s. 1,
- minor changes to sections 4(2)(b) and 4(1), and
- changes to, or the addition of definitions for “energy device”, “energy efficiency training”, “regulated item”, “specified proposal”, “specified standard”, and “technology innovation program”.

In July 2014 a second amendment was made which included:

- changes to the definition of “low-income household” in s. 1,
- changes to s. 3(a),
- changes to s. 4(1.1)(a),
- changes to s. 4(1.5),
- the addition of s. 4(1.9), and
- changes to s. 4(2)(b).

This Guide refers to the July 2014 version of the Regulation, as it applies to spending after December 31, 2014. Key changes from the previous version of this guide are noted in highlighted text. This guide does not provide a comprehensive review of the Regulation, but discusses certain complex portions of the Regulation.

The Demand-Side Measures Regulation can be accessed at www.bclaws.ca under the Utilities Commission Act.

3 KEY ELEMENTS

3.1 ADEQUACY – SECTION 3

Section 3 of the Demand-Side Measures Regulation requires utilities to include certain measures in their DSM portfolio in order for the portfolio to be considered adequate (for the purposes of s. 44.1(8)(c) of the *Utilities Commission Act*). This includes programs for low-income households, rental accommodations, and schools including post-secondary institutions.

The *Clean Energy Act* removed the requirement for BC Hydro to submit to the commission a long-term resource plan referenced in 44.1 of the *Utilities Commission Act*. Therefore, s. 3 does not apply to BC Hydro.

3.2 USE OF COST-EFFECTIVENESS TESTS – SECTION 4(1.1), (1.8), AND (6)

Standard practice across North America for evaluating the cost-effectiveness of DSM proposals is to use some combination of five tests¹: the Total Resource Cost Test (TRC), the Societal Cost Test (SCT), the Ratepayer Impact Test (RIM) (also called the Non-Participant Test), the Utility Cost Test (UCT), and the Participant Cost Test (PCT). Prior to the 2008 DSM Regulation, relative weighting and application of these tests was solely at the commission's discretion in BC, although the TRC has typically been the most important test. The DSM Regulation prescribes some rules for the application of these tests.

First, s. 4(6) of the DSM Regulation prevents the commission from using a RIM test result to determine that a measure is not cost-effective. The commission may continue to request and consider a demand-side measure's RIM test results.

Second, s. 4(1.1) requires that the commission "must make determinations of cost effectiveness by applying the total resource cost test" as set out in that subsection.

Third, s. 4(1.8) allows the commission to determine (with some exceptions) that a demand-side measure that fails the UCT is not cost-effective. This subsection does not suggest that the commission *must* or *should* reach this determination, it simply empowers it to do so even if s. 4(1.1) makes a measure cost-effective under the Modified TRC (see below).

3.3 TRC AND MODIFIED TRC – SECTION 4(1.1), AND (1.9)

In addition to requiring the use of a TRC, s. 4(1.1) also sets out steps for calculating this TRC. In this guide, we make a distinction between:

1. the TRC, which is altered only by s. 4(1.1)(b), and
2. the Modified TRC (or MTRC) which is altered by s. 4(1.1)(b), as well as (a), and (c), and the use of which is capped by s. 4(1.5),

as contemplated in s. 4(1.9)(b). The following table summarizes the differences between the TRC and MTRC.

¹ For more information on the typical makeup and use of these tests, see the California Standard Practice Manual (http://www.energy.ca.gov/greenbuilding/documents/background/07-J_CPUC_STANDARD_PRACTICE_MANUAL.PDF) or the Energy Efficiency Cost Effectiveness Guide by the National Action Plan for Energy Efficiency (<http://sedc-coalition.eu/wp-content/uploads/2011/05/NAPEE-08-11-01-Energy-Efficiency-Cost-effectiveness-guide.pdf>).

Requirement to...	TRC	MTRC
<i>...use the zero-emission energy alternative for the avoided cost of natural gas?</i>		✓
<i>...use the long-run marginal cost of clean BC electricity for the avoided cost of electricity?</i>	✓	✓
<i>...adjust the calculations for non-energy benefits?</i>		✓

Further details in sections below.

For instructions on the application of the MTRC to DSM expenditures made before January 1, 2015, please see the August 2012 version of this DSM Regulation Guide.

3.3.1 THE AVOIDED COST OF ELECTRICITY – SECTION 4(1.1)(B)

The TRC test is a cost-benefit calculation in which one of the benefits is the avoided cost of the energy saved by the DSM.

Section 4(1.1)(b) specifies the value to be used for the avoided cost of electricity. In the case of DSM by FortisBC Inc (i.e. the electric utility serving communities in BC's interior) this is the utility's long-run marginal cost of acquiring electricity generated from clean or renewable resources in BC; in all other cases (i.e. DSM by BC Hydro or by FortisBC Energy utilities, the natural gas delivery companies) it is BC Hydro's long run marginal cost of acquiring electricity generated from clean or renewable resources in BC. This value is to be used for electricity whether the DSM proposed is from a gas or an electric utility. However it is only to be used where electricity use is *decreased* (since it applies to the *avoided* electricity cost). Capacity reduction benefits of DSM are added to the energy benefits.

3.3.2 ZERO-EMISSION ENERGY ALTERNATIVE TO NATURAL GAS – SECTION 4(1.1)(A), (1.2) AND (1.3)

One of the principal components of the Modified TRC is the use of the price signal for a zero-emission energy supply alternative (ZEEA) as the avoided cost of energy for gas DSM. Section 4(1.1)(a) specifies that the ZEEA value for avoided natural gas from DSM be BC Hydro's long run marginal cost (LRMC) of acquiring electricity generated from clean or renewable resources in BC ² (the ZEEA). This applies regardless of the type of utility or DSM being

² Electricity is typically measured in megawatt-hours (MWh) but the units can be readily converted into gigajoules (GJ), i.e. 1 MWh = 3.6 GJ.

carried out, i.e. gas or electric. So if an electric utility carries out DSM that reduces natural gas use, the MTRC must include as a benefit the avoided cost of natural gas, valued at the ZEEA. For example, a building envelope improvement program administered by an electric utility that reduces gas furnace and electric baseboard consumption would value the avoided natural gas at the ZEEA value. Note that s. 4(1.1)(a) is only applicable where natural gas use is *decreased*.

The fuel-specific capacity benefits of a DSM are added to the ZEEA energy benefits. In the building envelope example above, if a smaller furnace and fewer baseboards could be used, two additional capacity reduction benefits would be added to the ZEEA energy benefits (e.g. avoided gas distribution volume capacity and distribution wires amperage capacity).

The ZEEA would not apply to calculations that result in increased natural gas usage (e.g., an electric utility program to reduce electricity may have cross-effects resulting in higher natural gas use). In this case, the actual avoided cost of natural gas is used, not the ZEEA.

The ZEEA is only applied to measures that reduce the emissions associated with that natural gas use, according to s. 4(1.2). It would not, for example, apply to DSM measures for which the utility has sold or otherwise disposed of the associated environmental attributes.

Example A
<p><i>A measure reduces natural gas demand by 10 GJ for one year. If in that year, BC Hydro's long-run marginal cost of acquiring clean or renewable BC electricity is \$100/MWh, the avoided cost of natural gas is calculated in the MTRC as:</i></p> $10 \text{ GJ} * \$100/\text{MWh} * 1 \text{ MWh}/3.6 \text{ GJ} *$ $= \$278 \text{ benefit}$
Example B
<p><i>A gas utility proposes a program to replace gas boilers with geoexchange heating systems. In its first year it will reduce natural gas use by 1,000 GJ and increase electricity use by 60 MWh.</i></p> <p><i>If the gas utility's standard TRC uses an electricity tier 2 cost of \$113/MWh, and if BC Hydro's long-run marginal cost of acquiring clean or renewable BC electricity is \$100/MWh, the avoided cost of energy for the program's first year would be calculated in the MTRC as:</i></p> $(1,000 \text{ GJ} * 1 \text{ MWh}/3.6 \text{ GJ} * \$100/\text{MWh}) - (60 \text{ MWh} * \$113/\text{MWh})$ $= \$27,778 - \$6,780$ $= \$20,998 \text{ benefit}$

Note that according to s. 4(1.3), a ZEEA cannot be used for demand-side measures that reduce greenhouse gas emissions by encouraging a switch from propane or oil to natural gas or electricity. For example, a ZEEA would not be used to calculate the TRC for a program to get customers to replace their oil furnace with a gas furnace.

3.3.3 NON-ENERGY BENEFITS – SECTION 4(1.1)(C) AND (1.7)

While the California Standard Practice Manual does not include non-energy benefits (NEBs) in the Total Resource Cost test, practices vary across jurisdictions. Examples of NEBs include improved building occupant comfort (from reduced drafts or cold spots) or health (from improved ventilation), reduced maintenance costs (less frequent light bulb replacement), and/or reduced materials (e.g., soap in a clothes washer). The DSM Regulation s. 4(1.1)(c) requires the commission to allow inclusion of NEBs to customers and the utility. The amount of NEBs is determined either by the commission based on evidence from the utility, or by a set percentage specified in the regulation. Societal non-energy benefits (for example, job creation) are not addressed in (c). It also does not address the NEBs for low-income programs (measures “referred to in s. 3(a)”) since these are addressed in s. 4(2) with a **standard 40% NEB adder to the benefits**.

The first step in assigning non-energy benefits is carried out in (c)(i) after the ZEEA has been applied. A utility quantifies the NEBs of a measure, and the commission can use this or a lesser value which it believes is more accurate. If the utility only proposes a value for the participant NEB, the value used by the commission should represent only the participant and not the utility NEBs, and vice versa.

Once NEB values are assigned to all measures for which the utility has proposed quantified NEBs, if any, the remaining measures are assigned a uniform percentage adder using subparagraph (ii). The adder is represented as a percentage increase in a measure’s benefits. For example if a measure has \$100,000 of benefits after application of s. 4(1.1)(a) and (b)), a 15% NEB adder would result in an extra \$15,000, resulting in a new total benefit of \$115,000. NEBs are also to be applied to DSM associated with savings from codes and standards attribution and conservation rates.

The value of the NEB adder must be such that expenditure portfolio’s benefits (after the application of the ZEEA in s. 4(1.1)(a) and (b)) increase by 15%. As a result, if quantified NEBs are small, the adder may approach or even substantially exceed 15% per measure. If the quantified NEBs are large, the adder will be smaller.

The total NEBs for a portfolio can exceed 15% if all DSM NEBs are quantified by the utility and the amounts are accepted by the commission.

Example C – No quantified NEBs				
<i>In this example, the utility does not propose any quantified NEBs under subparagraph (i). As a result, all DSM are assigned a NEB adder of 15%.</i>				
Measure	Benefits	Non-Energy Benefits	% Increase	New Total Benefits
DSM A	\$100,000	\$15,000	15%	\$115,000
DSM B	\$50,000	\$7,500	15%	\$57,500
DSM C	\$75,000	\$11,250	15%	\$86,250
DSM D	\$10,000	\$1,500	15%	\$11,500
DSM E	\$20,000	\$3,000	15%	\$23,000
TOTAL	\$255,000	\$38,250	15%	\$293,250

Example D – Quantified NEBs are less than 15% of pre-NEB portfolio benefits

In this example, there are quantified NEBs for DSM A and D which on their own do not increase portfolio benefits by 15% or more. Remaining measures are assigned a NEB adder of 9% which results in a 15% increase in portfolio benefits.

Measure	Benefits	Non-Energy Benefits	% Increase	New Total Benefits
DSM A	\$100,000	\$20,000	20%	\$120,000
DSM B	\$50,000	\$4,569	9%	\$54,569
DSM C	\$75,000	\$6,853	9%	\$81,854
DSM D	\$10,000	\$5,000	50%	\$15,001
DSM E	\$20,000	\$1,828	9%	\$21,828
TOTAL	\$255,000	\$38,250.00	15%	\$293,250

Example E – Quantified NEBs exceed 15% of pre-NEB portfolio benefits

In this example, there are quantified NEBs for DSM A and D which on their own increase portfolio benefits by 15% or more. As a result, remaining DSM are not given a NEB adder.

Measure	Benefits	Non-Energy Benefits	% Increase	New Total Benefits
DSM A	\$100,000	\$30,000	30%	\$130,000
DSM B	\$50,000	-	-	\$50,000
DSM C	\$75,000	-	-	\$75,000
DSM D	\$10,000	\$10,000	100%	\$20,001
DSM E	\$20,000	-	-	\$20,000
TOTAL	\$255,000	\$40,000	16%	\$295,000

Section 4(1.7) gives the commission the ability to expand its definition of ‘expenditure portfolio’, for the purposes of s. 4(1.1)(c). This ensures that a uniform NEB adder can be calculated even if programs are proposed in separate expenditure schedules.

3.4 MTRC IMPACT CAP – SECTION 4(1.5), (1.6), (1.7, AND (1.9))

Section 4(1.1)(a) and (c) requires the commission to apply the TRC test in a particular manner. This will result in some measures passing this modified TRC test that would not pass the TRC. However, the Regulation limits expenditure on these measures to, in the case of a gas utility, 33% of the DSM portfolio expenditure, and, in the case of an electric utility, 10% of the DSM portfolio expenditure. Under s. 4(1.5), a DSM that causes this cap to be exceeded is considered to be not cost-effective. If the cap is exceeded, that doesn’t mean that the entire portfolio is not cost-effective. Rather, the commission should determine which demand-side measures are to be eliminated so that the cap is not exceeded. This is further emphasized in s. 4(1.6).

The cap does not apply to measures that pass the TRC after modifications in s.4(1.1)(b). “Specified demand-side measures” and effective “public awareness programs” (covered in s. 4(4) and 4(5) respectively) are exempt from

this cap. The cap does not apply to measures which fail the TRC after all modifications in s. 4(1.1). The cap does not apply to low-income measures that pass the TRC using the adder in s. 4(2).

Example G				
<i>A gas utility proposes an expenditure portfolio of \$3.1 million:</i>				
Measure	TRC with s.4(1.1)(b)	MTRC (TRC with all of s.4(1.1))	Subject to cap? (reason)	Expenditure \$ (%)
Efficient fireplace program	1.2	1.6	No (passes both tests)	\$500,000 (16%)
Residential boiler program	0.8	1.2	Yes (fails TRC)	\$500,000 (16%)
Commercial boiler program	1.0	1.4	No (passes both tests)	\$500,000 (16%)
Leaky condo retrofit pilot	0.5	0.8	No (fails both tests)	\$300,000 (10%)
Furnace program	0.6	1.0	Yes (fails TRC)	\$250,000 (8%)
Low income program with ZEEA avoided cost (along with s4(2) 30% adder)	0.8	1.1	Yes (fails TRC)	\$250,000 (8%)
Low income program without ZEEA avoided cost (along with s4(2) 30% adder)	1.1	1.6	No (passes both tests)	\$500,000 (16%)
Homebuilder training	-	-	No (specified DSM)	\$200,000 (6%)
Community conservation campaign	-	-	No (effective public awareness program)	\$100,000 (3%)
TOTAL				\$3,100,000 (100%)
<p><i>Only the residential boiler program, the furnace program, and the low-income program (with ZEEA) are subject to the cap. These account for 32% of the proposed portfolio expenditure. This does not exceed the 33% cap set out in s. 4(1.5)(b)(iii) for utilities that recover DSM expenditures through gas rates. As a result, the commission may use s. 4(1.5) to find these measures are cost-effective.</i></p> <p><i>Homebuilder training is a specified DSM and the Community Conservation Campaign is an effective public awareness program, therefore both are exempt from the cap. Also, programs that pass the TRC are exempt, including low-income programs that use the s. 4(2) 40% benefits adder and do not require the s. 4(1.1)(a) ZEEA avoided cost to pass.</i></p> <p><i>The leaky condo retrofit pilot does not pass the TRC even after application of the ZEEA and NEBs, so it is not included in the cap. The commission could reject it, but could choose to accept the program if, for example, it believes the pilot will be useful in developing more cost-effective programs in future. Note that if the commission were to reject this pilot, the total portfolio expenditure would decrease, causing the cap to be exceeded. In that case, the commission would have to determine as not cost-effective some of the three capped measures to ensure the cap was not exceeded.</i></p>				

As noted in the example above, DSM that fails the MTRC (e.g., leaky condo retrofit program) can be approved by the commission, but with a caveat that the portfolio as a whole is still cost effective (as per s. 4(1)).

Section 4(1.7) gives the commission the ability to expand its definition of ‘expenditure portfolio’, for the purposes of s. 4 (1.1)(c). This ensures that the cap can be adhered to even if measures are proposed in separate expenditure schedules.

3.5 TREATMENT OF LOW-INCOME PROGRAMS – SECTION 4(2)

Non-energy benefits for low-income programs (referred to in s. 3(a)) are addressed in s. 4(2). Low income programs receive a benefits adder of 40%.

The 15% NEB adder referenced above does not apply to low income programs that receive the 40% adder.

If the low-income program is one to which s. 4(1.5) applies, then it is subject to the expenditure “cap” described in that section. In such a case, the 40% adder is applied *after* applying s. 4(1.1).

3.6 STANDARDS ATTRIBUTION – SECTION 4(1.4)

Some utility programs facilitate future energy savings by preparing the market for future mandatory energy efficiency standards. Section 4(1.4) allows utilities to incorporate some of the benefits from these standards into the TRC for such utility programs.

Standards are typically developed by government agencies in stages. An agency will usually announce its intent to regulate and hold public consultations on a proposed new standard. It will then pass the standard into law, usually with a delayed effective date. The DSM Regulation allows utilities to attribute a portion of the standard’s future benefits to demand-side measures that “increase the use of a regulated item” during the period *after* the standard is proposed or passed into law, but *before* it comes into force.

Only measures that are connected with a “specified standard” or “specified proposal” are eligible. These are defined in s. 1 of the DSM Regulation. Standards include those in the provincial Energy Efficiency Standards Regulation, the federal Energy Efficiency Regulations, the BC Building Code, local bylaws, and First Nation laws. Proposals are also defined: in the case of local bylaws they must have had a first reading by the council; in the case of first nation laws they must have been published by the first nation government; in the case of the federal standards, they must have been published in the Canada Gazette. In the case of provincial standards, the proposal must be published by the responsible minister and must make reference to the DSM Regulation. For example, the Ministry of Energy and Mines might publish a proposal for a new standard for gas boilers which has a footnote stating the proposal is valid for the purposes of the Demand-Side Measures Regulation.

The commission must be satisfied that the measure will increase the market share of the regulated item. The commission must also be satisfied with respect to the amount of the avoided capacity and energy costs attributed to the DSM. It is assumed that the standard *will* come into effect.

Given that the *Clean Energy Act* definition for a demand-side measure includes “a rate, measure, action or program undertaken to conserve energy or promote energy efficiency”, codes and standards can be defined as DSM and their benefits can be calculated using the ZEEA rate and including NEBs.

Example F

Attribution timeline:

Under the Pacific Coast Collaborative's West Coast Action Plan on Jobs, in May 2012, the utility and government discuss a future BC Energy Efficiency Act standard that adopts the California energy efficiency regulations for battery chargers, but no public proposal is issued. The utility launches a battery charger incentive program to increase the market share of this technology. No standards attribution is possible under s. 4(1.4).

In July 2013, the Minister issues a "Regulatory Impact Statement" on the Ministry website with a public proposal with respect to a future standard with a proposed effective date of July 2014. The proposal specifically refers to the DSM Regulation. In September 2013, the Minister passes the standard into law. Any portion of the program run between July 2013 and July 2014 is eligible to have savings from the standard attributed to it in accordance with s. 4(1.4).

In January 2015, the regulation is amended to match the Natural Resources Canada (NRCan) regulation, modeled off that of the US Department of Energy (DOE) standard, effective in 2017. This will not affect the utility's ability to recover its approved cost for the program to date.

Attributable amounts:

The commission believes the utility program will be successful in increasing the market share of efficient battery chargers sold in the province prior to regulation. The proposed standard is expected to result in avoided energy costs of \$1 million per year in the province, and increase consumer capital costs in the first year by \$\$100,000, for a net benefit of \$0.9 million. The amount eligible for attribution for each year of regulation is \$1 million in total avoided energy costs over the life of the product. The capital incremental costs paid by consumers after the regulation enters into force are not accounted for under the DSM regulation.

The portion of the standard's eligible avoided energy costs to attribute to the program is up to the commission's discretion. In this case, the commission decides that the program will likely be responsible for 50% of the efforts required to transform the market (e.g., increasing consumer awareness, developing product test standards and certification programs, training retail salespeople, ensuring product availability within various market segments, building acceptance among consumers and industry players) in advance of the regulation taking effect, and would thus accelerate market transformation by three years compared to normal market evolution (which would be completed when the 2017 NRCan/DOE regulation comes into place). The commission chooses to increase the utility battery charger program's MTRC benefits by \$1.5 million (50% of avoided energy costs from the regulation for three years after it takes effect, 2014-2017), over and above the benefits of the program before the regulation takes effect (2013-2014).

3.7 SPECIFIED DSM AND PUBLIC AWARENESS PROGRAMS – SECTION 4(4) AND (5)

Section 4(4) and (5) require that the cost-effectiveness of certain types of demand-side measures be evaluated at a portfolio level, rather than a measure level. As long as the portfolio containing these measures is considered cost-effective, these measures are to be considered cost-effective.

This special treatment is accorded to “specified demand-side measures” and effective “public awareness programs”, which are defined in s. 1 of the Regulation. Specified demand-side measures include:

- education programs for schools or post-secondary institutions,
- funding of energy efficiency training,
- community engagement programs,
- technology innovation programs, and
- measures that support development of, and compliance with, standards or government actions on energy efficiency in BC.

There are details on each of these measures in the regulation. For example, energy efficiency training includes training for people who:

- manufacture, sell or install energy-efficient products or products that conserve energy,
- design, construct or act as a real estate broker with respect to energy-efficient buildings,
- manage energy systems (including energy managers),
- conduct energy efficiency and conservation audits,
- on behalf of an organization, manage or advise with respect to the conservation or efficient use of energy in the organization’s facilities, or
- in an organization, educate other persons about the benefits of energy efficiency and conservation.

3.8 EXEMPTIONS FROM THE UCT – SECTION 4(1.8)

In s. 4(1.8) the commission is given the discretion to determine that a measure is not cost-effective if it fails the Utility Cost Test. However, the commission is not given the discretion to use the UCT to determine cost-effectiveness for: (a) specified DSM, (b) effective public awareness programs, (c) low-income programs, and (d) any demand-side measure which passes the TRC after it is attributed a portion of savings from regulated standards (i.e. application of s. 4(1.4)) but without a ZEEA or NEBs (i.e. application of s. 4(1.1)(a) and (c)).

3.9 EVALUATION LEVEL – SECTION 4(1)

Section 4(1) provides that the commission may determine the cost-effectiveness of a demand-side measure by considering either the cost-effectiveness of the measure itself, the measure along with other measures in a portfolio, or the portfolio as a whole. Exceptions are specified DSM and effective public awareness programs, which must be determined at a portfolio level (as set out in s. 4(4) and (5)). The commission’s discretion is also subject to s. 4(1.5), which requires evaluation at a measure level in order to determine if the MTRC impact cap is exceeded.

4 FREQUENTLY ASKED QUESTIONS

How is the ZEEA applied when a program increases one fuel and decreases another?

The ZEEA only applies when natural gas use or electricity use is decreased. See heading 3.3.1 above and Example B.

What is the “the authority’s long-run marginal cost of acquiring electricity generated from clean or renewable resources in BC”?

It is the amount that the commission is satisfied represents BC Hydro’s long-run marginal cost of acquiring electricity generated from clean or renewable resources in BC. This will typically be based on evidence provided by the utility proposing the DSM.

“Clean or renewable resource” is defined in the *Clean Energy Act*. The long-run marginal cost must be for energy produced in British Columbia, so cannot be based on the cost of imports.

Is it mandatory to use the long-run marginal cost of clean BC electricity in the TRC?

For DSM expenditures made after December 31, 2014, yes. All calculations of the TRC and the MTRC must set the avoided cost of electricity as the long-run marginal cost of acquiring electricity generated from clean or renewable resources in BC. The value may be different for each utility. See heading 3.1.1 above.

Does the MTRC impact cap apply to demand-side measures that fail the MTRC?

No. The expenditure cap set out in s. 4(1.5)(b)(iii) and (iv) only applies to measures that fail the TRC without application of s. 4(1.1)(a) and (c), but pass the TRC with application of s. 4(1.1)(b). See heading 3.4 above for more detail.

What if a measure fails the MTRC? Does the MTRC have to be applied at a measure level, or can it be done at a group or portfolio level?

The steps to calculate the TRC and the MTRC are done at a measure level in s. 4(1.1). However, s. 4(1) provides that the commission may determine the cost-effectiveness of a demand-side measure at the evaluation level it chooses (see heading 3.9 above).

Note also that the decision to accept or reject a schedule of expenditures on demand-side measures is based on a variety of considerations of which cost-effectiveness is only one—other considerations are set out in section 44.2 of the *Utilities Commission Act*.

Is inclusion of non-energy benefits obligatory?

Yes. The commission must apply the TRC test in the manner set out in s. 4(1.1). Section 4(1.1)(c) requires the commission to include either:

- (1) participant or utility NEBs proposed by the utility and accepted by the commission, or
- (2) NEBs calculated in accordance with the formula in s. 4(1.1)(c)(ii).

Do attributed benefits from regulated standards include non-energy benefits?

No. Section 4(1.4) only allows attribution of avoided capacity and energy costs.

When applying s. 4(1.4), is the benefit of avoided energy and capacity costs from a regulated standard offset by the standard's capital costs, prior to attribution to a utility DSM?

No. Only the avoided energy and capacity costs are attributed to the utility DSM. For example, if a new standard has benefits of \$3 million in avoided energy and capacity costs (net present value), and a capital cost of \$2 million (net present value), the commission could allow a portion of the \$3 million to be attributed to a utility program that increases the use of the regulated item, as opposed to a portion of the \$1 million.

What portion of a regulated standard's avoided costs should be attributed to utility programs?

Section 4(1.4) describes the benefits which are eligible for attribution to utility measures, but leaves it to the commission to decide what portion of these to attribute. In general, these should relate to the market transformation impacts of the DSM program(s) that enable the regulation to be successful.

Must a measure that fails the Utility Cost Test be determined to be not cost-effective?

No. See headings 3.2 and 3.8 above for more detail.

APPENDIX:

AMENDMENT TO THE DEMAND-SIDE MEASURES REGULATION

PROVINCE OF BRITISH COLUMBIA
REGULATION OF THE MINISTER OF ENERGY AND MINES AND MINISTER
RESPONSIBLE FOR CORE REVIEW

Utilities Commission Act

Ministerial Order No. 233

I, Bill Bennett, Minister of Energy and Mines and Minister Responsible for Core Review, order that the Demand-Side Measures Regulation, B.C. Reg 326/2008, is amended as set out in the attached Schedule.

DEPOSITED

July 10, 2014

B.C. REG. 141/2014

Date June 4, 2014


Minister of Energy and Mines and Minister
Responsible for Core Review

(This part is for administrative purposes only and is not part of the Order.)

Authority under which Order is made:

Act and section: Utilities Commission Act, R.S.B.C. 1996, c. 473, s. 125.1

Other: M271/2008

May 23, 2014

R/290/2014/27

SCHEDULE

- 1 *Section 1 of the Demand-Side Measures Regulation, B.C. Reg. 326/2008, is amended by repealing the definition of "low-income household" and substituting the following:*

"low-income household" means a household whose residents receive service from the public utility and

- (a) the residents have, in a taxation year, a before-tax annual household income equal to or less than the low-income cut-off established by Statistics Canada for that year for households of that size, multiplied by 1.3, or
- (b) the account holder receives one or more of the following:
 - (i) guaranteed income supplement under the *Old Age Security Act* (Canada);
 - (ii) allowance under the *Old Age Security Act* (Canada) for persons aged 60 to 64 with spouses or common-law partners who receive a pension under that Act and are eligible for a guaranteed income supplement;
 - (iii) survivor's allowance under the *Old Age Security Act* (Canada);
 - (iv) disability benefits under the *Canada Pension Plan* (Canada);
 - (v) National Child Benefit Supplement;
 - (vi) shelter aid for elderly renters under the *Shelter Aid for Elderly Renters Act*;
 - (vii) income assistance for persons with persistent multiple barriers to employment under the *Employment and Assistance Act*;
 - (viii) Provincial senior's supplement under the *Employment and Assistance Act*;
 - (ix) income assistance under the *Employment and Assistance Act*;
 - (x) hardship assistance under the *Employment and Assistance Act*;
 - (xi) disability assistance under the *Employment and Assistance for Persons with Disability Act*;
 - (xii) rental assistance provided by the British Columbia Housing Management Commission.

- 2 *Section 3 (a) is repealed and the following is substituted:*

- (a) a demand-side measure intended specifically
 - (i) to assist residents of low-income households to reduce their energy consumption, or
 - (ii) to reduce energy consumption in housing owned or operated by
 - (A) a housing provider incorporated under the *Society Act* or the *Cooperative Association Act*, or
 - (B) a band within the meaning of the *Indian Act* (Canada),if the benefits of the reduction primarily accrue to
 - (C) the low-income households occupying the housing,
 - (D) a housing provider referred to in clause (A), or

(E) a band referred to in clause (B) if the households in the band's housing are primarily low-income households.

3 *Section 4 is amended*

(a) in subsection (1.1) (a) by striking out “, multiplied by 0.5”,

(b) in subsection (1.5) by striking out “subject to subsections (4) and (5),” and substituting “subject to subsections (1.9), (4) and (5),”

(c) by adding the following subsection:

(1.9) The references in subsections (1.5) and (1.8) to subsection (1.1) must be read as references

(a) to subsection (1.1) (a), (b) and (c) for the purposes of a demand-side measure that is part of an expenditure portfolio for any period before January 1, 2015, and

(b) to subsection (1.1) (a) and (c) for the purposes of a demand-side measure that is part of an expenditure portfolio for any period after December 31, 2014., *and*

(d) in subsection (2) (b) by striking out “130%” and substituting “140%”.