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September 24, 2014

Via Email
Original via Mail

Commercial Energy Consumers Association of British Columbia
c/o Owen Bird Law Corporation
P.O. Box 49130
Three Bentall Centre
2900 – 595 Burrard Street
Vancouver, BC
V7X 1J5

Attention: Mr. Christopher P. Weafer

Dear Mr. Weafer:

Re: FortisBC Inc. (FBC)

**Application for Approval of Demand Side Management (DSM) Expenditures for
2015 and 2016 (the Application)**

**Response to the Commercial Energy Consumers Association of British
Columbia (CEC) Information Request (IR) No. 1**

On August 11, 2014, FBC filed the Application as referenced above. In accordance with Commission Order G-144-14 setting out the Amended Regulatory Timetable for the review of the Application, FBC respectfully submits the attached response to CEC IR No. 1.

If further information is required, please contact the undersigned.

Sincerely,

FORTISBC INC.

Original signed:

Dennis Swanson

Attachments

cc: Commission Secretary
Registered Parties (e-mail only)

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1 **1. Reference: Exhibit B-1, Page 1**

2 On July 10, 2014 the provincial government deposited BC Reg 141/2014 (the Amendment)
3 which modified the prior Demand-Side Measures Regulation (together, the DSM Regulation).
4 The Amendment raised the low income program eligibility threshold and added a deemed list of
5 eligible low income customers. Additionally, it changed the Long Run Marginal Cost (LRMC),
6 used to calculate the economic benefits of the DSM Plan of FortisBC Inc. (FBC or the
7 Company), effective January 1, 2015. The LRMC is required to be the cost of new resources
8 that meets the definition of BC "clean" energy.

2
3 1.1 Please provide a copy of the BC Reg 141/2014 Amendment.
4

5 **Response:**

6 Please refer to Attachment 1.1.
7
8

9
10 1.2 What was the original LRMC that was changed by the DSM Regulation?
11

12 **Response:**

13 For the 2014-2018 PBR Application, FBC used an LRMC of \$56 per MWh, which was based on
14 a market price forecast, and \$112 per MWh (+ 15% NEB) for the measures boosted by the
15 modified TRC up to the 10 percent mTRC budget cap.
16

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1 **2. Reference: Exhibit B-1, Page 1**

26 The 2015-16 DSM Plan reflects a return to approximately the same programs and expenditures
27 which were in the approved 2012-13 DSM Plan¹ and addresses many of the concerns raised by
28 interveners regarding proposed DSM programs and expenditures in the 2014-18 PBR Plan
29 process. The result is a DSM expenditure request for the 2015-16 filing period that is
30 comparable to the 2012-2013 approved Plan, that incorporates the expanded low income
31 requirements mandated by the Amendment. This DSM expenditure request is also supported
32 by the FBC 2013 Semi-Annual DSM Year-End Report included as Appendix B. The Semi-
33 Annual DSM Report describes the results of FBC's 2013 PowerSense programs, many of which
34 FBC is proposing to continue.

2

3 2.1 Is FortisBC aware of any programs or activities that might increase the level of
4 DSM savings in the future?

5

6 **Response:**

7 The dual-fuel, BC wide CPR to be undertaken in 2015 will be relied on to identify new measures
8 and/or programs, and develop various scenarios that may increase the level of DSM savings in
9 the future. These will be incorporated into future DSM expenditure schedule filings.

10 The Company actively seeks opportunities for DSM activities, such as the Community Energy
11 Diets, where public awareness can increase program participation and hence increase the level
12 of savings.

13

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16 2.1.1 If so, please discuss.

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18 **Response:**

19 Please refer to the response to CEC IR 1.2.1.

20

21

22

23 2.2 Why does FortisBC propose to use the same programs that were approved in the
24 2012-13 DSM plan rather than developing or adding new programs?

25

26 **Response:**

27 Please refer to the responses to BCUC IR 1.7.5 and CEC IR 1.2.1.

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2.3 Please describe the activities FortisBC undertakes to research new DSM programs.

Response:

The fundamental DSM planning steps include:

- Periodic Residential/Commercial End-Use studies provide detailed profiles of building stock characteristics, an inventory of lights & appliances, and occupant behaviours;
- Research through collaborative agencies, such as the Consortium for Energy Efficiency (CEE) and specialist consulting firms such as E-source; and
- Periodic Conservation Potential Reviews (CPR) research and include all cost-effective measures into programs for portfolio scenario development.

Detailed program investigation, collaboration etc. may be undertaken, including activities such as:

- Discussions with program managers of similar programs at other utilities to identify market barriers and opportunities for collaboration;
- Conduct qualitative interviews and/or focus group research with key stakeholders and target customers; and
- Pilot project(s) with M&V (measurement & verification) to confirm measure savings.

2.4 Why does FortisBC not propose to increase expenditures from those approved in the 2012-13 DSM plan for 2015-2016? Please provide any evidence that FortisBC relied on in determining that the 2012-2013 expenditures were adequate and appropriate for 2015-2016.

Response:

FBC did not have an objective to increase expenditures from those approved in the 2012-2013 DSM Plan. The 2012-2013 DSM approved Plan was referenced partly because of the fulsome

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testing (IRs and Oral Hearing) it underwent before approval, with the expectation that would allow for a more efficient regulatory process.

The adequacy and cost-effectiveness of the portfolio is demonstrated by its breadth of cost-effective (as defined by the DSM regulation) program measures and its compliance with the adequacy provisions of the DSM regulation.

2.5 How does maintaining similar expenditure levels account for inflation over the three year period between the two DSM plans?

Response:

FBC's goal was creating a cost-effective suite of program measures for its customers, not maintaining similar expenditure levels to 2012-2013. Nevertheless, FBC notes that the proposed 2015 DSM expenditures are \$0.4 million greater than the 2013 Actuals, and the proposed 2016 DSM expenditure is \$0.2 million higher than 2015.

2.6 Please list the concerns raised by interveners and identify how they were addressed by the proposed DSM programs and expenditures.

Response:

The concerns in regards to the 2014-2018 DSM Plan largely centered on the use of the lower \$56 per MWh market-derived LRMC, and the proposed expenditure level which was less than half the actual 2013 expenditure.

The two major concerns are addressed by use of a \$112 per MWh LRMC, representing BC Clean new resources, and a proposed 2015-2016 DSM expenditure schedule which is \$0.4 million higher than the 2013 actual expenditure.

2.7 Please explain how the DSM expenditure request is 'supported' by the FBC semi-annual DSM Year-End report.

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1
2 **Response:**
3 The 2013 Year End Semi-Annual DSM Report provides evidence that FBC is capable of
4 delivering a cost-effective DSM portfolio of similar complexity and expenditure level as has been
5 proposed in the 2015-2016 DSM Plan.

6

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3. Reference: Exhibit B-1, Pages 1 and 2

For the purposes of calculating benefits in cost-effectiveness tests, this filing uses an LRMC of \$112 per MWh from FBC's 2012 LTRP, and provides a sensitivity analysis using the avoided cost range of \$85-\$100 per MWh indicated by BC Hydro's 2013 Integrated Resource Plan (IRP)².

3.1 Does FortisBC have a more recent LRMC? If so, please provide.

Response:

No. As part of the development of its next Long Term Electric Resource Plan (LTERP), due to be filed by June 30, 2016, FBC will be developing an updated LRMC. FBC expects to have this completed by mid-2015 in order to perform the necessary analysis for the LTERP and DSM plans.

3.2 Please confirm that the \$112/MWh and the \$85-\$100/MWh are both for energy and do not include costs for capacity.

Response:

Not confirmed. The \$112/MWh LRMC is firm, i.e. inclusive of capacity, as is the \$85-\$100 IRP range for the purposes undertaken, namely the TRC sensitivity analysis.

The BC Hydro Standing Offer program wherefrom the \$112/MWh LRMC of New BC Clean Resources was derived does not distinguish between firm and non-firm energy. However the underlying BC Hydro 2008 Clean Power Call, wherefrom the \$112/MWh price was derived, does include capacity i.e. is firm energy.

BC Hydro's \$85-\$100 LRMC was derived from the next increment of DSM and the forecast price of renewal from the next expiring BC Hydro Electricity Purchase Agreement (EPA), which BC Hydro is not planning to renew. BC Hydro stated in its November 2014 IRP:

"The energy and capacity LRMCS relate to the cost of procuring annual firm energy and dependable capacity delivered to the Lower Mainland; hence, adjustments as described in

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1 *section 3.4.3 and Appendix 3A-34 (such as the costs of transporting the energy and capacity to*
2 *the Lower Mainland, including line losses) are included in the LRMCS.”¹*

3

¹ BC Hydro November 2014 Integrated Resource Plan, Page 9-54.

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1 **4. Reference: Exhibit B-1, Page 3**

10 Pursuant to section 44.2(3) and (4), the Commission must accept all (or a part of) the DSM
11 expenditure schedule if it considers the schedule (or a part of it) to be in the public interest. In
12 considering whether an expenditure schedule put forward by a non-Crown public utility is in the
13 public interest, the Commission must consider the following criteria according to section 44.2(5):

- 14 • the applicable British Columbia's energy objectives;
- 15 • the most recent long-term resource plan filed by the public utility under section
16 44.1, if any;
- 17 • if the schedule includes expenditures on demand-side measures, whether the
18 demand-side measures are cost-effective within the meaning prescribed by
19 regulation, if any; and
- 20 • the interests of persons in British Columbia who receive or may receive service from the
21 public utility.

2

3 4.1 Can the Commission require the utility to expend more on DSM than it proposes?
4 Please explain why or why not.

5

6 **Response:**

7 No, the Commission may not require a utility to expend more than it has proposed on DSM.
8 Pursuant to subsections 44.2(3) and (4) of the *Utilities Commission Act* (UCA), the Commission
9 must accept or reject the proposed expenditure schedule:

10 (3) *After reviewing an expenditure schedule submitted under subsection (1), the commission,*
11 *subject to subsections (5), (5.1) and (6), must*

12 (a) *accept the schedule, if the commission considers that making the expenditures*
13 *referred to in the schedule would be in the public interest, or*

14 (b) *reject the schedule.*

15 (4) *The commission may accept or reject, under subsection (3), a part of a schedule.*

16 However, pursuant to section 44.2(5) of the UCA, the Commission must consider several
17 factors in considering whether to accept an expenditure schedule. These factors include the
18 applicable of British Columbia's energy objectives, whether the demand-side measures are
19 cost-effective within the meaning of the DSM Regulation and the interests of persons in British
20 Columbia who receive or may receive service from the public utility. The Commission has
21 previously held that the sufficiency of a utility's DSM expenditures is one of the considerations
22 under section 44.2(5) in the Commission determining whether to approve an expenditure
23 schedule (see *2012-2013 RRA Decision*, p. 136).

24 Accordingly, in weighing the factors in section 44.2(5), the Commission could decide to reject an
25 expenditure schedule on the basis of that the utility's DSM expenditures were insufficient to

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1 satisfy the interests of persons in British Columbia who receive or may receive service from the
2 public utility. However, this factor must be considered in conjunction with the remaining factors
3 in section 44.2(5) and if the Commission were to reject an expenditure schedule, it would be for
4 the utility to revise a new schedule for the Commission to consider. The legislation does not
5 provide that the Commission may order that a utility “spend more”.

6 Further, having considered these factors in deciding whether to approve the expenditure
7 schedule, section 44.2(3) of the UCA provides that the Commission must accept the
8 expenditure schedule if the Commission considers that making the expenditures would be in the
9 public interest.

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13 4.2 Would it be in the interest of persons who receive service from the public utility to
14 have their bills reduced by implementation of additional DSM?
15

16 **Response:**

17 Pursuant to section 44.2(5) of the UCA, the Commission must consider several factors in
18 considering whether to accept a DSM expenditure schedule. These factors include the
19 applicable of British Columbia’s energy objectives, whether the demand-side measures are
20 cost-effective within the meaning of the DSM Regulation and the interests of persons in British
21 Columbia who receive or may receive service from the public utility. A utility’s demand-side
22 measures portfolio must take into consideration all of these factors. Simply implementing
23 additional DSM may not be in the interest, as defined by the UCA, of persons who receive
24 service from the public utility if those demand-side measures do not consider BC’s energy
25 objectives or are not cost-effective within the meaning of the DSM Regulation and instead
26 increase rates.

27 Please also refer to the response to CEC IR 1.4.1.
28

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1 **5. Reference: Exhibit B-1, Page 4**

Table 2-1: BC's Energy Objectives Met by FBC DSM Activity

Energy Objective	FBC DSM Portfolio
(b) to take demand-side measures and to conserve energy...	FBC's DSM proposals are designed to implement cost-effective (as defined by the DSM Regulation) demand-side measures.
(d) to use and foster the development in British Columbia of innovative technologies that support energy conservation and efficiency and the use of clean or renewable resources;	FBC supports pilot projects of new DSM technologies, and the DSM Plan allows new measures to be incented if B/C ratio is positive.
(h) to encourage the switching from one kind of energy source or use to another that decreases greenhouse gas emissions in British Columbia;	FBC does not have a fuel switching program at this time.
(i) to encourage communities to reduce greenhouse gas emissions and use energy efficiently;	Local government energy planning and infrastructure improvements are supported through selected measures and study cost subsidies.

2

3 5.1 Please provide a discussion of the pilot projects of new DSM technologies that
4 the FBC DSM portfolio supports.

5

6 **Response:**

7 FBC has supported a number of new DSM technologies and marketing strategies through pilot
8 projects. For example:

9 • FBC piloted the Rossland Energy Diet (community-based social marketing campaign)
10 concept in 2012, in partnership with City of Rossland and Columbia Basin Trust. The
11 results were very successful with 22 percent of the community participating in the
12 LiveSmart home retro-fit program;

13 • FBC piloted the scope expansion of the Energy Diet concept to the Kootenay and the
14 Okanagan-Similkameen regions in 2013, in partnership with NRCan and Columbia Basin
15 Trust. The pilot resulted in residential energy savings and has served as a model for
16 several other programs across BC;

17 • In 2013 FBC pilot-tested an on-bill finance program in the South Okanagan, and an off-
18 bill financing partnership with credit unions in the Kootenays, to provide low-interest
19 loans for homeowners to make energy efficiency improvements to their homes. The
20 results were mixed but are serving to inform further finance program development;

21 • Also in 2013, in partnership with the FEU, FBC conducted a pilot project to test the
22 efficacy of new vortex ice making technology that removes the air from the icing water
23 mechanically, instead of using hot flood water. The results were significant natural gas
24 and electricity savings. Electricity savings come in the form of less refrigeration to cool
25 the water when the ice is made and to maintain the ice temperature because the vortex

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1 produced ice is denser. It is expected that the new technology will be widely adopted
2 throughout the region within several years.

- 3 • In 2012 FBC was the first utility in Western Canada to support heat pump water heating
4 systems with rebates.

5 Although FBC is a small utility it has taken the lead on supporting a number of new technologies
6 and marketing or program design approaches. It consistently looks for opportunities to partner
7 with other utilities and/or organizations to promote energy efficiency in more effective ways, and
8 will continue to do so during the 2015-2016 DSM Plan period.

9
10
11
12 5.2 Why does FBC not have a fuel switching program at this time? Please explain.

13
14 **Response:**

15 Please refer to the response to BCUC IR 1.1.5.
16
17

18
19 5.2.1 Does FBC have any fuel switching programs under consideration for
20 future development and introduction?
21

22 **Response:**

23 Yes, please refer to the response to BCUC IR 1.1.5.
24
25

26
27 5.2.1.1 If yes, please provide an overview of each program and
28 identify when FBC might expect to introduce the program(s).
29

30 **Response:**

31 Please refer to the response to BCUC IR 1.1.5.

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Fuel switching opportunities are at the exploratory stage only, and no decision to proceed has been taken. If and when a decision is made to proceed, an appropriate filing with a proposed timeline will be issued.

5.2.1.2 If no, please explain why not.

Response:

Please refer to the response to CEC 1.5.2.1.1.

5.2.1.3 If no, please explain whether or not FBC intends to develop fuel switching programs and when these would be developed.

Response:

Please refer to the response to CEC IR 1.5.2.1.2.

5.2.1.4 In what ways would an approved PBR influence FBC in their development of fuel switching programs? Please explain.

Response:

Please refer to the response to CEC IR 1.5.2.1.1. If/when a decision to proceed with fuel switching program(s) is made, an appropriate regulatory process will be proposed that will include PBR aspects, if any. Note that DSM expenditure filings are not within the PBR scope.

5.3 While fuel switching may not be DSM would such load building programs be economically advantageous or detrimental to FBC customers?

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- 1
- 2 **Response:**
- 3 Please refer to the response to CEC IR 1.5.2.1.1. If/when a fuel-switching business case is
- 4 developed the economics from both a utility and customer perspective will be determined.
- 5

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6. Reference: Exhibit B-1, Page 4

2.3 CONSISTENCY WITH LONG TERM RESOURCE PLAN

Under section 44.2 of the UCA, the Commission, in considering whether to accept an expenditure schedule by a utility, must consider that utility's most recent long-term resource plan filed under section 44.1 of the Act. The current LTRP accepted by the Commission is the 2012 LTRP submitted in June 2011.⁴ The 2015-16 DSM Plan and the proposed expenditures are consistent with the methodology used in the 2012 LTRP, and the Commission's directives⁵ regarding that plan.

The 2012 Long Term DSM Plan⁶, which was integrated into the Company's 2012 LTRP, was based on a levelized market price of \$84.94/MWh. The 2012 LTRP indicated a LRMC – for BC "clean" new resources – of \$111.96/MWh, which in turn was based on the BC Hydro 2008 call for power. In this current DSM expenditure filing, the Company uses the BC "clean" LRMC as directed by the amended DSM Regulation, i.e. \$112/MWh, until such time as an updated LRMC is determined.

A price sensitivity analysis using the range of avoided cost (\$85-\$100/MWh) indicated by the 2013 BC Hydro IRP reveals lower benefit/cost ratios, but no substantive change in program measures. Hence the number and breadth of DSM measures and programs that pass the Total Resource Cost test, is similar to that envisioned in the 2012 LTRP.

⁴ FortisBC 2012 Integrated System Plan Volume 2

⁵ BCUC Order G-110-12

⁶ FortisBC 2012 Integrated System Plan Volume 2

6.1 When would FBC expect to have an updated LRMC?

Response:

Please refer to the response to CEC IR 1.3.1.

6.2 Please confirm the CEC's understanding that the proposed DSM plan for 2015-2016 is based on information dating back to BC Hydro's 2008 call for power.

Response:

Not confirmed. The proposed 2015-16 DSM plan is based on the 2013 CPR Update, and the measures were tested by the governing TRC test using the \$112 per MWh LRMC from the 2012 Resource Plan.

Please refer to the response to BCUC IR 1.3.1 for the basis for the \$112 per MWh LRMC.

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1 The DSM Plan sensitivity to the LRMC, using the \$85-\$100 per MWh range from BC Hydro's
2 2013 IRP was also tested.

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4
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6 6.2.1 If so, please provide the details, with links to sources, of the LRMC and
7 how it was 'based on' the BC Hydro 2008 call for power.
8

9 **Response:**

10 Please refer to the response to BCUC IR 1.3.1.
11
12

13
14 6.3 Would FBC expect the LRMC to have changed significantly since its previous
15 calculations?
16

17 **Response:**

18 FBC has referenced a LRMC value (\$112 per MWh) that was used in developing the approved
19 2012-13 DSM plan. FBC is using this value because it believes it is representative of the long-
20 run marginal cost of new BC clean resources, as required by the revised DSM regulation.
21
22

23
24 6.3.1 If so, please provide FBC's expectations as to how the LRMC may
25 have changed since its earlier calculation, and why.
26

27 **Response:**

28 Please refer to the response to CEC IR 1.6.3.
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32 6.3.2 If not, please explain why not.
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1 **Response:**

2 Please refer to the response to CEC IR 1.6.3.

3

4

5

6 6.4 Please confirm that the \$112/MWh represents an expected present value related
7 to the BC Hydro 2008 Clean Power call and specify the year of the dollars
8 applicable.

9

10 **Response:**

11 Please refer to the response to BCUC IR 1.3.1.

12

13

14

15 6.5 Please confirm that BC Hydro in numerous applications quotes its 2008 clean
16 power call as \$124/MWh and escalates this number by 2% per year to the year in
17 which it is applying this as an LRMC to applicable comparative costs.

18

19 **Response:**

20 FBC does not have the time or resources to review BC Hydro's "numerous applications", so
21 cannot confirm the statement.

22 FBC can confirm that BC Hydro reports that the 2008 Clean Power Call resulted in a Weighted-
23 Average Adjusted Firm Energy Price (FEP) of \$124.3 per MWh in 2009 dollars². BC Hydro also
24 states "The weighted-average levelized and adjusted FEP of \$124.3/MWh is a reasonable proxy
25 for the costs that will be borne by BC Hydro's ratepayers for electricity being acquired pursuant
26 to the Clean Power Call."³

27 "To compute the levelized FEP, BC Hydro divided the present value (PV) of the firm energy
28 purchases for each proposal, based on the proponent's selected options (e.g., COD, contract
29 term, escalation rate), by the PV of firm energy flow to be delivered over the term of the EPA.
30 The nominal discount rate used for the PV calculation was 8 per cent, including a 2.1 per cent
31 inflation component. The levelized FEP was adjusted to account for differences in product

² "Clean Power Call Request For Proposals – Report on the RFP Process" dated August 3, 2010, Table 3.5, Page 12.

³ "Clean Power Call Request For Proposals – Report on the RFP Process" dated August 3, 2010, Page 12.

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1 attributes, and in project location relative to the Lower Mainland. Adjustments were made for
2 hourly firm energy, wind integration, Network Upgrade (NU) costs borne by BC Hydro, Cost of
3 Incremental Firm Transmission (CIFT) and energy losses".⁴

4 Since this is reported in real 2009 dollars, that price would escalate annually by the Consumer
5 Price Index.

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9 6.5.1 If not confirmed, please discuss.

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11 **Response:**

12 Please refer to the response to CEC IR 1.6.5.

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16 6.6 Please confirm that the \$85-\$100/MWh in BC Hydro's IRP referenced \$2013;
17 and if not, please provide the appropriate reference year.

18
19 **Response:**

20 Confirmed.

21
22
23
24 6.7 Please confirm that the budgets being assessed against comparative LRMCs are
25 stated in nominal dollars of the years in which the expenditures are anticipated.

26
27 **Response:**

28 Confirmed.

29

⁴ "Clean Power Call Request For Proposals – Report on the RFP Process" dated August 3, 2010, Page 8.

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1 **7. Reference: Exhibit B-1, Page 5**

17 The Amendment as it applies to DSM for low income customers includes raising the LICO (Low-
18 Income Cut-Off as provided by Statistics Canada) eligibility threshold to 130% of the nominal
19 values, the provision of a list of pre-qualified recipients of various government income and
20 housing assistance programs and increasing the Total Resource Cost (TRC) benefit calculation
21 for low income programs from 130% to 140%.

2

3 7.1 What was the previous LICO eligibility threshold?

4

5 **Response:**

6 Please refer to the table below for the current federal LICO.

LICO 2012*	Community Size (Census Metropolitan Area)			
Household Size	Rural	<30,000	30,000- 99,999	100,000- 499,999
1 person	16,279	18,520	20,240	20,366
2 persons	20,266	23,055	25,196	25,353
3 persons	24,914	28,343	30,976	31,168
4 persons	30,250	34,414	37,610	37,843
5 persons	34,308	39,031	42,656	42,920
6 persons	38,695	44,021	48,109	48,408
7 or more persons	43,080	49,010	53,562	53,894

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9

10 7.2 Please provide FBC's estimate of how many individuals will be affected by the
11 increase in the LICO threshold to 130%.

12

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1 **Response:**

2 FBC expects that its number of eligible customers will now be approximately 17 percent of its
3 residential customer base, up from the current 9.1 percent (BC Stats, 2012)⁵.

4

5

<http://www.bcstats.gov.bc.ca/StatisticsBySubject/SocialStatistics/SocioEconomicProfilesIndices/Profiles.aspx>

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1 **8. Reference: Exhibit B-1, Page 5**

22 The Low Income Program portfolio includes Energy Saving Kits (ESKs) (both mail-out and bulk
23 distribution and direct-installation), direct-installation of lighting, insulation, draft-proofing, heat
24 pump measures for First Nations and similar measures for multi-family residences, and the
25 collaborative BC Hydro and FEU Energy Conservation Assistance Program (ECAP) for
26 customer-owned single-family dwellings.

2

3 8.1 Are the First Nations heat pump measures also available to First Nations that do
4 not pass the Low Income test?

5

6 **Response:**

7 No.

8

9

10

11 8.1.1 If so, please explain why they are included in the Low Income Program
12 rather than having separate programming.

13

14 **Response:**

15 Direct, no-cost installation of energy efficient heat pump heating systems are only available for
16 qualified First Nations low-income customers. The qualifying participants were chosen through a
17 combination of an analysis of the poorest performing homes (based on energy assessments
18 performed by NRCan certified energy evaluators) and an economic means test that the First
19 Nations administered.

20 It should be noted that the BC Ministry of Energy and Mines is providing a \$225,000 grant to
21 financially support FBC with this project. This contribution allows FBC to make more, deeper
22 retrofits (i.e., heat pump heating systems) and to test the efficacy of including heating systems
23 in direct, no cost installation programs.

24

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1 **9. Reference: Exhibit B-1, Page 5**

27 FBC has escalated Low Income programs in response to the Amendment, and effectively
28 doubled the 2015 Plan budget compared to the preceding 3-year average of the Company's
29 expenditures for this market segment.

2

3 9.1 Was FBC required to escalate Low Income programs to comply with the
4 Amendment or could FBC have complied with the Amendment without doing so?

5

6 **Response:**

7 No; however FBC deemed it appropriate to escalate the Low Income programs in response to
8 the Amendment's underlying policy intent and in anticipation of greater uptake with the
9 expanded eligibility criteria.

10

11

12

13 9.1.1 If so, please explain with quantification the ways in which the escalation
14 was driven by the Amendment.

15

16 **Response:**

17 Please refer to the response to BCUC IR 1.8.3 for a breakdown of the 2015 Low Income plan
18 budget. The increased budget for ESKs was the only measure directly escalated due to the
19 Amendment:

20 \$33,000 (2013 Actual) x 17/9.1 (Amended/prior percentage of eligible customers) = \$60,000
21 (rounded)

22 The other categories were estimates based on anticipated changes in program uptake or
23 regional cost differences and were not driven by the Amendment.

24

25

26

27 9.1.2 If no, please explain why FBC escalated the Low Income programs in
28 response to the Amendment.

29

30 **Response:**

31 Please refer to the response to CEC IR 1.9.1.

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10. Reference: Exhibit B-1, Pages 5 and 6

2.4.2 Rental Accommodations

In 2013 FBC piloted a direct-install program of ESK-type measures in 1,324 suites of 40 rental multi-unit residential buildings (MURBs) in its service territory. The pilot provided a whole-building audit to identify additional measures (common area lighting, central space heating and hot water boilers) that could be undertaken by the building owners. The 2015-16 DSM Plan includes provision to continue this offer to additional MURBs in this target segment.

- 1 Commercial programs are also available to owners of rental accommodations. These include
- 2 the Commercial Lighting offers (product and/or custom), the Building Improvements Program
- 3 (New and Retrofit), WaterSavers (low-flow showerheads) and the Commercial Energy
- 4 Assessment Program. The 2015-16 DSM Plan includes more strategic market segmentation
- 5 and direct marketing efforts.

10.1 Why did FBC limit its pilot to rental buildings?

Response:

To help overcome the “split incentive” inherent in rental accommodation, FBC developed a direct installation (of household measures) program.

This program is not offered to home owners (MURB or detached) as there isn't a “split incentive” issue to address in that segment. FBC offers other DSM programs and assistance for MURB stratas and/or individual homeowners, including landlords of detached dwellings, to make energy efficiency improvements to their buildings. These include incentive programs for lighting, appliances, space and water heating and building envelope improvements, and for larger projects funding for energy evaluations.

10.2 Does FBC consider Multi-unit residential rental buildings to be the target segment or does this include non-rental buildings as well? Please explain.

Response:

Yes, MURB rental buildings are the primary target segment for the direct install program referred to in the IR. The direct install program for Rental MURBs is designed to help address the “split incentive” problem wherein landlords are reluctant to invest in measures (low flow shower heads, CFL lamps, simple draft-proofing) that reduce the tenant's utility bills and vice versa. It is part of FBC's response to the DSM regulation's adequacy requirements.

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1 Non-rental MURBs can apply for rebates and assistance through the residential HIP (Home
2 Improvement program) and/or commercial BIP (Building Improvement program) programs.

3
4
5
6 10.3 Would the benefits of the pilot likely accrue to the owners of the rental buildings,
7 which would be considered commercial customers or to the renters? Please
8 explain.
9

10 **Response:**

11 It has been widely recognized that there is a market failure when it comes to rental housing.
12 “Split incentives” mean that owners don’t make efficiency investments because it’s the renters
13 who pay the energy bills. And renters won’t make investments in property they don’t own. The
14 result is housing that wastes energy and costs more to operate than it should. This program is
15 designed to help address this issue. The desired outcome is that the renters accrue the
16 benefits, through lower utility bills by using less energy to heat their homes’ space and water
17 and to provide light. If they aren’t paying the utility bills, then in the longer-term they benefit
18 because their rents do not go up to cover increasing energy costs. The draft proofing also
19 makes their homes more comfortable and sound proof.

20 The energy evaluation also informs the building owner of the energy efficiency measures that
21 could be upgraded in common areas (parking and indoor lighting, controls, and space and water
22 heating) and what rebates are available to assist with those upgrades.

23

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1 **11. Reference: Exhibit B-1, Page 6**

11 A number of education initiatives encouraging post-secondary students to learn and apply their
12 knowledge of energy conservation through interactive competitions will be continued.

3 11.1 Please provide a list of the education initiatives available to post-secondary
4 students.

5

6 **Response:**

7 In 2012 and 2013 FBC provided funding to Selkirk and Okanagan Colleges to help develop
8 curriculum for energy efficiency construction methods and sustainable energy technologies.
9 FBC also provided funding to Selkirk College to purchase energy evaluation equipment (blower
10 door testing equipment) to assist students' learnings about evaluations.

11 FBC also provides funds for several on-going on-campus social marketing campaigns:

- 12 • UBCO: Shut the Sash (to promote the closure of laboratory fume hoods) and the Power
13 of You (energy reduction awareness and engagement program to complement the FBC
14 sponsored Building Optimization Program)
- 15 • Selkirk College: Co-op energy conservation and awareness program, administered and
16 implemented by Redbird Communications.

17

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12. Reference: Exhibit B-1, Page 9

Table 4-1: FBC DSM Expenditures & Savings – 2013 Plan/Actual and 2015 Plan

Program Area	2013				2015 Plan		
	Plan Savings MWh	Cost (\$000s)	Actual Savings MWh	Cost (\$000s)	Savings MWh	Cost (\$000s)	TRC B/C ratio
1 Programs by Sector							
2 Residential	16,946	3,944	16,122	3,168	12,100	3,160	2.0
3 Commercial	11,980	2,085	10,885	1,909	12,530	2,530	2.5
4 Industrial	2,580	364	2,520	324	1,540	200	5.7
5 Subtotal Programs	31,506	6,393	29,526	5,401	26,170	5,890	2.2
6 Supporting Initiatives		725		706		675	-
7 Planning & Evaluation		760		748		725	-
8 Total (including Portfolio spend)		7,878		6,855		7,290	2.0
9 Income Tax Impact				(1,789)		(1,823)	
10 Total deferred (net of tax)				5,066		5,468	

The current 2014 Plan is omitted from the above table since the 2015-16 DSM Plan seeks to re-establish the previously approved level of DSM expenditures from the 2012-13 DSM Plan. The 2016 Plan figures, patterned on 2015 figures shown above, are provided in the 2015-16 DSM Plan (Appendix A).

12.1 Please extend the above Table to include 2012 Plan and Actual and the 2014 Plan and Forecast.

Response:

Please refer to the tables below for the requested information.

Table 1: FBC DSM expenditures and Savings - 2012 and 2013

Program Area	2012				2013			
	Plan Savings MWh	Cost (\$000s)	Actual Savings MWh	Cost (\$000s)	Plan Savings MWh	Cost (\$000s)	Actual Savings MWh	Cost (\$000s)
1 Programs by Sector								
2 Residential	16,101	3,717	12,758	2,564	16,946	3,944	16,122	3,168
3 Commercial	13,380	2,199	17,892	3,020	11,980	2,085	10,885	1,909
4 Industrial	2,480	350	937	173	2,580	364	2,520	324
5 Subtotal Programs	31,961	6,266	31,587	5,757	31,506	6,393	29,526	5,401
6 Supporting Initiatives		725		816		725		706
7 Planning & Evaluation		740		728		760		748
8 Total (including Portfolio spend)		7,731		7,300		7,878		6,855
9 Income Tax Impact				(1,905)				(1,789)
10 Total deferred (net of tax)				5,395				5,066

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1

Table 2: FBC DSM expenditures and Savings - 2014 and 2015

Program Area	2014				2015		
	Plan		YTD		Plan		TRC
	Savings <i>MWh</i>	Cost (\$000s)	Savings <i>MWh</i>	Cost (\$000s)	Savings <i>MWh</i>	Cost (\$000s)	
1 Programs by Sector							
2 Residential	5,800	1,037	5,822	1,301	12,100	3,160	2.0
3 Commercial	6,200	1,134	3,130	447	12,530	2,530	2.5
4 Industrial	800	148	305	71	1,540	200	5.7
5 Subtotal Programs	12,800	2,319	9,257	1,819	26,170	5,890	2.2
6 Supporting Initiatives		492		318		675	-
7 Planning & Evaluation		190		25		725	-
8 Total (including Portfolio spend)		3,001		2,162		7,290	2.0
9 Income Tax Impact				(564)		(1,823)	
10 Total deferred (net of tax)				1,598		5,468	

2

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10 **Response:**

11 Please note that in 2013 FBC underspent its DSM plan by approximately \$0.7 million and not
12 \$2.0 million as stated in the query above (please also refer to the Table below – Item C).

13 The benefit that FBC shareholders earned as a result has been negligible - estimated at \$0.02
14 million (please also refer to the Table below – Item M).

15 A high level calculation has been provided below:

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Shareholder Impact of DSM Capital Difference between Approved & Actual in Year 2013

		(\$millions)	
Planned Pre Tax DSM Expenditure	A_1	7.88	Refer: 2012-13 RRA Evidentiary Update Filing, Exhibit B-12, Tab-7, Page-14, Lines 2 to 3
Tax Component	A_2	(1.97)	
Planned Post Tax DSM Expenditure	$A = A_1 + A_2$	5.91	
Actual Pre Tax DSM Expenditure	B_1	7.02	Refer: 2013 Annual Report Fortis BC Inc. Page 8, Line 2
Tax Component	B_2	(1.81)	
Actual Post Tax DSM Expenditure	$B = B_1 + B_2$	5.21	
Difference between Plan & Actual	$C = A - B$	0.70	
Mid Year Effect to Rate Base	$D = C \times 50\%$	0.35	

Debt Component Savings

Approved Debt Component	E	60%	Refer: 2013 Annual Report Fortis BC Inc. Pages 21 & 23
Effective Short Term Debt Rate	F	2%	
Actual Tax Rate	G	25.75%	

Debt Component Savings $H = DEF(1-G)$ **0.003**

Equity Component Savings

Approved Equity Component	J	40%
Approved Return on Equity	K	9.15%

Equity Component Savings $L = DJK$ **0.013**

Net savings by Shareholders $M = H + L$ **0.02**

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12.2.1 Please provide a discussion as to how the \$2 million in underspending was accounted for.

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1 **Response:**

2 The nominal underspend was \$0.9 million (\$7.878 million - \$6.855 million) and not \$2 million as
3 stated in the question. The net (rate-base) underspend of \$0.7 million (please also refer to the
4 response to CEC IR 1.12.2) will be accounted for through rate base adjustments in future
5 revenue requirements applications.

6
7

8

9 12.3 What protocols are in place to ensure that FortisBC spends all the planned
10 spending?

11

12 **Response:**

13 FBC prudently manages its DSM portfolio and has on average expended 100 percent of plan
14 costs over the past ten years (2004-2013), whilst achieving an average of 115 percent of plan
15 savings. Given a timely decision – well in advance of the test year – FBC intends to ramp up its
16 programs to meet the savings target within the proposed budget. Protocols include monthly
17 internal management reports to ensure Year To Date (YTD) savings and expenditures are on
18 track. Where YTD results are below plan, the program design is reviewed and/or additional
19 marketing efforts are undertaken to escalate participation.

20
21

22

23 12.4 Please confirm that the shareholder would not benefit from underspending of the
24 DSM budget either under PBR or Cost of Service.

25

26 **Response:**

27 As indicated in the response to CEC IR 1.12.2, the return that the FBC shareholder earns as a
28 result of DSM underspending is generally negligible under the cost of service scenario.

29 Under PBR, through the Earning Sharing Mechanism (ESM), earnings over / under the
30 approved ROE limit will be shared between the customers and the shareholders, thus further
31 reducing impacts of DSM budgetary variance, if any, as stated above.

32

33

34

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1 12.4.1 If not confirmed, please provide the circumstances under which the
2 shareholder would benefit from an underspending of the DSM planned
3 spending.
4

5 **Response:**

6 Please refer to the response to CEC IR 1.12.4.
7
8

9
10 12.5 Why did FortisBC underspend the Residential DSM program plan by
11 approximately 20%?
12

13 **Response:**

14 Please refer to the response to BCOAPO IR 1.4.1.
15
16

17
18 12.6 Why did FortisBC underspend the Commercial DSM program by approximately
19 9%?
20

21 **Response:**

22 Please refer to the response to BCOAPO IR 1.4.1.
23
24

25
26 12.7 Why does FortisBC propose to reduce its planned spending by nearly 20% (from
27 \$3,944 thousand in the 2013 plan to \$ 3,160,000 in the 2015 plan) in the
28 residential sector?
29

30 **Response:**

31 The incentive portion of the 2013 plan was pro-rated downward to reflect the lower savings
32 target, and the administration portion of the 2013 plan was reduced by \$0.1 million to reflect
33 process improvements resulting in the 2015 plan cost.

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1 Note that the proposed 2015 residential sector expenditure closely matches the 2013 Actual
2 expenditure of \$3,168,000.

3
4
5
6 12.8 Please confirm that a lower TRC is indicative of the benefits approaching the cost
7 of the measure, and that including all measures that provide for TRC of one or
8 more may be considered cost effective.

9
10 **Response:**

11 Confirmed. To be clear, a Benefit/Cost ratio of unity (1.0) represents the benefits equaling the
12 incremental costs for an efficient measure as opposed to the baseline measure. It should be
13 noted that a measure with a B/C ratio less than unity may be considered if it is a measure
14 required for adequacy as defined by the DSM Regulation, and/or is assessed on a portfolio-level
15 basis.

16
17
18
19 12.8.1 If not confirmed, please explain why not.

20
21 **Response:**

22 Please refer to the response to CEC IR 1.12.8.

23
24
25
26 12.9 Please confirm that the TRC of 2.5 and 5.7 for Commercial and Industrial
27 respectively could cost-effectively include several more measures to bring the
28 TRC down to 2.0 or lower.

29
30 **Response:**

31 Confirmed. However, the proposed Commercial/Industrial programs include all of the identified
32 DSM measures found to be economic in the 2013 CPR Update. Additional cost-effective
33 measures may, or may not, be found in the BC wide dual-fuel 2015 CPR which may be pursued
34 in subsequent DSM Plan expenditure requests. Thus, it would not be prudent to add additional
35 expenditures at this time.

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12.10 Please provide the TRC for each segment for each year including 2012 and 2014 Plan and Actuals.

Response:

Sector	Total Resource Cost Benefit/Cost Ratios						
	Plan 2012	Actual 2012	Plan 2013	Actual 2013	Plan 2014	Plan 2015	Plan 2016
<i>Residential</i>	1.6	1.5	1.6	1.6	1.3	2.0	2.0
<i>Commercial</i>	1.7	2.0	1.7	1.8	1.7	2.5	2.5
<i>Industrial</i>	3.9	1.9	3.9	1.0	2.8	3.4	3.5
TOTAL	1.5	1.6	1.5	1.6	1.4	2.0	2.0

12.11 The 2013 Actual expenditures were approximately 84% of the 2013 plan. Please explain why FBC did not make all the proposed expenditures as planned in 2013 for each of the residential, commercial and industrial segments.

Response:

Please refer to the responses to CEC IRs 1.12.5 and 1.12.6 which refer to FBC's response to BCOAPO IR 1.4.1 for information regarding underspending in the residential and commercial sectors.

In 2013, FBC underspent the Industrial DSM program plan because of a lack of new participants in the Energy Management Information System (EMIS) software program.

12.12 FBC proposes to increase its commercial spending by 21% on DSM relative to the 2013 Plan and by 32% relative to the 2013 Actual but does not propose to increase Residential spending. Please explain why not.

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1 **Response:**

2 Please refer to the responses to BCUC IRs 1.7.1 and 1.7.2 for an explanation on how the DSM
3 Plan savings and budget are built, and why the 2015 Plan expenditure is less than 2013 Plan.
4 Although the 2013 Actual savings and/or expenditures are used as reference points, they do not
5 drive the 2015 Plan.

6
7

8

9 12.13 FBC proposes to reduce Industrial spending from the 2013 Actual. Please
10 explain why.

11

12 **Response:**

13 The 2015 DSM Plan expenditure of \$0.2 million is commensurate with the 2013 Actual
14 expenditure, when adjusted for the 2015 savings target.

15
16

17

18 12.14 Would FBC agree that having a TRC that was equal for all segments would be
19 indicative of equality in the DSM programming between segments?

20

21 **Response:**

22 No, because the same TRC is indicative of equality in economic potential only. DSM program
23 equality includes broader equity issues such as reasonable opportunities (measures and
24 programs that address key end-uses in each sector or customer segment), and similar
25 Participant Cost Test (PCT) ratios that reflect the payback enjoyed by participants in the various
26 segments and sectors.

27
28

29

30 12.14.1 If not, please explain why not.

31

32 **Response:**

33 Please refer to the response to CEC IR 1.12.14.

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1 **13. Reference: Exhibit B-1, Page 9**

Table 4-1: FBC DSM Expenditures & Savings – 2013 Plan/Actual and 2015 Plan

Program Area	2013				2015 Plan		
	Plan		Actual				TRC
	Savings MWh	Cost (\$000s)	Savings MWh	Cost (\$000s)	Savings MWh	Cost (\$000s)	
1 Programs by Sector							
2 Residential	16,946	3,944	16,122	3,168	12,100	3,160	2.0
3 Commercial	11,980	2,085	10,885	1,909	12,530	2,530	2.5
4 Industrial	2,580	364	2,520	324	1,540	200	5.7
5 Subtotal Programs	31,506	6,393	29,526	5,401	26,170	5,890	2.2
6 Supporting Initiatives		725		706		675	-
7 Planning & Evaluation		760		748		725	-
8 Total (including Portfolio spend)		7,878		6,855		7,290	2.0
9 Income Tax Impact				(1,789)		(1,823)	
10 Total deferred (net of tax)				5,066		5,468	

The energy savings target has dropped in the residential sector due to provincial and/or federal Energy Efficiency (EE) regulations phasing out incandescent light bulbs, mandating "Energy Star" performance levels for major household appliances and electronics and raising the prescriptive requirements for new home construction. The Industrial sector energy savings achieved in 2013 included an extraordinary project, and the 2015-16 savings targets are a forecast figure based on a 20-year ramp rate.

13.1 Please describe the extraordinary project included in the Industrial sector.

Response:

The extraordinary project in the industrial sector in 2013 was the partial modernization of a dimensional lumber saw mill in the Southern Interior. This project was the replacement of the sawmill line itself, and portions of the compressed air system. The planer mill and kilns are under consideration for future upgrades. The overall efficiency of the mill, in kWh per thousand board-feet, was improved by 27 percent.

13.1.1 Please explain why the project is not included in the 2015 plan.

Response:

That specific project was completed in 2013. Another mill is considering a similar scope of project, but is at the engineering scope stage, and no decision to proceed has been made, thus it has not been included in the 2015 plan.

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1 Other saw mills in the Southern Interior have begun step-by-step upgrades versus larger
2 modernization projects. FBC continues to work with these customers as they upgrade their
3 mills, and that incremental DSM work is factored into the 2015-2016 DSM Plan.

4
5
6
7 13.1.2 Would it be possible to redo, in another circumstance or venue, such a
8 project? Please explain why or why not.
9

10 **Response:**

11 Yes. Please refer to the response to CEC IR 1.13.1.1.
12

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1 **14. Reference: Exhibit B-1, Page 10**

Table 4-2: Programs Classified as Previously Approved

Program Area	DSM Plan 2015-16 Programs	Approved in 2012 - 2013
Residential	Home Improvement (Building Envelope) Program	Yes
	Heat Pump Program	Yes
	Heat Pump Water Heater Program	Yes
	Water Savers (Low-Flow Fixtures)	Yes
	ENERGY STAR® Residential Lighting	Yes
	New Home Program	Yes
	Rental Accommodation Programs	New
Commercial	Commercial Lighting Program	Yes
	Building & Process Improvement Program	Yes
	Product Rebate Program	Yes
	Custom Business Efficiency Program	Yes
	Commercial Energy Assessment Program	Yes
Industrial	Industrial Efficiency Program	Yes
Low Income	Energy Savings Kit	Yes
	Energy Conservation Assistance Program	Yes
	Direct Install Lighting	Yes
Conservation Education & Outreach	Public Awareness Program	Yes
	School Education Program	Yes
	Trades Training	Yes

2

3 14.1 Please provide a list of any discontinued programs with the TRC and RIM of
4 each program.

5

6 **Response:**

7 FBC has not discontinued any of the previously approved programs in the 2015-2016 Plan.

8

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1 **15. Reference: Exhibit B-1, Page 12**

20 As stated in the previous section, the 2015-15 DSM Plan uses the LRMC of \$112 per MWh from
 21 the 2012 LTRP to determine the avoided energy cost benefits of DSM program measures. The
 22 Company also adds a Deferred Capital Expenditure (DCE) value of \$35.60 per kW per year to
 23 represent the incremental capacity savings of deferred infrastructure. The estimated
 24 Benefit/Cost ratios, using those avoided costs, are shown at the sector/component and portfolio
 25 levels in Table 4-1 above.

26 Sensitivities using the more recent BC Hydro range of \$85-\$100 per MWh from its 2013 IRP
 27 were also conducted. The following summary table compares the B/C ratios at the three
 28 different LRMC points.

2

3 15.1 Please confirm that the LRMC of \$112 per MWh does not include the cost of
 4 capacity.

5

6 **Response:**

7 Please refer to the response to CEC IR 1.3.2.

8

9

10

11 15.2 Please provide the average LRMC including the average cost of capacity for new
 12 supply.

13

14 **Response:**

15 Please refer to the response to CEC IR 1.3.2.

16

17

18

19 15.3 Please provide the BC Hydro range of including the cost of capacity.

20

21 **Response:**

22 Please refer to the response to BCUC IR 1.3.4.2(ii). With the \$13 per MWh equivalent adder,
 23 the BC Hydro range becomes \$98-\$113 per MWh.

24

25

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15.4 Please confirm that BC Hydro uses \$55/Kw-year as its cost of capacity.

Response:

Confirmed. According to BC Hydro's November 14, 2013 IRP:

"The LRMC for capacity resources when needed to augment the acquisition of energy and capacity resources is based upon Revelstoke Unit 6, which is lower cost than SCGTs. Revelstoke Unit 6 is being advanced as a contingency resource for its earliest in-service date; however, it is not expected to be needed in the BRP until F2031 . The Unit Capacity Cost (UCC) for Revelstoke Unit 6 is between \$50/kW-year and \$55/kW-year

The LRMC outlook is as follows:

- Energy: \$85 to \$100 per MWh F2017 thru end of the planning 3 horizon (i.e., F2033)*
- Capacity: \$50 to \$55 per kW-year F2017 thru F2032.⁶*

15.5 Please explain why FBC has less expensive capacity than BC Hydro.

Response:

Please refer to the response to BCUC IR 1.3.4.1.

⁶ BC Hydro November 2014 Integrated Resource Plan, Page 9-53 to 9-54

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1 **16. Reference: Exhibit B-1, Page 10 and Page 13**

4.3 DSM GUIDING PRINCIPLES

The 2012 long term DSM Plan was created using the following guiding principles:

1. The DSM Plan will be customer-focused by offering a range of measure choices within programs that address the key end-uses of the principal customer rate classes;
2. The DSM Plan will be cost-effective by including only those measures, with the exception of prescribed measures, which have a TRC Benefit Cost ratio greater than unity on a portfolio basis;
3. The DSM Plan will be inclusive of best practices in terms of program design, implementation, marketing, outreach, monitoring and evaluation; and
4. The DSM Plan will be compliant with the applicable sections of the UCA and CEA, and with the DSM Regulation.

FBC continues to be guided by these principles in designing and carrying out the 2015-16 DSM Plan.

- 3 Only one measure, ductless heat pumps, falls below unity, with a B/C ratio of 0.9, when an
- 4 LRMC of \$85 is used. If that LRMC level was selected, the Company would propose to include
- 5 the measure on a portfolio basis, since ductless heat pumps are an energy-efficient solution to
- 6 the 23 percent of FBC customers that use electric baseboard heating.

4 16.1 Please describe any prescribed measures which may have a TRC Benefit of less
5 than 1 that FBC will be including.

7 **Response:**

8 FBC has not included any measures that have a TRC benefit/cost ratio of less than 1 in the
9 2015-2016 DSM Plan.

13 16.1.1 What are the costs and savings for each measure that have a TRC of
14 less than 1?

16 **Response:**

17 Please refer to the response to CEC IR 1.16.1.

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1 **17. Reference: Exhibit B-1, Page 13**

3 Only one measure, ductless heat pumps, falls below unity, with a B/C ratio of 0.9, when an
4 LRMC of \$85 is used. If that LRMC level was selected, the Company would propose to include
5 the measure on a portfolio basis, since ductless heat pumps are an energy-efficient solution to
6 the 23 percent of FBC customers that use electric baseboard heating.

2

3 17.1 Is the ductless heat pump measure applicable to both commercial and residential
4 customers or to residential only? Please explain.

5

6 **Response:**

7 Ductless heat pump heating systems are used effectively in light commercial applications as
8 well as residential applications. FBC provides prescribed rebates for the technology in the
9 residential HIP program and in the commercial BIP programs.

10

11

12

13 17.2 Please confirm whether the 23% of FBC customers using electric baseboard
14 heating includes commercial as well as residential heating.

15

16 **Response:**

17 23 percent of FBC residential customers (including single family dwellings, townhomes, and
18 apartments) use electric baseboard heat, not including commercial customers.

19

20

21

22 17.2.1 Please provide the proportion of residential and commercial customers
23 using electric baseboard heating, if both.

24

25 **Response:**

26 23 percent of FBC residential customers (including single family dwellings, townhomes, and
27 apartments) use electric baseboard heat. FBC's 2009 commercial end-use survey indicates that
28 14 percent of commercial customers use some form of electric resistance heat (that includes
29 electric baseboards) as their main heating system.

30

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1 **18. Reference: Exhibit B-1, Page 13**

2 ***5.1.4.1 Inclusion of Non-Energy Benefits (NEBs)***

Section 4(1.1)(c) of the DSM Regulation requires the Commission to allow the inclusion of NEBs, the amount of which may be determined either by the Commission based on evidence from the utility or by using a deemed 15 percent adder to the benefits side of the mTRC calculation. FBC uses the 15 percent NEB adder in its mTRC calculations for the 2015-16 DSM Plan. However, as stated, no measures require an NEB boost to pass the TRC cost test with a LRMC of \$112 per MWh.

2

3 18.1 Does the TRC depicted in Table 4-1 include the NEB 15% adder?

4

5 **Response:**

6 No, the TRC depicted in Table 4-1 does not include the NEB 15 percent adder.

7

8

9

10 18.1.1 If so, is the TRC more accurately described as the mTRC in this table?

11

12 **Response:**

13 No, this table does not represent the mTRC as none of the programs in the 2015-2016 DSM
14 Plan require the mTRC calculation to pass the cost effectiveness test.

15

16

17

18 18.1.1.1 If not, please explain why not.

19

20 **Response:**

21 No measures require an NEB adder to pass the TRC cost test with an LRMC of \$112 per MWh.
22 Thus, the cost effectiveness of each program is only evaluated using the TRC test, which does
23 not include the 15 percent NEB adder.

24

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1 **19. Reference: Exhibit B-1, Appendix A, Page A3**

16 With its temperate winters and hot summers, the FBC service area is an ideal climate for
 17 energy efficient heat pumps. Further, recent Residential End Use Survey (REUS) data
 18 shows that 38 percent of FBC customers have electric heat, indicating a large potential
 19 market for the program. The program will continue with incentives for owners to upgrade
 20 electric heating systems to air source heat pumps, either central (forced-air) or ductless (for
 21 customers with electric baseboard heating). A modified geoechange (ground-source heat
 22 pump) offer will be designed to minimize the free-ridership of past programs.

2

3 19.1 Please provide details of the modified geoechange offer.

4

5 **Response:**

6 FBC is presently investigating several program design offers that promote the technology while
 7 minimizing the “free ridership” rate. One such option is to include the technology as part of the
 8 performance-based New Home program, which is being designed in collaboration with the FEU
 9 and BC Hydro for an April 2015 launch. Another option is to incorporate the offer into an
 10 installation loan program similar to that which Manitoba Hydro is offering to single-family home
 11 customers and First Nations communities.

12

13

14

15 19.2 Please explain how the modified geoechange program is designed to minimize
 16 free ridership.

17

18 **Response:**

19 To limit free ridership but still support the high efficiency geoechange technology, FBC is
 20 planning to provide support for geoechange within two programs.

21 1. New Home Program: The new New Home program is being redesigned in collaboration
 22 with BC Hydro and FEU to provide performance-based rebates. To be eligible for the
 23 program all elements of the home must be evaluated: air tightness, insulation levels,
 24 lighting, etc. A customer will not be eligible for a rebate for simply installing a
 25 geoechange system. They must also ensure the home is constructed with efficiency in
 26 mind.

27 2. Geoechange Loan programs: Based on FBC’s success with its heat pump loan
 28 program and other utilities’ experience with geoechange loans, FBC will offer loans for
 29 the installation of geoechange heating systems. Program evaluation and other utility-

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1 conducted research shows there is a minimum amount of free-ridership with loan
2 programs.

3
4
5
6 19.3 Would the geo-exchange program be suitable for commercial customers?
7 Please explain why or why not.
8

9 **Response:**

10 FBC's commercial Custom BIP programs provide rebates for commercial geosystem systems
11 if they meet other program criteria, such as a non-natural gas fired back-up heating system. In
12 the latter cases the incentives available to commercial customers are limited to the improved air
13 conditioning specifications.

14
15
16
17 19.4 Please cite examples in the BC Hydro (BCH) jurisdiction where commercial
18 customers are being provided geosystem and comment on by whom.
19

20 **Response:**

21 Other than those projects (Brentwood College and Seymour Capilano Filtration Plant) listed on
22 the GeoExchange BC website, FBC is not familiar with the BC Hydro commercial customers
23 that are being provided with geosystem, or by whom.
24

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1 **20. Reference: Exhibit B-1, Appendix A, Page A5**

23 **A1.9 RESIDENTIAL BEHAVIOURAL PROGRAM**

24 PowerSense messaging to encourage customers to adopt energy-efficient behaviours (for
25 example, the use of clotheslines) will continue using a variety of communication channels,
26 including the distribution of product samples at community events.

27 An in-home display (IHD) product incentive will enable participants to view real-time energy
28 usage of their residential and small commercial (single phase) AML meters. Additional
29 analytical and bin data, including RCR tiers, will enable customers to better understand and
30 thereby manage their energy usage.

2

3 20.1 Please provide further details as to the IHD product incentive available to
4 residential and commercial customers.

5

6 **Response:**

7 The details of IHD program offer have not been designed yet. FBC expects to finalize the offer
8 once the AML system operation is stabilized in early 2016. FBC also intends to coordinate the
9 program with BC Hydro to ensure device compatibility wherever possible.

10

11

12

13 20.2 Why does FBC not report the commercial and residential aspects of this program
14 separately?

15

16 **Response:**

17 The text was meant to be illustrative, i.e. a single phase meter is common to both residential
18 and small commercial customers.

19 FBC has made no provision for a commercial IHD offer, as it has no DSM measure data for
20 commercial applications. The BC wide 2015 CPR may well provide such data, in which case
21 such a commercial IHD measure may be available in the future.

22

23

24

25 20.3 Please comment on the applicability of IHD or 'in-business display' (IBD) for the
26 commercial sector.

27



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- 1 **Response:**
- 2 Please refer to the response to CEC IR 1.20.3.
- 3

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21. **Reference: Exhibit B-1, Appendix A, Page A6**

Table A2-1: Commercial Program Expenditures & Savings

		2015 Plan			2016 Plan	
		Savings <i>MWh</i>	Cost (\$000s)	TRC <i>B/C ratio</i>	Savings <i>MWh</i>	Cost (\$000s)
1	Lighting	7,445	1,485	2.6	7,616	1,519
2	Building Improvement	3,454	842	2.1	3,452	842
3	Computers	378	55	6.4	378	55
4	Municipal	759	79	3.2	759	79
5	Irrigation	490	69	3.8	490	69
6	Total	12,526	2,530	2.5	12,695	2,564

21.1 Does FBC propose to add any new programs to those from 2013?

Response:

FBC has not proposed any new programs beyond those offered in 2013 for the commercial sector. Several program elements will be enhanced, i.e., the prescribed rebate program will be updated with new product offers and the municipal LED street lighting incentive will be reinstated but there will be no new programs offered.

21.1.1 If not, please explain why not.

Response:

With the recent and planned commercial program improvements (please refer to the response to CEC IR 1.21.1), FBC believes its program offers will motivate its commercial customers to make energy efficiency improvements and for FBC to meet its energy savings goals.

21.2 Please provide further details of the 'computers' program.

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1 **Response:**

2 The commercial Computers program is designed to encourage FBC customers to employ the
3 most efficient technology when building new, or expanding their existing, data server “farms”.
4 The custom Computer program will be delivered with the assistance of professional data server
5 consultants.

6
7

8

9 21.3 Please confirm that the Partners in Efficiency is the municipal program identified
10 above.

11

12 **Response:**

13 The Municipal program shown is for infrastructure projects occurring in the local government
14 segment.

15 Partners in Efficiency (PiE) is a “key account” initiative to partner FBC with its largest
16 Institutional, Commercial and Industrial (ICI) customers, including municipalities, to improve
17 energy efficiency and maximize long-term savings. Through PiE, customers agree to review
18 their capital expenditure plan with FBC on an annual basis to identify key projects that have an
19 impact on energy use, to determine the economics of investing in more efficient technologies
20 and for FBC to make recommendations on possible assistance and/or value of rebates it could
21 provide if the identified efficiency upgrades are made.

22 ICI customers may also access point-of-purchase rebates through FBC’s Lighting (Product
23 Rebate) program at participating wholesalers.

24
25

26

27 21.3.1 If not confirmed, please provide further details of the ‘municipal’
28 program.

29

30 **Response:**

31 Consultation with municipalities revealed that, although local governments appreciate the
32 rebates they receive for investing in energy efficiency measures and processes for their large
33 infrastructure projects, more support in the planning process of their projects would be effective.
34 The Municipal program is designed to help meet that need by providing greater funding for

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1 upfront energy modelling studies and/or expert consultants' assistance to uncover energy
2 efficiency and conservation opportunities and determine the economics of such projects.

3
4
5
6 21.4 Please provide the 2016 TRCs for Table A2-1.

7
8 **Response:**

9 The 2016 Benefit/Cost ratios are the same as for 2015, since the plan savings and costs are
10 similar.

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1 **22. Reference: Exhibit B-1, Appendix A, Page A6**

15 For specialty lighting, and larger, more complex, new construction or retrofits, customers will
16 be encouraged to pursue the Commercial Business Efficient program (CBEP) for a custom
17 option rebate.

2

3 22.1 Please provide further details of the Commercial Business Efficient program.

4

5 **Response:**

6 The Commercial Business Efficiency program (CBEP) is the marketing name for the Computer,
7 BIP (New and Retro-fit) and Industrial Efficiency programs and as stated it is intended for larger,
8 more complex projects. The nominal incentive is ten cents per annual kWh saved, subject to
9 Measurement & Verification (M&V) protocols, and Schedule 90 limits (50 percent of project
10 costs or amount sufficient for two-year payback).

11 A CBEP participant is guided through a multi-step process, beginning with a consulting study
12 subsidy (if required), through project pre-approval, to completion (first half of incentive), through
13 M&V rigour to confirm the energy savings, to the customer's final incentive payment.

14

15

16

17 22.1.1 Please explain where the CBEP program is accounted for in the above
18 table.

19

20 **Response:**

21 As the response to CEC IR 1.22.1 indicates, the CBEP program spans a number of programs
22 and measures including lighting, building and process improvements (new and retrofit),
23 computers, municipal, and irrigation. The program costs are part of the appropriate program
24 measure budgets, depending on the measures undertaken.

25

Supporting Initiatives are funded at the portfolio level, and FBC does not break them down by customer class. Expenditures for each customer class vary from year-to-year as different opportunities present themselves. However, FBC endeavors to undertake energy efficiency supporting initiatives in each customer class.

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1 **24. Reference: Exhibit B-1, Appendix A, Page A12**

Table A5-2: Monitoring & Evaluation Expenditures

Sector	2015		2016	
	Study Type	Budget	Study Type	Budget
Program Name(s)				
Residential		(\$000s)		(\$000s)
Home Improvement Program (Retrofit)	Process and Impact (second half in 2015)	\$ 32		
New Home Program - EnerGuide 80/85	Process and Impact	\$ 70		
ENERGY STAR air-source heat pump, ENERGY STAR split ductless air-source heat pump and Geo-exchange heating system			Process and Impact	\$ 70
Low Income Direct Installation Lighting Program	Process and Impact (combined with Custom Commercial Lighting)	\$ 36		
Commercial/Industrial				
Building Improvement Program – BOP			Impact - Case Studies	\$ 20
Building Improvement Program – New and Retrofit			Combined custom evaluation (process and case study)	\$ 80
Industrial Efficiency Program				
Industrial - EMS (Energy Management Information Systems)				
Municipal Program				
Commercial Lighting Program (Custom)	Process and Impact (combined with Low Income Direct Install)	\$ 36		
Allowance for unplanned EM&V activities		\$ 26		\$ 30
Total		\$ 200		\$ 200

2

3 24.1 What are EM & V activities?

4

5 **Response:**

6 Evaluation, Measurement and Verification (EM&V) is an encompassing term that is used to
7 describe measurement and verification as well as monitoring and evaluation activities.

8 The last line of Table A5-2, is meant to indicate any unplanned monitoring and evaluation
9 activities, and it would more accurately be stated as “Allowance for unplanned Monitoring &
10 Evaluation activities”.

11

12

13

14

15

24.2 Why does FortisBC require a greater than 10% allowance for unplanned EM & V activities in 2015, and why does it increase to 15% in 2016?

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1
2 **Response:**
3 FBC is requesting the additional funds to allow for M&E activities for initiatives which are not
4 part of the formal M&E Plan. For instance a participant survey was undertaken of Energy Diet
5 participants to ascertain what percentage of them proceeded to install measures. Such surveys
6 help to inform the results of the Energy Diet and how the campaign might be improved upon in
7 future campaigns. The small increase in 2016 resulted from keeping the budgets total the same
8 in both years.
9

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1 **25. Reference: Exhibit B-1, Appendix A, Page A14**

Table A6-1: Summary Table of 2015-16 DSM Plan

Program Area		Plan Savings		Plan Cost		Benefit Cost Ratios				
		2015 MWh	2016 MWh	2015 (\$000s)	2016 (\$000s)	TRC	UCT	PCT	RIM	Levelise d Cost \$/MWh
1	<i>Programs by Sector</i>									
2	Residential	12,100	12,910	3,160	3,350	2.0	4.1	4.0	0.8	30.7
3	General Service	12,530	12,690	2,530	2,560	2.5	4.7	4.7	1.0	25.7
4	Industrial	1,540	1,590	200	210	5.7	5.7	6.0	1.2	19.7
5	Program Subtotal:	26,170	27,190	5,890	6,120	2.2	4.4	4.3	0.9	27.8
6	Supporting Initiatives			675	675					
7	Planning & Evaluation			725	735					
8	Total (incl. Portfolio spend):			7,290	7,530	2.0	3.5		0.9	34.4
11	<i>Residential Programs</i>									
12	Building Envelope	3,106	3,106	884	884	2.0	4.4	3.8	0.9	27.2
13	Heat Pumps	1,618	1,618	302	302	1.4	6.3	1.9	0.9	18.9
14	New Home	1,179	1,179	390	390	1.7	4.1	3.4	0.9	29.4
15	Lighting	1,569	1,547	193	189	2.8	6.7	5.3	0.9	17.2
16	Appliances	288	288	96	96	1.4	2.9	3.1	0.8	40.4
17	Electronics	-	-	-	-	-	-	-	-	-
18	Water Heating	850	948	387	430	1.7	2.0	13.2	0.7	59.2
19	Low Income & Rentals	2,598	3,174	824	952	2.5	3.3	8.6	0.7	48.0
20	Behavioural	888	1,048	85	106	5.3	5.3	-	0.9	21.3
21	Residential Subtotal:	12,096	12,908	3,160	3,348	2.0	4.1	4.0	0.8	30.7
22	<i>Commercial Programs</i>									
23	Lighting	7,445	7,616	1,485	1,519	6.4	3.1	-	-	37.2
24	Building Improvement	3,454	3,452	842	842	3.2	8.4	4.3	1.1	13.7
25	Computers	378	378	55	55	3.8	5.3	11.7	1.0	21.0
26	Municipal	759	759	79	79	5.7	5.7	6.0	1.2	19.7
27	Irrigation	490	490	69	69	2.2	4.4	4.3	0.9	27.8
28	Commercial Subtotal	12,526	12,695	2,530	2,564	2.5	4.7	4.7	1.0	25.7
29	<i>Industrial Programs</i>									
30	Industrial	1,537	1,585	202	209	5.7	5.7	6.0	1.2	19.7
31	Industrial Subtotal	1,537	1,585	202	209	5.7	5.7	6.0	1.2	19.7

2

3 25.1 Please provide a brief discussion of the Utility Cost Test, Participant Cost Test
4 and Rate Impact Measure and how they may be interpreted.

5

6 **Response:**

7 The UCT is the utility-centric version of the benefit cost analysis, presenting the B/C ratio from
8 the utility perspective by omitting the Customer Portion of Cost (CPC). The UCT B/C ratio is
9 decreased, all else equal, by increasing the utility's measure incentive. The UCT levelized cost
10 (\$/kWh) can be used to rank the relative attractiveness of measures, and can be used to
11 compare the DSM plan sector/portfolio costs to supply-side alternatives.

12 The PCT is the customer-centric version of the benefit cost analysis, indicating the value of the
13 participant's bill savings divided by the CPC, i.e. measure cost less utility incentive. It presents

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the measure economics from the customer's perspective and helps balance equity since the increase/decrease of measure incentive can shift the PCT ratio.

The RIM test shows the relative impact of various measures and programs on the utility's ratepayers. It incorporates the utility's lost revenue stream (aka participant bill savings) in the denominator. A positive figure (>1.0) means the avoided cost benefits exceed the measure's total costs and vice versa.

25.2 Please confirm or otherwise explain that a score of lower than 1 in the RIM test is indicative that the utility is saving less than the cost of the program, and as such is also indicative of subsidization from other ratepayer groups of participants by non-participants.

Response:

Confirmed.

25.3 Please confirm or otherwise explain that a score of 1.0 is indicative of no subsidization from other ratepayer groups of participants by non-participants.

Response:

Confirmed, assuming this IR is also in regards to the RIM test.

25.4 Please confirm or otherwise explain that where the Participant Cost test is above 1 and the RIM is below 1 that the Participant will be better off in the short, medium and long term.

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1 **Response:**

2 Confirmed. In a situation where the participant cost test is above unity and the ratepayer impact
3 measure is below unity the impacts would be:

4 • In the short term, the program participant would benefit from the investment in energy
5 efficiency and the non-participating ratepayers would be unaffected;

6 • In the medium term, the program participant would continue to benefit but after the rates
7 are adjusted non-participating ratepayers would see an increase in utility rates. FBC's
8 decoupling mechanism means that this increase would be realized relatively quickly; and

9 • In the long term, the program participant would continue to benefit and the impact on
10 nonparticipating ratepayers will depend on the avoided cost of energy and system
11 capacity.

12

13

14

15 25.5 Please confirm or otherwise explain that where the Participant Cost test is above
16 1 and the RIM is below 1 that rates for non-participants may be higher in the
17 medium term, but that this may be moderated in the long run.

18

19 **Response:**

20 Confirmed, in theory. However rates for non-participants may not moderate in the long run if the
21 actual avoided costs experienced by the utility are less than the prescribed LRMC.

22

FortisBC Inc. (FBC or the Company) Application for Approval of Demand Side Management (DSM) Expenditures for 2015 and 2016 (the Application)	Submission Date: September 24, 2014
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1 **26. Reference: Exhibit B-1, Appendix B, Pages 8 and 9**

Table 3 - Energy Savings by Sector

SECTOR	Plan	Actual	% of Plan
	GWh		Achieved
Residential	16.9	16.1	95%
Commercial	12.0	10.9	91%
Industrial	2.6	2.5	98%
Total Savings (GWh)	31.5	29.5	94%

Note: Differences due to rounding

Table 5 - Commercial Energy Savings

COMMERCIAL	Plan	Actual	% of Plan
	GWh		Achieved
Lighting	7.4	7.6	103%
Building and Process Improvement	3.5	2.6	74%
Water Handling and Infrastructure	1.1	0.7	63%
Total Savings (GWh)	12.0	10.9	91%

26.1 Does FBC propose to make any changes to its Building and Process improvement ensure that the Commercial sector achieves 100% of its planned savings?

Response:

FBC recently added a number of new prescriptive measures for commercial kitchens and refrigeration equipment to its product option offerings that will increase program savings. It has also made process improvements to both program paths (prescriptive and custom option) to make it easier for customers to access rebates. FBC will also be increasing the level of financial support for energy modelling studies to potentially capture more energy savings in new and retro-fit projects. Finally the Company plans to re-launch the FLIP Direct Install (Lighting) program for small to medium size businesses and thus increasing savings in the commercial sector as a whole.

FBC and the FEU are currently undertaking a joint Commercial End-Use study (CEUS) and thereafter both will partner with BC Hydro to undertake the BC wide, dual fuel 2015 CPR. FBC feels it is prudent to have the results from these two important "opportunity" studies before making greater changes to its commercial sector programs.

FortisBC Inc. (FBC or the Company) Application for Approval of Demand Side Management (DSM) Expenditures for 2015 and 2016 (the Application)	Submission Date: September 24, 2014
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1

2

3

4 26.1.1 If not, why not?

5

6 **Response:**

7 Please refer to the response to CEC IR 1.26.1.

8

9

10

11 26.1.2 If so, what changes does FBC contemplate?

12

13 **Response:**

14 Please refer to the response to CEC IR 1.26.1.

15

16

17

18 26.2 How much of the underperformance in each category in Table 5 is attributable to
19 underspending the plan?

20

21 **Response:**

22 Both the GWh and spending performance can be linked to DSM program uptake, which is
23 influenced by market effects and the inherently voluntary nature of customer participation.
24 Market effects (for example, the withdrawal of LiveSmart BC incentives in spring of 2013) also
25 lead to lower than planned customer participation, which in turn results in not meeting the
26 savings target and underspending the plan.

Attachment 1.1

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.

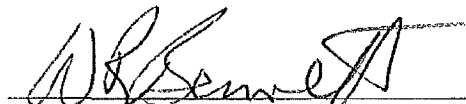
DEPOSITED

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%”.