



Diane Roy
Vice President, Regulatory Affairs

Gas Regulatory Affairs Correspondence
Email: gas.regulatory.affairs@fortisbc.com

Electric Regulatory Affairs Correspondence
Email: electricity.regulatory.affairs@fortisbc.com

FortisBC
16705 Fraser Highway
Surrey, B.C. V4N 0E8
Tel: (604) 576-7349
Cell: (604) 908-2790
Fax: (604) 576-7074
Email: diane.roy@fortisbc.com
www.fortisbc.com

April 6, 2017

Mr. Norman Gabana
3850 Dogwood Drive
Trail, BC V1R 2V5

Attention: Mr. Norman Gabana

Dear Mr. Gabana:

**Re: FortisBC Inc. (FBC)
Project No. 3698896
2016 Long Term Electric Resource Plan (LTERP) and Long Term Demand Side
Management Plan (LT DSM Plan)
Response to Norman Gabana (Gabana) Information Request (IR) No. 1**

On November 30, 2016, FBC filed the Application referenced above. In accordance with the British Columbia Utilities Commission Order G-197-16 setting out the Regulatory Timetable for the review of the Application, FBC respectfully submits the attached response to Gabana IR No. 1.

If further information is required, please contact Joyce Martin at 250-368-0319.

Sincerely,

FORTISBC INC.

Original signed:

Diane Roy

Attachments

cc (email only): Commission Secretary
Registered Parties

FortisBC Inc. (FBC or the Company) 2016 Long Term Electric Resource Plan (LTERP) and Long Term Demand Side Management Plan (LT DSM Plan) (the Application)	Submission Date: April 6, 2017
Response to Norm Gabana (Gabana) Information Request (IR) No. 1	Page 1

- 1 1. ES page 1. Page 1 line 30.
2 Provide planning graphs from year 2007, and 2015 for anticipated electrical
3 consumption, and actual consumption.
4

5 **Response:**

6 Please refer to the below table where the “Approved” column represents the anticipated sales
7 volume.

8 **Table 1: Historical Electricity Sales Volume**

(GWh)	Approved	Actual
2007	3,077	3,090
2015	3,224	3,116

9
10

- 11
12 2. List what will require Fortis to request more funds from its customers In the first
13 five years of this plan.
14

15 **Response:**

16 As discussed in Section 1.1 of the Executive Summary of the LTERP, based on the reference
17 case load forecast, existing resources and contracts in place and the proposed level of DSM,
18 FBC does not require any new supply-side resources for the next ten years. Optimization of
19 market purchases and the PPA will provide FBC with enough energy and capacity until 2025 to
20 meet customers’ requirements. As discussed in Section 6.3 of the LTERP, FBC anticipates two
21 system reinforcement projects within the next five years. Therefore, FBC will require funding
22 over the next five years related to the following LTERP and LT DSM Plan items:

- 23 • Implementation of programs and incentives in accordance with the LT DSM Plan;
24 • Power purchase expense increases, if any, due to any increases in the cost of market
25 purchases and in accordance with the contractual terms of power supply contracts; and
26 • The Grand Forks Terminal Transformer Addition and the Kelowna Bulk Transformer
27 Capacity Addition for capacity and reliability purposes.

28
29
30



FortisBC Inc. (FBC or the Company) 2016 Long Term Electric Resource Plan (LTERP) and Long Term Demand Side Management Plan (LT DSM Plan) (the Application)	Submission Date: April 6, 2017
Response to Norm Gabana (Gabana) Information Request (IR) No. 1	Page 2

1 3. ES, page 3 line 10.
2 Why should Fortis customers expend capital to subsidize the operations of
3 vehicles that a large percentage of customers will not ever be able to afford?
4

5 **Response:**

6 Although the initial cost of an EV is often more expensive than a gasoline powered equivalent,
7 the costs to operate EVs on a per-kilometer basis are generally far less. Moreover, the costs of
8 lithium-ion EV batteries have fallen from approximately \$750 per kWh (USD) in 2010 to \$145
9 per kWh (USD) in 2016, or a decrease of over 80 percent. On this basis, FBC does not believe
10 the characterization of EVs as unaffordable is accurate.

11 As noted in Appendix H of the LTERP, EVs and their associated load requirements could pose
12 the greatest risk of disruption for FBC over the term of the LTERP. FBC believes the moderate
13 investment it has made in EV charging stations is warranted given the additional insight
14 provided for both the infrastructure requirements for supporting public EV charging stations, as
15 well as for understanding customer uptake of public charging resources. On this basis, FBC
16 does not believe it appropriate to characterize these investments as a subsidy towards the
17 operations of electric vehicles, particularly since EVs are predominantly charged at customers'
18 homes and not at community charging resources.

19
20

21
22 4. Page 25 line 32.
23 Provide capital cost of the three charging stations mention and year of
24 construction, and revenue derived from each of the stations.
25

26 **Response:**

27 FBC has spent approximately \$15 thousand on the three Level 3 DC fast-charging stations
28 discussed in Section 2.3.2 of the LTERP. The Keremeos and Penticton DC fast-charging
29 stations were completed in 2015, with the Princeton station completed in 2016. FBC has
30 collected revenue of approximately \$3.5 thousand from the Keremeos and Princeton charging
31 stations to date. FBC does not collect revenue from the Penticton charging station because
32 service is provided by the municipal electric utility.

33
34
35



FortisBC Inc. (FBC or the Company) 2016 Long Term Electric Resource Plan (LTERP) and Long Term Demand Side Management Plan (LT DSM Plan) (the Application)	Submission Date: April 6, 2017
Response to Norm Gabana (Gabana) Information Request (IR) No. 1	Page 3

1 5. Provide annual operating cost and level of insurance if required.

2

3 **Response:**

4 FBC has not incurred any direct costs related to the operation of the stations as they are
5 operated by municipal entities.

6

7

8

9 6. ES, page 6, line 20.

10 Provide construction cost of each of the subs mention in proposed construction
11 year along with benefits and potential cost savings as a result of the construction.

12

13 **Response:**

14 Final scoping and Class 3 estimating have not yet been completed for these two
15 projects. Potential cost savings resulting from construction have not yet been identified. The
16 Grand Forks Terminal Transformer Addition project will be required in order to maintain an
17 acceptable standard of reliability. The Kelowna Bulk Transformer Addition Project will be
18 required in order to provide necessary capacity and maintain an acceptable standard of
19 reliability.

20

21

22

23 7. Describe the role of the resort planning advisory group mentioned in the
24 document.

25

26 **Response:**

27 As discussed in Section 10.1 of the LTERP, the role of the RPAG is to provide insight and
28 feedback for the development of the LTERP.

29

30

31

32 a. Please provide agenda of the above group for the last two
33 meetings.

34

FortisBC Inc. (FBC or the Company) 2016 Long Term Electric Resource Plan (LTERP) and Long Term Demand Side Management Plan (LT DSM Plan) (the Application)	Submission Date: April 6, 2017
Response to Norm Gabana (Gabana) Information Request (IR) No. 1	Page 4

1 **Response:**

2 The agenda for the second last RPAG meeting on April 27, 2016 included the following:

- 3
- 4 • Introductions and Overview
 - 5 • Supply-Side Resource Options
 - 6 • Market Price Forecasts and Rate Scenarios
 - 7 • Long Run Marginal Cost
 - 8 • CPR and DSM Plan Update
 - 9 • Load Scenarios
 - 10 • Electric Vehicles in B.C.
 - 10 • Wrap-up and Next Steps

11

12 The agenda for the last RPAG meeting on October 27, 2016 included the following:

- 13
- 14 • Introductions
 - 15 • Load Forecast and Monte Carlo range
 - 16 • Load-Resource Balance Before DSM
 - 17 • DSM
 - 18 • Load-Resource Balance After DSM
 - 19 • Portfolio Analysis and Objectives
 - 20 • Planning Environment
 - 21 • LTERP Outline
 - 21 • Wrap-Up and Next Steps

22
23

24

25 b. Does the above group receive stipends for its involvement. If so

26 please state amounts and conditioner?

27

28 **Response:**

29 FBC paid a per diem amount of \$850 per full-day meeting to a member of the RPAG who

30 represented a not-for-profit organization that is not a government organization and does not

31 have commercial/business membership supporting its activities.

32
33



FortisBC Inc. (FBC or the Company) 2016 Long Term Electric Resource Plan (LTERP) and Long Term Demand Side Management Plan (LT DSM Plan) (the Application)	Submission Date: April 6, 2017
Response to Norm Gabana (Gabana) Information Request (IR) No. 1	Page 5

1
2 c. Please provide number of Fortis and none Fortis employees
3 involved.
4

5 **Response:**

6 As listed in Table 10-1 in Section 10.1 of the LTERP, the non-FBC members of the RPAG
7 included 13 people. The FBC members totaled 8 people.

8
9
10
11 8. Page 26 line 27.
12 Provide some material to substantiate the statement and if possible economy
13 numbers.
14

15 **Response:**

16 Please refer to the response to Shadrack IR 1.2.

17
18
19
20 9. Page. 28 line 27.
21 The Opinion of the farseers that there is a potential problem on the horizon, what
22 actions would Fortis recommend to forewarn governments that the possibility
23 exists.
24

25 **Response:**

26 For reference, the text that is the subject of this question is:

27 Second, the growth in interest and participation in small scale customer-owned
28 generation, such as the installations that qualify for the Company's Net Metering
29 Program, may begin to pose rate stability challenges for all customers.

30 For an explanation of this passage, please refer to the response to BCUC IR 1.11.4.

31 The Company has raised the issue as part of its 2016 Net Metering Update Application and, in
32 that application, sought changes to the Net Metering Program intended to mitigate the potential
33 impact that an increased participation rate could impose on other customers.

FortisBC Inc. (FBC or the Company) 2016 Long Term Electric Resource Plan (LTERP) and Long Term Demand Side Management Plan (LT DSM Plan) (the Application)	Submission Date: April 6, 2017
Response to Norm Gabana (Gabana) Information Request (IR) No. 1	Page 6

1 Chief among these was the introduction of a kWh Bank which, while providing the maximum
2 benefit to most program participants, would ensure that the Customer Charge (reflective of a
3 portion of the Company's fixed cost of service) would be collected from each customer every
4 billing period.

5 The Commission denied this portion of the 2016 Net Metering Update Application, and the
6 Company has filed for a reconsideration of this and other portions of the Decision.

7
8

9

10 10. Page 5 line 9.

11 Provide number of megawatts Fortis sold to its residential customers, the amount
12 of revenue derived in each of the last five years.

13

14 **Response:**

15 Please refer to the following table.

	Energy Sales (GWh)	Sales Revenue (\$000s)
2016	1,260	167,967
2015	1,252	163,258
2014	1,309	161,453
2013*	1,453	158,895
2012	1,220	134,421

16

17 **The increase in 2013 energy sales is due to FBC's purchase of the utility assets of the City of Kelowna*
18 *(CoK). CoK is no longer a Wholesale customer of FBC and the formerly indirect customers of CoK are*
19 *now direct customers of FBC.*

20

21

22

23 11. Provide number of megawatts sold to each of FortisBC whole sale customers
24 and amount of revenue derived in each of the last five years.

25

26 **Response:**

27 Please refer to the following table.

FortisBC Inc. (FBC or the Company) 2016 Long Term Electric Resource Plan (LTERP) and Long Term Demand Side Management Plan (LT DSM Plan) (the Application)	Submission Date: April 6, 2017
Response to Norm Gabana (Gabana) Information Request (IR) No. 1	Page 7

	Energy Sales (GWh)	Revenue (\$000s)
2016	551	44,541
2015	581	43,959
2014	574	43,375
2013*	695	49,211
2012	901	61,990

1

2 **The decrease in the Wholesale customer class is due to FBC's purchase of the utility assets of the City*
 3 *of Kelowna (CoK). CoK is no longer a Wholesale customer of FBC and the formerly indirect customers of*
 4 *CoK are now direct customers of FBC.*

5

6

7

8 12. What percent of Fortis's in house generation met the annual power demand in
 9 each of the last five years, and anticipated percentage in year five and year ten
 10 of this purposed plan?

11

12 **Response:**

13 The following table shows the percentage of FBC's annual energy and peak demand
 14 requirements that were met with FBC-owned generation (Corra Linn, South Slocan, Upper
 15 Bonnington, Lower Bonnington) over the past 5 years, as well as the forecast percentage in
 16 2020 (year 5 of the LTERP) and 2025 (year 10 of the LTERP).

17

Year	% of Annual Energy	% of Peak Demand
2012	45%	28%
2013	45%	27%
2014	45%	30%
2015	48%	34%
2016	48%	29%
2020	44%	28%
2025	44%	27%

18

19

20

FortisBC Inc. (FBC or the Company) 2016 Long Term Electric Resource Plan (LTERP) and Long Term Demand Side Management Plan (LT DSM Plan) (the Application)	Submission Date: April 6, 2017
Response to Norm Gabana (Gabana) Information Request (IR) No. 1	Page 8

1 13. Show gains the company derive from the implementation from the AMI program.

2

3 **Response:**

4 The AMI impact on load, which affects the LTERP, is explained in the response to BCUC IR
5 1.15.1. Information regarding AMI-related cost savings is beyond the scope of information
6 required to review the LTERP, but is addressed in FBC's Annual Reviews for setting rates. The
7 Company expects to file its Annual Review for 2018 Rates in August, 2017.

8

9

10

11 14. Provide number of hourly pay employees in each of the last five years.

12

13 **Response:**

14 The following table provides the number of hourly paid FBC employees as of December 31 for
15 each of the last five years.

Year	Hourly Employees
2016	205
2015	231
2014	229
2013	204
2012	260

16

17

18

19

20 15. Provide a number of staff employees in each of the last five years.

21

22 **Response:**

23 The following table provides the number of salary paid FBC staff employees for each of the last
24 five years.

Year	Salary Employees
2016	283
2015	280

FortisBC Inc. (FBC or the Company) 2016 Long Term Electric Resource Plan (LTERP) and Long Term Demand Side Management Plan (LT DSM Plan) (the Application)	Submission Date: April 6, 2017
Response to Norm Gabana (Gabana) Information Request (IR) No. 1	Page 9

Year	Salary Employees
2014	282
2013	278
2012	282

1

2

3

4 16. Is the company planning to implement any efficiencies to operations during the
5 time frame of this per posed plan?

6

7 **Response:**

8 FBC is not planning any operations efficiencies associated with the LTERP during the time
9 frame posed.

10

11

12

13 17. Are there any plans to improve the efficiency of electrical distribution during the
14 lifetime of this plan?

15

16 **Response:**

17 Yes, FBC continually evaluates improvements to the efficiency of electrical distribution. When
18 prudent, improvements (e.g. distribution line reconductoring or phase rebalancing) will continue
19 to be carried out.

20

21

22

23 18. Are there any small efficiencys in generation in any of the existing plants?

24

25 **Response:**

26 Increasing the efficiency or capacity (energy output) can be achieved only through
27 refurbishment and upgrade of the generating units. FBC plans to refurbish the Upper
28 Bonnington Old Units (Units 1 to 4) during 2017-2021 in order to address safety, reliability, and
29 environmental risks. The planned unit refurbishments may result in minor efficiency gains that
30 have not yet been determined.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27

19. What amount of capital money is Fortis planning to request in each of the first five years of this proposed plan?

Response:

Please refer to the responses to BCUC IRs 1.21.1 and 1.21.1.1.

20. Show capital fleet value and number of licenses vehicles in year 2014, 2015 and 2016.

Response:

The following table shows the number of FBC licensed vehicles in 2014, 2015 and 2016.

Year	2014	2015	2016
# of licensed vehicles	257	252	233

The following table shows the Capital Fleet Spend in 2014, 2015 and 2016.

Year (\$ thousands)	2014	2015	2016
Capital Fleet Spend	\$996	\$1,560	\$1,860

21. Show capital for proposed fleet upgrading in each of the next five years.

Response:

The following table shows the anticipated Capital Fleet Spend for the next five years.

Year (\$ thousands)	2017	2018	2019	2020	2021
Capital Fleet Spend	\$1,907	\$1,945	\$1,950	\$2,023	\$2,064

1 22. Are there any opportunities for pump storage in any of Fortis's operations? Is it
 2 possible to show magnitude and capital costly each?
 3

4 **Response:**

5 FBC considered two pumped storage hydro projects in its portfolio modelling. Both were
 6 located in BC Hydro's service territory.

Name	Location	Nameplate Capacity (MW)	UCC (\$/kW-year) ¹	Earliest Availability
PS1	BC Hydro	500	\$222	2024
PS2	BC Hydro	500	\$217	2024

7
8

9
 10 23. Is it possible to produce a number that represents the total amount line lost
 11 electricity and from any other cause, and turn put a dollar to the number if it was
 12 saleable at present rates?
 13

14 **Response:**

15 FBC's estimated system losses are provided as part of the Annual Review process, with actuals
 16 provided for prior years. In FBC's Annual Review for 2017 Rates, actual 2015 losses were
 17 noted at 272.4 GWh. Assuming an average retail rate of \$0.1038 per kWh (based on 2015
 18 approved sales volume and revenue), system losses of 272.4 GWh represent approximately
 19 \$28.3 million in revenue.

20 System losses are comprised of two components: technical losses that result predominantly
 21 from the natural resistance of electrical conductors, and non-technical losses that are typically
 22 the result of electricity theft. Generally speaking, technical losses are largely unavoidable as
 23 they are inherent to the operation of electric networks. Please also refer to the response
 24 provided to BCUC IR 1.15.3 for further discussion of FBC's ability to reduce system losses over
 25 the term of the LTERP.

26
27
28

¹ Assumes a 6 percent discount rate.



FortisBC Inc. (FBC or the Company) 2016 Long Term Electric Resource Plan (LTERP) and Long Term Demand Side Management Plan (LT DSM Plan) (the Application)	Submission Date: April 6, 2017
Response to Norm Gabana (Gabana) Information Request (IR) No. 1	Page 12

1 24. Show amounts of money spent on the DMS program in each of the last three
2 years, the amount budgeted in each of the years, also the number of megawatts
3 considered to have been saved.
4

5 **Response:**

6 Please refer to the response to BCUC IR 1.38.2.1, which provides the requested DSM program
7 metrics for the last ten years.

8