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October 18, 2013

Via Email
Original via Mail

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

Attention: Ms. Erica M. Hamilton, Commission Secretary

Dear Ms. Hamilton:

Re: FortisBC Inc. (FBC)
FBC Radio-Off AMI Meter Option Application
Response to the British Columbia Utilities Commission (BCUC or the Commission) Information Request (IR) No. 1

On August 30, 2013, FBC filed the Application as referenced above. In accordance with Commission Order G-160-13 setting out the Amended Regulatory Timetable for the review of the Application, FBC respectfully submits the attached response to BCUC IR No. 1.

If further information is required, please contact the undersigned.

Sincerely,

FORTISBC INC.

Original signed:

Dennis Swanson

Attachments

cc (email only): Registered Parties



FortisBC Inc. (FortisBC, FBC or the Company) Application for Advanced Metering Infrastructure (AMI) Radio-Off Meter Option (the Application)	Submission Date: October 18, 2013
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1 **1.0 Reference: Radio-off Option Participation Rate**
2 **Exhibit B-1, p. 6; Exhibit B-2, Power Grid International (November**
3 **2012 issue)**

4 “FortisBC bases the per-read fee on a Radio-off Option participation rate of 0.5%, based
5 on the experience of similar programs in the U.S. (there are very few similar programs in
6 Canada, and those that exist are nascent).” [Exhibit B-1, p. 6]

7 “Customers in Maine, the state with the highest level of press coverage regarding the
8 issue, are most active, with some 1.4 percent of customers’ opting out (about 8,000
9 customers of the 600,000 total).” [Exhibit B-2, Power Grid International (November 2012
10 issue)]

11 1.1 Has FortisBC conducted any surveys or other activities in order to estimate the
12 potential Radio-off Option participation rate in the FortisBC service area? If yes,
13 please discuss the nature of the actions undertaken and provide the results.
14

15 **Response:**

16 FortisBC maintains a database of all customer contacts (phone, mail, email) pertaining to AMI.
17 The purpose of the database is to enable the company to contact all noted customers prior to
18 deployment of AMI meters at their premise in order to work through concerns and present
19 alternatives available to customers, including the Radio-off option.

20 Since the BCUC approval of the Company’s AMI project, there have been 103 such contacts
21 (up to October 10, 2013).

22
23

24
25 1.2 Does FortisBC have any indication of the potential Radio-off participation rate in
26 the FortisBC service area? Please discuss.
27

28 **Response:**

29 Radio-off participation rates from other North American utilities were presented in Exhibit B-1,
30 section 1.6, page 6. The data indicates a participation spread between 0% and 1.4% with the
31 average being 0.4% - about 1 in 250 customers.

32 BCHydro has also presented evidence on this topic in Section 3.3 and Table 3.2 of its Meter
33 Choice Program. That evidence indicates a participation spread between 0% and 1.3%,
34 including Hydro Quebec’s 0.2% participation rate.



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1 FortisBC has relied primarily on the information provided from Power Grid International, which is
2 consistent with the BC Hydro estimate range. This information results in an estimate of 695
3 customers participating in the radio-off program.

4
5

6

7 1.3 Please list the other jurisdictions in Canada that offer opt-out options for
8 programs similar to FortisBC's AMI project.

9

10 **Response:**

11 FortisBC is aware of only one other jurisdiction in Canada that offers an opt-out option. Hydro
12 Quebec also offers a fee-based advanced metering opt-out option.

13

14

15

16 1.3.1 For the jurisdictions identified in the preceding IR, please provide any
17 available information on the actual or forecast opt-out participation rate.

18

19 **Response:**

20 As of June 30, 2012, Hydro Quebec reports that 402 non-communicating next generation
21 meters have been installed, which is an approximate opt-out rate of 0.2 percent of total installed
22 next generation meters to date.

23

24

25

26 1.4 In FortisBC's opinion, what is the likelihood that the Radio-off Option participation
27 rate could be closer to the rate experienced in Maine of 1.4 percent? Please
28 discuss.

29

30 **Response:**

31 FortisBC does not believe such a percentage is likely, given that Maine is the only jurisdiction in
32 the study with that percentage.



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1 Two factors likely contribute to the unusually high rate: 1) the relatively low one-time opt-out fee
2 of \$40 (or \$20 for a radio-off meter) and 2) the fact that a bill to eliminate opt-out fees has been
3 introduced in Maine.

4
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6
7 1.4.1 Please provide a revised Per-premise Setup Fee and Per-read Fee,
8 including supporting calculations, assuming a Radio-off participation
9 rate of 1 percent.

10

11 **Response:**

12 The per-premise setup fee would remain the same, at \$110.00.

13 The per-read fee would be reduced to \$17 per read.

14 Please refer to Attachment 4.1 for the spreadsheet with calculations supporting these figures.

15



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2.1.1.1 Is the hourly rate and the benefit loading factor used in the labour cost per hour of \$57.14 consistent with the approved labour costs in the most recent FortisBC revenue requirements? If not, please detail how these costs were derived.

Response:

The hourly rate of \$57.14 is the estimated rate in 2016. The estimated rate (including the benefit loading factor) was derived in a manner that is consistent with the estimated rates included in the FortisBC 2012 -2013 Revenue Requirements Application.

2.1.2 If the labour cost per hour of \$57.14 is for contract labour time, please discuss how the cost per hour is derived and if it is based on prices included within the Itron contract.

Response:

Please refer to the response to BCUC IR 1.2.1.

2.2 Please provide the actual 2012 average hourly rate for a metering analyst, broken out between base salary/wages and benefit loading.

Response:

Effective February 1, 2012 the hourly wage rate for a Metering Analyst) was \$31.25 Fringe benefit loading was applied at 78 percent to that wage.

Hourly Wage February 1, 2012	\$31.25 per hour
Fringe Benefit Load	<u>\$24.38</u> per hour
Estimated Hourly Rate	<u>\$55.63</u> per hour



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1 **3.0 Reference: Per-premise Setup Fee**
2 **Exhibit B-1, p. 5; Exhibit B-2, Radio-off Fee Derivation;**
3 **2012 FortisBC AMI CPCN Application proceeding, Exhibit B-1, pp.**
4 **55-56**
5 **Metering Analyst**

6 The Metering Analyst component of the Per-premise Setup Fee is derived as follows:

<u>Meter Analyst calculation</u>			
Time required to configure meter			1 hour
Hourly Rate		\$57.14	per hour
Meter Analyst costs		\$57.14	

7
8 (Exhibit B-2, Radio-off Fee Derivation)

9 “Itron is responsible for infrastructure deployment, and will competitively tender the
10 deployment sub-contract for the meters, according to the requirements specified by
11 FortisBC, following receipt of a Commission decision on the Project. **Itron will manage**
12 **all logistics associated with the infrastructure deployment** while FortisBC will
13 maintain overall project management of the end-to-end solution including deployment. A
14 single control source accountable for product design, build, delivery and installation
15 reduces logistical complexity, minimizes risk for the Company, and will bring FortisBC’s
16 AMI solution to production more quickly by avoiding potentially time consuming and
17 costly interfaces between multiple vendors.” [2012 FortisBC AMI CPCN Application
18 proceeding, Exhibit B-1, pp. 55-56]

19 3.1 For the Per-premise Setup Fee planned by FortisBC, please provide a detailed
20 description of the processes and actions undertaken by the meter analyst in
21 order to configure the radio-off meter within the AMI system and provide a
22 breakdown of the estimated amount of time for each action, per customer.
23

24 **Response:**

25 The detailed process (and resulting timings) required for this function are to be developed
26 during the Define/Design stage of the project. At that time, more precise definitions and work
27 breakdowns (between Meter Analyst and Contact Centre work) will be known and assigned.

28 The hour of meter analyst time is a conservative estimate of the time required for:

- 29 • Processing the radio-off application form and preparing to install the meter:



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- 1 ○ Searching the metering database to determine whether an AMI meter is required
- 2 at the premises
- 3 ○ Obtaining an appropriate AMI meter, if required, from inventory
- 4 ○ Downloading the appropriate security keys for the meter into the laptop

5
6 In the response to BCUC IR 2.5.6 in the AMI CPCN regulatory process the Company indicated
7 that the LAN radio could be disabled remotely. FortisBC now understands that the LAN radio
8 can only be disabled via a manual process but that the reconfiguration of the meter and related
9 software systems will take less time, resulting in no change to the estimated hour required. The
10 process involves the following steps:

- 11 • Driving to the premises, and, if an AMI meter had not already been installed, exchanging
12 the meter;
- 13 • At the meter, plugging in a handheld tool connected to a laptop, proceeding through a
14 series of steps to disable the LAN radio, downloading meter information, including the
15 initial state of the metrology registers;
- 16 • Driving back to the office; and
- 17 • Proceeding through a number of steps necessary to change or redefine the customer
18 meter configuration within the CIS system.

19
20 The steps above are expected to take at least one hour. The travel time to attend the customer
21 premises is expected to be a significant portion of the hour.

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25 3.1.1 Please discuss how FortisBC has determined the estimated amount of
26 time that will be spent by the meter analyst in order to configure the
27 radio-off meter within the AMI system.

28
29 **Response:**

30 Please refer to the response to BCUC IR 1.3.1.

31
32
33 3.1.2 Under the pre-AMI system, please provide the following information
34 related to the set-up of one new customer:



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- 1 • Processes and actions (if any) undertaken by a meter analyst;
- 2 • The amount of time (if any) spent by the meter analyst; and
- 3 • The costs incurred (if any) related to meter analyst labour.

4
5 **Response:**

6 Under the pre-AMI system, there is no equivalent to a radio-off option. The current (non-AMI)
7 process for setting up one new customer generally follows two scenarios, only one of which
8 involves a Customer Service Person (CSP). A CSP is the closest equivalent to the future meter
9 analyst role - CSP's install and remove meters.

10 Scenario one consists of a new customer connecting to an existing meter. In this case there are
11 no actions performed by the CSP resulting in no time spent or costs incurred by a CSP.

12 Scenario two consists of a new customer connecting to a new meter. In this case, the CSP
13 must:

- 14 • Retrieve order request;
- 15 • Confirm meter type required;
- 16 • Retrieve meter from warehouse;
- 17 • Install meter at premises;
- 18 • Seal meter; and
- 19 • Update order request with details of installation.

20
21 The time to complete these activities varies depending on the location of the premises, but
22 averages roughly 45 minutes at a cost of \$44.67 (including benefits loading and inflated to
23 \$2016 in order to compare to the post-AMI rate).

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27 3.2 Does the Per-premise Setup Fee assume that the configuration of the radio-off
28 meter within the AMI system will take place at the same time as the initial
29 installation of the AMI meter at the customer's property? Please discuss why or
30 why not.

31
32 **Response:**

33 Please refer to the response to BCUC IR 1.3.1.

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1 The per-premise setup fee does not assume that the configuration will occur at the same time
2 as the initial installation of the meter. The configuration is a manual process that will be
3 completed either prior to installation or at the customer premise as applicable dependent upon
4 receipt of a completed and signed Radio-off AMI Meter Customer Application Form.

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8 3.3 Does the Per-premise Setup Fee assume that the configuration of the radio-off
9 meter within the AMI system will be performed by a FortisBC employee or under
10 the Itron deployment sub-contract? Please explain the choice of either FortisBC
11 employee or Itron sub-contract.

12

13 **Response:**

14 The configuration of the radio-off meter within the AMI system will be performed by a FortisBC
15 employee, and that fact is taken into account in the Per-premise Setup Fee. As is noted in the
16 response to BCUC IR 1.3.5, the choice to proceed with a FortisBC employee includes
17 consideration of the fact that FortisBC employees will already be dealing with a number of more
18 complex installations and customer concerns. This approach has several advantages:

- 19 • FortisBC employees are better equipped to discuss customer concerns;
- 20 • The process will be separate from a costing perspective and easier to track; and
- 21 • The contract with the deployment vendor is simplified.

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25 3.4 Is it possible under the existing Itron contract for the configuration of radio-off
26 meters within the AMI system to be completed under Itron's deployment sub-
27 contract at the time of installation? Please discuss why or why not.

28

29 **Response:**

30 Please refer to the response for BCUC IR 1.3.3.

31 The existing Itron contract only contemplates meter deployment, and not meter configurations
32 by the deployment subcontractor. Given the complexities involved in meter configuration, the
33 Company is not considering contracting this work out.



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3.4.1 Please describe the processes and actions that would be undertaken in order to configure the radio-off meter within the AMI system at the time of installation and provide the estimated amount of time that these processes and actions would take.

Response:

Please refer to the response to BCUC IR 1.3.1.

3.4.2 Please provide a revised Per-premise Setup Fee, including the detailed calculations for each fee component, assuming that the sub-contractors under the Itron contract configure the radio-off meters within the AMI system at the time of installation.

Response:

Please refer to the responses to BCUC IRs 1.3.4 and 1.3.5.

3.5 Is it possible for the manufacturer to configure a specific number of radio-off meters within the AMI system ahead of deployment (i.e. in the warehouse)? Please discuss why or why not.

Response:

It is technically possible for the manufacturer to pre-configure a specific number of radio-off meter ahead of deployment. However, FortisBC does not intend to cause this to be done since there is minimal efficiency for FortisBC in doing so, and only increased cost for the manufacturer. The majority of the effort in configuring a radio-off meter is not “turning it off”, but is in associating the meter with the correct premises and customer in the FortisBC billing system and physically attending the property to install a new meter or reconfigure an existing meter. These activities cannot take place at the manufacturing facility without several weeks of lead time, needlessly delaying installation.



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1 It is worth noting that radio-off AMI meters will not be deployed as part of the Itron contract, and
2 will be deployed by FortisBC staff. FortisBC employees will already be dealing with a number of
3 more complex installations and customer concerns. This approach provides several
4 advantages:

- 5 • FortisBC employees are better equipped to discuss customer concerns;
- 6 • The process will be separate from a costing perspective and easier to track; and
- 7 • The contract with the deployment vendor is simplified.

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11 3.5.1 Please describe the processes and actions that would be undertaken in
12 order to configure a specific number of radio-off meters with the AMI
13 system ahead of deployment (i.e. in the warehouse) and provide the
14 estimated amount of time that these processes and actions would take.

15

16 **Response:**

17 Whether the meter is configured in the warehouse or in the field will have no material impact on
18 the total time required to install a new radio-off meter. Please also refer to the response to
19 BCUC IR 1.3.5.

20

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23 3.5.2 Please provide a revised Per-premise Setup Fee, including the detailed
24 calculations for each fee component, assuming that a specific number
25 of radio-off meters are configured with the AMI system ahead of
26 deployment (i.e. in the warehouse).

27

28 **Response:**

29 Whether a radio-off meter is configured in the warehouse or in the field will have no material
30 impact on the total time required to install a new radio-off meter and therefore would not have a
31 material impact on the fee. Please also refer to the response to BCUC IR 1.3.5.

32

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1 **4.0 Reference: Per-premise Setup Fee**

2 **Exhibit B-1, p. 8**

3 **Process to Enable the AMI Meter Radio**

4 With respect to Radio-off Option customers that choose a standard, radio-on meter,
5 FortisBC submits that:

6 “Once the Company receives notice of the customer’s decision to stop participating in
7 the Company’s Radio-Off Option, FortisBC will dispatch a meter technician to complete
8 a final manual meter read, and to enable the AMI meter’s radio. The customer will incur
9 one final per-read fee.” [Exhibit B-1, p. 8]

10 4.1 Please discuss the technical differences between enabling the AMI meter’s radio
11 (i.e. for Radio-off Option customers that choose a standard, radio-on meter) and
12 disabling the AMI meter’s radio (i.e. for those customers that elect the Radio-off
13 Option during the installation phase).

14
15 **Response:**

16 There are no technical differences between the operations at the meter. Either case requires a
17 laptop with appropriate configuration software to be linked to the meter using a handheld tool.

18 There are back office technical differences. Standard radio-on AMI meters are designed to be
19 “zero-touch” and will automatically join the AMI network, register with the HES and MDMS
20 software and begin transmitting meter readings once they are activated. However, radio-off
21 meters require individual and manual configuration as described in the response for BCUC IR
22 1.3.1.

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26 4.1.1 Please provide a cost comparison of enabling the AMI meter’s radio (i.e.
27 for Radio-off Option customers that choose a standard, radio-on meter)
28 and disabling the AMI meter’s radio (i.e. for those customers that elect
29 the Radio-off Option during the installation phase).

30
31

31 **Response:**

32 As described in the response for BCUC IR 1.4.1, standard AMI (radio-on) meters are mass
33 configured to automatically join the AMI network and connect to the back-end systems.
34 Therefore it is expected that, outside of the “at the meter” cost associated with turning the AMI
35 meter’s radio on, there are no material costs associated with radio enablement.



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- 1 The “at the meter” costs are captured at the time of the final manual meter read for a Radio-off
- 2 meter that is being enabled.
- 3 The costs associated with disabling the AMI meter’s radio are provided in Exhibit B-1 (the
- 4 Application) Section 1.6.
- 5



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1 Estimated Hourly Rate in \$2016 \$28.88 per hour
2 Estimated Fringe Benefit Load \$22.53 per hour
3 Estimated Hourly Rate \$51.41 per hour
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7 5.1.1.1 Is the hourly rate and the benefit loading factor used in the
8 labour cost per hour of \$51.41 consistent with the approved
9 labour costs in the most recent FortisBC revenue
10 requirements? If not, please detail how these costs were
11 derived.
12

13 **Response:**

14 The hourly rate of \$51.41 is the estimated rate in 2016. The estimated rate (including the benefit
15 loading factor) was derived in a manner that is consistent with the estimated rates included in
16 the FortisBC 2012 -2013 Revenue Requirements Application.
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20 5.1.2 If the labour cost per hour of \$51.41 is for contract labour time, please
21 discuss how the cost per hour is derived and if it is based on prices
22 included within the Itron contract.
23

24 **Response:**

25 Please refer to the response to BCUC IR 1.5.1.
26
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30 5.2 For the Per-premise Setup Fee planned by FortisBC, please provide a detailed
31 description of the processes and actions that must be undertaken by the contact
32 centre in order to configure the radio-off meter within the AMI system and provide
33 a breakdown of the estimated amount of time for each action, per customer.
34

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1 **Response:**

2 Please refer to the response to BCUC IR 1.5.3.

3
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6 5.3 Please discuss how FortisBC has determined the estimated amount of time that
7 will be spent by the contact centre in order to configure the radio-off meter within
8 the AMI system.

9

10 **Response:**

11 The detailed process (and resulting timings) required for this function are to be developed
12 during the Define/Design stage of the project. At that time, more precise definitions and work
13 breakdowns (between Meter Analyst and Contact Centre work) will be known and assigned.

14 The hour of contact centre time is a conservative estimate of the time required to:

- 15
- Discuss AMI-related concerns with the customer;
 - Prepare and print or email information packages for the customer to review;
 - Discuss options with the customer;
 - Assist customers with completion of the Radio-off AMI Meter Customer Application Form; and
 - Process the Radio-off AMI Meter Customer Application Form and forward the account to the meter analyst.
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25 5.4 Under the pre-AMI system, please provide the following information related to the
26 set-up of one new customer:

- Processes and actions (if any) undertaken by the contact centre;
 - The amount of time (if any) spent by the contact centre; and
 - The costs incurred (if any) related to contact centre labour.
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1 **Response:**

2 Under the pre-AMI system there are multiple scenarios that could be considered to describe,
3 “the set-up of one new customer”.

4 The first differentiation is whether an account already exists for a customer who is moving into a
5 new or existing premise. If an account does not already exist, it needs to be created from
6 scratch in the billing system. The Contact Centre’s Customer Service Representative (CSR)
7 would gather from a customer the following information in order to create an account:

- 8 • Name, telephone number, and other personal ID;
- 9 • Location of the premise that they wish to be billed for;
- 10 • New mailing address and mailing preference (Canada Post or email);
- 11 • Additional names and ID for persons who can be granted access to the account;
- 12 • Billing preferences (i.e. Equal Payment Plan and/or Direct Debit); and
- 13 • The CSR would also provide general account information and answer any questions the
14 customer may have, including ensuring that the correct rate and tax exemption is
15 selected.

16
17 The average time to complete this activity is 13 minutes at a labour cost of \$11.14 (includes
18 benefits loading and inflated to \$2016 in order to compare to the post-AMI rate).

19 If a customer account already exists, only the following needs to be obtained:

- 20 • Location of the premise that they wish to be billed for;
- 21 • Changed mailing address and mailing preference (Canada Post or email);
- 22 • Additional names and ID for persons who can be granted access to the account;
- 23 • Billing preferences (i.e. Equal Payment Plan and/or Direct Debit); and
- 24 • The CSR would also provide general account information and answer any questions the
25 customer may have, including ensuring that the correct rate and tax exemption is
26 selected.

27
28 The average time to complete this activity is 9 minutes at a labour cost of \$7.71 (includes
29 benefits loading and inflated to \$2016 in order to compare to the post-AMI rate).



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1 For both of the above scenarios, the CSR would also create a billing order to request a meter
2 reading. This action is already included in both the 13 and 7 minute scenarios. However, in
3 both scenarios, once a meter reading returns to the Contact Centre, a CSR completes the billing
4 order in approximately 3 minutes on average, for an additional labour cost of \$2.57 (includes
5 benefits loading and inflated to \$2016 in order to compare to the post-AMI rate).

6 The second differentiation is that the premise may not exist at all yet, requiring a service to be
7 built and a meter to be installed. This scenario does not involve the request for a meter reading
8 as described in the two scenarios above, however often it requires the CSR to create a request
9 to the Distribution Projects department, which then coordinates the construction of the service
10 with the customer.

11 The average time to complete this activity is 9 minutes at a labour cost of \$7.71 (includes
12 benefits loading and inflated to \$2016 in order to compare to the post-AMI rate).

13 Once the service is ready to be energized and a meter installed, the Contact centre creates a
14 Dispatch order to get the meter installed.

15 The average time to complete this activity is 10 minutes at a labour cost of \$8.57 (includes
16 benefits loading and inflated to \$2016 in order to compare to the post-AMI rate).

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20 5.5 Please provide the actual average 2012 hourly rate for a contact centre labour,
21 broken out between base salary/wages and benefit loading.
22

23 **Response:**

24 Effective February 1, 2012 the hourly wage rate for a Contact Centre Agent was \$27.13. Fringe
25 benefit loading was applied at 78 percent to that wage.

26	Hourly Wage February 1, 2012	\$27.13 per hour
27	Fringe Benefit Load	<u>\$21.16</u> per hour
28	Estimated Hourly Rate	<u>\$48.29</u> per hour

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30



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Components	Cost	Hourly Rate (2013)	Hourly Rate (2016)
Insurance	\$ 12,069	\$ 1.73	\$ 1.82
Maintenance	\$ 44,462	\$ 6.36	\$ 6.71
Lease costs	\$ 44,691	\$ 6.39	\$ 6.74
Fuel	\$ 51,160	\$ 7.31	\$ 7.72
Other	\$ 6,416	\$ 0.92	\$ 0.97
Vehicle Rate (2016)	\$ 158,798	\$ 22.70	\$ 23.95

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6.1.2 Are variable vehicle costs (i.e. fuel/mileage/maintenance) allocated based on hours of vehicle use or distance (i.e. kms) travelled? Please explain.

Response:

The variable vehicle costs are allocated based on the hours of vehicle use.

6.1.3 Please provide the forecast annual vehicle costs for one meter reading vehicle used to develop the vehicle costs hourly rate. Please provide a cost breakdown using the following categories:

- Insurance;
- Maintenance;
- Lease / capital costs; and
- Other.

Response:

The forecasted annual vehicle cost for a meter reading vehicle is approximately \$5,000 per year.

The cost breakdown is as follows:



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Components	Per Vehicle Cost
Insurance	\$ 635
Maintenance	\$ 1,355
Lease costs	\$ 1,365
Other	\$ 1,645
Estimated Annual Cost	\$ 5,000

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- 6.2 Please provide the actual 2012 annual vehicle costs for one meter reading vehicle, broken down into the following categories:
- Insurance;
 - Maintenance;
 - Lease / capital costs; and
 - Other.

Response:

Providing information for one meter reading vehicle is not an accurate representation of the group because the utilization and cost of a meter reading vehicle fluctuates depending on the service territory and the unit itself. Furthermore, servicing customers who have chosen the radio-off option will be a component of a different job than performed in 2012 and the vehicles used for those purposes will fall within the Radio-Off fee. The existing vehicle cost has no impact on the radio-off metering costs.

The average actual cost of a 2012 meter reading vehicle is \$5,990.

Components	Per Vehicle Cost
Insurance	\$ 635
Maintenance	\$ 1,570
Lease costs	\$ 1,580
Other	\$ 2,205
Average Annual Cost	\$ 5,990

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- 6.3 How many vehicles will be included in the fleet assigned to meter reading for Radio-off Option customers?



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1

2 **Response:**

3 It is anticipated that there will be no vehicles assigned solely to meter reading. It is anticipated
4 that the work associated with gathering a relatively small number of manual meter reads from
5 disparate locations throughout the service territory will form part of other roles within the
6 Company – roles for which vehicles are already assigned.

7 Final decisions of this nature will be concluded during the Define/Design phase of the project.

8

9

10

11 6.3.1 Will these vehicles be used for any purpose other than meter reading
12 for Radio-off Option customers? If yes, please provide the other
13 purposes and the forecast time that will be allocated to these other
14 items.

15

16 **Response:**

17 Please refer to the response to BCUC IR 1.6.3.

18 Exactly how the manual meter reading function will be configured within Company operations
19 will be determined during the project, therefore the Company is unable at this time to respond to
20 the time allocation question.

21

22

23

24 6.3.2 Please provide a breakdown of the forecast time for these vehicles that
25 will be allocated to manual meter reading for Radio-off Option
26 customers.

27

28 **Response:**

29 FortisBC is unable to answer the question at this time.

30 The answer is, in part, dependent upon:

- 31 • The number and geographic location of any customers selecting the Radio-off option;
32 and



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- 1 • The allocation of the manual meter reading work within other operational roles in the
2 Company.

3
4 While the Company intends to approximate time/role allocations during project implementation,
5 the Company will not know the full extent of the Radio-off participation rate until the end of the
6 Project and therefore will not be able to finalize allocations until that time.

7

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1 **7.0 Reference: Per-read Fee**
 2 **Exhibit B-1, pp. 5-6; Exhibit B-2, Radio-off Fee Derivation**
 3 **Meter Reading – Labour Cost per Hour**

4 The labour component of the Per-read Fee is derived as follows:

<u>Labour per read calculation</u>			
Time per read			0.3 hr
Labour cost			\$59.57 per hr
Labour cost per read			\$16.27

6 (Exhibit B-2, Radio-off Fee Derivation)

<u>Labour Costs (Loaded - 2016)</u>			
contact center			\$51.41 per hr
Metering Analyst			\$57.14 per hr
customer service person (CSP)			\$59.57 per hr

8 (Exhibit B-2, Radio-off Fee Derivation)

9 7.1 Please discuss why the labour cost per hour of \$59.57 for a “customer service
 10 person (CSP)” is used in the determination of meter reading costs.

11
 12 **Response:**

13 Servicing and manually reading an AMI meter requires skill sets that approximate those of the
 14 existing Customer Service Person role. Therefore, while final decisions as to the allocation of
 15 manual meter reading work will be completed during the project, it is appropriate to estimate
 16 costs based upon the CSP role.

17
 18

19
 20 7.2 Please discuss if the labour cost per hour of \$59.57 is for FortisBC employee
 21 time, contract labour or a combination of both.

22
 23 **Response:**

24 The labour cost per hour is for FortisBC employee time.

25
 26



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- 7.2.1 Please provide the detailed calculations to support the labour cost per hour of \$59.57 including the following relevant information:
- Number of employees (including job titles) included in the hourly rate;
 - Salary of the FortisBC employee(s);
 - Hourly rate of the FortisBC employee(s);
 - Benefit loading factor applied to the labour cost per hour for the FortisBC employee(s); and
 - Any other items that contribute to the hourly rate.

Response:

The number of employees was not a factor in the calculation of the hourly rate and no salaried employees were factored in calculation. The estimated \$59.57 hourly rate was calculated by escalating the 2012 hourly rate for an IBEW Customer Service Person to \$2016 at 1.8% annually and adding a fringe benefit load factor of 78 percent.

Estimated Hourly Rate in \$2016	\$33.47 per hour
Estimated Fringe Benefit Load	<u>\$26.10</u> per hour
Estimated Hourly Rate	<u>\$59.57</u> per hour

- 7.2.1.1 Is the hourly rate and the benefit loading factor used in the labour cost per hour of \$59.57 consistent with the approved labour costs in the most recent FortisBC revenue requirements? If not, please detail how these costs were derived.

Response:

The hourly rate of \$59.57 is the estimated rate in 2016 and is consistent with the estimated rates included in the most recent FortisBC Revenue Requirements Application.

- 7.3 Please provide the actual average 2012 hourly rate for meter reading labour, broken out between base salary/wages and benefit loading.



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Response:

Effective February 1, 2012 the hourly wage rate in the IBEW collective agreement for a Customer Service Person was \$31.16. Fringe benefit loading was applied at 78 percent to that wage.

Hourly Wage February 1, 2012	\$31.16 per hour
Fringe Benefit Load	<u>\$24.31</u> per hour
Estimated Hourly Rate	<u>\$55.47</u> per hour



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1 **Response:**

2 Please refer to the response to CEC IR 1.10.2.1.

3

4

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8.2.1 Please provide revised Per-read Fee calculations using an average speed of 40 km/h and 50 km/h.

7

8

9 **Response:**

10 Per-read fees at an average speed of 40kmh is \$18.31.

11 Per-read fees at an average speed of 50kmh is \$15.61.

12 Please refer to Attachment 8.2.1 for the spreadsheets supporting these calculations.

13

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1 **9.0 Reference: Per-read Fee**
2 **Exhibit B-1, pp. 5-6; Exhibit D-1-1, p. 1**
3 **Meter Reading Frequency**

4 The following is an excerpt from a Letter of Comment in this proceeding:

5 “Why is Fortis BC charging customers with radio-off meters extra and not simply allowing
6 those customers to **read their own meters and report it to Fortis BC**. Many customers
7 in remote locations do this now and see the meter reader once a year. West Kootenay
8 Power used to let its customers in remote areas send in readings by mail and have
9 meter readers go out occasionally at no extra cost. **Fortis BC already allows**
10 **customers to submit meter readings online**. Or Fortis BC can use the **annual**
11 **payment method** based on last year’s usage and have a reading at the end of the
12 year.” [Exhibit D-1-1, p. 1]

13 9.1 Does FortisBC currently have a system in place for customers to submit their
14 meter readings online? If yes, please describe the system that is in place. If not,
15 please discuss the actions and associated costs that would be required in order
16 to set-up such a system.

17
18 **Response:**

19 FortisBC currently has a manual process in place for handling customer-submitted meter
20 readings. Customers can either phone the Trail Contact Centre with a reading or send their
21 reading in via the online meter reading submission form found on the FortisBC web site. These
22 submissions are directed to Customer Service for processing. With either method, a FortisBC
23 employee will enter the readings into the system if it appears that the reading is correct, as
24 informed by the customer and the reason that it is being supplied. There is a risk that the meter
25 reading supplied by the customer is not accurate, either intentionally or accidentally, which may
26 not be observable by Customer Service at the time of entry. It should be noted that this process
27 is intended for ad-hoc readings supplied by customers due to estimated reading concerns, or
28 the verification of a reading originally obtained by FortisBC meter readers. It is not intended to
29 handle the large volume of regular meter readings performed by FortisBC meters readers.
30 Furthermore, due to the Billing system having a small and changing window during which it is
31 expecting to receive a reading for the purpose of billing, a customer would need to know ahead
32 of time which exact date for each month that they would need to call in their reading. There is
33 no system in place to automatically enter customer-supplied meter readings in to the billing
34 system.

35
36



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1
2 9.2 Does FortisBC currently have a system in place for customers to submit their
3 meter readings by phone? If yes, please describe the system that is in place. If
4 not, please discuss the actions and associated costs that would be required in
5 order to set-up such a system.

6
7 **Response:**

8 Please refer to the response to BCUC IR 1.9.1 above.

9
10
11
12 9.3 Please provide the pros and cons associated with allowing customers to submit
13 monthly meter readings online or by phone in order to reduce the frequency of
14 meter readings by FortisBC.

15
16 **Response:**

17 Please refer to the responses to BCPSO IRs 1.2.1 and 1.2.2. In the circumstances, FortisBC
18 does not believe there to be pros.

19
20
21
22 9.4 In FortisBC's opinion, would it be possible to allow customers to submit meter
23 readings online or by phone in order to reduce the frequency of meter readings
24 by FortisBC to either quarterly or annually? Please discuss.

25
26 **Response:**

27 FortisBC does not believe it is a feasible approach or one that would be in the public
28 interest. There are very significant security and cost issues, including as follows:

- 29 • The theft detection benefits would be compromised since updated data would be
30 available less frequently, increasing radio-off fees. Please see the response to BCPSO
31 IR 1.2.2 for an estimate of the impact to theft reduction benefits of a complete elimination
32 of hourly data.
- 33 • Operational events such as outage alarms, under or over-voltage alarms, tamper alarms
34 and temperature alarms would be available less frequently reducing safety and outage
35 response benefits for the customer.



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- 1 • Customer bills would have to be estimated until the manual download occurs. Even if
2 the customers were submitting readings in the interim, Tier 1 and Tier 2 consumption
3 would have to be estimated for those customers on the Residential Conservation Rate.
- 4 • Customers would have less frequent access to their hourly consumption data, reducing
5 the conservation effect expected from the customer portal.

6
7 The problems with customers submitting meter readings by sending digital photographs or
8 entering the reading on the web portal include that:

- 9 • this does not permit the collection of hourly interval data;
- 10 • the photograph may be unclear or data entry may be incorrect;
- 11 • customers may forget or refuse to do this; and
- 12 • administrative costs are incurred in following up on those which have not been
13 provided.

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17 9.4.1 Please provide revised Per-read Fee calculations (if any revisions
18 result) assuming each of quarterly and annual meter reading for Radio-
19 off Option customers.

20
21 **Response:**

22 The frequency of manual meter reading does not impact the time per read calculation, so the
23 per-read fee remains the same. The total annual Per-read Fee for bi-monthly reading is \$132,
24 for quarterly reading is \$88 and for annual reading is \$22.

25 Please also refer to the responses to BCPSO IRs 1.2.1 and 1.2.2.

26

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1 **10.0 Reference: Financial Treatment and Adjustment Mechanism**

2 **Exhibit B-1, p. 7**

3 “The revenue received from radio-off fees would be forecast and recorded as “Other
4 Income” similar to other tariff fees. These revenues would be offset by increased O&M
5 costs. The net result would be a forecast zero rate impact.” (Exhibit B-1, p. 7)

6 “The Company will recommend fee revisions during the next Cost of Service/Rate
7 Design Application if appropriate.” (Exhibit B-1, p. 7)

8 10.1 Given that FortisBC currently has a Performance Based Ratemaking application
9 for a period of five years before the Commission, when are the next Cost of
10 Service and Rate Design applications expected to be filed?

11
12 **Response:**

13 In order to complete a COSA with the most complete information possible, the Company will
14 require the load data that the AMI-enabled metering will provide. Assuming full deployment of
15 AMI by the end of 2015, the Company would collect at least one full year of data during 2016
16 and could perform a full cost of service study as early as 2017.

17
18

19
20 10.2 Does FortisBC propose to track the incremental O&M costs associated with the
21 Radio-off Option separately from all other O&M? Please discuss why or why not.

22
23 **Response:**

24 Yes, the Company intends to track the costs associated with those items that form part of the
25 fees; specifically costs related to manual downloading, meter analysts, range extenders and the
26 contact centre. In addition, the Company will track any other costs that have not been
27 anticipated or that were expected to be immaterial. This is being done to ensure that the fees in
28 fact reflect incremental costs.

29
30

31
32 10.2.1 Please discuss the processes that would be required in order to track
33 the incremental O&M costs associated with the Radio-off Option
34 separately from all other O&M.



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1

2 **Response:**

3 As it does with other project costs, FortisBC will create a “radio-off” order in SAP to which
4 material, time and other expenses will be charged. All employees are trained in these
5 straightforward cost accounting processes.

6

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1 **11.0 Reference: Radio-Off Customer Property Move**

2 **Exhibit B-1, p. 9**

3 FortisBC proposes that Radio-off Option customers that move properties be subject to
4 the following fees:

5 “Customers will pay a fee for the final read at the old premises, and the applicable per-
6 premise setup and per-read radio-off fees for the new premises. The fee at the new
7 residence will be the per-premise setup fee noted above, \$110. These fees relate to the
8 cost of manually turning off the radio at the new premises, configuring the system to
9 accept manual reads at the new premise, ensuring that the RF-mesh network continues
10 to operate around the new radio-off location, and manually turning on the radio at the old
11 premises.” [Exhibit B-1, p. 9]

12 11.1 Please provide the detailed calculation to support the proposed \$110 fee,
13 including detailed sub-calculations for the following components:

- 14 • Manually turning off the radio at the new premises;
15 • Configuring the system to accept manual reads at the new premises;
16 • Ensuring the RF-mesh continue to operate around the new radio-off location;
17 • Manually turning on the radio at the old premises; and
18 • Any other items.

19
20 **Response:**

21 Please refer to the responses to BCUC IRs 1.3.1 and 1.5.3 which respond to all bullets in the
22 question except the third.

23 Specifically with regards to the third bullet, the RF-mesh operation, when a premise becomes
24 radio-off a “hole” in the RF-mesh may be created, requiring additional communications
25 infrastructure in order for the AMI system to operate correctly. It is impossible to determine
26 where those “holes” may be, or their impact upon the operation of the AMI system, prior to
27 actually installing or configuring a radio-off AMI meter.

28 It is the Company’s intent to construct the RF-mesh as if all customers are accepting standard
29 radio-on AMI meters. In this way, regardless of when a premise becomes radio-on, it will be
30 able to communicate automatically with the AMI system. In this way work and the associated
31 cost required to continuously modify the RF-mesh is limited.

32 The process for deployment of communications infrastructure will be:

- 33 • Deploy the full AMI system communications infrastructure
34 • Deploy AMI meters



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- 1 • Discover “holes” in the RF-mesh
- 2 • Optimize the communications infrastructure by re-locating or deploying additional
- 3 communication infrastructure as required to complete the RF-mesh.

4

5 In the absence of knowing where, or how much additional communications infrastructure will be

6 required, the Company has represented this forecast cost by extrapolating the range extender

7 to meter ratio (0.3%) of the entire AMI system over the forecast number of radio-off premises

8 (695 premise x 0.3% = 2.1).

9

10

11

12 11.1.1 Please describe the processes and actions that are required for each of

13 the components listed above.

14

15 **Response:**

16 Please refer to the responses to BCUC IRs 1.3.1 and 1.11.1.

17

18

19

20 11.1.2 Please provide a comparison of the processes, actions, amount of time

21 and costs that are required to configure the system to accept manual

22 reads at the new premise versus the initial set-up fee at the old

23 residence (i.e. at the time of the AMI program implementation).

24

25 **Response:**

26 Please refer to the responses to BCUC IRs 1.3.1 and 1.11.1.

27 There are no differences in the requirements at an existing or new AMI premise since both

28 require site attendance and the same amount of configuration work.

29

30

31

32 11.1.3 Given that the customer account has already been processed for

33 manual meter reading during the initial set-up at the old residence, is



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1 the amount of time spent by the meter analyst and contact centre for the
2 set-up at the new residence reduced? Please discuss why or why not.

3
4 **Response:**

5 All work (and costs) captured by the per premise set up fee, including processing the Radio-off
6 AMI Meter Customer Application, discussing options with the customer, reconfiguring the meter
7 and reconfiguring the software systems will have to be performed for the new premise, so the
8 cost will be the same at the new premise.

9
10

11
12 11.2 Is it possible to remotely disable the radio at the new premises and enable the
13 radio at the old premises? If not, please discuss why not. If yes, please provide a
14 revised fee assuming remote connect/disconnect of the radio with detailed
15 supporting calculations.

16
17 **Response:**

18 Disabling and enabling the AMI meters LAN radio requires and physical attendance at the meter
19 – connecting a laptop with appropriate software to the meter using an optical probe attachment.
20 This cannot be done remotely.

21

Attachment 4.1

RADIO-OFF OPTION FEE DERIVATION

<u>Per-premise setup fee:</u>	
Contact Centre	\$51.41
Metering Analyst	\$57.14
Additional Range Extenders	\$2.12
Total	\$ 110.67

Proposed fee: \$110

<u>Per-read fee:</u>	
Labour	\$12.51
Vehicle	\$5.03
Total	\$ 17.54

Proposed fee: \$22

<u>Range Extenders:</u>		
	Project	Radio-off
customer count	138,900	1,389
# network devices	380	4
ratio	0.3%	0.3%

<u>Radio-Off customer forecast</u>	
Number of customers (2016)	138,900
Radio-off option rate	1.00%
forecast Radio-off customers	1,389

<u>Mobilization Time calculation:</u>			
read hours / day	6.5	number of days to read all radio-off customers per cycle	39
available minutes/day	390	mobilization hours per day	1
travel and download time in minutes	11	mobilization hours per cycle	39
average reads per day	36	mobilization hours per customer per cycle	0.03
		mobilization minutes per customer per cycle	2

Contact Centre calculation

Time required to process application	1 hour
Hourly Rate	\$51.41 per hour
Contact Centre costs	\$51.41

Meter Analyst calculation

Time required to configure meter	1 hour
Hourly Rate	\$57.14 per hour
Meter Analyst costs	\$57.14

Additional Range Extender calculation:

Number of customers (2016)	138,900
radio-off option rate	1.00%
Radio-off customers	1,389
Radio-off range extenders (customer count * 0.3%)	4.2
range extender cost per unit	\$187.00
Radio-off range extender costs	\$779.23
range extender installation cost per unit	\$520.00
radio-off range extender installation costs	\$2,166.84
Total Radio-off range extender costs	\$2,946.07
Radio-off range extender cost per customer	\$2.12

Between read time calculation:

Service territory area	18,000 km ²
Area per radio-off customer	13.0 km ²
Minimum distance between radio-off customers	3.6 km
Adjusted distance between radio-off customers	4.0 km
Average speed	30 km/h
Between read time	8 min

Total Travel Time

Between read time	8 min
Mobilization time	2 min
Read time	3 min
Total time per read	13 min
	0.2 hr

Labour Costs (Loaded - 2016)

contact center	\$51.41 per hr
Metering Analyst	\$57.14 per hr
customer service person (CSP)	\$59.57 per hr

Vehicles costs (2016)

Hourly Rate	\$23.95 per hr
-------------	----------------

Labour per read calculation

Time per read	0.2 hr
Labour cost	\$59.57 per hr
Labour cost per read	\$12.51

Vehicle cost per read calculation

Time per read	0.2 hr
Vehicle cost	\$23.95 per hr
Vehicle cost per read	\$5.03

Attachment 8.2.1

RADIO-OFF OPTION FEE DERIVATION

Per-premise setup fee:	
Contact Centre	\$51.41
Metering Analyst	\$57.14
Additional Range Extenders	\$2.12
Total	\$ 110.67

Proposed fee: \$110

Per-read fee:	
Labour	\$13.06
Vehicle	\$5.25
Total	\$ 18.31

Proposed fee: \$22

Range Extenders:		
	Project	Radio-off
customer count	138,900	695
# network devices	380	2
ratio	0.3%	0.3%

Radio-Off customer forecast	
Number of customers (2016)	138,900
Radio-off option rate	0.50%
forecast Radio-off customers	695

Mobilization Time calculation:		
read hours / day	6.5	number of days to read all radio-off customers per cycle
available minutes/day	390	mobilization hours per day
travel and download time in minutes	11	mobilization hours per cycle
average reads per day	34	mobilization hours per customer per cycle
		mobilization minutes per customer per cycle

Contact Centre calculation

Time required to process application	1 hour
Hourly Rate	\$51.41 per hour
Contact Centre costs	\$51.41

Meter Analyst calculation

Time required to configure meter	1 hour
Hourly Rate	\$57.14 per hour
Meter Analyst costs	\$57.14

Additional Range Extender calculation:

Number of customers (2016)	138,900
radio-off option rate	0.50%
Radio-off customers	695
Radio-off range extenders (customer count * 0.3%)	2.1
range extender cost per unit	\$187.00
Radio-off range extender costs	\$389.61
range extender installation cost per unit	\$520.00
radio-off range extender installation costs	\$1,083.42
Total Radio-off range extender costs	\$1,473.03
Radio-off range extender cost per customer	\$2.12

Labour per read calculation

Time per read	0.2 hr
Labour cost	\$59.57 per hr
Labour cost per read	\$13.06

Vehicle cost per read calculation

Time per read	0.2 hr
Vehicle cost	\$23.95 per hr
Vehicle cost per read	\$5.25

Between read time calculation:

Service territory area	18,000 km ²
Area per radio-off customer	25.9 km ²
Minimum distance between radio-off customers	5.1 km
Adjusted distance between radio-off customers	5.6 km
Average speed	40 km/h
Between read time	8 min

Total Travel Time

Between read time	8 min
Mobilization time	2 min
Read time	3 min
Total time per read	13 min
	0.2 hr

Labour Costs (Loaded - 2016)

contact center	\$51.41 per hr
Metering Analyst	\$57.14 per hr
customer service person (CSP)	\$59.57 per hr

Vehicles costs (2016)

Hourly Rate	\$23.95 per hr
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RADIO-OFF OPTION FEE DERIVATION

Per-premise setup fee:	
Contact Centre	\$51.41
Metering Analyst	\$57.14
Additional Range Extenders	\$2.12
Total	\$ 110.67

Proposed fee: \$110

Per-read fee:	
Labour	\$11.14
Vehicle	\$4.48
Total	\$ 15.61

Proposed fee: \$22

Contact Centre calculation

Time required to process application	1 hour
Hourly Rate	\$51.41 per hour
Contact Centre costs	\$51.41

Meter Analyst calculation

Time required to configure meter	1 hour
Hourly Rate	\$57.14 per hour
Meter Analyst costs	\$57.14

Additional Range Extender calculation:

Number of customers (2016)	138,900
radio-off option rate	0.50%
Radio-off customers	695
Radio-off range extenders (customer count * 0.3%)	2.1
range extender cost per unit	\$187.00
Radio-off range extender costs	\$389.61
range extender installation cost per unit	\$520.00
radio-off range extender installation costs	\$1,083.42
Total Radio-off range extender costs	\$1,473.03
Radio-off range extender cost per customer	\$2.12

Labour per read calculation

Time per read	0.2 hr
Labour cost	\$59.57 per hr
Labour cost per read	\$11.14

Vehicle cost per read calculation

Time per read	0.2 hr
Vehicle cost	\$23.95 per hr
Vehicle cost per read	\$4.48

Range Extenders:		
	Project	Radio-off
customer count	138,900	695
# network devices	380	2
ratio	0.3%	0.3%

Radio-Off customer forecast	
Number of customers (2016)	138,900
Radio-off option rate	0.50%
forecast Radio-off customers	695

Mobilization Time calculation:

read hours / day	6.5	number of days to read all radio-off customers per cycle	17
available minutes/day	390	mobilization hours per day	1
travel and download time in minutes	10	mobilization hours per cycle	17
average reads per day	40	mobilization hours per customer per cycle	0.02
		mobilization minutes per customer per cycle	1

Between read time calculation:

Service territory area	18,000 km ²
Area per radio-off customer	25.9 km ²
Minimum distance between radio-off customers	5.1 km
Adjusted distance between radio-off customers	5.6 km
Average speed	50 km/h
Between read time	7 min

Total Travel Time

Between read time	7 min
Mobilization time	1 min
Read time	3 min
Total time per read	11 min
	0.2 hr

Labour Costs (Loaded - 2016)

contact center	\$51.41 per hr
Metering Analyst	\$57.14 per hr
customer service person (CSP)	\$59.57 per hr

Vehicles costs (2016)

Hourly Rate	\$23.95 per hr
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