Dennis Swanson
Director, Regulatory Affairs

FortisBC Inc.
Suite 100 - 1975 Springfield Road
Kelowna, BC V1Y 7V7
Ph: (250) 717-0890
Fax: 1-866-335-6295
electricity.regulatory.affairs@fortisbc.com
www.fortisbc.com

October 21, 2011

Via Email

Ms. Alanna Gillis
Acting Commission Secretary
BC Utilities Commission
Sixth Floor, 900 Howe Street, Box 250
Vancouver, BC V6Z 2N3

Dear Ms. Hamilton:

Re: FortisBC Inc. (FortisBC) Application for 2012 -2013 Revenue Requirements and Review of 2012 Integrated System Plan Responses to System Loss Information Requests

Please find attached FortisBC's responses to the British Columbia Utilities Commission second round of Information Requests related to system losses.

If further information is required, please contact the undersigned at (250) 717- 0890.

Sincerely,

Dennis Swanson
Director, Regulatory Affairs

1.0 Reference: Gross System Losses
Exhibit B-7, BCUC 1.1.1 – 1.1.4
Forecasted Average Loss Rates

1.1 What is the range of accuracy for the forecast average loss rates provided?

Response:

Historical forecasting percentage errors for the gross loss rate over the 2001-2010 period have a mean of 1% and a standard deviation of 8.4%. Therefore, approximately 95% of the time the forecasting error for the loss rate will fall into the range (1% – 2*8.4%, 1% + 2*8.4%) = (-15.8%, 17.8%). It means that for 95% of the time, the loss rate will be between the range of (0.842*Expected Rate, 1.178* Expected Rate). Below is the summary table for the forecasting range from 2012 to 2016:

Table BCUC IR2 (Losses) 1.1

95% Range of Loss Rates

Year	2012	2013	2014	2015	2016
Expected	8.82%	8.76%	8.69%	8.63%	8.55%
Low	7.43%	7.38%	7.32%	7.27%	7.21%
High	10.39%	10.32%	10.24%	10.16%	10.07%

Actual losses are heavily dependent on loads (weather) due to the I2R rule. If loads are higher than forecast by 5%, losses will be approximately 10% higher than the forecast loss rate.

1.2 Are these forecast average loss rates used to calculate (or is a function of) other forecast values in the Application (i.e. purchase power)?

Response:

The expected loss rate is used to calculate the expected gross load, which drives the calculation of the expected power purchases and revenue requirements.

An example of the reduced rate impact from reducing the loss rate by 1% (i.e. from 8.8% to 7.8%) was provided in the response to BCUC IR1 Q232.3.3 and is -0.6% in 2012 and -0.1% in 2013.

1.2.1 If so, please identify which calculations and demonstrate the impact of the forecasted average loss rates on these figures.

Response:

Please refer to the response BCUC IR2 (Losses) Q1.2 above.

1.3 If the Company is forecasting the average losses to "flatten out" as indicated in the IR response, why do the data points supplied by FortisBC have a positive slope?

Response:

Please refer to the responses to BCUC IR1 (Losses) Q1.1 and BCUC IR1 (Losses) Q1.2. In addition, the Company notes that the forecast loss rate of 8.82% declines to 8.55% by 2016 and therefore the slope is not positive as stated in the question.

1.4 As the forecasted average losses shown in the Application do not include the estimated impact of the OTR project, please adjust and file an update of all calculations and amounts in the Application that use the revised values.

Response:

Changes to losses do not affect forecast sales, only forecast power purchase expense.

As described in BCUC IR1 (Losses) Q1.3, the 2012-13 RRA did not include any loss reduction benefit from the completion of the OTR project nor was the loss percentage increased as a result of sales growth. Adjusting for both these factors, the Company has estimated a net reduction in the forecast losses from the Application of 12.2 GWh in 2012 and 9.5 GWh in 2013 as shown in Table BCUC IR2 (Losses) 1.4 below.

A reduction to forecast losses of 10.0 kWh annually beginning in 2014 is also proposed, as explained in point 6 of the Load Growth Loss Adjustment section below.

Table BCUC IR2 (Losses) 1.4a

	OTR Loss Reduction	Load Growth Loss Increase	Net Loss Reduction
	(GWh)		
2012	(18.1)	5.9	(12.2)
2013	(19.6)	10.1	(9.5)

The details of these calculated amounts are given below.

OTR Loss Reduction

The calculation of the reduction of energy losses due to the OTR project in GWh/year is performed as follows and is summarized in Table BCUC IR2 (Losses) 1.4b below:

1. The loss at peak in kW for 2010 is determined from a power flow simulation model, using the Power System Simulation for Engineering (PSS®E) software and the 2010 Winter Peak WECC base case;

2. The loss at peak for 2011-13 is calculated from (1) by applying the loss growth rate of 8%. The rate of 8% is the square of the load growth rate in the North and South Okanagan;

3. The average loss for each year is calculated from (2) by applying the Loss Load Factor (LLF) of 31.5%[1];

4. The annual energy loss is calculated by multiplying (3) by 8,760 hours;

5. Column "DIFF" shows the difference in pre-OTR and post-OTR annual energy loss in GWh;

6. The values from (5) are multiplied by the "project in service" percentage for each year to provide the energy loss savings. The "project in service" percentage is a combination of the loss saving project portions (the 230 kV lines) and the number of months in service per year; and

7. The values from (6) are reduced by 50% or 0.6 GWh of the 2010 loss savings to account for the fact that the average losses from 2009 and 2010 were used in the Application.

[1] The **Loss Load Factor (LLF)** is computed from the empirical formulas: **LLF = 0.3 L_f +0.7 L^2_f** for urban areas and **LLF = 0.16 L_f +0.84 L^2_f** for rural areas, where **L_f** is the Load Factor (ratio of average kW to peak kW). In this analysis a combined urban/rural formula was used as follows: **LLF = 0.2 L_f +0.8 L^2_f** . [Ref. *A.S. Pabla, Electric Power Distribution*].

Table BCUC IR2 (Losses) 1.4b

Loss Growth Rate	8.0%	Load Factor (LF)	51.5%	Loss Load Factor (LLF)	31.5%

	PRE-OTR			POST-OTR			DIFF	PROJECT IN SERVICE	ENERGY LOSS SAVINGS	ENERGY LOSS SAVINGS w 2010 ADJUSTMENT
	Loss at Peak kW	Average Loss kW	Energy Loss GWh	Loss at Peak kW	Average Loss kW	Energy Loss GWh	GWh	%	GWh	GWh
2010	30,900	9,741	85.3	25,100	7,913	69.3	16.0	8	1.3	N/A
2011	33,372	10,521	92.2	27,108	8,546	74.9	17.3	87	15.1	14.5
2012	36,042	11,362	99.5	29,277	9,230	80.9	18.7	100	18.7	18.1
2013	38,925	12,271	107.5	31,619	9,968	87.3	20.2	100	20.2	19.6

Load Growth Loss Adjustment

The calculation of the increase of energy losses due to the increased loss rate caused by load growth in GWh/Year is performed as follows and is summarized in Table BCUC IR2 (Losses) 1.4c below:

1. The load growth rate must use the sales growth rate since the correct loss growth rate is the square of the load growth rate;

2. The assumed loss growth rate in the Application before AMI adjustments is flat and therefore grows at the same percentage as sales grow;

3. The correct loss growth rate is that losses grow at a rate that is the square of the load growth rate. For example, if loads grow by 10%, all else being equal, losses will grow by 1.1 * 1.1 = 1.21 or by 21%;

4. Losses before AMI must be used since AMI is not changing the actual load for the first several years;

5. The corrected losses and the required adjustment to gross load; and

6. All things being equal, the adjustment column will continue to grow in size. However, it is assumed that various smaller upgrade projects that occur from time to time will result in a flat 10 GWh reduction for 2014 onward.

Table BCUC IR2 (Losses) 1.4c

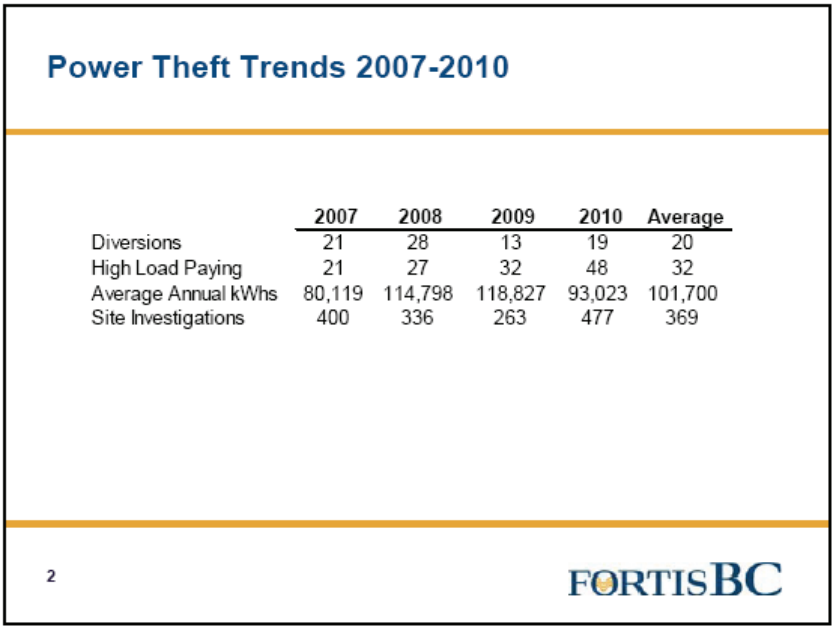
	Load Growth Rate	Assumed Loss Growth Rate	Correct Loss Growth Rate	Forecast Losses before AMI	Corrected Losses	Loss Adjustment (GWh)	Combined OTR Loss Adjustment (GWh)
2010	-3.6%				294.2		
2011	2.37%	2.37%	4.8%	305.8	308.2	2.5	N/A
2012	1.08%	1.08%	2.2%	309.1	314.9	5.9	(12.2)
2013	1.24%	1.24%	2.5%	312.6	322.8	10.1	(9.5)
Future							(10.0)

The impact of this reduction in losses to 2012 and 2013 Power Purchase Expense and the resulting rate impacts will be included in the Evidentiary Update to the 2012-13 RRA to be filed on or before November 2, 2011 (please see the response to BCUC IR2 Q1.1)

2.0 Reference: Losses
Exhibit B-7, BCUC 1.1.2.1
System Loss Composition

FortisBC responded that it "is unable to provide the requested [loss composition] data as the Company has insufficient information to apportion total system losses in this manner. Currently, the Company only has knowledge of the total system losses and these are calculated by subtracting the total energy billed in a given interval from the total energy generated or imported in the same interval. Additional metering infrastructure such as that proposed in the Advanced Metering Initiative project would be required to support the collection of loss data at this granularity."

During the FortisBC 2010 Annual Review and 2011 Revenue Workshop, FortisBC provided its average annual energy thefts in kWhs on slide 2 of the Revenue Protection presentation that was filed as Exhibit B-5 in that proceeding and copied below:



Power Theft Trends 2007-2010

	2007	2008	2009	2010	Average
Diversions	21	28	13	19	20
High Load Paying	21	27	32	48	32
Average Annual kWhs	80,119	114,798	118,827	93,023	101,700
Site Investigations	400	336	263	477	369

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FORTISBC

2.1 Please reconcile the following table with estimated figures in GWhs. The three lines of losses provided (Lines 1-3 below) appear to add up to the total line indicating that unaccounted for energy thefts plus meter inaccuracies equal zero, which is contradictory to the slide presentation above. Please explain and provide an updated table. Update other parts of the Application as required.

	Type of System Loss (Average Annual GWh)	2006	2007	2008	2009	2010	2012	2013	Total
1	Losses in the transmission and distribution system	313	310	272	258	227			
2	Company use	12	13	11	12	12			
3	Losses due to wheeling through the BC Hydro system	40	23	30	51	41			
4	Unaccounted-for energy (meter inaccuracies)								
5	Unaccounted-for energy (theft) (*source: Exhibit B-5 in FortisBC 2010 Annual Review and 2011 RRA)*		***80.12***	***114.80***	***118.83***	***93.02***			
	Total *(as provided in response to Table BCUC IR1 2.1)*	364 ?	346 ?	313 ?	321 ?	280 ?	306 ?	309 ?	310 ?

Response:

FortisBC notes that kWh were incorrectly converted to GWh in the table provided above. For example, in 2007, 80,119 kWh per equals 0.080199 GWh per site or 1.7 GWh total. This amount is a small portion of total losses.

In the response to BCUC IR1 (Losses) Q2.1, FortisBC did not assume that unaccounted for energy plus meter inaccuracies equaled zero – the Company assumed that unaccounted for energy plus meter inaccuracies were included in the Line 1 (Losses in the transmission and distribution system).

FortisBC also notes that the theft figures provided in Exhibit B-5 in FortisBC 2010 Annual Review and 2011 RRA represents the estimated amount of *detected* theft and not an estimate of the total amount of theft that exists.

2.2 Please provide an updated Table BCUC IR1 2.2 and update relevant parts of the Application as required.

Response:

An update to Table BCUC IR1 2.2 is not required since the total value of system losses has not changed.

2.3 Please attempt to separate transmission losses from distribution losses for each year in the table above, even if only on a modeled basis.

Response:

A modeled separation of total energy losses into approximate transmission and distribution components is provided below.

Table BCUC IR2 (Losses) 2.3 - Approximate Transmission and Distribution Energy Losses

	2007	2008	2009	2010
Energy Sales GWh	3,064	3,087	3,157	3,044
T&D Losses GWh	310	272	258	227
Transmission Losses GWh	88	77	73	64
Distribution Losses GWh	222	195	185	163

2.4 Please identify which portions of the transmission system FortisBC has the ability to directly meter losses. For instance, which substations, lines or groups of lines and substations, can be "ring-fenced" by meters that are capable of metering total energy?

Response:

Almost all transmission lines and substations can be "ring fenced" by meters to provide metered energy losses. However, there are some exceptions at various locations in the service area where stations (primarily transmission customer interconnections) are not equipped with appropriate metering. Through coincident time-stamped meter readings, transmission system energy losses could be calculated, however manual corrections would need to be made for the transmission customers mentioned above. In addition, although the raw energy data is available for the most part, database queries and reconciliation software would need to be developed and tested to implement these loss calculations.

Note that a similar exercise to determine distribution system losses is not possible without the installation of Advanced Metering Infrastructure.

3.0 Reference: System Planning Forecasts
Exhibit B-7, BCUC 1.6.2, Table BCUC IR1.6.2; BCUC 1.229.2
1-in-20 Peak Forecast

3.1 As the industry practice appears to more consistently use a 1-in-10 risk level, please provide Table BCUC IR1.6.2 showing the summer and winter "1-in-10" peak load forecasts, and provide the comparison with the "1-in-20" results.

Response:

FortisBC offers the following clarifications with respect to the 1-in-20 peak forecast:

1. The forecast is not used for resource planning (i.e. for power purchases);
2. The forecast is not used directly for system capital planning.
3. The forecast is used only for benchmarking the existing distribution planning forecast. The distribution planning forecast does not inherently contain a quantifiable risk index (as it is constructed from the "bottom up" using historical, individual feeder load data). By comparing the 1-in-20 forecast to the distribution planning forecast, FortisBC is then able to confirm that the distribution planning forecast (and hence system infrastructure) can accommodate potential load increases due to reasonably extreme weather variations.
4. All capital projects were driven solely by the distribution planning forecast; no project timing changes resulted from the use of the 1-in-20 forecast.

Notwithstanding the above, FortisBC also does not agree that industry practice is standardizing around a specific risk index for system planning purposes. There are currently no standards, mandatory or other, that prescribe the risk level and confidence bands of a load forecast. Local conditions in the economy and weather vary significantly in different jurisdictions, making the application of uniform risk standards impractical. For example, a 95% confidence band will be wider in jurisdiction A vs. B, if weather patterns in A are more variable than in B. Several utilities (Bonneville Power, PacifiCorp, ISO New England and others) compute confidence bands for 90% and 95% confidence (1-in-10 and 1-in-20 risk levels). BC Hydro employs Monte Carlo methods to compute a 90% confidence band, indicating there is a 10% probability that the actual peak load will exceed the forecast peak load in a particular year. Similarly, the PJM interconnection employs a 90% confidence level. A large geographic jurisdiction, such as PJM, Bonneville, ISONE, will generally have a lesser variance due to extreme weather, as non-uniform weather conditions will mitigate the total effect. Smaller areas, such as FortisBC, are exposed to a greater relative weather risk. The objective of the 1-in-20 load forecast at FortisBC is to provide system planners with a benchmark level that quantifies the risk of the transmission plan. Transmission adequacy is extremely important, as shortages in transmission cannot be mitigated in the short term except with customer outages.

1 Please find the requested tables below.

2 **Table BCUC IR2 (Losses) 3.1**

	1-in-20		1-in-10		1-in-10 vs. 1-in-20	
	Year that sets the peak					
	1998	1990	2007	2004		
	SUMMER PEAK (MW)	WINTER PEAK (MW)	SUMMER PEAK (MW)	WINTER PEAK (MW)	SUMMER PEAK (MW)	WINTER PEAK (MW)
2011	652	843	636	842	-15	-1
2012	661	856	645	855	-15	-1
2013	669	869	654	867	-16	-2
2014	678	880	662	876	-16	-4
2015	685	890	668	882	-16	-8
2016	688	895	671	887	-17	-8
2017	692	902	675	895	-17	-7
2018	697	910	680	902	-17	-8
2019	703	918	685	910	-17	-8
2020	708	926	691	918	-18	-8
2021	714	935	696	927	-18	-8
2022	720	943	702	935	-18	-9
2023	726	951	708	943	-18	-8
2024	732	960	713	951	-18	-9
2025	738	969	719	960	-19	-9
2026	744	977	725	968	-19	-9
2027	750	986	731	977	-19	-9
2028	756	995	737	985	-19	-9
2029	763	1004	743	994	-20	-10
2030	769	1013	749	1003	-20	-10
2031	775	1022	755	1012	-20	-10
2032	782	1031	761	1021	-20	-10
2033	788	1041	767	1031	-21	-10
2034	795	1051	774	1040	-21	-10
2035	802	1061	780	1050	-21	-11
2036	808	1071	787	1060	-21	-11
2037	815	1081	794	1071	-22	-11
2038	823	1092	801	1081	-22	-11
2039	830	1103	808	1091	-22	-11
2040	837	1113	815	1102	-23	-11

3.2 Please provide the tables and figures in BCUC 1.229.2 for the "1-in-10" risk level, and provide the comparisons to the "1-in-20" risk level results. Please also provide the results in electronic format.

Response:

Please find the answer below. The results are also provided in an electronic Excel file titled "BCUC Losses IR2 Q3.2.xlsx".

Figure BCUC IR2 (Losses) 3.2a

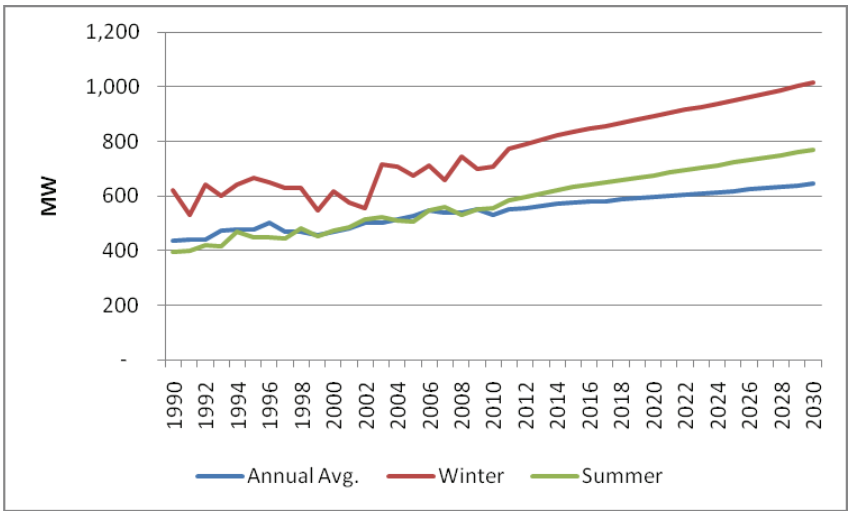

Figure BCUC IR2 (Losses) 3.2b

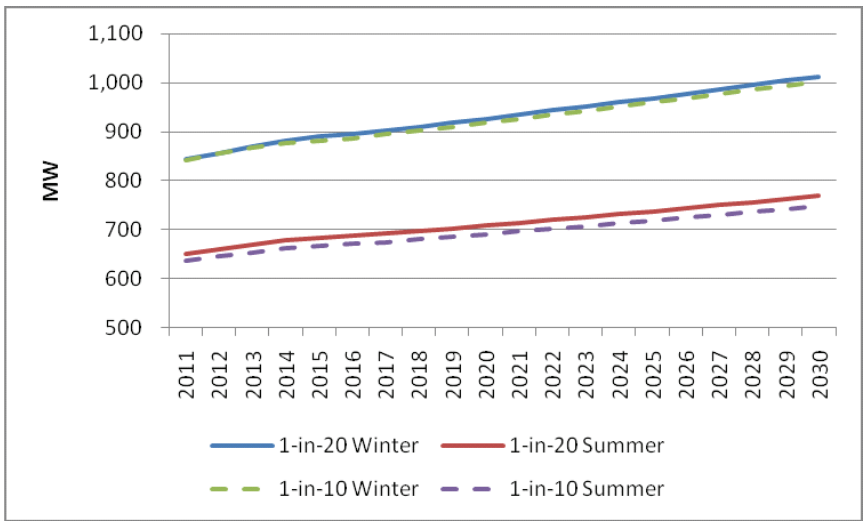

Table BCUC IR2 (Losses) 3.2

Actual/Forecast Peaks (MW) **1-in10 vs 1-in-20**

Year	Annual Avg.	Winter	Summer	1-in-20 Winter	1-in-20 Summer	1-in-10 Winter	1-in-10 Summer	Winter	Summer
1990	437	623	396						
1991	439	530	400						
1992	443	640	420						
1993	472	600	415						
1994	476	642	469						
1995	479	667	449						
1996	502	651	447						
1997	468	631	446						
1998	471	628	483						
1999	459	548	453						
2000	469	616	473						
2001	483	576	486						
2002	501	555	515						
2003	502	715	523						
2004	516	708	511						
2005	525	675	508						
2006	547	711	548						
2007	538	659	561						
2008	541	746	532						
2009	552	700	553						
2010	531	707	554						
2011	550	772	586	843	652	842	636	-1	-15
2012	557	788	598	856	661	855	645	-1	-15
2013	565	805	611	869	669	867	654	-2	-16
2014	572	821	623	880	678	876	662	-4	-16
2015	577	835	634	890	685	882	668	-8	-16
2016	579	846	642	895	688	887	671	-8	-17
2017	582	856	650	902	692	895	675	-7	-17
2018	587	868	658	910	697	902	680	-8	-17
2019	591	879	667	918	703	910	685	-8	-17
2020	595	891	676	926	708	918	691	-8	-18
2021	600	903	685	935	714	927	696	-8	-18
2022	605	915	695	943	720	935	702	-9	-18
2023	610	927	703	951	726	943	708	-8	-18
2024	614	940	713	960	732	951	713	-9	-18
2025	619	952	722	969	738	960	719	-9	-19
2026	624	964	731	977	744	968	725	-9	-19
2027	629	977	741	986	750	977	731	-9	-19
2028	634	989	750	995	756	985	737	-9	-19
2029	639	1,002	760	1,004	763	994	743	-10	-20
2030	644	1,014	769	1,013	769	1,003	749	-10	-20

3.3 Please identify those projects and parts of the Application that would need to be revised because of the changed "1-in-10" summer and winter peak load forecasts.

Response:

As stated in the response to BCUC IR2 (Losses) Q3.1 above, the "1-in-20" forecast was used only for benchmarking purposes, to provide a quantitative assessment of the risk of the Distribution Load Forecast, and as a consistency check against the Resource Planning Load Forecast. It has not been used directly to determine the need or timing of specific capital projects and the use of a "1-in-10" forecast would not impact either the Long Term Capital Plan or customer rates.

4.0 Reference: Energy Theft
Exhibit B-7, BCUC 1.1.4, 1.3.1; BCOAPO 1.8.1
AMI Impact

4.1 In responses to BCUC 1.3.1, FortisBC states that "AMI technology will enable FortisBC to identify more comprehensively both the incidence and value of energy theft." Given that the above slide presentation appears to suggest that FortisBC is already able to specifically identify energy thefts by year, is there still a need for AMI?

Response:

Yes. AMI is expected to significantly enhance existing theft detection efforts and results.

4.2 The previous slide provided by FortisBC indicates that energy theft losses are approximately 100 GWh/year, what is the estimated incremental benefit provided by AMI in GWhs and dollars saved.

Response:

As explained in the response to BCUC IR2 (Losses) Q2.1 above, the estimate of total energy theft is not 100 GWh a year.

At this time, the Company estimates total theft at approximately 42 GWh a year. The estimated AMI GWH benefit is given in more detail in the response to BCUC IR1 Q231.4. The estimated residential rate is only available through 2016. Estimated AMI benefits from reduced energy theft are presented in the table below.

Table BCUC IR2 (Losses) 4.2

	AMI Sales Increase	
	MWh	$000s
2012	-	-
2013	2,286	245,070
2014	4,662	528,753
2015	7,132	901,104
2016	9,694	1,287,204

4.3 Please explain why the average losses do not decline even with the implementation of AMI.

Response:

The expected losses are, in fact, forecast to decline with the implementation of AMI. Please refer to BCUC IR1 (Losses) 1.4 for further information. A summary of forecast loss rates is found below.

Table BCUC IR2 (Losses) 4.3

2012	2013	2014	2015	2016
8.82%	8.76%	8.69%	8.63%	8.55%

4.4 In response to BCUC 1.1.4, FortisBC appears to indicate that gross losses are estimated at 312.6 GWh, while information provided in the above presentation slide indicates power thefts to be approximately 100 GWh. Please explain the difference.

Response:

As stated in response to BCUC IR2 (Losses) Q4.2, the current best estimate the Company has of total losses due to theft is 42 GWh. This is only a small portion of the total system losses that are mainly resistance losses in the system.

5.0 Reference: Energy Theft
Exhibit B-7, BCUC 1.1.4, 1.3.1; BCOAPO 1.8.1
AMI Impact

5.1 Please provide FortisBC's estimate of the current amount of energy theft, and the effect by year of the AMI project on the amounts of a) remaining stolen electricity, b) electricity converted to billed sales, and c) reduction in the amount of used electricity, and the corresponding effects on losses.

Response:

Please refer to the response to BCUC IR1 Q231.4 for the requested information. The Company's current best estimate of the total theft is 42 GWh annually. Total increased sales peak at 12 GWh in 2017 and then decline to zero by 2022. Total loss reduction in 2022 is 13 GWh and slowly increases with load growth thereafter.

5.2 Please explain why the gross residential load is not expected to decline as electricity theft is reduced because of AMI. Does FortisBC expect that all existing energy theft will be converted to sales, and if so why? Why does FortisBC not expect the existing usage via stolen electricity to decline, when converted to billed electricity? If electricity usage will decline, please revise all calculations in the Application to reflect this decline.

Response:

FortisBC does expect existing energy theft to be converted to sales, which is offset by a commensurate decrease in losses for the period 2013 – 2017, resulting in no change to gross load. FortisBC does expect that detected incidences of electricity theft will eventually culminate in reduced residential sales from 2018 to 2022, as explained and tabulated in the response to BCUC IR1 Q231.4. By 2022 there will no longer be any positive impact to sales due to detection of electricity theft but the loss savings will continue, thereby resulting in reduced gross load, which has been taken into account in the load forecast.

6.0 Reference: Data Retention
Exhibit B-7, BCUC 1.228.1.1

6.1 Please describe FortisBC's policy for electric system data retention. Is data prior to 2004 available?

Response:

FortisBC interprets this question as referring to distribution substation load data (which was the subject of the original information request). FortisBC has no formal policy related to this data. In general, information and electronic data is retained for the period that it is considered relevant. Detailed substation load data prior to 2004 is not readily available in an electronic form. Moreover, as discussed in the response to BCUC IR1 Q228.1.2 this data is no longer considered useful as the electric system has been reconfigured multiple times since that date. Many new substations and feeders have been added and old substations have been retired. Tracking the movement of distribution loads from source to source over a long interval is impractical. Thus, a simple comparison of recent substation actual load data to that from many years ago is not meaningful.

7.0 Reference: Line Losses
Exhibit B-7, BCUC 1.232.2
Mitigating losses

FortisBC indicates that reduction in system losses has been an ancillary benefit from many recent system upgrade projects. Loss reduction results from an increase in the supply voltage or by the installation of additional transformation capacity.

FortisBC also identifies several projects in the five-year timeframe that are all expected to result in some reduction in system losses.

7.1 Please explain then why is the Company only "forecasting losses to flatten out" in the test period (as indicated in responses to BCUC 1.1.2)?

Response:

Future transmission and distribution losses, as a percentage of total energy, are impacted by various factors, including:

1. Several projects have some loss reduction benefits, as stated in the question.

2. Load growth. This impact can be substantial, as the increase in losses is proportional to the square of the increase in energy flows.

The combined effect of (1) and (2) can be a "flattening out" of losses in the test period.

Please refer to the response to BCUC IR2 (Losses) Q1.4 for a discussion of the Company's proposed downward loss adjustments for 2012 and 2013 that were presented in the response to BCUC IR1 (Losses) Q1.3.

FortisBC indicates that "losses will increase (in percentage terms) as load increases," (in BCUC 1.1.3) and "load growth increases losses over time" (in BCUC 1.232.2).

7.2 Load growth is a function of both customer growth and use per customer. Does FortisBC agree that DSM measures affect use per customer to some degree? If so, then please explain how it is possible that any potential reduction in losses are all offset by load growth?

Response:

The question is not clear to the Company.

The impact of DSM on average use per customer is not relevant since system losses are not a direct function of the average use per customer, but of the total demand of all customers. It is this total system requirement that must be transported through the system to the customer. Since the overall system load is growing, losses will increase as well.

8.0 Reference: Line Losses
Exhibit B-7, BCUC 1.232.3
Historical losses

In response to BCUC 1.232.3, FortisBC indicates that it is "unable to provide the requested data as the company has insufficient information to apportion total system losses between the various causes…"

8.1 Given the slide presentation previously provided on power thefts, it appears that FortisBC is able to indentify losses due to energy thefts. Please revise your response to include other causes of energy loss by year for the period 2000-2010.

Response:

The current estimate of total theft is 42 GWh a year on a forecast basis. The actual number is highly uncertain and this estimate is based on information from BC Hydro. The Company is not able to determine what theft may have been over the 2000 to 2010 period. Please refer to the response to BCUC IR2 (Losses) Q2.1 for further information.