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Delivered by Email (commission.secretary@bcuc.com)

British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC
V6Z 2N3

Attention: Patrick Wruck, Commission Secretary

Dear Sirs/Mesdames:

Re: FortisBC Alternative Energy Services Inc. 2018/2019 Revenue Requirements and Cost of Service Rate Application for the Thermal Energy Service to Delta School District No. 37 – Project No. 1598949 (the “Application”)

We are the solicitors to Delta School District No. 37 (“DSD”) and write in regard to the above-noted matter.

Please find enclosed DSD’s Information Request No. 1. We confirm that a copy of DSD’s Information Request No. will be filed via the Commission’s eFiling system.

Yours truly,

Borden Ladner Gervais LLP


Dionysios Rossi

CC Matthew Ghikas (mghikas@fasken.com)

DELTA SCHOOL DISTRICT NO. 37

Information Request No. 1 - May 22, 2018

FortisBC Alternative Energy Services Inc. 2018/2019 Revenue Requirements and Cost of Service Rate Application for the Thermal Energy Project Serving Delta School District No. 37 (the “2018/19 COS Application”)

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1.0 THERMAL ENERGY DEMAND FOR THE PROJECT

In the Application for a Certificate of Public Convenience and Necessity for Approval of Contracts and Rate for Public Utility to Provide Thermal Energy Service to Delta School District No. 37 (the “CPCN Application”), FortisBC Energy Inc. (“FEI”) stated that it expected the thermal energy project that is the subject of these proceedings (the “Project”) to provide 10,605 MWh of thermal energy to Delta School District No. 37 (“DSD”) in the 2012/13 fiscal year and each year thereafter.¹ In the 2018/19 COS Application, FortisBC Alternative Energy Services Inc. (“FAES”) states that the Project actually provided:

- 673 MWh of thermal energy to DSD in the 2012/13 fiscal year;
- 4,626 MWh of thermal energy to DSD in the 2013/14 fiscal year;
- 5,006 MWh of thermal energy to DSD in the 2014/15 fiscal year;
- 5,818 MWh of thermal energy to DSD in the 2015/16 fiscal year;
- 6,893 MWh of thermal energy to DSD in the 2016/17 fiscal year; and
- 6,893 MWh of thermal energy to DSD in the 2017/18 fiscal year.²

FAES also confirms that thermal energy demand has now stabilized at 6,893 MWh per year.³ In effect, this means that:

- over the first five years of operations, the Project cumulatively delivered less than 50% of the amount of thermal energy originally forecasted; and
- on a go-forward basis, the Project will annually deliver less than 32% of the amount of thermal energy originally forecasted.

The 2015/16 COS Application states that the discrepancy between the forecast thermal energy demand and the actual energy demand should be attributed to errors made by FEI in designing the Project which led FEI to over-estimate the thermal energy loads that would be served by the Project.⁴ For example, FEI’s forecast for thermal energy demand included energy loads supplied

¹ CPCN Application, p. 43 and Appendix D (Financial Model).

² 2018/19 COS Application, p. 16.

³ 2018/19 COS Application, p. 2.

⁴ 2015/16 COS Application, pp.7 and 8.

by equipment other than FAES's thermal energy systems and relied upon historical energy data which should not have been used to forecast future thermal energy demand.⁵

The 2018/19 COS Application states that the discrepancy between the forecast thermal energy demand and the actual energy demand is a key driver of the discrepancy between the Market Rate and the Cost-of-Service Rate, and the growing balance of the District Deferral Account (“DDA”), which FAES projects will reach \$3,845,000 by the end of June 2018.⁶

- 1.1 Please provide any data relied upon by FEI when forecasting the thermal energy demand for the Project that has not already been made publicly available.
- 1.2 Please identify any assumptions made by FEI when forecasting the thermal energy demand for the Project that have not already been made publicly available.
- 1.3 Please provide a detailed explanation for the discrepancy between the thermal energy demand originally forecast by FEI and the actual energy demand. Please provide all data relied upon by FAES to provide this explanation and identify any assumptions made by FAES in providing this explanation.
- 1.4 Please provide a breakdown of the thermal energy sales for each DSD school, by month (i.e. monthly totals for thermal energy sales by the Project to each DSD site). Please include the natural gas used, electricity used, and the thermal energy provided and please compare this against FEI's projected thermal energy sales by month for each DSD facility.
- 1.5 Please provide a list of all Project sites that have been unable to reach a set point of (21.5°C) since the inception of the Project (which has resulted in the use of more expensive occupant-controlled electric heat sources, such as space heaters), and explain why the Project has been unable to deliver sufficient heat to meet the required temperature at each of these sites.
- 1.6 Please provide a detailed description of all measures undertaken by FEI to ensure that the original forecast of thermal energy demand for the Project was accurate, and any subsequent analysis undertaken to determine why FEI's original forecasts proved incorrect.

⁵ 2015/16 COS Application, pp.7 and 8.

⁶ 2018/19 COS Application, p.16, 17 and 22.

2.0 ENVIRONMENTAL PERFORMANCE OF THE PROJECT

In the CPCN Application, FEI stated that:

... the primary driver of this Project is the SD's need to implement energy solutions that reduce GHG emissions, make efficient use of energy and make use of renewable energy sources, within the SD's budget constraints. In turn, the primary benefit of this Project is that it helps the SD achieve its energy goals.⁷

FEI then went on to state that:

The Project will reduce GHG emissions by over 70% from these sites. The sites currently generate 2,900 tCO₂e per year, and this amount will be reduced to 700 tCO₂e per year. Over the 20 year term of the Contracts with the SD, the targets for BC GHG emissions are almost 25% of the existing natural gas emissions today and in 2007. Therefore, this Project will reduce the emissions by threefold when comparing to the target reductions as shown in the graph below.⁸

The CPCN Application materials suggest that the thermal energy provided by the Project would have a GHG intensity of 65 kg per MWh of heat (see calculations set out in Schedule "A" hereto).⁹ However, based on FAES' projections in the 2018/19 COS Application, the Project's actual GHG intensity is 239 kg per MWh of heat (see calculations set out in Schedule "A" hereto).¹⁰

The lower-than-forecast GHG emissions reductions appear to be due in part to the fact that the Project has provided much less thermal energy demand than FEI forecasted and in part to the fact that the Project was not well integrated with the mechanical equipment in DSD's facilities. For example, in the CPCN Application, FEI stated that it evaluated each of DSD's facilities to determine which facilities would be compatible with heat pump technology and suitable for inclusion in the Project.¹¹ However, in the 2015/16 COS Application, FAES suggested that problems with the Project are a consequence of the Project being a retrofit of high temperature heating systems with a combination of heat pumps and natural gas boilers¹².

- 2.1 Please explain what reductions in GHG emissions have actually been achieved by the Project, from its inception to date, expressed as a percentage of the 2010-2011

⁷ CPCN Application, p.10.

⁸ CPCN Application, p.12.

⁹ CPCN Application, Appendix D (Financial Model).

¹⁰ 2018/19 COS Application, Appendix A (2018/19 Cost of Service Rate and Deferral Account Balance Forecast Update).

¹¹ CPCN Application, pp.18-19.

¹² 2015/16 COS Application, p. 9.

natural gas consumption data that DSD originally provided to FEI for its feasibility analysis.

- 2.2 Please provide any data relied upon by FEI when calculating the GHG emissions reductions that would be realized by the Project that has not already been made publicly available.
- 2.3 Please identify any assumptions made by FEI when calculating the GHG emissions reductions that would be realized by the Project that have not already been made publicly available.
- 2.4 Please provide a detailed explanation for the discrepancy between the GHG emissions reductions that FEI claimed would be realized by the Project and the actual GHG emissions reductions that were in fact realized by the Project. Please provide all data relied upon by FAES to provide this explanation and identify any assumptions made by FAES in providing this explanation.
- 2.5 Please describe in detail all of the steps undertaken by FEI to analyze each of DSD's facilities to determine which facilities would be compatible with heat pump technology and suitable for inclusion in the Project. Please provide all of the information collected by FEI in analyzing each of DSD's facilities to determine which facilities would be compatible with heat pump technology and suitable for inclusion in the Project.
- 2.6 Please provide a detailed description of any other due diligence measures (i.e. apart from analyzing DSD's facilities) that were undertaken by FEI to ensure that its claims regarding the GHG emissions reductions that would be realized by the Project were accurate.

Schedule "A" of the Design Build Agreement (the "**Design Build Agreement**") entered into between FEI and Johnson Controls L.P. ("**Johnson Controls**") requires Johnson Controls to design each thermal energy system included in the Project to meet the gas consumption targets specified on page 37 of the Design Build Agreement and states that compliance with this requirement will be conclusively confirmed by system performance tests carried out by Johnson Controls or an independent commissioning agent at each site following completion of the installation of the equipment at each site.

- 2.7 Please provide DSD with all documents and information in FAES's possession which discuss or relate to the performance of the thermal energy systems included in the Project including, but not limited to:
 - (a) the results of every system performance test carried out by Johnson Controls, an independent commissioning agent or another person pursuant to the Design Build Agreement; and

(b) the boiler operation and heat pump status operation trend logs for all of the Project sites, for the entire duration of the Project.

2.8 Please advise whether each thermal energy system included in the Project was designed to meet, and met (by one or more system performance tests), the gas consumption targets specified on page 37 of the Design Build Agreement.

3.0 PROJECT DESIGN

3.1 Please describe the extent to which the actual Project equipment differs from the original design of the Project equipment.

3.2 Please describe each change made to the original design of the Project equipment and please identify the reason for the change, resulting change in performance, the cost of implementing the change, and any additional costs incurred as a result of the change.

4.0 OPERATIONS AND MAINTENANCE COSTS FOR THE PROJECT

4.1 Please provide a detailed description of all measures undertaken by FAES to review and minimize the operations and maintenance costs for the Project, with particular emphasis on:

(a) the use of Johnson Controls as the sole party to provide operations and maintenance services on the Project; whether the selection of Johnson Controls was subject to a competitive bidding process; if not, why not; and if so, the details of any such process; and

(b) the failure or refusal of FAES to use DSD facilities personnel to provide operations and maintenance services on the Project, despite requests from the DSD to this effect, in order to reduce operations and maintenance costs associated with the Project.

4.2 Please provide a table or spreadsheet that identifies:

(a) each invoice issued for work completed by contractors on the heating plants for operations and maintenance since the beginning of the Project;

(b) the scope of work covered by each invoice; and

(c) the costs billed by each invoice.

5.0 ADDITIONAL CAPITAL COSTS FOR THE PROJECT

The CPCN Application states that the total capital costs for the Project are \$6,500,000, excluding the \$1,357,000 Contribution in Aid of Construction provided by DSD (the “CIAC”).¹³ However, the 2018/19 COS Application shows a cumulative capital spend of \$8,190,000 through the 2018/19 fiscal year, excluding the CIAC.

- 5.1 Please provide a detailed explanation of why each additional capital cost (i.e. costs over and above \$6,500,000) was incurred for the Project.
- 5.2 Please provide a detailed description of all measures undertaken by FAES to review and minimize the additional capital costs incurred for the Project.

The 2015/16 COS Application shows cumulative capital expenditures of \$7,488,000 through the 2014/15 fiscal year, excluding the CIAC¹⁴. However, the 2018/19 COS Application shows cumulative capital expenditures of \$8,098,000 through the 2014/15 fiscal year, excluding the CIAC.¹⁵

- 5.2 Please explain why the cumulative capital spend through the 2014/15 fiscal year was retroactively increased by \$610,000 in the 2018/19 COS Application.

6.0 FORECAST OF THE COST-OF-SERVICE RATE

The Cost-of-Service Rate forecast included in the CPCN Application excludes carbon taxes on natural gas (which were in place before the CPCN Application was filed).¹⁶

- 6.1 Please explain why the Cost-of-Service Rate forecast included in the CPCN Application excluded carbon taxes on natural gas, and the impact of this calculation omission on the Cost-of-Service Rate.

¹³ CPCN Application, p.30.

¹⁴ 2015/16 COS Application, Appendix B (Live Financial Models), Schedule 9 (Capital Spending). The sum of Line 10 for years 2012/13, 2013/14, 2014/15 and 2015/16 is \$7,665,000. The CIAC is tracked separately, in Line 27.

¹⁵ 2018/19 COS Application, Appendix A (2017/19 Cost of Service Rate and Deferral Account Balance Forecast Update), Schedule 9 (Capital Spending). The sum of Line 10 for years 2012/13, 2013/14, 2014/15, 2015/16, 2016/17, 2017/18, and 2018/19 is \$8,190,000. The CIAC is tracked separately, in Line 12.

¹⁶ CPCN Application, Appendix D (Financial Model), Inputs Tab, Row 107. There is an input here for carbon tax, but the input does not get used to calculate the Cost-of-Service Rate.

The 2018/19 COS Application states that:

As illustrated in Figure 4 below, the COS in year 5 of the service aligns closely with the expected costs that were estimated at the outset of the project. The higher COS in the initial years relates to the delay in realization of Capital Cost Allowance tax benefits as compared to the initial forecast.

While the realization of tax deductions has been delayed, the forecasted costs align with expectations set out that resulted in the approvals received by Order G-71-12. Moreover, given that FAES has waited the full 5 year transition period, it is reasonable to now allow FAES to begin charging the COS Rate.¹⁷

6.2 Please provide a table showing, for each year of the Project:

- (a) the original forecast cost-of-service in unit cost terms (\$ per MWh of thermal energy service); and
- (b) the actual cost-of-service to date in unit cost terms (\$ per MWh of thermal energy service), and FAES' forecast cost-of-service for the remainder of the term in unit cost terms (\$ per MWh of thermal energy service).

As the original forecast used calendar years (i.e. 2018, 2019 etc.) and the current practice appears to be to use the school year's fiscal years (i.e. 2017/18, 2018/19 etc.) please use the school year's fiscal years as the columns in this table, and show the original forecast cost of service for the year that most closely corresponds to the relevant school year fiscal year.

6.3 Please provide a chart illustrating the values shown in the table requested in IR No. 6.2.

7.0 THE RELATIONSHIP BETWEEN THE MARKET RATE AND THE COST-OF-SERVICE RATE

The 2018/19 COS Application suggests that there is a gap between the Market Rate and the Cost-of-Service Rate that will not close in the foreseeable future.¹⁸

- 7.1 Please provide DSD with all documents and information in FAES's possession that have not already been publicly disclosed and that discuss or relate to:
- (a) the design of the Market Rate and the Cost-of-Service Rate;
 - (b) the relationship between the Market Rate and the Cost-of-Service Rate; or

¹⁷ 2018/19 COS Application, p. 17.

¹⁸ 2018/19 COS Application, pp.22-23.

- (c) the potential transition from the Market Rate to the Cost-of-Service Rate.
- 7.2 Please provide a detailed explanation as to how FAES determined that there is a gap between the Market Rate and the Cost-of-Service Rate that will not reasonably close in the foreseeable future. Please provide all data relied upon by FAES to provide this explanation and identify any assumptions made by FAES in providing this explanation.
- 7.3 Please provide DSD with all documents and information in FAES's possession that have not already been publicly disclosed and that discuss or relate to a switch from the Market Rate to the Cost-of-Service Rate within 2-5 years of the commencement of the Project.

8.0 SWITCHING DSD TO THE COST-OF-SERVICE RATE

During the course of the Project, the parties had a number of discussions regarding the possibility of an application to the Commission for approval to switch DSD to the Cost-of-Service Rate.

- 8.1 Please provide DSD with all documents and information in FAES's possession that have not already been publicly disclosed or provided in response to IR No. 7.3 above that discuss or relate to an application to the Commission for approval to switch DSD to the Cost-of-Service Rate.
- 8.2 Please provide DSD with all documents and information in FAES' possession that discuss or relate to a balance remaining in the DDA upon the expiry or termination of the contracts with DSD.

9.0 ADDING NEW CUSTOMERS TO THE RATE POOL

In the 2018/19 Application, FAES states that:

FAES had engaged a number of other school districts with the intention of expanding the service. However, FAES has been unable to bring additional customers into the RDA despite its attempts. As such, the RDA has been limited to only DSD sites.¹⁹

- 9.1 Please provide a detailed description of all measures undertaken by FAES to add new customers to the rate pool.
- 9.2 Please provide DSD with all documents and information in FAES's possession that have not already been publicly disclosed and that discuss or relate to FAES' efforts to add new customers to the rate pool.

¹⁹ 2018/19 COS Application, p. 23.

Schedule "A"

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
1	Delta School District																							
2																								
3	Line																							
4		GHG Intensities																						
5	1	Natural Gas	0.180 tonnes per MWh	Common intensity factor for natural gas																				
6	2	Electricity	0.009 tonnes per MWh	ECH reported 2015 GHG intensity of electricity																				
7																								
8	Projection from Original Deal																							
9																								
10	3	Thermal Energy Sales	10,605 MWh	CPCN Application Financial Model, "Inputs" tab, row 199, "Total Billing Demand (MWh)"																				
11																								
12	4	Gas Input	3,682 MWh	CPCN Application Financial Model, "Cost of Natural Gas" tab, row 14. This gives the volume of natural gas in GJ. Divide by 3.6 to convert this to 3,682 MWh.																				
13	5	Electricity Input	3,095 MWh	CPCN Application Financial Model, "Cost of Electricity" tab, row 14. This value is in MWh, so no conversion is required.																				
14																								
15	6	GHG emissions	691 tonnes	Line 1 x Line 4 + Line 2 x Line 5																				
16	7	GHG emissions per MWh	65 kg per MWh thermal energy	Line 6 / Line 3 x 1000																				
17																								
18																								
19	Current Projection by FAES																							
20																								
21	8	Thermal Energy Sales	6,893 MWh	Current Application, Appendix A, page 5, Line 1 "Annual Volume for Billing (MWh)". Value for 2017/18 and onwards is 6,893 MWh.																				
22																								
23	9	Gas Input	9,140 MWh	Current Application, Appendix A, Schedule 3, Line 4. Value for 2017/18+ is 32,905 GJ. Divide by 3.6 to convert this to 9,140 MWh.																				
24	10	Electricity Input	359 MWh	Current Application, Appendix A, Schedule 4, Line 3. Value for 2017/18+ is 359 MWh.																				
25																								
26																								
27	11	GHG emissions	1,648 tonnes	Line 1 x Line 9 + Line 2 x Line 10																				
28	12	GHG emissions per MWh	239 kg per MWh thermal energy	Line 11 / Line 8 x 1000																				