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File No. 551952/000002

February 1, 2019

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”)

Further to the Regulatory Table dated November 30, 2018, please find enclosed the following argument and evidence of Delta School District No. 37 (“DSD”) in the Application proceedings:

1. **DSD’s Written Final Argument dated February 1, 2019.**
2. Report of Reshape Strategies dated January 31, 2019.
3. Report of MCW Consultants Ltd. dated February 1, 2019.

A USB with copies of the authorities cited in the DSD’s Written Final Argument will be couriered to the Commission’s offices and to Fasken’s offices on February 4, 2019 as the digital file containing these authorities is too large to send via e-mail.

We trust this is satisfactory. If you have any questions, please contact the undersigned directly.

Yours truly,

Borden Ladner Gervais LLP



Dionysios Rossi

Enclosure

cc Matthew Ghikas (mghikas@fasken.com)

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Delta School District No. 37 – Written Final Argument	

BRITISH COLUMBIA UTILITIES COMMISSION
IN THE MATTER OF THE UTILITIES COMMISSION ACT
R.S.B.C. 1996, CHAPTER 473

AND

FORTISBC ALTERNATIVE ENERGY SERVICES INC.
APPLICATION FOR APPROVAL OF THE FISCAL 2018/2019
REVENUE REQUIREMENTS AND COST OF SERVICE RATES
FOR THE THERMAL ENERGY SERVICE TO DELTA SCHOOL
DISTRICT NO. 37

FINAL WRITTEN ARGUMENT OF DELTA SCHOOL DISTRICT NO. 37

FEBRUARY 1, 2019

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1.0 INTRODUCTION

1. In this proceeding, FortisBC Alternative Energy Service Inc. (“FAES”) is seeking approval from the British Columbia Utilities Commission (the “BCUC”) to switch the Delta School District No. 37 (the “DSD”) from the market rate (the “Market Rate”) to the cost of service rate (the “COS Rate”) and, specifically, to the proposed COS Rate of \$0.253 per kWh (the “Proposed COS Rate”). In its written argument, FAES submits that the DSD should be switched from the Market Rate to the COS Rate now because the Project (as defined herein) is performing as FortisBC Energy Inc. (“FEI”) promised it would, the costs of the service align with FEI’s forecasts; and because FAES will only be able to earn a fair return on its investment if the switch occurs now. FAES further submits that the BCUC should approve the Proposed COS Rate because, *inter alia*, the costs sought to be recovered by FAES as part of the Proposed COS Rate were prudently incurred.

2. In DSD’s submission, it would be unjust and unreasonable for the DSD to be switched to COS Rate now for the following reasons:
 - a. Based on the factual matrix in which the Energy System Rate Development Agreement (the “RDA”) was negotiated, executed and approved, which militates against a switch to the COS Rate at this time.
 - b. Based on the representations made by FEI/FAES to the DSD regarding the timing of a switch from the Market Rate to the COS Rate.
 - c. The Project is not performing as FEI promised it would. The entire Project is delivering 34% less thermal energy to the DSD than FEI promised it would and the capital-intensive heat pump components of the Project in particular are delivering 64% less thermal energy than FEI promised they would (76% vs. 12%).
 - d. The Project has lowered the DSD’s greenhouse gas (“GHG”) emissions by 44% rather than the 69% FEI promised.
 - e. The costs of the service do not align with FEI’s forecasts. The COS Rate is not competitive with the Market Rate and does not provide benefits to the DSD in the form of low and/or less volatile rates as FEI advised the BCUC it would during the CPCN Application proceedings. Specifically:

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- 2.e.1 the capital costs of the Project are 124% higher than FEI advised they would be;
 - 2.e.2 the actual “unit cost of service” (i.e. the actual cost of delivering each unit of thermal energy to the Project), when the July 2013 Project reconfiguration is taken into account, is 24 % higher than the original projected “unit cost of service”, even after excluding the cost of the amortization of the District Deferral Account (“DDA”); and
 - 2.e.3 the actual 20-year levelized cost of energy from the heat pump components of the Project, taking into account the July 2013 Project reconfiguration (\$632/MWh), is 485% higher than the estimated 20-year levelized cost of energy from the heat pump components of the Project after the July 2013 Configuration Change (\$108/MWh).
3. Finally, the evidence submitted by the DSD in these proceedings establishes reasonable grounds to question the prudence of at least a portion of the Project-related capital costs incurred by FAES (the “**Capital Costs**”) that FAES seeks to recover via the Proposed COS Rate. As a result, the DSD submits that the BCUC should undertake a full prudence review of the Capital Costs that FAES seeks to recover via the Proposed COS Rate, and should require FAES to demonstrate that these Capital Costs were prudently incurred by FAES in light of the circumstances that were known to, or ought to have been known to, FAES at the time these Capital Costs were incurred, before it decides whether to switch the DSD from the Market Rate to the Proposed COS Rate.

2.0 UPDATED EXPERT EVIDENCE

- 4. The DSD submitted expert evidence to the BCUC on August 10, 2018.
- 5. FAES submitted rebuttal evidence to the BCUC on October 11, 2018 and provided the DSD with additional information regarding the rebuttal evidence on November 8, 2018.
- 6. On November 30, 2018, the BCUC determined that the evidentiary record in this proceeding should be closed.¹ Given this, the DSD has had no opportunity to have its experts review and opine on the

¹ Order G-228-18.

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additional information provided by FAES in its rebuttal evidence on October 11 and November 8, 2018.

7. Accordingly, the DSD seeks leave to adduce updated expert evidence that considers and responds to the additional information provided by FAES on October 11 and November 8, 2018, on the grounds of procedural fairness. The DSD submits that this updated expert evidence should be considered by the BCUC as it is proper and relevant and affects the Proposed COS Rate within the meaning of section 60(1)(a) of the *Utilities Commission Act*, R.S.B.C. 1996, c. 473 (the “UCA”).

3.0 OVERVIEW

8. These submissions are organized as follows:

- a. Part 4 summarizes the relevant facts.
- b. Part 5 outlines the issues that must be determined by the BCUC in these proceedings.
- c. Part 6 outlines the legal position of the DSD in these proceedings, which is that:

8.c.1 The DSD should not be switched from the Market Rate to the COS Rate at this time.

8.c.2 The evidence submitted by the DSD in these proceedings establishes reasonable grounds to question the prudence of at least a portion of the Capital Costs that FAES seeks to recover via the Proposed COS Rate.

8.c.3 The BCUC should undertake a full prudence review of the Capital Costs that are meant to be recovered via the Proposed COS Rate, and should require FAES to demonstrate that these Capital Costs were prudently incurred by FAES in light of the circumstances that were known to, or ought to have been known to, FAES at the time these Capital Costs were incurred, before it decides whether to switch the DSD from the Market Rate to the Proposed COS Rate.

8.c.4 If the BCUC declines to order a full prudence review of the Capital Costs that are meant to be recovered via the Proposed COS Rate, and decides that the DSD should be switched to the Proposed COS Rate, the DSD should be granted the

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opportunity to make further submissions to the BCUC regarding a potential phase-in of the switch before any switch is actually ordered.

- d. Part 7 describes the DSD’s position regarding a potential phase-in of the COS Rate.
- e. Part 8 describes the relief that the DSD is seeking in these proceedings.

4.0 FACTS

4.1 The Applicant

- 9. The Applicant, FAES, is an affiliate of FEI, a wholly owned subsidiary of Fortis Inc. FAES owns 27 operating projects across 45 sites in British Columbia.²

4.2 Delta School District No. 37

- 10. The DSD is a school district under the *School Act*, R.S.B.C. 1996, c. 412 that serves the communities of North Delta, Ladner, Tsawwassen and Westham Island. The DSD provides a comprehensive education program to over 16,000 students at 31 elementary and secondary schools. In addition, the DSD’s sites include Learning Centres, a District Administration Building and a District Maintenance Centre.³

4.3 The Initial Project Discussions (June 2008 – January 2011)

- 11. Between June 2008 and October 2010, Terasen Energy Services Inc. (“**Terasen**”), later known as FEI, engaged in sustained efforts to persuade the DSD to undertake a joint thermal energy project with FEI to upgrade the DSD’s energy systems.⁴
- 12. In or around June of 2008, Frank Geyer, the DSD’s Director of Facilities & Planning, attended the annual conference of the School Plant Officials Association of British Columbia in Penticton, British Columbia. During this conference, Tim Mah of Terasen approached Mr. Geyer to discuss the possibility of undertaking a joint energy project between Terasen and the DSD to upgrade the DSD’s heating systems and reduce its energy costs. At the time, the DSD was looking for a way to upgrade its heating systems and reduce its energy costs because the DSD’s natural gas heating systems were

² <https://www.fortisbc.com/aes/about-us>

³ CPCN Application, Commission Decision dated March 9, 2012, p. 6.

⁴ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, paras. 5 to 24.

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reliant upon natural gas and the DSD expected the price of natural gas to increase. As Mr. Geyer believed the joint energy project was worth investigating, he followed up with Mr. Mah after the conference to obtain further details.⁵

13. On July 8, 2008, Mr. Mah sent Mr. Geyer an email message with a brief overview of Terasen's activities and information about two of its thermal energy projects.⁶
14. For a number of months after July of 2008, DSD and Terasen staff met to discuss the details of the proposed energy project. At the time, Terasen was proposing that:
 - a. Terasen would upgrade and/or replace the DSD's energy supply equipment (e.g. its natural gas boilers), own the upgraded or new equipment and sell heat to the DSD; and
 - b. the DSD would pay Terasen for the energy and would pay for the cost of maintaining and replacing the energy supply equipment as the project proceeded.⁷
15. After some months of discussions, and the completion of preliminary tests at a possible project site (Seaquam Secondary – which was not included in the final project), the DSD ended the discussions with Terasen as the DSD was of the view that the costs of the proposed project were prohibitively high.⁸
16. On October 22, 2009, John Turner, the then Director of Customer Management and Sales at Terasen, contacted Dale Saip, a Trustee on the DSD's Board of Education (the "**Board of Education**"), in an attempt to re-open discussions with the DSD regarding the proposed project. At the time, Mr. Turner advised Mr. Saip that:
 - a. Terasen wished to participate in and contribute to a thermal energy audit for all DSD facilities.
 - b. It was anticipated that the result of this audit would be a portfolio of thermal energy solutions optimized for all DSD facilities. The goal would be to aggregate all capital investment

⁵ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 5.

⁶ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 6.

⁷ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 7.

⁸ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 8.

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necessary to optimize thermal energy use in the school district, maximize Terasen’s capital costs contribution, and determine a single energy rate for all DSD facilities.⁹

17. On or about November 6, 2009, at the request of Mr. Saip, DSD staff re-opened discussions with Terasen staff (specifically, Vlad Koska and Don Bergler) regarding the proposed project. At the time, DSD staff remained concerned that the costs of the proposed project would be prohibitively high. However, they were open to discussing the proposed project as the DSD’s annual facility grant (worth \$2,800,000) had just been cancelled; the DSD still needed to find other ways to upgrade its heating systems and reduce its energy costs; and Terasen had indicated that it would consider different thermal energy project options.¹⁰
18. Between November 6, 2009 and July 14, 2010, Terasen undertook a feasibility assessment of the proposed thermal energy project. DSD staff assisted with the feasibility assessment by providing Terasen staff with information regarding the DSD’s energy consumption and access to DSD facilities, as requested.¹¹
19. On or about July 14, 2010, Terasen staff presented its feasibility assessment (the “**Feasibility Assessment**”) to DSD staff. The Feasibility Assessment recommended that Terasen and the DSD undertake a joint energy project at an initial capital cost of \$6,961,321.00 to replace the energy systems at 16 of DSD’s facilities with a combination of geothermal heat pump systems, high efficiency heat pump systems, and high efficiency (Energy Star rated) boilers. Under the terms of the recommended project, either the DSD or the B.C. Ministry of Education would fund \$1,935,415 of the initial capital costs for the project. However, Terasen would own the upgraded energy systems and would sell energy to the DSD at an agreed-upon rate.¹²
20. The Feasibility Assessment stated that the recommended project would:
 - a. reduce the DSD’s GHG emissions by 61 to 65%;

⁹ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 9.

¹⁰ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 10.

¹¹ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 12.

¹² COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 13.

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- b. reduce the DSD’s annual operating and capital costs by \$224,650;
 - c. reduce the DSD’s future replacement costs;
 - d. increase the efficiency of the DSD’s energy systems;
 - e. protect the DSD against energy price volatility; and
 - f. deliver a better and healthier indoor environment to DSD school and facility occupants.¹³
21. DSD staff decided not to present the Feasibility Assessment to the Board of Education as they knew the Board of Education would not agree to make significant financial contributions towards the design and construction of energy systems that the DSD would not own. Nonetheless, DSD staff continued discussions with Terasen staff in the hope that the proposed thermal energy project could be revised to make it more palatable to the Board of Education.¹⁴
22. On or about October 28, 2010, after months of further discussions between DSD staff and Terasen staff, Terasen staff presented a revised feasibility assessment (the “**Revised Feasibility Assessment**”) to the DSD. The Revised Feasibility Assessment recommended that the DSD and Terasen undertake a joint thermal energy project (the “**Project**”) at an initial capital cost of \$4,942,000 to replace the energy systems at 19 of DSD’s facilities with a combination of geothermal heat pump systems, open loop heat pump systems, air source to water heat pump systems, and high efficiency (Energy Star rated) boilers. Under the terms of the Project, either the DSD or the B.C. Ministry of Education would fund approximately \$1,357,000 of the initial capital costs for the project. However, Terasen would own the upgraded energy systems and would sell energy to the DSD at an agreed-upon rate.¹⁵
23. The Revised Feasibility Assessment stated that the Project would:
- a. reduce the DSD’s GHG emissions by 69% (as FEI noted in the CPCN Application, this was “the primary driver of the Project”)¹⁶;

¹³ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 14.

¹⁴ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 16.

¹⁵ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 17.

¹⁶ CPCN Application, Exhibit B-1, pp. 9 to 10.

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- b. reduce the DSD’s annual operating and capital costs by \$188,000;
 - c. reduce the DSD’s future replacement costs;
 - d. increase the efficiency of the DSD’s energy systems;
 - e. protect the DSD against energy price volatility; and
 - f. deliver a better and healthier indoor environment to DSD facility occupants.¹⁷
24. DSD staff believed that the terms of the Revised Feasibility Assessment would be more palatable to the Board of Education than the terms of the Feasibility Assessment, primarily because the required capital cost contributions were lower. However, DSD staff remained concerned that the DSD did not have \$1,357,000 to contribute to the initial capital costs for the Project. To address this funding issue, at Terasen’s suggestion, the DSD applied to the Climate Action Secretariat for \$1,357,000 in Public Sector Energy Conservation Agreement (“PSECA”) funding. Terasen supported the DSD’s application for PSECA funding and assisted with the application by providing the Climate Action Secretariat with a draft energy study for the Project.¹⁸
25. The letter dated January 6, 2011 from Mr. Geyer to the Climate Action Secretariat Director regarding the DSD’s application for PSECA funding summarized the DSD’s understanding of what would be included in the Project and the purpose of the PSECA funding. It provided, in part:

The amended funding request is now \$1,357,000 towards the overall project budget of \$4,892,000. The breakdown of cost sharing and scope of work is listed on the table included as Appendix A. For the smaller projects (i.e. replacement of conventional boilers with high efficiency condensing boilers), Terasen’s contribution through its efficient boiler program is small, with government picking up the majority of costs for the labour to remove, re-pipe and connect to the new boilers. On the larger projects, Terasen will pick up the majority of cost for construction of geoexchange fields, wells, heat pumps and associated plant, with the government share limited to the cost to adapt existing piping and replace thermal distribution equipment downstream as necessary to adapt to the new plant. The site with the largest government contribution is South Delta Secondary, where significant cost will be incurred to change a system of over 50 gas-fired rooftop heating systems throughout

¹⁷ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 18.

¹⁸ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 19.

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the facility over to a central ground source heat pump plant distributing heated and chilled water to new coils and fan units at former RTU locations.¹⁹

26. The draft energy study Terasen provided to the Climate Action Secretariat confirmed the DSD’s understanding that the Project would be a package project that would meet all of the DSD’s energy needs without any further work required from the DSD. Neither Mr. Geyer nor any other DSD representatives had any experience or expertise regarding the design, construction, installation or operation of thermal energy systems. At all material times, the DSD relied upon Terasen, FEI and FAES as thermal energy system providers to provide expertise regarding the design, construction, installation and operation of the thermal energy systems included in the Project.²⁰
27. The DSD ultimately agreed to undertake the Project on the understanding that it would achieve the objects set out in the Revised Feasibility Assessment and summarized in paragraph 23 above.²¹
28. The DSD’s funding model with the British Columbia Ministry of Education generally provides all schools with equivalent funding on a per-pupil basis. Given this, it was important to the DSD to achieve as much certainty and predictability as possible with respect to its energy costs, and to avoid significant volatility or “rate shock” in any given year. This was because, under its funding model, the DSD would not receive any additional funding for increases in energy costs that deviated from that of other school districts.²²

4.4 The Design Build Agreement (December 2010)

29. In December of 2010, after the DSD agreed to undertake the Project, FEI entered into a design build agreement (the “**Design Build Agreement**”) with Johnson Controls L.P. (“**JCLP**”). The Design Build Agreement required JCLP to:
 - a. design, build, install and commission thermal energy delivery systems for 19 of the DSD’s building sites for the Project;
 - b. provide all detailed engineering and development scope for the Project;

¹⁹ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 21.

²⁰ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 22.

²¹ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 23.

²² COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 24.

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- c. provide all project management for the Project;
- d. supply all Project documentation for each site by each installation date; and
- e. provide a complete commissioning report and system performance verification.²³

4.5 Negotiation of the Project Agreements (February 2011 to September 2011)

30. On or about February 7, 2011, the Climate Action Secretariat approved the DSD’s application for PSECA funding.²⁴
31. Between February 7, 2011 and September 26, 2011, Terasen (which became FEI during this period) negotiated 19 Energy System Service Agreements (the “**Service Agreements**”) and the RDA with the DSD. Email messages exchanged between FEI’s Business Development Manager, Grant Bierlmeier, and Mr. Geyer during this time period show the factual context in which the agreements were being negotiated between the parties. As set out in the email messages, one of the objects of the agreements was to create a rate structure whereby the DSD would only be required to switch from the Market Rate to the COS Rate if it was in DSD’s best interests to do so. Of note, Mr. Bierlmeier advised Mr. Geyer that:

- a. The DSD could choose to pay the COS Rate at any time during the term of the Energy System Rate Development Agreement. FEI expected the COS Rate to be lower than the Market Rate, however, the choice to switch would be for the DSD to make. As set out in an email message from Mr. Bierlmeier to Mr. Geyer dated May 30, 2011:

You may choose to pay the cost of service rate at any time during the Agreement. We expect this rate to be lower than the market rate, but the choice will be yours to make. [Emphasis ours]

- b. The DSD would only be unilaterally switched to the COS Rate if the BCUC determined that switching to the COS Rate was in the DSD’s best interests. As set out in an email message from Mr. Bierlmeier to Mr. Geyer dated September 12, 2011:

The market rate is a deviation from the standard cost of service. Albeit a necessary one to provide you, the SD, with the guarantee that you need for your board. The issue we saw was that since only the SD had the choice to switch, it raises the

²³ CPCN Application, Exhibit B-1, pp. 30 to 31.

²⁴ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 25.

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potential that if you (Frank G) are no longer there, and new people who do not understand what the real purpose of the market rate is to begin to administer the contract, then they may not switch to the cost of service even if it makes sense to. So, we put in an election for FEI to switch, subject to BCUC approval. You might say, shouldn't we need SD agreement? Well, if the SD agrees, then the SD will simply elect to switch. The FEI election is simply to give both FEI and the BCUC an out to move to cost of service. The nuance here is that BCUC approval is required to switch, so, since the BCUC looks after the interests of customers, FEI would need to present a compelling argument that moving to cost of service is in the interest of the SD, even though the SD does not agree. No small task to say the least (not even sure what kind of argument it would have to be at the moment if you know what I mean). [Emphasis added]

- c. The DSD would have the opportunity to ensure that the COS Rate was reasonable before being switched to the COS Rate. As set out in an email message from Mr. Bierlmeier to Mr. Geyer dated September 15, 2011:

However, while I trust you to be reasonable Frank, since I know you understand this deal, I don't know what mindset will prevail at the District in 10 or 15 years from now. As of now, we all want to get to Cost of Service, but you need proof that it will be beneficial, which is what the market rate gives you so that you can get some comfort that COS is going to be reasonable before switching. We would go straight to COS, but this way, with the market rate, you have the chance to watch and ensure that the costs are in line with expectations first. What worries me is in 10 or 15 years from now, if the District is still on the market rate, the people administering the contract may not know what our intent was today and may not elect or agree to go to COS rates, even if there are good reasons to do it. Sometimes it is the reality of bureaucracy. [Emphasis added]

By giving FEI the ability to ask the BCUC to move the District to COS under the contract, FEI has at least a tiny bit of control over the process. BCUC approval is still necessary, which is to the benefit of the District. If FEI needs District consent to ask the BCUC, then implicitly, the District also wants to move to COS, which does not require BCUC approval. If that is true, then the District will simply elect to pay the COS rate, which means there is no reason to have a clause for FEI to apply to the BCUC to move the District to COS the BCUC will always be the decision maker and the BCUC must consider the District interests.²⁵

32. At all material times during the above-noted email exchanges and all other communications with FEI/FAES representatives, Mr. Geyer understood that the DSD could only be switched from the

²⁵ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 27.

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Market Rate to the COS Rate if it was in DSD’s best interests (including its best financial interests) to switch.²⁶

33. As set out in the above-noted email messages, at no time during these discussions did Mr. Bierlmeier or any other FEI representative state that there would be a 3 to 5 year transition period for switching to the COS Rate. To the contrary, Mr. Bierlmeier repeatedly and expressly stated that the DSD could continue to pay the Market Rate for so long as it was in the DSD’s best interests to do so.²⁷

4.6 The Terms of the Project Agreements

A. The Service Agreements

34. The terms of the Service Agreements provided that, *inter alia*:
- a. FEI would provide the total construction and related services required to design, construct and commission the thermal energy systems included in the Project (the “**Energy Systems**”) and connected components of the space heating, cooling and ventilation, and domestic hot water distribution and control systems in the DSD’s existing buildings (the “**DSD Building Systems**”).²⁸
 - b. FEI would design the Energy Systems to meet the thermal energy requirements of the DSD buildings included in the Project (the “**Project Buildings**”) and to be operationally compatible with the DSD Building Systems.²⁹
 - c. The DSD could review the specifications prepared by FEI for each Energy System, but that right would not impose any obligation on the DSD to verify the suitability of the Energy System and could not be construed as confirmation by the DSD that the Energy System satisfactorily met the energy requirements of the Project Buildings.³⁰

²⁶ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 28.

²⁷ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 29.

²⁸ Service Agreement, s. 2.1.

²⁹ Service Agreement, ss.2.1(c) and 2.3.

³⁰ Service Agreement, s.2.3.

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- d. FEI would deliver thermal energy to the Project Buildings throughout the term of the Service Agreements (discussed in paragraph 34(g) below).³¹
- e. The DSD would pay FEI for the thermal energy that FEI delivered to the Project Buildings according to the rates set out in the RDA.³²
- f. FEI would own, maintain and repair the Energy Systems.³³
- g. The Service Agreements would have a term of 20 years. The term would automatically renew for periods of ten years unless one party provided written notice of termination to the other party no less than six months prior to the expiry of the term. Upon expiry of the term, unless otherwise agreed by the parties and subject to agreement by the BCUC, the DSD could, at its option: (i) require FEI to remove the Energy Systems at FEI’s cost; or (ii) acquire the Energy Systems from FEI at a defined price (the “Adjusted Energy System Purchase Price”).³⁴
- h. The Service Agreements would be subject to approval by the BCUC. If the BCUC approved the Service Agreements, the services provided under the Service Agreements would be subject to regulation by the BCUC under the UCA and would form another class of service that FEI provided as a public utility. The terms of the UCA might supersede the terms of the Service Agreements.³⁵

B. The RDA

35. The terms of the RDA provided that, *inter alia*:

- a. Either party could, by notice to the other party, add as a Project Building any additional building owned by the DSD subject to: (i) BCUC approval, if necessary under applicable laws, and (ii) the parties having entered into an agreement that was substantially equivalent to a Service Agreement in respect of such building.³⁶

³¹ Service Agreement, s. 7.1.

³² Service Agreement, s.7.3.

³³ Service Agreement, s.6.1.

³⁴ Service Agreement, ss. 3.1, 3.2, and 15.6.

³⁵ Service Agreement, s. 11.4.

³⁶ RDA, s. 4.1.

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- b. Within 15 days following the end of each month, FEI would provide the DSD with a statement setting out the monthly energy charges for each Project Building. The monthly energy charges for each Project Building would be calculated by multiplying the amount of thermal energy delivered to the Project Building by the “Thermal Energy Rate” and adding applicable taxes for the calendar month immediately prior to the date of invoice. The “Thermal Energy Rate” would mean the “Market Rate” until either: (i) the DSD notified FEI in writing that it was electing to pay the COS Rate or (ii) FEI received approval from the BCUC to charge the COS Rate, after which time the Thermal Energy Rate would mean the COS Rate and the Market Rate would no longer be available.³⁷
- c. The cumulative difference between FEI’s total cost of service for all Project Buildings at any time during the term that have been approved by the BCUC (the “**Annual Cost of Service**”) and revenues would be recorded in the DDA.³⁸
- d. The RDA would have a term of 20 years. The term would automatically renew for periods of ten years unless one party provided written notice of termination to the other party no less than six months prior to the expiry of the term.³⁹
- e. The RDA would be subject to approval by the BCUC. If the BCUC approved the RDA, the services provided under the RDA would be subject to regulation by the BCUC under the UCA and would form another class of service that FEI provides as a public utility. The terms of the UCA might supersede the terms of the RDA.⁴⁰

4.7 The CPCN Proceedings (November 2011 – June 2012)

36. On November 28, 2011, FEI filed an application (the “**CPCN Application**”) with the BCUC for:

- a. a Certificate of Public Convenience and Necessity (a “**CPCN**”) for the Project under sections 45 and 46 of the UCA; and

³⁷ RDA, ss. 1.1.(rr) and 4.2.

³⁸ RDA, s. 1.1(q).

³⁹ RDA, ss. 2.1 and 2.2.

⁴⁰ RDA, s.6.4.

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- b. approval of the rate and rate design established by the RDA and the Service Agreements, as just and reasonable rates under sections 59 through 61 of the UCA.⁴¹
37. On December 6, 2011, the DSD applied to participate as an intervener in the CPCN Application proceedings. The DSD was not represented by legal counsel during the CPCN Application proceedings; did not receive legal advice during the CPCN Application proceedings; did not file any evidence in the CPCN Application proceedings; and did not submit any argument in the CPCN Application proceedings.⁴²
38. In its CPCN Application, FEI provided details regarding, *inter alia*:
- a. the work that was undertaken to assess which Project Buildings, if any, would be suitable for connection to heat pump energy systems;
 - b. the DSD's thermal energy demands;
 - c. the Project cost;
 - d. the relationship between the Market Rate and the COS Rate; and
 - e. expansion of the rate pool.
39. Specifically, FEI advised the BCUC as follows:
- a. Suitability of Project Buildings for Heat Pump Energy Systems: FEI analyzed each Project Building to assess the complexity of connecting the Project Building's mechanical systems to heat pump energy systems and determined that 11 of the 19 Project Buildings were suitable for the installation of heat pump energy systems (Delview Secondary School, North Delta Secondary School, South Delta Secondary School, Delta Manor Centre, Delta Secondary School, English Bluff Elementary School, Neilson Grove Elementary School, Pinewood Elementary School, Richardson Elementary, the District Administration Building and South Park Elementary School).⁴³

⁴¹ CPCN Application, Exhibit B-1, p. 1.

⁴² COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, paras. 31-32.

⁴³ CPCN Application, Exhibit B-1, pp.19 to 20.

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- b. The DSD’s Thermal Energy Demands: FEI stated that the thermal energy demands of the Project Buildings were “well known” to FEI.⁴⁴ The total annual thermal energy demand for all 19 Project Buildings was 10,605 MWh.⁴⁵ To calculate this number, FEI utilized historical billing information for both natural gas and electricity and then performed a regression analysis against heating degree-days in Vancouver to establish the thermal energy demand for each Project Building.⁴⁶ FEI then added the thermal energy demand for each Project Building to calculate the total annual thermal energy demand for all Project Buildings.⁴⁷
- c. Project Cost: The total Project cost was \$6,500,000, which included: (i) \$50,000 spent by FEI to develop the Project; (ii) \$100,000 paid by FEI to JCLP for a Project feasibility analysis; and (iii) \$6,350,000 to be paid to JCLP pursuant to the Design Build Agreement (\$1,900,000 for fixed cost components and \$4,450,000 variable cost components). The DSD would provide FEI with a \$1,357,000 Contribution in Aid of Construction towards the total Project cost.⁴⁸
- d. Relationship Between the Market Rate and COS Rate: There was no set time by which the DSD would be obligated switch from the Market Rate to the COS Rate. The true cost of service would be captured in the DDA and either recovered from, or returned to, the DSD. However, there might be a strong incentive for the DSD to switch to the COS Rate in the near future. The COS Rate initially would be very low, which means that should the DSD remain on the Market Rate for some period of time, the DDA impact might produce a credit initially, that reduces rates in the future, rather than a debit that increases rates in the future. Based on the financial analysis undertaken by FEI, including the sensitivity analysis, FEI expected that the COS Rate would be competitive with the Market Rate and would provide benefits to the DSD in the form of low and/or less volatile rates.⁴⁹

⁴⁴ CPCN Application, Exhibit B-1, p. 3.

⁴⁵ CPCN Application, Exhibit B-1, p. 43.

⁴⁶ In addition, the CPCN Application said the JCLP performed an evaluation at each Project Building to estimate the boiler efficiencies and any non- heating gas utilization at the Project Building.

⁴⁷ CPCN Application, Exhibit B-1, p. 18.

⁴⁸ CPCN Application, Exhibit B-1, p. 30.

⁴⁹ CPCN Application, Exhibit B-1, pp. 44 to 45.

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- e. Expansion of the Rate Pool: The RDA and the Service Agreements contemplate the potential expansion of the rate pool. The negotiated rate rider creates an appropriate incentive structure to expand the service to incorporate other schools, ensuring that the DSD continues to get the credit for the contribution even in the event that other customers are added to the asset pool. Furthermore, the Service Agreements are separate to produce an incentive for both the DSD and FEI to continue to explore economically viable expansion opportunities for the pool, since expansion necessarily will provide additional risk management benefits to all parties.⁵⁰
40. On March 9, 2012, the BCUC issued Order No. G-31-12:
- a. granting FEI a CPCN for the Project on the condition that the RDA and the Service Agreements be assigned to an affiliate of FEI; and
 - b. denying approval of the proposed rate and rate design but indicating that it would approve a modified rate and rate design.
41. On March 16, 2012, the RDA and the Service Agreements were assigned to FAES and the BCUC issued Order No.C-3-12 granting FAES a CPCN for the Project.
42. On June 5, 2012, the BCUC issued Order No. G-71-12 approving the rate design and on June 25, 2012, the BCUC issued Order No. G-88-12 approving the rate.

4.8 Changes to the Configuration of the Project (2013)

43. After the BCUC issued the CPCN, the following changes were made to the configuration of the Project:
- a. The ground source heat pump systems at North Delta Secondary School and Delview Secondary School were changed to air- to-water heat pump systems.
 - b. In exchange for FAES taking over the ownership, installation, control and metering of the existing natural gas boilers at Devon Gardens Elementary School and Sunshine Hills Elementary School, FAES relinquished the ownership, installation, control and metering of 50 air source heat pumps (roof top units) at the South Delta Secondary School. The capital

⁵⁰ CPCN Application, Exhibit B-1, p.3 and 33.

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costs incurred by FAES in respect of the 50 air source heat pumps at the South Delta Secondary School were included in the capital costs for the Project.⁵¹

4.9 Post-CPCN Concerns About the Project (July 2012 to February 2013)

44. In the summer and fall of 2012, Mr. Geyer understood that FEI was undertaking efforts to market the Project to other boards of education. At the time, a number of third parties raised concerns about the Project, specifically, the economic feasibility of the Project and the cost risks being assumed by the DSD in connection with the Project.⁵²
45. As a result of the foregoing, on or about October 3, 2012, Mr. Geyer asked Mr. Bierlmeier to provide a response to the concerns raised.⁵³
46. On October 3, 2012, Mr. Bierlmeier sent Mr. Geyer an email message in which he outlined his responses to the concerns raised by the third parties. In respect of the issue of cost effectiveness, Mr. Bierlmeier stated as follows:

On the issue of cost effectiveness, the Delta service was designed to offer maximum emission reductions without costing more. It is true that a purely “low-cost” solution could have been implemented instead, but without the huge emission reductions that the service delivers. Given carbon neutrality is the mandate, with an emphasis on real reductions being the priority, we feel strongly that the project best achieves this. The BCUC merely is putting on record that they think there may be cheaper solution, without the green benefits available. Nonetheless, the Ministry supported the project and ultimately the BCUC approved this project, thereby indicating their support for it.⁵⁴

47. In respect of the BCUC’s comments in the CPCN Decision regarding the current and future risks of the Project, Mr. Bierlmeier stated as follows:

I actually disagree with the Commission opinion on the current and future risks. The service that was approved by the BCUC has checks and balances on initial and future costs via the prudence reviews that the BCUC has done and will be doing each year on the service. In contrast, a long term investment decision along with firm long term contracts by a school district based solely on forecasts of energy and price savings into the future done at this moment in time exposes future ratepayers to immense risk without any opportunity to represent themselves. In our solution, future ratepayers will have an ongoing opportunity to

⁵¹ COS Rate Application, Exhibit B-3, p. 17.

⁵² COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 47.

⁵³ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 48.

⁵⁴ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 49.

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represent their interests to the BCUC. As such, I believe the quoted BCUC statements on this matter in the Delta decision are incorrect and that the BCUC are becoming more aware of this through the subsequent processes we have been engaged in with them since the Delta Decision. In any event, we must remember that the BCUC approved this rate design and will be reviewing it each year for reasonableness in the interests of customers.⁵⁵

48. On February 19, 2013, the DSD’s then Energy Specialist, Debra Eng, emailed Mr. Geyer a document titled “BC Utilities Commission Order Favours Competition Over Regulation” (the “**AES Inquiry Document**”), which set out Ameresco’s views regarding the BCUC’s Alternative Energy Services Inquiry and raised concerns about the Project. In the AES Inquiry Document, Ameresco detailed its concerns that:

- a. the Project was not properly designed from an engineering perspective; and
- b. the Project exposed the DSD to significant and unnecessary financial risks.⁵⁶

49. On February 19, 2013, Mr. Geyer forwarded the AES Inquiry Document to Mr. Bierlmeier and asked him to provide a response to the concerns contained within it.⁵⁷

50. On February 20, 2013, Mr. Bierlmeier responded to Mr. Geyer’s email message. Notably, in his response, Mr. Bierlmeier did not respond to Ameresco’s concern that the Project was not properly designed from an engineering perspective. However, in response to Ameresco’s concern that the Project exposed the DSD to significant and unnecessary financial risks, he stated that:

[Y]ou have a thermal energy rate that you pay in exchange for thermal energy service. We must provide that service until you no longer want it (effectively we are obligated in perpetuity now). We must pay for the costs of providing that service and providing those costs are reasonable, we have a reasonable expectation that we can recover those costs, over time. You have lowered your risks relative to energy input costs in a number of ways. First, your rate is for thermal energy, all-in. Second, the equipment we are using to provide the thermal energy will dramatically reduce energy usage overall thereby reducing the exposure to commodity prices and volumes. Finally, you have direct protection under the UCA guaranteeing you continuous, reliable service at reasonable rates subject to oversight by a panel of experts (and you have already seen the standards they hold us up to). This protection extends to whether we go bankrupt or sell the service – it is much more powerful a protection than any hollow “performance guarantee” that requires you to come up with the investment

⁵⁵ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 50.

⁵⁶ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 54.

⁵⁷ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 56.

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capital and rely on the price forecasts provided at the time of analysis applied to what are effectively certain energy performance characteristics driven by the nature of the predictability of your need for thermal energy and the design of the systems. Your service provides much more protection and reduction in risk than any other alternative[...]⁵⁸

4.10 The COS Rate Approvals (2014 – 2017)

51. On July 24, 2014, the BCUC issued Order No. G-0100-14 approving the forecast COS Rate for the DSD for the upcoming contract year (July 1, 2014 to June 30, 2015).
52. On April 29, 2015, FAES filed an Application for Approval of the Fiscal 2015/16 Revenue Requirements and COS Rate for Thermal Energy Service (the “**2015/16 COS Rate Application**”) with the BCUC.
53. On May 27, 2015, a BCUC employee, Yolanda Domingo, telephoned Mr. Geyer regarding the 2015/16 COS Rate Application. During the telephone call, Ms. Domingo:
 - a. expressed concerns about the growing DDA balance that the BCUC believed would eventually have to be paid by the DSD regardless of whether the DSD paid the Market Rate or COS Rate; and
 - b. encouraged the DSD to seek further understanding and guidance on the matter and to apply to participate as an intervener in the 2015/16 COS Rate Application.⁵⁹
54. After Mr. Geyer received this telephone call on May 27, 2015, he sent an email message to Mr. Bierlmeier in which he summarized his telephone call with Ms. Domingo and stated, in part:

I re-read the RDA and am still under the belief that as long as we stay on the market rate (indexed), the deferral account will not be a factor to to [sic] the District. Once the COS rate drops at or below the Market Rate and we elect to change, only then would the deferral account affect the District (as part of the COS rate in the form of an amount necessary to amortize the deferral account balance).

Please tell me that I’m correct and that I didn’t get duped...⁶⁰

⁵⁸ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 57.

⁵⁹ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 63.

⁶⁰ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 64.

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55. On May 27, 2015, Mr. Bierlmeier sent Mr. Geyer an email message in which he expressly confirmed that Mr. Geyer’s understanding regarding responsibility for the DDA balance and a potential switch to the COS Rate (as outlined above) was correct. In his email message, Mr. Bierlmeier specifically stated that:

Your understanding is absolutely correct Frank. You pay the market rate until you elect to switch to the COS rate exactly as you describe below.⁶¹

56. In the 2015/16 COS Rate Application, in response to the BCUC’s Information Request regarding FAES’ interpretation of the BCUC’s jurisdiction on the enforcement of rates, FAES stated that:

2.8 What is FAES’ interpretation of the Commission’s jurisdiction on the enforcement of rates? Could the Commission direct FAES to commence charging of the cost of service rates at any time in order to reduce the balance in the deferral account?

Response:

FAES does not wish to take a position on this matter, at this time, in the absence of particular facts upon which to make an informed submission. Should the Commission wish to make such a direction, then FAES would anticipate being provided with reasonable notice of this intention and an opportunity to be heard regarding this matter, before any such direction is made. FAES would also expect that the Delta SD would wish to make submissions regarding such a direction.

The Delta SD’s IR No. 1 to FAES highlights the two areas of concern to the Delta SD. First, the Delta SD wants confirmation that the financial risk associated with potential non-recovery of the balance in the deferral account will be borne by FAES’ shareholders, and not the Delta SD. Second, the Delta SD wants confirmation that FAES is not seeking approval from the Commission to convert the Thermal Energy Rate from the Market Rate to the Cost of Service Rate now and that FAES will only make such an application if it can clearly demonstrate that it is in the best interest of the Delta SD to switch to the Cost of Service Rate.

In response to the Delta SD IRs, FAES confirmed that the first statement is correct, and with respect to the second point, FAES confirmed that it will endeavor to work with the Delta SD to achieve a mutually desirable approach if and when it were to seek approval from the BCUC for a change to the Cost of Service Rate.

Therefore, if the Commission were to direct FAES to commence charging the Cost of Service Rates “at any time in order to reduce the balance in the deferral account”, the Delta SD would likely be very concerned to start having to pay the Cost of Service Rate with the

⁶¹ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 65.

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sole objective to reduce the balance in the deferral account, the non-recovery of which FAES confirmed is at the risk of its shareholder.⁶²

57. On December 24, 2015, the BCUC issued Order No. G-213-15 approving the forecast COS Rate for the DSD for the upcoming contract year (July 1, 2015 to June 30, 2016).
58. On April 26, 2016, issued Order G-53-16, granting FAES relief from filing:
 - a. its annual rate review process; and
 - b. the additional financial information outlined in Order G-100-14.
59. The BCUC accepted FAES’ proposal to file an estimate of the DDA balance as of July 1 and the forecast COS Rate for the next contract year on an annual basis for information purposes only.
60. On June 20, 2017, FAES filed an estimate of the DDA balance as of July 1, 2017 and an estimate of the forecast COS Rate for the next contract year (July 1, 2017 to June 30, 2018).

4.11 The Current Proceedings (2018- 2019)

61. On February 8, 2018, FAES filed an application with the BCUC seeking approval to switch the DSD to the Proposed COS Rate for the next contract year (July 1, 2018 to June 30, 2019).
62. On April 12, 2018, the BCUC issued Order No. G-77-18 approving the existing market rate mechanism and resulting market rate on an interim and refundable basis, effective July 1, 2018.
63. On June 13, 2018, FAES filed an evidentiary update to its February 8, 2018 application. The February 8, 2018 application, as amended by the June 13, 2018 evidentiary update, is hereinafter referred to as the “**COS Rate Application**”.
64. In the current proceedings, the DSD and FAES filed evidence with the BCUC which provided details regarding, *inter alia*:
 - a. the design of the heat pump energy systems for the Project;
 - b. the annual output from heat pump energy systems for the Project;
 - c. FAES’ thermal energy load forecasts;

⁶² 2015/16 COS Rate Application, Exhibit B-4-1.

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- d. the Project cost;
- e. the relationship between the Market Rate and the COS Rate; and
- f. the expansion of the rate pool.

A. The DSD’s Evidence

65. The DSD’s evidence can be summarized as follows:

a. The Design of the Heat Pump Energy Systems for the Project:

65.a.1 In May and June of 2012, Don Poole, a mechanical engineer who was retained by Geo-Energie Inc. (JCLP’s sub-consultant) to assist with the design and installation of the heat pump systems for the Project, advised Geo-Energie Inc. that:

65.a.1.1 It is a basic principle of thermodynamics that, in order for heat to flow, heat must go from a high temperature to a low temperature. This means that a low temperature heat pump system that supplies energy to a high temperature terminal equipment won’t work effectively.

65.a.1.2 He was concerned that the design of the Project was proceeding without consideration for the disconnect between the low temperature heat pump systems (the Energy Systems) and the high temperature terminal equipment (the DSD Building Systems) in the Project Buildings selected for connection to the low temperature heat pump systems. A number of the Project Buildings that had been selected for connection to heat pump systems would only be suitable for connection to such heat pump systems if the high temperature terminal equipment located in such buildings was upgraded to work with the low temperature heat pump systems (by for example, replacing the high temperature coils in such equipment with low temperature coils).⁶³

65.a.2 In July and August of 2018, MCW Consultants Ltd. (“MCW”), a mechanical engineering expert retained by the DSD, reviewed the design drawings and the

⁶³ COS Rate Application, Exhibit C1-6, Affidavit #1 of Don Poole dated August 2, 2018.

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mechanical systems for three of the Project Buildings connected to heat pump systems (Delview Secondary, Richardson Elementary, and Neilson Grove Elementary) and concluded that:

65.a.2.1 The information FEI provided to the BCUC in the CPCN Application proceedings showed a pre-retrofit natural gas consumption [GJ] and post-retrofit expected gas consumption [GJ]. From this table, the following information could be extracted:

School	Pre-retrofit NG [GJ]	Post-retrofit NG [GJ]	Expected NG Savings
Delview Secondary	5093	320	93%
Neilson Grove Elementary	1121	78	93%
Richardson Elementary	1891	117	93%

65.a.2.2 The expected 93% natural gas savings using a combination of high efficiency boilers and heat pumps was very aggressive and relied heavily on the usage of the heat pump system to reduce gas consumption.

65.a.2.3 The technical information provided by FAES does not explain in detail how the 93% natural gas savings were supposed to be achieved. To determine this level of savings, FAES should have completed an energy model for each of the schools to analyze the operation of the atmospheric boilers, high efficiency boilers and heat pumps. This is a standard industry practice for the design of thermal heating plants using a combination of boilers and heat pumps.

65.a.2.4 Achieving the forecasted 93% natural gas consumption savings was not possible in the schools examined by MCW because:

65.a.2.4.1 The heating distribution systems (the DSD Building Systems) for the 3 schools were not changed. These systems were originally designed as high temperature systems which meant the heat pumps, due to their temperature limitations, could not provide enough hours of operation in the heating season leading to significant reliance on boilers.

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65.a.2.4.2 The central plant at each school lacked elements like variable speed drives in pumps to facilitate flow reduction at lower loads in order to maximize efficiency of the high efficiency boilers.

65.a.2.4.3 The efficiency of the high efficiency boilers was reduced by failing to include more than one boiler.

65.a.2.5 According to standard industry practice, FAES should have known of the items mentioned above and should have determined whether a full heating system retrofit might be needed to meet the natural gas reduction targets.

b. The Annual Output From Heat Pump Systems: In July and August of 2018, Will Cleveland of Reshape Strategies, an economic expert retained by the DSD, reviewed relevant Project documents and concluded that the utilization of the heat pump systems has been much lower than forecast. In the CPCN, the Project was forecast to consume 3,095 MWh of electricity per year, of which 2,889 MWh would be used by the sites with heat pump-based systems. FAES has forecast that actual electricity consumption will stabilize at 301 MWh per year.⁶⁴

c. FAES' Thermal Energy Load Forecast: In July and August of 2018, Mr. Cleveland reviewed relevant Project documents and concluded that:

65.c.1 FAES made errors in its thermal energy load forecast. FAES' original forecast was that the Project would provide 10,605 MWh of thermal energy, but FAES' current estimate is that the weather-normalized thermal energy produced by the Project has stabilized at 6,504 MWh per year (a 39% variance from the original projection).

65.c.2 The -39% variance in the load forecast can be attributed to two different errors:

65.c.2.1 First, FAES over-estimated the total thermal energy demand of the DSD sites (i.e. they did not develop an accurate estimate of the weather-adjusted thermal energy load of the sites). Thermal energy load was estimated using gas consumption from prior years, so FAES likely over-estimated the

⁶⁴ COS Rate Application, Exhibit C1-6, Report of Reshape Strategies dated August 10, 2018.

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efficiency of the existing equipment. In prior proceedings, FAES mentioned the impact of the BC Teachers’ Strike, however, this was a one-time event that occurred in 2014 and could not have impacted FAES’ original load forecast or the variance in the Project’s other years. There is no evidence in the BCUC filings for this Project that the total thermal energy demand of the DSD sites has been reduced through demand-side measures such as building envelope upgrades.

65.c.2.2 Second, FAES over-estimated how much of the DSD sites thermal energy would be supplied by FAES-owned equipment, rather than by the DSD-owned equipment. This error represents actual load that the DSD sites have had and continue to have, and which FAES represented could and would be met by FAES-owned equipment but which cannot be met by the FAES-owned equipment due to the pre-existing secondary side configuration of the DSD sites, and instead is met by DSD-owned Equipment.⁶⁵

d. The Project Cost: In July and August of 2018, Mr. Cleveland reviewed relevant Project documents and opined that:

65.d.1 A thermal energy utility’s annual revenue requirement can be thought of in absolute terms (i.e. the total dollar amount, per year) or in unit cost terms (i.e. \$ per MWh of end-use energy). An annual revenue requirement does not necessarily tell the entire story because low output from a project can lead to significantly higher costs per unit of energy.

65.d.2 As of 2016/17 (the most recent year for which actuals are available), the unit cost of service (excluding the amortization of the DDA) was 44% higher than the original forecast unit cost of service adjusted for fuel rate variances. Based on FAES’ projection for 2018/19, the unit cost of service excluding the amortization of the DDA will be 24% higher than the adjusted original forecast.⁶⁶

⁶⁵ *Ibid.*

⁶⁶ *Ibid.*

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65.d.3 The actual 20 year levelized cost of energy from the heat pump components of the Project (\$471/MWh) is 495.79% higher than the estimated 20 year levelized cost of energy from the heat pump components of the Project at the time of the CPCN Application proceedings (\$95/MWh).

B. FAES’ Evidence

66. The evidence of FAES can be summarized as follows:

a. The Design of the Heat Pump Energy Systems for the Project:

66.a.1 Following completion of the initial feasibility study and the subsequent approval of the CPCN, JCLP performed the detailed system design on a site-by-site basis including a detailed energy study for the Project that included an analysis of climate data, heating degree days, coefficient of performance of the equipment, floor space, operating hours, and building envelope characteristics.

66.a.2 FAES and JCLP considered the DSD’s own heating distribution systems and the compatibility of the heat pump equipment. JCLP’s design philosophy also considered the equipment’s sequence of operations as a key factor in determining how each piece of equipment operates together as a compatible system throughout the year. Through their energy modelling analysis of the school sites, JCLP determined that the DSD’s terminal systems (the thermal coils and radiant systems already existing in the schools) were capable of satisfying energy demand using lower temperatures during certain off-peak conditions.

66.a.3 JCLP considered and installed higher temperature heat pump systems on a case-by-case basis where the benefits exceeded costs. For example, JCLP selected a heat pump with an expanded output temperature range up to 60°C/140°F (the median between low temperature, 120°F, and high temperature, 160°F, systems) at Neilson Grove Elementary consistent with the requirements and design at that school.

66.a.4 The DSD’s operation and maintenance of the DSD Building Systems have impacted the system’s efficiency. The DSD’s behaviour is not related to system

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design and FAES and JCLP could not have been expected to model such behaviour.⁶⁷

- b. The DSD’s Thermal Energy Demands: The thermal energy demands of the Project Buildings were not “well known” to FEI at the time of the CPCN Application. The total annual thermal energy demand for all of the Project Buildings in the year preceding the COS Rate Application (the 2017/18 fiscal) was 6,504 MWh, only 61% of the 10,605 MWh forecast by FEI in the CPCN Application.⁶⁸
- c. FAES’ Thermal Energy Load Forecast: The load variances referred to by Mr. Cleveland in his evidence had no impact on the total cost of service, they only reduced the Market Rate.
- d. The Project Cost: The total Project cost is \$8,099,000, or 124.6% of the total Project cost estimated in the CPCN Application.⁶⁹ The unit cost of service of the Project referred to by Mr. Cleveland in his evidence is irrelevant because the DSD is the only customer and is required to pay the total cost of service. The only practical relevance of unit costs is to facilitate dividing up the total annual cost for monthly billing. Furthermore, Mr. Cleveland’s calculations regarding the unit cost of Service of the Project were incorrect because they did not account for the July 2013 Project reconfiguration.⁷⁰
- e. Relationship Between the Market Rate and COS Rate: Contrary to what FEI stated in the CPCN Application, the impact of the DSD remaining on the Market Rate for the initial portion of the Term was not to produce a credit that reduced the DSD’s thermal energy rate in the future. Rather, the impact was to produce a debit that would significantly increase the DSD’s thermal energy rate in the future should the DSD be switched to the COS Rate. As of June 30, 2018, the DDA balance is expected to be \$3,925,000 and is expected to grow at \$700,000 each year (before amortization and AFUDC). Furthermore, FEI’s financial analysis, including its sensitivity analysis, were incorrect. The COS Rate has not been competitive with the Market Rate and has not provided benefits to the DSD in the form of

⁶⁷ COS Rate Application, Exhibit B-7, pp. 30 to 40.

⁶⁸ COS Rate Application, Exhibit B-1-1, p. 16.

⁶⁹ COS Rate Application, Exhibit B-1-1, Appendix A.

⁷⁰ COS Rate Application, Exhibit B-7, pp. 19 to 28.

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low and/or less volatile rates.⁷¹ As a result, switching to the COS Rate will result in the very “rate shock” that the Project was intended to avoid.

- f. Expansion of the Rate Pool: The RDA contemplates the expansion of the rate pool. With the expansion of the rate pool, the DSD would potentially benefit from rate stabilization due to a larger pool of customers as well as a lower COS Rate through application of the SD 37 Rate Rider. However, if no other customers are added to the pool, the DSD only benefits by a one year deferral of the rate rider. To this end, 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.

C. The DSD’s Request for Further Information

67. After receipt of the above-noted evidence from FAES, the DSD submitted an Information Request to FAES which asked FAES to, *inter alia*:
- a. provide the DSD with JCLP’s detailed energy models and calculations for all school sites, including the input reports, output reports and the name of the software used to generate the models;
 - b. identify any assumptions made by JCLP in preparing the models and undertaking the calculations;
 - c. advise the DSD whether JCLP investigated the operation and maintenance practices of the DSD with respect to its own terminal systems when designing the Project and, if JCLP did so, advise what information was collected during this investigation and how this information was taken into account by JCLP;
 - d. provide the DSD with all correspondence and other documents between the parties concerning the issues referred to in paragraph 67(c) above;

⁷¹ COS Rate Application, Exhibit B-1-1, p. 17.

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- e. quantify the impact of the DSD’s operations and maintenance of its terminal systems on the system’s efficiency, provide all data relied upon by FAES to provide this calculation, and identify any assumptions made by FAES in undertaking this calculation;
- f. explain *how* the compatibility of systems was resolved through JCLP’s design philosophy, equipment selection, and the design of the sequence of operations and provide all documents and information relied upon by JCLP to resolve the compatibility of systems;
- g. identify every Project Building other than Neilson Grove Elementary where JCLP considered installing equipment such as higher temperature heat pumps and decided to do so, explain the reasoning for JCLP’s decision, and provide any relevant documents in this regard; and
- h. identify every Project Building where JCLP considered installing equipment such as higher temperature heat pumps and decided not to do so, explain the reasoning for JCLP’s decision, and provide any relevant documents in this regard.⁷²

68. However, FAES refused to provide the information requested⁷³ and, in reasons dated November 30, 2018, the BCUC declined to order FAES to produce this information.⁷⁴

D. The DSD’s Updated Expert Evidence

69. In connection with this argument, the DSD has submitted updated evidence from MCW and Mr. Cleveland.

70. The updated evidence of MCW is that:

- a. While the calculations used in the energy model JCLP completed for Neilson Grove Elementary are correct, JCLP failed to consider the heat pump capacity in the model. The heat pump size in this building limits its operation to outside air temperature of 45 F° and higher instead of the 32 F° used by JCLP in the model. The analysis MCW completed for Room 114 in Neilson Grove Elementary also corroborates the 45 F° outside air temperature

⁷² COS Rate Application, Exhibit C 1-9.

⁷³ COS Rate Application, Exhibit B-8.

⁷⁴ COS Rate Application, Exhibit A-9.

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limit. In effect, this means that the heat pump systems in this school can only achieve 33% natural gas savings, not the 93% natural gas savings FEI promised they could achieve.

- b. There are large discrepancies in forecasting natural gas savings on the basis of an energy model alone. It is also important to know how the building actually functions. For instance, other rooms in the school may have a different behaviour which could force the central plant to operate at higher water temperatures in order to satisfy the space requirements. Most of the time these factors are unknown to an energy engineer unfamiliar with the building operation and can cause erroneous outputs in the building simulation.
- c. Due to these factors in building operation, an experienced and prudent engineer should have performed some tests in the existing building to validate the assumptions in the energy model. For instance, the heat plant could have been operated at lower water supply temperatures during the heating season to find out the limitation of the building heating distribution systems. The analysis could then be used in the energy model to provide a forecast that is based on how the building actually performs.
- d. Based on the rebuttal evidence provided to date by FAES, we still do not have quantitative evidence to explain the lack of energy performance in the three schools MCW studied in its earlier reviews (Neilson Grove Elementary, Delview Secondary and Richardson Elementary).
- e. FAES claims that poor maintenance and operation of the mechanical systems by the DSD staff have caused the poor performance but it has failed to quantify these factors by either assessing their impact quantitatively in the energy model or by detailing a number of instances where the sheer volume of evidence suggests an impact on system performance. In contrast, our analysis has resulted in quantifiable evidence that casts doubt on the prudence of FAES’ engineering approach to forecasting gas savings for the schools. The energy model for the remaining schools will need to be reviewed to determine if there are similar deficiencies.

71. The updated evidence of Mr. Cleveland is that:

- a. The entire Project is delivering 34% less thermal energy to the DSD than FEI promised it would and the actual “unit cost of service” (i.e. the actual cost of delivering each unit of

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thermal energy to the Project), when the July 2013 Project reconfiguration is taken into account, is 24 % higher than the original projected “unit cost of service”, even after excluding the cost of the amortization of the DDA.

- b. The capital-intensive heat pump components of the Project are delivering significantly less thermal energy than FEI promised they would. FEI promised that the heat pump components would deliver 76% of the Project’s thermal energy (revised to 69% after the July 2013 Configuration Change) and they are actually delivering only 12% of the Project’s thermal energy.
- c. The actual 20-year levelized cost of energy from the heat pump components of the Project, taking into account the July 2013 Project reconfiguration (\$632/MWh), is 485% higher than the estimated 20-year levelized cost of energy from the heat pump components of the Project after the July 2013 Configuration Change (\$108/MWh).⁷⁵

5.0 ISSUES

72. The DSD respectfully submits that the issues to be determined by the BCUC in this proceeding are as follows:
- a. Should the DSD be switched from the Market Rate to the COS Rate?
 - b. If the DSD should be switched from the Market Rate COS Rate, is the Proposed COS Rate just and reasonable?

6.0 ARGUMENT

6.1 Should the DSD be switched from the Market Rate to the COS Rate?

A. The Statutory Framework

73. In determining whether to approve the COS Rate Application, the BCUC must have regard to the principles set out in sections 59 and 60 of the UCA, including the following principles:

⁷⁵ One uncertainty in Mr. Cleveland’s calculation of the levelized cost of energy from heat pump systems, is the total capital cost associated with the heat pump systems. FAES does not know how much of its total capital costs are for heat pump systems (Exhibit B-8, p. 28 line 20 – p. 29 line 2.). In the DSD’s submission, it is not acceptable that FAES cannot provide a breakdown of capital costs to this level of detail.

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- a. a public service utility must not make, demand or receive an unjust, unreasonable, unduly discriminatory or unduly preferential rate⁷⁶ for a service provided by it in British Columbia (s.59(1)(a));
 - b. it is a question of fact, of which the BCUC is the sole judge, whether a rate is unjust or unreasonable and whether, in any case, there is undue discrimination, preference, prejudice or disadvantage in respect of a rate or service (s.59(4));
 - c. a rate is "unjust" or "unreasonable" if:
 - 73.c.1 the rate is more than a fair and reasonable charge for service of the nature and quality provided by the utility,
 - 73.c.2 the rate is insufficient to yield a fair and reasonable compensation for the service provided by the utility, or a fair and reasonable return on the appraised value of its property, or
 - 73.c.3 the rate is unjust or unreasonable for any other reason (s.59(5));
 - d. in setting a rate under the UCA, the BCUC must consider all matters that it considers proper and relevant affecting the rate (s.60(1)(a)); and
 - e. the BCUC must have due regard to the setting of a rate that:
 - 73.e.1 is not unjust or unreasonable within the meaning of section 59 of the UCA,
 - 73.e.2 provides to the public utility for which the rate is set a fair and reasonable return on any expenditure made by it to reduce energy demands, and
 - 73.e.3 encourages public utilities to increase efficiency, reduce costs and enhance performance (s.60(1)(b));
74. Collectively, these principles endow the BCUC with wide discretion in the exercise of its rate-making powers.

⁷⁶ In the UCA, "rate" includes: (a) a general, individual or joint rate, fare, toll, charge, rental or other compensation of a public utility, (b) a rule, practice, measurement, classification or contract of a public utility or corporation relating to a rate, and (c) a schedule or tariff respecting a rate.

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B. The Regulatory Compact

75. In specific response to paragraphs 18 through 33 of FAES’ written argument, the DSD agrees that there are two sides to the regulatory compact, as set out in the authorities cited therein. However, the DSD maintains that, given the factual matrix in which the RDA was negotiated, executed, and approved by the BCUC, and, specifically, the representations made by FAES to the DSD during the course of these events regarding the timing of any future switch from the Market Rate to the COS Rate, the regulatory compact requires that FAES be denied the relief that it seeks in these proceedings.

C. The Factual Matrix

76. The RDA is silent on the factors that the BCUC must consider when determining whether the DSD should be switched to the COS Rate. For the purposes of this proceeding, the DSD submits that the BCUC should have regard to the factual matrix in which the RDA was made. The factual matrix includes, among other things, evidence of the commercial purpose of the contract and its aims and objectives, the nature of the industry in which the contract was entered into, and evidence of the mutual and objective intentions of the parties.⁷⁷ The DSD submits that relevant facts for the BCUC to consider include:

- a. that the DSD had twice rebuffed Terasen’s attempts to persuade the DSD to undertake a thermal energy project prior to agreeing to undertake the Project due to concerns about cost; and
- b. that the DSD agreed to undertake the Project based on FAES’ statements and forecasts regarding:
 - 76.b.1 which Project Buildings would be suitable for connection to heat pump energy systems;
 - 76.b.2 the reduction in GHG emissions that would be achieved by the Project;
 - 76.b.3 the DSD’s thermal energy demands;

⁷⁷ *King v. Operating Engineers Training Institute of Manitoba Inc.*, 2011 MBCA 80, at para. 72 (Tab 2).

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76.b.4 the Project cost and the financial impact of the Project on the DSD’s long-term energy costs, including a reduction in volatility;

76.b.5 the relationship between the Market Rate and the COS Rate; and

76.b.6 the circumstances in which the DSD would be switched to the COS Rate.

D. The Representations of FEI/FAES

77. Taken together, the evidence adduced by DSD in paragraphs 31 to 33 of these submissions confirms that between May and September of 2011, FEI/FAES represented to the DSD that:

- a. FEI expected the COS Rate to be lower than the Market Rate and to provide benefits to the DSD in the form of low and/or less volatile rates;
- b. the rate structure in the RDA would give the DSD the opportunity to ensure that the COS Rate was “in line with expectations” before the DSD would be switched to the COS Rate; and
- c. BCUC approval would be required to switch the DSD from the Market Rate to the COS Rate and FEI would need to present a compelling argument that switching the DSD to the COS Rate was in the DSD’s interests before the DSD would be switched;

(collectively, the “**Representations**”).

78. A review of the above-noted evidence likewise confirms that it is readily apparent that, throughout this period and after it, the DSD consistently understood that it would not be switched to the COS Rate unless or until the COS Rate dropped at or below the Market Rate and that FAES knew this to be the DSD’s understanding. For example, in May of 2015, Mr. Geyer expressly asked Mr. Bierlmeier to confirm that the DSD would only be affected by the DDA and would only be required to pay the COS Rate “once the COS Rate drops at or below the Market Rate” and Mr. Bierlmeier expressly confirmed that Mr. Geyer’s understanding was “absolutely correct”.⁷⁸ Furthermore, at no time prior to the COS Rate Application did FAES advise the DSD that FAES disagreed with the DSD’s

⁷⁸ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 65.

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understanding of the circumstances in which the DSD would be switched to the COS Rate, or that it was somehow (according to FAES) incorrect.

79. In specific response to paragraphs 35 through 39 of FAES’ written argument, while the DSD maintains that the Representations constitute an implied term of the RDA, for the purposes of this proceeding, it acknowledges that the BCUC ultimately has the jurisdiction to determine whether to switch the DSD from the Market Rate to the COS Rate. Accordingly, the DSD is prepared to proceed on the basis that FAES may apply to switch the DSD from the Market Rate to the COS Rate, but maintains that the BCUC should decline to grant such relief – in part, on the basis of the Representations – whether or not they constitute an implied term of the RDA. As set out below, the DSD maintains that, in any event, the Representations are relevant to the determination of whether the Proposed COS Rate is just and reasonable, and effectively operate as an estoppel that the BCUC should find collectively precludes FAES from being granted the relief that it seeks.

(i) ***Promissory Estoppel***

80. Promissory estoppel has five elements:

- a. The parties have a legal relationship (most commonly in the form of a contract);
- b. The promisor has, by words or conduct, made a promise or an assurance which was intended to affect the parties’ legal relationship and be acted on by the promisee;
- c. The promisee relied on the representations and acted on it or in some way changed position;
- d. The promisee acted upon the promise to its detriment; and
- e. The promisee acted equitably.

81. It is well-settled that not all elements of estoppel need to be present, particularly where an administrative decision-maker is presiding. In *M.A.H.C.P. v. Nor-Man Regional Health Authority Inc.*, 2011 SCC 59, the Supreme Court of Canada found that an administrative body did not act unreasonably in applying promissory estoppel, despite the fact that there was no evidence of the promisor’s intent. Fish J. stated:

Labour arbitrators are not legally bound to apply equitable and common law principles — including estoppel — in the same manner as courts of law. Theirs is a different mission, informed by the particular context of labour relations.

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To assist them in the pursuit of that mission, arbitrators are given a broad mandate in adapting the legal principles they find relevant to the grievances of which they are seized. They must, of course, exercise that mandate reasonably, in a manner that is consistent with the objectives and purposes of the statutory scheme, the principles of labour relations, the nature of the collective bargaining process, and the factual matrix of the grievance.⁷⁹

82. In the DSD’s submission, the elements of promissory estoppel have been made out in this case. The DSD and FEI/FAES have a legal relationship; FEI/FAES represented to the DSD that it expected the COS Rate to drop below the Market Rate and that the DSD would not be switched to the COS Rate until the COS Rate was “in line with expectations”; the DSD relied on these representations and acted on these representations by agreeing to the rate and rate design proposed by FAES in the CPCN Application proceedings; and the DSD acted equitably. Accordingly, in the furtherance of its statutory mandate under ss.59-60 of the UCA, applied in light of the factual matrix in which the RDA was negotiated, executed, and approved, the BCUC should find that FAES is estopped from obtaining an order switching the DSD to COS Rate until the COS Rate is competitive with the Market Rate and provides benefits to the DSD in the form of low and/or less volatile rates, as the parties originally contemplated. DSD maintains any other outcome would not be just and reasonable for the purposes of s.59 of the UCA.

E. Specific Responses to FAES’ Additional Submissions

83. At paragraphs 40 to 72 of its written argument, FAES argues that the DSD should be switched from the Market Rate to the COS Rate at this time for all of the following reasons:
- a. the Market Rate was intended to be a transitional rate and the “natural transition period” has now elapsed;
 - b. FAES has met the express conditions to trigger a switch to the COS Rate;
 - c. operations have stabilized, the final number of schools is known and the tax impacts are understood;
 - d. the Current Total Cost of Service aligns with the Forecasted Total Cost of Service;
 - e. the total cost of service is slightly more than the BAU Total Cost of Service;

⁷⁹ *M.A.H.C.P. v. Nor-Man Regional Health Authority Inc.*, 2011 SCC 59, at paras. 5-6 (Tab 3).

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- f. delaying the switch to the COS Rate by three, five or ten years will cause the DSD to pay a much higher COS Rate; and
- g. delaying the switch to the COS Rate until the latter half of the RDA’s term will deprive FAES of a reasonable opportunity to earn a fair return on, and the return of, its invested capital.⁸⁰

84. At paragraphs 73 to 151 of its written argument, FAES further argues that:

- a. FAES has demonstrated that it is in the best interests of the DSD to switch to the COS Rate now, relative to switching in three, five or even ten years;
- b. the DSD is alleging that there is an implied term of the RDA, but the Entire Agreement clause precludes any implied terms or understanding;
- c. the RDA is unambiguous as to when FAES can apply to switch to the COS Rate; and
- d. the DSD’s claim to have been misled about the RDA is untenable given the DSD’s level of sophistication.

85. The DSD will address each of these arguments in turn.

(i) *The Alleged “Natural Transition Period”*

86. There is no “natural transition period” after which the DSD must be switched to the COS Rate. The RDA does not contemplate any “natural transition period” after which the DSD must be switched to the COS Rate or otherwise specify that the DSD must be switched from the Market Rate to the COS Rate after a specified period of time has elapsed. Indeed, this was acknowledged by FEI in the CPCN Application, where it expressly stated that “there is no set time by which the DSD must switch from the Market Rate to the COS Rate.”⁸¹

87. During the CPCN Application proceedings, FEI stated that it expected the DSD to elect to switch to the COS Rate within 2 to 5 years after the approval of the Project because this was the period during which FEI projected that the COS Rate would drop below the Market Rate and it would be in the DSD’s best financial interests to switch to the COS Rate. However, as FEI’s projection was incorrect,

⁸⁰ COS Rate Application, FAES Written Argument, pp. 20-38.

⁸¹ CPCN Application, Exhibit B-1, p. 44.

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and the COS Rate did not drop below the Market Rate within 2 to 5 years after the approval of the Project, the 2 to 5 year period after the approval of the Project cannot now fairly be described as “natural transition period” after which the DSD should be switched to the COS Rate in any event.

(ii) The Alleged Conditions to Trigger a Switch to the COS Rate

88. The RDA specifies the conditions that must be satisfied before FAES can apply to the BCUC for approval to switch the DSD to the COS Rate. However, the RDA is silent regarding the basis upon which the BCUC may grant such relief. Accordingly, it is not open to FAES to argue that FAES has met the express conditions to actually trigger a switch to the COS Rate.

(iii) The Stabilization of Operations

89. The DSD takes no position on FAES’ position that operations have stabilized, that the final number of schools served by the Project is known, or that the tax impacts of the Project are understood. However, it respectfully submits that these factors alone do not warrant a switch the Proposed COS Rate.

(iv) Current Total Cost of Service vs. Forecasted Total Cost of Service

90. The fact that the Current Total Cost of Service in absolute dollars is not significantly different from the Forecasted Total Cost of Service, should have no bearing on the BCUC’s decision as to whether the DSD should be switched to the Proposed COS Rate. As set out below, this (often-repeated) metric by FAES is completely misleading with respect to the performance of the Project.

91. Under the UCA, the BCUC is charged with regulating rates. In this proceeding, the BCUC is tasked with determining, *inter alia*, whether the Proposed COS Rate, which is significantly higher than the 2012 forecast COS Rate,⁸² is just and reasonable within the meaning of the UCA. The BCUC is not charged with determining whether the Current Total Cost of Service is just and reasonable in light of the Forecasted Total Cost of Service.

⁸² COS Rate Application, Exhibit C1-6, Report of Reshape Strategies dated August 10, 2018, Table 1. The final column shows that as of 2018/19, the requested COS Rate was 24% higher than the original forecast COS Rate (that is after removing the amortization of the DDA from the COS Rate). Including the amortization of the DDA pushes the requested COS Rate even higher. The full requested COS Rate (so including the DDA amortization) for 2018/19 is \$223 per MWh. See Exhibit B-1 of the current proceeding, S. 1.7, line 9. This provides it as \$0.223 per kWh; converted to MWh it is \$223 per MWh.

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92. It bears emphasis that the Forecasted Total Cost of Service was calculated on the assumption that:
- a. the Project would provide 10,605 MWh in thermal energy each year (revised to 10,045 MWh after the July 2013 Configuration Change); and
 - b. 76% of the Project's thermal energy would be provided via heat pumps (revised to 69% after the July 2013 Configuration Change), with the remainder met by gas boilers.
93. In fact:
- a. the Project is only projected to provide an average of 6,669 MWh of thermal energy per year (a 34% decline in thermal energy sales relative to the forecast at the time of the July 2013 Configuration Change);
 - b. only 12% of the Project's thermal energy is provided by via heat pumps, with the rest provided by natural gas; and
 - c. the price of natural gas has declined significantly relative to projected prices at the time of the CPCN Application proceedings. For example, 2019 prices are 41% lower than was forecast at the time of the CPCN Application proceedings⁸³.
94. The reduction in thermal energy load means that Total Cost of Service should be far lower than the Forecasted Total Cost of Service because, all else being equal, a reduction in energy demand will result in a reduction in fuel consumption and therefore fuel costs. The sharp decline in natural gas prices and the Project's near-total reliance on gas boilers (as opposed to heat pumps) should also decrease the Total Cost of Service. Nevertheless, the Total Cost of Service remains relatively close to the Forecasted Total Cost of Service. FAES somehow suggests that this is an indication that the Project is performing well, as the parties expected it to. The DSD disagrees. If anything, the relationship between the Total Cost of Service and the Forecasted Total Cost of Service indicates how poorly the Project is performing, given the factors noted above.

⁸³ At the time of the CPCN Application Proceeding, 2019 total natural gas costs were forecast to be \$11.43 per GJ. In the current application, FAES is showing total natural gas costs of \$6.72 per GJ, a decline of 41%. See CPCN Application Proceeding, Exhibit B-1, Appendix D (working spreadsheet), "Inputs" tab, cell J180, and Current Proceeding, Exhibit B-1, Appendix A, Schedule 3, Row 11 and Row 4. Dividing the 2018/19 value in Row 11 (\$221,000) by the corresponding natural gas volume in Row 4 (32,905 GJ) provides the unit cost of natural gas for 2018/19 of \$6.72 per GJ.

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(v) ***The Current Total Cost of Service vs. The BAU***

95. In written argument, FAES argues that the DSD should be switched to the COS Rate now because if it is switched now:
- a. the Current Total Cost of Service will be slightly more than the BAU Total Cost of Service; and
 - b. the DSD will save a total of \$1,900,000 over the life of the Project (not account for equipment upgrades).
96. As set out above, the BCUC has a statutory mandate to regulate rates. In this proceeding, the BCUC is tasked with determining, *inter alia*, whether the Proposed COS Rate, which is significantly higher than the 2012 forecast COS Rate,⁸⁴ is just and reasonable within the meaning of the UCA. The BCUC is not charged with determining whether the Current Total Cost of Service is just and reasonable in light of the BAU Total Cost of Service.
97. Third, it bears emphasis that the alignment of the Current Total Cost of Service with the BAU Total Cost of Service is not particularly noteworthy as the BAU Total Cost of Service was calculated on the assumption that:
- a. the Project would provide 10,605 MWh in thermal energy each year (revised to 10,045 MWh after the July 2013 Configuration Change); and
 - b. 76% of the Project's thermal energy would be provided via heat pumps (revised to 69% after the July 2013 Configuration Change), with the remainder met by gas boilers.
98. In fact, as set out above:
- a. the Project is only projected to provide an average of 6,669 MWh of thermal energy per year (a 34% decline in thermal energy sales relative to the forecast at the time of the July 2013 Configuration Change);
 - b. only 12% of the Project's thermal energy is provided by via heat pumps, with the rest provided by natural gas; and

⁸⁴ *Supra*, note 84.

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c. the price of natural gas has declined significantly relative to projected prices at the time of the CPCN Application proceedings. For example, 2019 prices are 41% lower than was forecast at the time of the CPCN Application proceedings⁸⁵.

99. Finally, the DSD agreed to undertake the Project on the understanding that, as promised by FEI, the Project would reduce the BAU Total Cost of Service by \$188,000 during each year of the Project⁸⁶, such that the DSD would save \$3,760,000 over the life of the Project (\$1,860,000 or 97.89% more than FAES is now saying the DSD will save over the life of the Project). The fact that the Project is performing poorly with respect to the original forecasts, and will save the DSD far less than FEI promised it would, militates against switching DSD to the Proposed COS Rate.

(vi) Delaying the Switch By Three, Five or Ten Years

100. The DSD does not dispute that, assuming the DSD is switched to the Proposed COS Rate, delaying the switch to the COS Rate by three, five or ten years will cause the DSD to pay a higher COS Rate and that doing so would not be in the DSD’s best interests. However, the DSD submits that this fact does not serve as a reason to justify switching the DSD to the COS Rate at this time.

101. The question before the BCUC is not, as FAES implies in its argument, whether the DSD should be switched to the COS Rate now or in three, five or ten years.⁸⁷ Contrary to the submission of FAES, it is not inevitable that the DSD will be switched to the COS Rate in three, five or ten years. To this end, the RDA contemplates a scenario where the DSD is switched to the COS Rate after 10 years, and FAES cannot recover the full balance in the DDA from the DSD.⁸⁸ FAES recognized this in the 2015/16 COS Rate Application proceedings, where it confirmed that the financial risk associated with non-recovery of the balance of the DDA at the end of the Term is ultimately borne by FAES’

⁸⁵ At the time of the CPCN Application Proceeding, 2019 total natural gas costs were forecast to be \$11.43 per GJ. In the current application, FAES is showing total natural gas costs of \$6.72 per GJ, a decline of 41%. See CPCN Application Proceeding, Exhibit B-1, Appendix D (working spreadsheet), “Inputs” tab, cell J180, and Current Proceeding, Exhibit B-1,

⁸⁶ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 18.

⁸⁷ COS Rate Application, FAES Written Argument, pp.30-36. In its argument, FAES states that “delaying the change to COS Rate only increases the burden on [the] DSD later”.

⁸⁸ Under the terms of the RDA, if the DSD is not switched to the COS Rate during the Term, the balance of the DDA forms part of the purchase price of the Energy System, if the DSD wishes to purchase the Energy System at the end of the Term.

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shareholders.⁸⁹ DSD maintains that the BCUC should not intervene to reallocate that financial risk and impose it on DSD.

(vii) *Whether Delaying the Switch Will Violate the Regulatory Compact*

102. In its written argument, FAES described the “regulatory compact” as follows:

20. In basic terms, the regulatory compact ensures that the public utility has a reasonable opportunity to recover its prudently incurred costs and earn a fair return on its investment, while ensuring that customer rates are not set to recover excessive profits for the nature and quality of the service provided. In essence, section 59(5)(a) is the side of the regulatory compact that speaks to ensuring that rates do not reflect excessive profits. Subsection (b) addresses the recovery of prudently incurred costs and invested capital, and the Fair Return Standard, which protects the public utility.

103. FAES then goes on to argue that the BCUC should not give effect to the terms of the RDA that permit a switch to the COS Rate after 10 years because this will violate the aforementioned regulatory compact.

104. Delaying the switch to the COS Rate until after 10 years will not violate the regulatory compact. Such a delay is expressly contemplated by the terms of the RDA, which FAES agreed to and which the BCUC approved as being in the public interest.

(viii) *Timing of the Switch*

105. This argument essentially repeats FAES’ argument that delaying the switch to the COS Rate by three, five or ten years will cause the DSD to pay a higher COS Rate and that doing so would not be in the DSD’s best interests. As set out above, the DSD does not dispute that, assuming the DSD is switched to the Proposed COS Rate, delaying the switch to the COS Rate by three, five or ten years will cause the DSD to pay a higher COS Rate and that doing so would not be in the DSD’s best interests. However, for the reasons set out in paragraph 101 above, the DSD submits that this fact does not serve as a reason to justify switching the DSD to the COS Rate at this time.

(ix) *Implied Term of the RDA/Timing of Application*

⁸⁹ 2015/16 COS Rate Application, Exhibit B-41, IR No. 2.8.

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106. As set out above in paragraph 79, for the purposes of this proceeding, the DSD acknowledges that the BCUC ultimately has the jurisdiction to determine whether to switch the DSD from the Market Rate to the COS Rate. Accordingly, the DSD is prepared to proceed on the basis that FAES may apply to switch the DSD from the Market Rate to the COS Rate, but maintains that the BCUC should decline to grant such relief – in part, on the basis of the Representations – whether or not they constitute an implied term of the RDA.

(x) *DSD’s Level of Sophistication*

107. Throughout the course of the negotiation and execution of the RDA, the DSD was represented by legal counsel. However, the DSD was not represented by legal counsel during the CPCN Application proceedings and did not have the benefit of legal advice when reviewing the BCUC’s March 9, 2012 decision regarding the CPCN Application.

108. Moreover, the DSD is only sophisticated with respect to the administration of a school district. The DSD does not have, and has never had, expertise regarding: (i) energy forecasting, (ii) the design of rates and rate structures, or (iii) the design, construction, installation and operation of the thermal energy systems. For this reason, at all material times, the DSD relied upon Terasen, FEI and FAES as regulated utilities and thermal energy system providers to provide expertise regarding these matters. The evidence adduced by DSD in this proceeding confirms that it was consistently seeking guidance from FAES with respect to all manner of issues concerning the RDA and the BCUC proceedings to approve it.

6.3 Is the Proposed COS Rate just and reasonable?

109. In the COS Rate Application, FAES is seeking the BCUC’s approval to charge the DSD the Proposed COS Rate of \$0.253 per kWh, less the DSD Rate Rider of \$0.018/kWh.⁹⁰

110. At paragraphs 152 to 213 of its written argument, FAES submits that the Proposed COS Rate is just and reasonable for all of the following reasons:

- a. the Current Total Cost of Service aligns with the Forecasted Total Cost of Service;
- b. the DSD’s focus on FAES’ 2012 load forecasting errors is a “red herring”;

⁹⁰ COS Rate Application, Exhibit B-1-1, p. 21.

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- c. the operating costs are being managed appropriately;
- d. FAES has been undercharging overhead costs;
- e. financial costs in the DDA balance reflect BCUC approvals;
- f. capital costs were reasonable; and
- g. the DSD’s arguments about the merits of the Project and its design are conceptually and substantively flawed.

111. The DSD will address each of these arguments in turn.

A. The Current Total Cost of Service vs. the Forecasted Total Cost of Service

112. Section 59(4) of the UCA states that it is a question of fact, of which the BCUC is the sole judge, whether a rate is unjust or unreasonable. In accordance with section 59(5) of the UCA, a rate is “unjust” or “unreasonable” if the rate is:

- a. more than a fair and reasonable charge for service of the nature and quality provided by the utility,
- b. insufficient to yield a fair and reasonable compensation for the service provided by the utility, or a fair and reasonable return on the appraised value of its property, or
- c. unjust and unreasonable for any other reason.

113. In FAES’ submission, the Proposed COS Rate is just and reasonable because the Current Total Cost of Service aligns with the Forecasted Total Cost of Service. As set out above, the DSD does not dispute that the Current Total Cost of Service aligns with the Forecasted Total Cost of Service. Rather, it respectfully submits that this alignment is not relevant to a determination of the whether the Proposed COS Rate is just and reasonable as it does not indicate that the Proposed COS Rate is a fair and reasonable charge for service of the nature and quality provided by FAES.

B. FAES’ 2012 Load Forecasting Errors

114. In its written argument, FAES variously states that:

- a. “the original forecast thermal energy demand itself has no bearing on the actual cost of service, which has been consistent with original forecasts”;

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- b. “load had no impact on the total cost of service”; and
- c. “the load forecast itself has no bearing on the actual cost of service or the capital costs for the Project.”⁹¹

115. While the first statement is true, the second and third statements are not. The thermal energy load in a given year has a direct impact on the cost of service in that year because:

- a. an increased thermal energy load in a given year requires the purchase of additional fuel and drives up the cost of service for that year; and
- b. a decreased thermal energy load in a given year requires the purchase of less fuel and drives down the cost of service for that year.

116. Furthermore, these statements misunderstand the purpose of Mr. Cleveland’s evidence, which is to demonstrate that, *inter alia*:

- a. FAES significantly over-estimated how much of the DSD sites thermal energy would be supplied by the FAES Equipment, rather than by the DSD Equipment; and
- b. FAES significantly over-estimated the total thermal energy demand of the DSD sites (i.e. it did not develop an accurate estimate of the weather-adjusted thermal energy load of Project Buildings).

C. The Operating Costs, the Overhead Costs and the Financial Costs in the DDA Balance

117. The DSD does not dispute that, based on the facts known at the present time, and the limited information provided by FAES in this proceeding:

- a. the operating costs of the Project are being managed appropriately by FAES;
- b. the overhead costs of the Project do not include some indirect costs; and
- c. FAES has incurred costs to provide service and has had to finance those costs with both debt and equity in anticipation of future recovery.

⁹¹ FAES Written Argument, paras. 152, 173 and 174.

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D. The DSD’s Arguments Regarding the Prudence of the Capital Costs Incurred for the Project

(i) The Law Regarding Prudence

118. A rate will be “unjust” or “unreasonable” if it permits a utility to recover imprudently incurred costs. Indeed, it is well-settled law that a public utility may only recover its prudently-incurred costs. The Supreme Court of Canada has held that a public utility’s interest in maximizing the benefits to its shareholders is limited by the utility’s managerial discretion over key decisions, including prices, service offerings and the prudence of plant and equipment investment decisions.⁹²

119. A “prudent” cost is a “wise or sound” cost. As the Supreme Court of Canada explained in *ATCO Gas & Pipelines Ltd. v. Alberta (Energy & Utilities Board)*, 2006 SCC 4 at paragraphs 34 and 35:

Because, as will be discussed, the meaning of “prudence” is the focus of much of the debate in this case, it is helpful to start by examining the ordinary meaning of the word as a baseline for the subsequent analysis. Pertinent dictionary definitions give a range of meanings for “prudent”, including “having or exercising sound judgement in practical affairs” (The Oxford English Dictionary (2nd ed. 1989), vol. XII, at p. 729), “acting with or showing care and thought for the future” (Concise Oxford English Dictionary (12th ed. 2011), at p. 1156), or “marked by wisdom or judiciousness [or] shrewd in the management of practical affairs” (Merriam-Webster’s Collegiate Dictionary (11th ed. 2003), at p. 1002). While these definitions may vary in their nuance, the ordinary sense of the word is such that a prudent cost is one which may be described as wise or sound.

However, these dictionary definitions are not so consistent and exhaustive as to provide a complete answer to the question of the meaning of “prudent” costs in the context of the Alberta utilities regulation statutes. As such, a contextual reading of the statutory provisions at issue provides further guidance. In the context of utilities regulation, I do not find any difference between the ordinary meaning of a “prudent” cost and a cost that could be said to be reasonable. It would not be imprudent to incur a reasonable cost, nor would it be prudent to incur an unreasonable cost.

120. Further, as the Nova Scotia Utility and Review Board explained in *Nova Scotia Power Inc., Re*, 2005 NSUARB 27 at paragraph 84:

... prudence is that standard of care which a reasonable person would be expected to exercise under the same circumstances encountered by utility management at the time decisions had to be made. ... Hindsight is not applied in assessing prudence. ... A utility’s decision is prudent if it was within the range of decisions reasonable persons might have

⁹² *ATCO Gas & Pipelines Ltd. v. Alberta (Energy & Utilities Board)*, 2006 SCC 4, at para. 4 (Tab 4).

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made. ... The prudence standard recognizes that reasonable persons can have honest differences of opinion without one or the other necessarily being imprudent.⁹³

121. A prudency requirement is needed to avoid the moral hazard that would result if rates were based solely on costs, however incurred. Otherwise, public utilities could incur capital costs without regard for the efficiency of their capital outlays, nor the burden on the public. Costs incurred by a public utility are therefore subject to compensation only if prudently incurred, and the notion of “a fair rate of return” must be modified to account for only those capital outlays embodied in properties that may be termed “used and useful.”⁹⁴
122. Similarly, the prudency requirement reflects the Bonbright principle that rates should achieve dynamic efficiency by promoting innovation and responding economically to changing demand and supply patterns.⁹⁵ If a public utility is allowed to recover costs that have not been incurred prudently, this will encourage wasteful spending.
123. In a given case, prudence is a question of fact and evidence must be adduced to prove or disprove that certain costs were prudently incurred. As the Alberta Utilities Commission explained in *Direct Energy Regulated Services, Re*, 2016 CarswellAlta 1467 at paragraph 99:

Prudence is not a “fact” that can be sworn to in an affidavit. Prudence (or imprudence) is a conclusion arrived at after reviewing the facts. Clearly a utility (or any party) cannot “prove” prudence simply by stating that it was prudent. It is not the role of a party to a proceeding to determine prudence; it is the role of the OEB.

[...]

The Commission must examine each project's costs with consideration to the decisions that were made by the applicant and parties it was responsible for, directly or indirectly, given the information that was known or should have been known at the time the decisions were being made. If there is insufficient information to determine that the decision was reasonable, the Commission has the discretion to direct disallowances.⁹⁶

⁹³ *Nova Scotia Power Inc., Re*, 2005 NSUARB 27, at para. 84 (Tab 5).

⁹⁴ James C. Bonbright et al., *Principles of Public Utility Rates* (Arlington, Virginia: Public Utility Reports, Inc., 1988), pp. 138 (Tab 6).

⁹⁵ Bonbright et al., pp. 283 (Tab 6).

⁹⁶ *Direct Energy Regulated Services, Re*, 2016 CarswellAlta 1467, at para. 99 (Tab 7).

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124. The prudence test is particularly useful when considering committed capital costs, as opposed to operating costs, because it encourages efficient investment. As the Supreme Court of Canada explained in *Ontario (Energy Board) v. Ontario Power Generation Inc.*, 2015 SCC 44 at paragraph 107:

Capital costs, particularly those pertaining to areas such as capacity expansion or upgrades to existing facilities, often entail some amount of risk, and may not always be strictly necessary to the short-term ongoing production of the utility. Nevertheless, such costs may often be a wise investment in the utility's future health and viability. As such, prudence review, including a no-hindsight approach (with or without a presumption of prudence, depending on the applicable statutory context), may play a particularly important role in ensuring that utilities are not discouraged from making the optimal level of investment in the development of their facilities.⁹⁷ [Emphasis added.]

125. This rationale aligns well with section 60(b)(iii) of the UCA, which states that the BCUC must have due regard to the setting of a rate that “encourages public utilities to increase efficiency, reduce costs and enhance performance.”

126. When determining whether specific costs were prudently incurred, the BCUC engages in the two-stage prudence review process described by the Ontario Court of Appeal in *Enbridge Gas Distribution Inc. v. Ontario (Energy Board)*, [2006] O.J. No. 1355, 210 O.A.C. 4 at paragraph 11:

The "prudence" inquiry described by the Board has two stages. At the first stage, the decision of Enbridge is presumed to have been made prudently unless those challenging the decision demonstrate reasonable grounds to question the prudence of that decision. At the second stage of the inquiry, reached only if the presumption of prudence is overcome, Enbridge must show that its business decision was reasonable under the circumstances that were known to, or ought to have been known to, Enbridge at the time it made the decision.⁹⁸

127. When undertaking a prudence review, the BCUC is entitled to consider whether capital costs incurred by a utility when scoping and planning a project were prudently incurred. Indeed, the BCUC considered this in the Terasen Gas (Whistler) Inc. 2010-2011 Revenue Requirements and Rates Application, where it found that \$0.84 million of the capital costs of a conversion project undertaken by Terasen Gas (Whistler) Inc. were not prudently incurred.⁹⁹

⁹⁷ *Ontario (Energy Board) v. Ontario Power Generation Inc.*, 2015 SCC 44, at para. 107 (Tab 8).

⁹⁸ *Enbridge Gas Distribution Inc. v. Ontario (Energy Board)*, [2006] O.J. No. 1355, 210 O.A.C. 4, at para. 11 (Tab 9).

⁹⁹ BCUC Order No. G-138-10 (Tab 10).

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(ii) *Application to this Case*

128. The evidence presented by the DSD in these proceedings strongly suggests that either FAES or its agent, JCLP, breached its contractual obligation under section 2.1(b) of the Service Agreement to design and construct the Project “in accordance with sound and currently accepted industry standards and codes of practice normally employed, at the time and place of performance, in projects of a similar type and nature.”
129. More specifically, FAES and/or JCLP failed to undertake reasonable efforts to obtain an accurate understanding of the actual thermal energy demands of the Project Buildings prior to undertaking the Project. This is demonstrated by the significant difference between the forecasted annual thermal energy demands of the Project Buildings (10,605 MWh) and the actual annual thermal energy demand for the Project Buildings in the year preceding the COS Rate Application (6,504 MWh). Furthermore, FAES and/or JCLP failed to undertake the work necessary to conclude with any reasonable certainty that the Project could achieve the 93% natural gas savings (and resulting GHG emission reductions) that FEI originally promised the DSD that the Project could achieve and which were the “primary driver of the Project”.¹⁰⁰
130. The updated evidence of MCW, which refers only to Neilson Grove Elementary because FAES refused to provide the energy models for any of the other schools, is that:
- a. While the calculations used in the energy model JCLP completed for Neilson Grove Elementary are correct, JCLP failed to consider the heat pump capacity in the model. The heat pump size in this building limits its operation to outside air temperature of 45 F° and higher instead of the 32 F° used by JCLP in the model. The analysis MCW completed for Room 114 in Neilson Grove Elementary also corroborates the 45 F° outside air temperature limit. In effect, this means that the heat pump systems in this school can only achieve 33% natural gas savings, not the 93% natural gas savings FEI promised they could achieve.
 - b. There are large discrepancies in forecasting natural gas savings on the basis of an energy model alone. It is also important to know how the building actually functions. For instance, other rooms in the school may have a different behaviour which could force the central plant to operate at higher water temperatures in order to satisfy the space requirements. Most of

¹⁰⁰ COS Rate Application, Exhibit C1-6, Report of MCW Consultants Ltd. dated August 10, 2018.

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the time these factors are unknown to an energy engineer unfamiliar with the building operation and can cause erroneous outputs in the building simulation.

- c. Due to these factors in building operation, an experienced and prudent engineer should have performed some tests in the existing building to validate the assumptions in the energy model. For instance, the heat plant could have been operated at lower water supply temperatures during the heating season to find out the limitation of the building heating distribution systems. The analysis could then be used in the energy model to provide a forecast that is based on how the building actually performs.
 - d. Based on the rebuttal evidence provided to date by FAES, we still do not have quantitative evidence to explain the lack of energy performance in the three schools MCW studied in its earlier reviews (Neilson Grove Elementary, Delview Secondary and Richardson Elementary).
 - e. FAES claims that poor maintenance and operation of the mechanical systems by the DSD staff have caused the poor performance but it has failed to quantify these factors by either assessing their impact quantitatively in the energy model or by detailing a number of instances where the sheer volume of evidence suggests an impact on system performance. In contrast, our analysis has resulted in quantifiable evidence that casts doubt on the prudence of FAES’ engineering approach to forecasting gas savings for the schools. The energy model for the remaining schools will need to be reviewed to determine if there are similar deficiencies.
131. In the absence of evidence from FAES that JCLP undertook these prudent design engineering steps with respect to the other Project Buildings with heat pump systems (which evidence the DSD requested but FAES refused to provide), the BCUC should infer that it did not.
132. The updated evidence of Mr. Cleveland is that:
- a. The heat pump components of the Project are delivering significantly less thermal energy than FEI promised they would. FEI promised that the heat pump components would deliver 76% of the Project’s thermal energy (revised to 69% after the July 2013 Configuration Change) and they are actually delivering 12% of the Project’s thermal energy.

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- b. The actual 20 year levelized cost of energy from the heat pump components of the Project, taking into account the July 2013 Project reconfiguration (\$632/MWh), is 485% higher than the estimated 20 year levelized cost of energy from the heat pump components of the Project after the July 2013 Configuration Change (\$108/MWh). In other words, the DSD is paying an exorbitant price (\$632/MWh) for each MWh of thermal energy provided by the heat pump components of the Project. This is a function of the extremely low utilization of the heat pump systems, which are highly capital-intensive and were expected to produce 6,923 MWh, but instead are only producing 800 MWh. The low utilization of the heat pump systems is due to their incompatibility with the DSD Building Systems.

133. The DSD respectfully submits that:

- a. the foregoing evidence, the design portions of which are corroborated by the evidence of a person who had direct involvement in the design of the Project (Don Poole) and by the evidence of a third party with no direct involvement in the design of the Project (Ameresco), demonstrates reasonable grounds to question the prudence of at least a portion of the Capital Costs that are meant to be recovered via the Proposed COS Rate; and
- b. the BCUC should undertake a full prudence review of the Capital Costs that are meant to be recovered via the Proposed COS Rate and should require FAES to demonstrate that these Capital Costs were prudently incurred by FAES in light of the circumstances that were known to, or ought to have been known to, FAES at the time these Capital Costs were incurred, before it decides whether to switch the DSD to the Proposed COS Rate.

134. The DSD notes that FAES specifically advised the DSD that the service that was approved by the BCUC "has checks and balances on initial and future costs via the prudence reviews that the BCUC...will be doing each year on the service." In light of foregoing, the DSD submits that it would not be equitable or fair for the BCUC to refuse the DSD's request that the BCUC undertake a full prudence review of the Capital Costs that are meant to be recovered via the Proposed COS Rate before it decides whether to switch the DSD to the Proposed COS Rate.

E. Specific Responses to FAES' Additional Submissions

135. In specific response to the submissions made by FAES at paragraphs 177 through 213 of its written argument, the DSD respectfully submits as follows:

<p style="text-align: center;">FortisBC Alternative Energy Service Inc. (FAES) Application for Approval of the Fiscal 2018/2019 Revenue Requirements and Cost of Service Rates for the Thermal Energy Service to Delta School District No. 37 (DSD) (the “Application”)</p>	<p style="text-align: center;">Submission Date: February 1, 2019</p>
<p style="text-align: center;">Delta School District No. 37 – Written Final Argument</p>	

- a. The Grant of a CPCN Means that the Project Supporting the Service Was in the Public Interest: The DSD is not alleging that the CPCN should not have been issued for the Project and is not asking the BCUC to “reassess” the CPCN, as FAES suggests in its argument. Rather, the DSD is alleging that a portion of the Capital Costs that are meant to be recovered via the Proposed COS Rate were not prudently incurred and is asking the BCUC to undertake a full prudency review of these Capital Costs before it decides whether to switch the DSD to the Proposed COS Rate.
- b. The DSD Was Contracting for a Service, not a Project: The distinction FAES attempts to draw between a “service” and a “project” is a distinction without a difference. Put simply, under the UCA, the BCUC must determine whether the Capital Costs that FAES now seeks to recover via the Proposed COS Rate were prudently incurred regardless of whether the Capital Costs were incurred to provide a “service” or a “project” to the DSD. Nevertheless, if the BCUC finds it useful to think of this as a “service” as opposed to a “Project”, then it is also clear from the CPCN proceeding that the intent of both parties and the representation made by FAES was that it would be a low-carbon thermal energy service.¹⁰¹
- c. The DSD’s Distribution System is the Bottleneck: In its written argument, FAES states that the efficiency of the Energy Systems it designed, constructed and installed as part of the Project can only be improved, and additional GHG emissions can only be achieved, if the DSD Building Systems are upgraded and the DSD’s operation and maintenance of the DSD Building Systems is altered. In effect, FAES is arguing that that Energy Systems cannot achieve the efficiencies and the GHG emissions FEI promised they would achieve in the CPCN Application proceedings, unless the DSD Building Systems are upgraded and the DSD’s operation and maintenance of the DSD Building Systems is altered. The DSD respectfully submits that FAES and/or JCLP should have:

135.c.1 undertaken the work necessary to understand how the Energy Systems would interact with the DSD Building Systems and to understand how the DSD actually operates and maintains the DSD Building Systems; and

¹⁰¹ See e.g. CPCN Proceeding, Exhibit B-1, p. 9. S. 2.1: “In this Section, FEI describes the primary driver for the Project, which is the SD’s desire to implement energy systems that reduce GHG emissions and make use of renewable energy sources that are cost effective over the long term.”

<p style="text-align: center;">FortisBC Alternative Energy Service Inc. (FAES) Application for Approval of the Fiscal 2018/2019 Revenue Requirements and Cost of Service Rates for the Thermal Energy Service to Delta School District No. 37 (DSD) (the “Application”)</p>	<p style="text-align: center;">Submission Date: February 1, 2019</p>
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135.c.2 designed the Energy Systems so they would be operationally compatible with the DSD Building Systems (as required by the Service Agreements) and so they would achieve the efficiencies and the GHG emissions FEI promised they would achieve in the CPCN Application Proceedings.

- d. The notion that FAES and/or JCLP could not have undertaken the work described in paragraph 113.c.1 above, or designed the Energy Systems as described in paragraph 113.c.2 above is belied by the evidence of MCW referred to herein.
- e. The DSD further submits that FAES’ allegation that the operation and maintenance of the DSD Building Systems has impacted the efficiency of the Energy Systems in any material way, based on isolated incidents, is purely speculative. The DSD asked FAES to provide the DSD with objective evidence quantifying this alleged impact and FAES refused to do so. In absence of any such objective evidence, FAES’ allegation that the operation and maintenance of the DSD Building Systems has impacted the efficiency of the Energy Systems must be rejected by the BCUC.
- f. MCW Wrongly Assumed that No Detailed Modelling Was Done: In its report dated August 10, 2018, MCW assumed that JCLP did not prepare energy models for the Project Buildings because FAES had at that time not advised the DSD that JCLP prepared energy models for the Project Buildings.
- g. MCW’s Simplified Peak Analysis Was Flawed: In its responsive report dated February 1, 2019, MCW confirmed that a peak load assessment is not a conclusive method to estimate energy savings and advised that at the time of producing its August 10, 2018 report, it did not complete an energy model and was only able to comment on the actual plant design and installation without the benefit of reviewing an actual energy model.
- h. Cost and GHG Emissions Must Be Balanced: The DSD does not, as FAES alleges in its argument, ignore the fact that costs must be incurred to lower GHG emissions. However, the DSD submits that while FEI promised the DSD that \$6,500,000 in costs would be incurred to lower the DSD’s GHG emissions by 69%, in fact, \$8,099,000 in costs have been incurred to lower the DSD’s GHG emissions by 44%. In other words, the DSD acknowledges that the competing objectives of lowering cost and lowering GHG emissions must be balanced, but

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submits that the balance that has actually been achieved in this case is very different from the balance that FEI promised would be achieved.

- i. The RDA Contains No Performance Standards Regarding GHG Reductions: The DSD agreed to undertake the Project on the grounds that, as FEI promised, the Project would reduce the DSD’s GHG emissions by 69%. Accordingly to FAES’ evidence, the Project has only reduced the DSD’s GHG emissions by 44%.¹⁰² The fact that the Project has reduced the DSD’s GHG emissions by 25% less than FEI promised it would does not support FAES’ argument that the Proposed COS Rate is just and reasonable. Furthermore, it bears emphasis that the rate design set out in the RDA does not contain performance standards regarding the reduction of the DSD’s GHG emissions because FEI specifically advised the DSD that a rate design without performance standards would give the DSD “much more powerful a protection...and reduction in risk” than a rate design containing what FEI characterized as “hollow performance guarantees”.¹⁰³
- j. Mr. Poole Was Mistaken About JCLP’s Design Considerations: FAES has not adduced any evidence that Mr. Poole was mistakenly concerned that the design of the Project was proceeding without consideration for the disconnect between low temperature heat pump systems and high temperature terminal equipment in the Project Buildings selected for connection to the low temperature heat pump systems (i.e. without consideration for the lack of compatibility between the Energy Systems and the DSD Building Systems). FAES has asserted that JCLP resolved the compatibility of the Energy Systems and the DSD Building Systems through its design philosophy, equipment selection, and the design of the sequence of operations. However, FAES has refused to provide an explanation of *how* JCLP resolved the compatibility of systems through its design philosophy, equipment selection, and the design of the sequence of operations and has refused to provide the DSD with any of the documents and information relied upon by JCLP to resolve the compatibility of the Energy Systems and the DSD Building Systems. Furthermore, FAES’ submission that the Project cannot achieve the efficiencies and GHG emissions reductions FEI promised it would achieve without upgrades to the DSD Building Systems suggests that Mr. Poole was correctly

¹⁰² FAES Written Argument, p. 103.

¹⁰³ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 57.

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concerned that the design of the Project was proceeding without consideration for the lack of compatibility between the Energy Systems and the DSD Building Systems.

- k. The DSD Had Been Heavily Involved in the Project Design: The DSD was involved in the design of the Project. However, as the evidence of Mr. Geyer makes clear, at all material times, the DSD relied upon Terasen, FEI and FAES as thermal energy system providers to provide expertise regarding the design, construction, installation and operation of the thermal energy systems included in the Project. Indeed, section 2.3 of the Service Agreement expressly acknowledges that the DSD did not have any obligation to verify the suitability of the thermal energy systems designed, constructed and installed by FAES for the Project.¹⁰⁴ It provides that:

2.3 SPECIFICATIONS

Subject to and in accordance with this Section 2.3, FEI shall prepare and complete the Specifications promptly following the Acceptance Date.

FEI confirms the Energy System, as described in the Specifications and as contemplated by the Energy System description set out in Schedule A, will be designed to meet the thermal energy requirements of the Building and operational compatibility of the Building System based in part on information supplied by the District as to historical usage, which information has not been independently verified by FEI. FEI shall have no liability to the District for the failure of the Energy System to satisfy the requirements of the Building where such failure is attributable to the information supplied by the District being incorrect, inaccurate or incomplete.

FEI will prepare the Specifications in consultation with the District in order to ensure the Energy System can be appropriately accommodated within the Building and interface with the Building Systems. FEI will submit material changes to the Specifications, both before and during construction, to the District for review and comment prior to such changes taking place. If the District does not comment on the Specifications or material changes to the Specifications or advise that it has no comment within five (5) Business Days of receipt, FEI will be entitled to proceed on the basis of the information provided to the District. FEI will revise the Specifications based on the comments from the District provided that doing so will not impact FEI's costs or adversely affect system performance.

Review of and comment on the Specifications by the District does not impose any obligation on the District to verify the suitability of the Energy System or be construed as confirmation by the District that the Energy System satisfactorily meets the Building's energy requirements. [Emphasis added]

¹⁰⁴ COS Rate Application, Exhibit C1-6, Affidavit #1 of F. Geyer, para. 22.

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7.0 THE PHASE-IN OPTION

136. In its written argument, FAES submits that if the DSD is switched to the COS Rate, the switch could be phased in over a period of no more than three years, provided the unrecovered portion of the COS Rate during the phase-in period is added to the DDA and amortized over the term of the RDA along with the remainder of the DDA balance.¹⁰⁵
137. If the BCUC decides not to undertake a full prudence review of the Capital Costs that are meant to be recovered via the Proposed COS Rate, and decides that the DSD should be switched to the Proposed COS Rate, the DSD respectfully requests that it be granted an opportunity to provide submissions to the BCUC regarding a potential phase-in of the switch before the switch is actually ordered.

8.0 RELIEF SOUGHT

138. The DSD respectfully submits that the BCUC should issue an Order dismissing the COS Rate Application. Alternatively, if the BCUC decides not to dismiss the COS Rate Application, the BCUC should delay its decision regarding the COS Rate Application until after the BCUC has undertaken a full prudence review of the Capital Costs that are meant to be recovered via the Proposed COS Rate. The evidence submitted by the DSD in these proceedings demonstrates reasonable grounds to question the prudence of at least a portion of the Capital Costs that are meant to be recovered via the Proposed COS Rate.

¹⁰⁵ FAES Argument, para. 218.