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Creative Energy Vancouver Platforms Inc.
Application for a Certificate of Public Convenience and Necessity
For Beatty-Expo Plants and Reorganization

Decision
and Order G-38-19

February 19, 2019

Before:
D. A. Cote, Panel Chair
D. J. Enns, Commissioner
M. Kresivo, QC, Commissioner

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1.0 Introduction

1.1 Background

On June 29, 2018, Creative Energy Vancouver Platforms Inc. (Creative Energy or Company) filed an application with the British Columbia Utilities Commission (BCUC) for a Certificate of Public Convenience and Necessity (CPCN) pursuant to sections 45 and 46 of the *Utilities Commission Act* (UCA). The applicant seeks to construct and operate new and renovated steam plant works and related facilities at Creative Energy's existing site at 720 Beatty Street in Vancouver and at an adjacent site within BC Place Stadium (the Proposed Project), and additional approvals required in connection with the Proposed Project (Application).

The Proposed Project encompasses the design and construction of the following components:

- The renovation of the existing Creative Energy steam plant (the Beatty Plant) to decommission equipment which is at end of life, replace certain equipment, and retain equipment with design life remaining; and
- A new steam plant (the Expo Plant) with two 200,000 pounds per hour steam boilers and related equipment to be located within BC Place Stadium, including equipment to interconnect the Expo Plant with the Beatty Plant.

Creative Energy estimates the total capital cost for the Proposed Project to be \$53.1 million, of which Creative Energy will be responsible for \$15 million through an agreement with a developer, Westbank Projects Corp. (Developer) who will provide the funding in excess of Creative Energy's contribution. The Developer intends to redevelop the area adjacent to and above the Beatty Plant with an office tower and a public plaza between Beatty Street and BC Place Stadium.¹

The Application also includes a request for approval of certain corporate reorganization steps involving Creative Energy, Westbank, Emanate Energy and Creative Energy Developments LP, including the amalgamation of a public utility requiring the consent of the Lieutenant Governor in Council (LGIC). Creative Energy submits that the reorganization is required to facilitate the Proposed Project and Developer's project, the development and transfer of assets surplus to utility needs on a tax efficient basis, and the acquisition of an indirect 50 percent interest in the utility by Emanate Energy.²

More information about the Applicant and related parties is provided in Section 1.5.

1.2 Approvals sought

In the Application, Creative Energy seeks the following approvals:

Pursuant to sections 45 and 46 of the UCA, a CPCN for the construction and operation of the following components of the Proposed Project at an estimated total capital cost of \$53.1 million:

¹ Exhibit B-1, pp. 7-8.

² Ibid., p. 97.

- the Expo Plant, including facilities to interconnect steam, condensate and fuel oil services between the Expo and Beatty Plants; and
- the Beatty Plant renovation.

Given that Creative Energy's portion of the total project cost is limited to \$15 million, Creative Energy proposes that the BCUC include a condition on its CPCN approval that Creative Energy's rate base shall increase by \$15 million as a result of the Proposed Project. This is subject to adjustments as approved by the BCUC for additional costs (inclusion in rate base) in connection with any change orders requested by Creative Energy or project delays caused by Creative Energy and to any secondary payment. As explained in the Application, Creative Energy will, in a future application, request approval of rates to enable Creative Energy to recover its costs for the Proposed Project.³

Further, Creative Energy seeks the following approvals:

- Pursuant to section 44.2 of the *UCA*, acceptance of additional capital expenditures of up to \$5.25 million that will only be payable by Creative Energy if it expands generating capacity at the Beatty Plant within the first 20 years after completion of the Proposed Project;
- Pursuant to sections 56 and 60 of the *UCA*, approval to establish a regulatory deferral account to record the undepreciated net book value of the Creative Energy assets that are to be retired as part of the Proposed Project; and
- Pursuant to sections 60 and 61 of the *UCA*, approval of a new long-term customer service agreement between B.C. Pavilion Corporation (PavCo) and Creative Energy for heating service to the BC Place Stadium.

In addition, Creative Energy seeks approval of the following steps related to a corporate reorganization involving Creative Energy:

- Amalgamation involving a public utility requiring BCUC endorsement and LGIC consent pursuant to section 53 of the *UCA*;
- Corporate structure changes requiring BCUC approval, including:
 - Repurchase and issuance of shares in a public utility, pursuant to section 50 of the *UCA*;
 - Disposition of shares or other property of a public utility, other than in the normal course of business, pursuant to section 52 of the *UCA*;
 - Transfer of shares in a public utility that results in a person acquiring a reviewable interest in the public utility, pursuant to section 54 of the *UCA*; and
- Disposition of Creative Energy's interest in "Trust Property" (as defined in the Application, the Trust Property is the interest in the lands, spaces and improvements on 720 Beatty Street and 701 Expo Boulevard, Vancouver, including all development rights that are surplus to the requirements of the utility), pursuant to section 52 of the *UCA*.⁴

³ Exhibit B-1, pp. 7–8.

⁴ *Ibid.*, pp. 9, 100–102; Appendix O.

1.3 Regulatory process

By Order G-128-18 dated July 13, 2018, the BCUC established a regulatory timetable which included a workshop, one round of Information Requests (IRs) with further process to be determined.

The following parties registered to participate as interveners in the proceeding:

1. B.C. Pavilion Corporation (PavCo);
2. Commercial Energy Consumers Association of British Columbia (CEC);
3. FortisBC Alternative Energy Services Inc. (FAES); and
4. FortisBC Energy Inc. (FEI).

The following persons and organizations registered as interested parties:

1. Mr. James Lee;
2. The City of Vancouver (the City); and
3. Emanate Energy Solutions Inc.

While the proceeding was underway, the Panel engaged Grover, Elliott & Co. Ltd. as an independent appraiser to conduct a valuation of the land associated with the Application and to provide an expert report to the Panel.

By Order G-194-18 dated October 12, 2018, the BCUC established further regulatory timetable for the review of the Application. This provided for filing of the Land Value Assessment Report by Grover, Elliott & Co. Ltd. on the Land Value Assessment Report, a second round of IRs, one round of IRs to Grover, Elliott & Co. Ltd. as well as written final and reply arguments.

Subsequent to Creative Energy filing of responses to BCUC IR No. 2 on November 15, 2018, the BCUC issued Panel IRs in order to clarify Creative Energy responses regarding the journal entries, and subsequent balance sheet amounts, pertaining to the transaction in accordance with the terms and conditions of the Trust and Development Agreement (Trust Agreement) and of the Proposed Project. Specifically, the Panel requested clarity on the amount of the proposed addition to rate base.

Due to the delayed filing of responses to IR No. 1 on Land Value Assessment Report, Creative Energy requested a one day extension for filing Final Argument. The request was granted and by Order G-216-18 dated November 15, 2018, the BCUC amended the regulatory timetable established by Order G-194-18.

Following Creative Energy's filing of its Reply Argument on December 10, 2018, the CEC submitted a request to file a sur-reply. On December 13, 2018, the BCUC requested Creative Energy to make submissions with regard to CEC's sur-reply request and invited CEC to provide a reply argument. After review of the filed submissions, the Panel determined that both CEC sur-reply submission and Creative Energy's submission regarding the CEC's request were to be added to the evidentiary record.

1.4 Legislative framework

Detailed information about the applicable legislative framework is presented in Appendix A.

1.5 The Applicant and related parties

Creative Energy

Creative Energy's steam utility has been in operation since 1968, and received a CPCN in 2016 for North East False Creek (NEFC). Creative Energy's steam plant is located at 720 Beatty Street, and two, smaller steam to hot water converter stations are located in the NEFC area. There are six gas-fired boilers currently installed at the Beatty Plant with a combined nameplate capacity of 825,000 pounds per hour. The company also owns and maintains approximately 14 km of steam distribution mains in downtown Vancouver, and hot water distribution mains in NEFC. Creative Energy has a long-term Municipal Access Agreement with the City of Vancouver.⁵ Creative Energy is a wholly owned subsidiary of Creative Energy Canada Platforms Corp. (Creative Energy Canada), which is a member of the Westbank group of companies (Westbank). Creative Energy Canada has held all of the issued and outstanding common shares of Creative Energy since 2013.⁶

Westbank

The Westbank group of companies manages a diverse portfolio of businesses including real estate development, construction, property and asset management, restaurants, hotels and mini-storage facilities. Westbank has over \$25 billion worth of real estate development projects completed or under development, including involvement in the utility sector in British Columbia through Creative Energy Canada and real estate development activities. A Westbank affiliate will be the Developer of the space housing the Beatty Plant and the surplus space above and adjacent to the Beatty Plant with an office tower, retail space and enhanced and beautified public areas.⁷

Emanate Energy

Emanate Energy is a wholly-owned subsidiary of the InstarAGF Essential Infrastructure Fund managed by InstarAGF Asset Management Inc. (InstarAGF). Emanate Energy is incorporated in Ontario. InstarAGF was launched in 2014 as an independent alternative asset management firm which has experience investing in and directing infrastructure businesses, including power generation, district energy, and renewable energy assets.⁸

Creative Energy Developments LP

Creative Energy Canada and Emanate have formed a limited partnership named Creative Energy Developments LP to develop, construct, finance, renew and manage urban energy infrastructure in British Columbia and other locations in North America. Subsequent to completion of the reorganization (if approved) Creative Energy is to be wholly owned by Creative Energy Developments LP, giving each of Emanate Energy and Creative Canada an indirect 50 percent interest in Creative Energy.⁹

⁵ Exhibit B-1, pp 12–14.

⁶ The BCUC approved the acquisition of all of the issues and outstanding shares of Central Heat Distribution Limited (CHDL) by Order No. G-190-13 dated November 21, 2013. Subsequently, CHDL was renamed Creative Energy Vancouver Platforms Inc. (Creative Energy).

⁷ Exhibit B-1, p. 14.

⁸ Ibid., pp. 14–15.

⁹ Ibid., p. 15.

1.6 Organization of the Decision

The Panel has structured this decision in seven sections:

- Section 1.0 – the Introduction.
- Section 2.0 includes description of the Proposed Project as explained in the Application.
- In Section 3.0 the Panel examines justifications for the Proposed Project, including project need, alternatives, associated risks, and benefits.
- Section 4.0 presents the matters related to financial modeling pertaining to the Proposed Project, including load demand and energy forecast, capital costs to Creative Energy and rate base impacts as well as system operating costs and related issues.
- In Section 5.0 the Panel examines the issues arising with respect to the Proposed Project and CPCN as applied for, including: change in land ownership and PavCo statutory right of way, management of project risks, secondary capital expenditure and deferral account for undepreciated assets.
- Section 6.0 presents the Panel’s determination on CPCN.
- In Section 7.0 the Panel addresses corporate reorganization proposed by Creative Energy and Customer Service Agreement between PavCo and Creative Energy.

2.0 Description of the Proposed Project

2.1 Components and scope of the Proposed Project

The current Beatty Plant occupies about 23,600 square feet of space, located on the property between Beatty Street and Expo Boulevard. This plant is the only source of energy supply for Creative Energy’s steam distribution network and the NEFC hot water network.¹⁰ It was originally built in 1949 to house the Vancouver Press printing presses. Additions to the structure were made in or around 1953 and 1957. Creative Energy (then called Central Heat Distribution Limited) first occupied the building in 1968 and made additions to the structure in 1990 and 1994.¹¹

Creative Energy states that it plans to first build a smaller off-site plant that will be operational and serve steam customers during the summer and shoulder seasons while the existing plant undergoes renovation work, all in coordination with redevelopment by others of the space above and adjacent to the existing plant. As noted in Section 1.1 the Developer plans to redevelop the “surplus property” with an office tower, retail space and enhanced and beautified public areas, including a public plaza between Beatty Street and BC Place. The Developer’s project will be coordinated with the removal of the adjacent Georgia Street viaduct by the City of Vancouver.¹²

The Proposed Project is comprised of the following major components:

- Construction of the new Expo Plant in unused mechanical space within the BC Place Stadium to replace some of the equipment at the Beatty Plant (boilers # 1, #2 and #4);

¹⁰ Exhibit B-1, p. 16.

¹¹ Ibid., pp. 16–18.

¹² Ibid., pp. 3–4.

- Interconnection of steam, condensate and fuel oil services between the Expo and Beatty Plants;
- Relocation of Boiler #5 and other equipment within the Beatty Plant;
- Replacement of fuel oil tanks and other major equipment at the Beatty Plant;
- Construction of new boiler flues for the Beatty Plant, routed to the roof of the new office tower; and
- Relocation of the Creative Energy team to temporary office space during construction and to permanent office space in the new office tower when it is completed.¹³

In order to meet the current and forecast peak demand conditions, Creative Energy must be able to meet the roughly 650,000 pounds per hour peak demand requirement of the distribution network. Table 2–1 depicts the proposed boiler changes and summarizes how the proposed project will meet this requirement.¹⁴

Table 2-1: Proposed Boiler Capacity¹⁵

Boiler ID (lb/hr)	Manufacturer	Year Built	Rated Capacity (lb/hr)	Functional Capacity (lb/hr)	Notes
No. 1	Foster Wheeler	1967	100,000	50,000	Abate & demolish
No. 2	Foster Wheeler	1968	100,000	60,000	Abate & demolish
No. 3 (Beatty)	B & W	1969	135,000	100,000	Retain*
No. 4	B & W	1973	215,000	180,000	Abate & demolish
No. 5 (Beatty)	Cleaver-Brooks	1983	75,000	70,000	Retain & relocate
No. 6 (Beatty)	Foster-Wheeler	1991	200,000	170,000	Retain
No. 1 (Expo)	B & W	2019	200,000	200,000	New
No. 2 (Expo)	B & W	2019	200,000	200,000	New
Total Connected Capacity			810,000	740,000	

Creative Energy has provided a review of the equipment at the existing site, including the boilers capacity, size and age, the deaerators, generators, and feedpumps.¹⁶ The capacity (functional capacity of 630,000 pounds per hour) and age of the boilers is set out, as are certain specifics such as the kind of controls and whether they have a burner management system. Those are set out in the Table 2–2 below.

¹³ Exhibit B-1, p. 35.

¹⁴ Ibid., p. 36.

¹⁵ Ibid., p. 37.

¹⁶ Ibid., pp. 20–22.

Table 2-2: Creative Energy Boilers¹⁷

Boiler ID	Manufacturer	Year Built	Rated Capacity (lb/hr)	Functional Capacity (lb/hr)	Annual Contribution to Steam Generation	Design Life Remaining
No. 1	Foster-Wheeler	1967	100,000	50,000	6%	0
No. 2	Foster-Wheeler	1968	100,000	60,000	4%	0
No. 3	B & W	1969	135,000	100,000	20%	1
No. 4	B & W	1973	215,000	180,000	39%	5
No. 5	Cleaver-Brooks	1983	75,000	70,000	3%	15
No. 6	Foster-Wheeler	1991	200,000	170,000	28%	23
TOTAL			825,000	630,000	100%	

The Application also provides information on the date of installation and the operating capacity of all deaerators, generators, and feedpumps.¹⁸

Creative Energy advises that when the Proposed Project is complete it will have two interconnected steam plants that conform to modern seismic and fire resistance standards, have significantly increased efficiency and enhanced long term service reliability with improved redundancy for customers and new administrative office space

2.1.1 Expo Plant

Creative Energy intends to repurpose unused space at the base of BC Place Stadium across the street from the existing steam plant and build a new plant (the Expo Plant). As stated in Section 1.1, the Expo Plant will have two 200,000 pound per hour steam boilers with high efficiency and low NOx equipment and be interconnected with the existing Beatty Plant and steam distribution network.

In consultation with BC Place Stadium staff, Creative Energy concluded that the Expo Plant would be housed in what was Fan Room #4, which consists of an 863 m² space located underneath the plaza at the northeast end of BC Place, has access for loading of equipment from the East gate and is adjacent to the Beatty Plant.¹⁹ The Company has entered into a Statutory Right of Way (SRW) Agreement with PavCo for use of this space, and access and egress, for a term of forty years.²⁰

¹⁷ Exhibit B-1, p. 20.

¹⁸ Ibid., p. 22.

¹⁹ Ibid., p. 36.

²⁰ Ibid., Appendix K.

In addition to the two boilers the Expo Plant is comprised of the following major equipment components:

- Water softeners;
- Emergency generator;
- Medium voltage (600V) electrical distribution;
- Feed water pumps;
- Chemical treatment;
- Control room;
- Lunchroom;
- Washrooms;
- Deaerator;
- Condensate receiver;
- Boiler flues, routed out upper concourse;
- Relief piping, routed out upper concourse; and
- High performance façade.²¹

Creative Energy has selected Babcock and Wilcox as the preferred boiler supplier. The boilers are B&W FM120-124 D Type Water Tube boilers, rated to produce 200,000 pounds per hour of steam at 200 psig. The boiler package will also include primary and secondary economizers. The boilers are rated as “ultra-low NOx boilers with guaranteed performance of 30 ppm NOx, matching the Metro Vancouver requirements. The stacks will extend to about the height of the BC Place spires and extend past the roof of the office tower. The Expo Plant may, at PavCo’s option, obtain some of its water requirements from rainwater recovered from the roof of BC Place.²²

The Expo Plant will be interconnected to the existing steam distribution system through an interconnection with the Beatty Plant across Expo Boulevard.²³ The interconnecting piping has been designed by Vibratech Engineering and will be tendered as part of the Expo Plant project and will be constructed as part of the early works of the office tower development and prior to commissioning of the Expo Plant.

The Expo Plant will be supplied with condensate and fuel oil through interconnections with the Beatty Plant. The Expo Plant will have independent natural gas and water connections and take electricity supply from an existing, unused substation within BC Place.²⁴

2.1.2 Beatty Plant

The current Beatty Plant occupies about 23,600 square feet of space, located on the property between Beatty Street and Expo Boulevard. The plant stretches along a north-south axis, with the sole loading point for major

²¹ Exhibit B-1, pp. 40–41.

²² Ibid., pp. 41–42.

²³ Exhibit B-5, BCUC IR 19.5.

²⁴ Exhibit B-1, p. 42.

equipment at the south end. The steam equipment was generally installed along this axis, starting in the north end of the building.²⁵

The Beatty Plant renovation project includes the following major components:

- Removal of the walls, roof and other structural elements of the existing structure housing the plant, except for the floor;
- Decommissioning of Boilers, #1, #2 and #4 and other major equipment Creative Energy states is at end of life;
- Overhaul and relocate equipment with remaining design life;
- Install a new diesel generator, diesel fuel tanks and feed pumps; and
- Construction of a new structure to house the equipment, primarily within the below-grade areas of the office tower development.

When complete, the Beatty Plant will be located within the below-grade structure, in the new office tower development built on the property at 720 Beatty.²⁶

2.1.3 Office space

Creative Energy's current office space is a portion of the ground floor at the Beatty Street site. The total space available is 8,600 square feet and its office staff occupies approximately 2500 square feet. The remaining 6,100 square feet are leased to other organizations.²⁷

Creative Energy advises that its projections on the future requirements for office space and functionality are based on the projected growth of the company and recommendations of the report from DIALOG, the consultant that reviewed the office needs²⁸. During the construction period the Developer will provide, at its cost, temporary replacement office space for Creative Energy's employees. Creative Energy states that it will have approximately 4,265 square feet of office space in the office tower and this space will provide workspaces for up to 25 employees, meeting rooms and a staff kitchen.²⁹ This is confirmed in Schedule C-3 of the Trust Agreement which depicts the layout of the new offices.³⁰ Creative Energy projects using an office gross area of 3781 square feet and 16 office staff as a projected requirement 5 years from now. A summary of the projected office area and staff count over time are set out in the Table 2–3.

²⁵ Exhibit B-1, pp. 16–17.

²⁶ Ibid., p. 46.

²⁷ Ibid., p. 25.

²⁸ Ibid. p. 25.

²⁹ Ibid., p. 57.

³⁰ Ibid, Appendix A, Schedule C-3.

Table 2-3: A Summary of the Areas and Office Staff Count ³¹

CREATIVE ENERGY PROGRAM - SUMMARY				
MILESTONE	OFFICE GROSS AREA (EXCL. WASHROOMS) (SQFT)	OFFICE STAFF COUNT	PLANT STAFF COUNT	TOTAL STAFF COUNT
CURRENT	2530	13	18	31
5 YEAR	3781	16	18	34
10 YEAR	4758	21	18	39
20 YEAR	5384	25	19	44
20 YEAR REDUCED	4573	25	19	44

Looking forward there will be a need to secure additional office space if the number of office staff increases as expected.

2.1.4 Change in ownership structure at Beatty Plant and Expo Plant

Creative Energy is currently the owner of 720 Beatty Street. If this Application is accepted, there would be a significant change to the ownership of the utility property at the Beatty Plant and the addition of a SRW for the new Expo Plant to be constructed. This will change significantly with an air parcel or long term lease for the Beatty Plant as described below and a 40-year SRW for the Expo Plant being proposed.

2.1.4.1 Expo Plant Statutory Right of Way

Creative Energy has entered into a SRW Agreement with PavCo for the use of space in the BC Place Stadium for the construction, maintenance and operation of the Expo Plant. The SRW is for 40 years and the parties have agreed that if the Company is not in default of any of the terms, at least 36 months prior to the end of the term Creative Energy may request that PavCo consider granting a renewal or extension of the SRW. It is in PavCo's sole discretion whether to grant any renewal or extension and for what period but there is no obligation on the part of PavCo to respond within any particular time frame.³² In the Workshop Creative Energy made reference to a five-year notice provision. The Panel notes that the SRW filed with the Application does not include such a provision.

The SRW specifically provides Creative Energy the following:

- Access to, and use of, the energy centre (ECR) for the purpose of construction and maintenance and operation of the Expo plant;
- Access to, and use of, the Energy Transfer Station (ETS) for the purpose of constructing, maintaining and operating the ETS, which will be used to provide steam service to BC Place; and
- Access to, and egress from, the ECR and the ETS via the Access Area as defined in the SRW Agreement.³³

³¹ Exhibit B-1, Appendix H, p. 10.

³² Ibid., Appendix K, Section 3.

³³ Ibid., pp. 43–44.

PavCo also grants a non-exclusive license to the Company to construct, maintain and operate the condensate line and for access and egress over the BC Place lands.³⁴

Creative Energy is required to pay PavCo an annual fee based on the approximate carrying costs of eliminated space at 720 Beatty, including reduced property taxes. The annual fee for the first five years is estimated to be \$178,376.48.³⁵ Should the new facility be subject to property tax, the amount of the SRW payment will be reduced by the amount of actual property taxes up to \$124,630 (with inflationary adjustments on similar terms as the underlying SRW payment). Creative Energy states it is an estimated rate equivalent of \$19.21/sf.³⁶

PavCo may develop BC Place Stadium during the term of the SRW but may not relocate, demolish or redevelop the Expo Plant and is required to use “commercially reasonable efforts” to minimize interference with or interruption of its operation of the Expo Plant.³⁷ In the event that PavCo does redevelop or demolish BC Place Stadium, Creative Energy will continue to have use of the Expo Plant for the 40-year period. However, the Creative Energy will be responsible for the cost of structural changes which may be required to ensure the Expo Plant and flues can function without the support of the BC Place Stadium and for making all arrangements for the installation of replacement utility services, including gas, electrical and other utility service lines and connections on the BC Place Lands.³⁸ Creative Energy states that it considers this very unlikely but in this scenario, the flues would likely be replaced with shorter flues similar to those currently situated at Beatty Street. Creative Energy estimates the costs for this to be less than \$100,000 since structural changes would be minimal because the enclosure for the Expo Plant has separation from the rest of BC Place.³⁹ As to the stadium itself, Creative Energy reports that BC Place and the surrounding plaza are “robust cast-in-place structures” found on glacial till. Creative Energy further reports that the PavCo structural consultant states that a remaining lifespan in excess of 50 years is achievable with periodic engineering review and maintenance regimen.⁴⁰

The SRW requires Creative Energy to design and construct the Expo Plant to meet certain performance thresholds to ensure the operation of the plant does not have detrimental impacts on BC Place Stadium. The thresholds specify levels in respect of noise, smoke, vibration and odours.⁴¹ The Application does not provide any information on whether there is any concern about meeting these thresholds. In addition, the SRW requires Creative Energy to indemnify PavCo from any liabilities or losses in connection with its occupancy and use of the SRW areas. The Company intends to obtain insurance to cover that potential liability.⁴² Creative Energy advises that in its view there are no incremental costs associated with it indemnifying PavCo and states that if PavCo incurs any liability or suffers a loss in all likelihood it would be covered by Creative Energy’s insurance.⁴³

The SRW Agreement does not include a licence for Creative Energy to construct, maintain and operate the steam and fuel oil services between the Expo and Beatty Plants. Creative Energy advises that rights will be secured from PavCo for the interconnection piping at the appropriate juncture of the project.⁴⁴ Creative Energy

³⁴ Exhibit B-1, p. 44.

³⁵ Ibid., p. 45.

³⁶ Transcript, Volume 1, p. 65, Exhibit B-2 p. 45.

³⁷ Exhibit B-1, Appendix K, p. 20, section 2.10.

³⁸ Ibid., p. 44.

³⁹ Exhibit B-6, CEC IR 35.1.

⁴⁰ Exhibit B-5, BCUC IR 81.2, 81.2.1.

⁴¹ Exhibit B-1, pp. 44–45.

⁴² Ibid., p. 46.

⁴³ Exhibit B-6, CEC IR 38.1.

⁴⁴ Exhibit B-5, BCUC IR 81.1, Exhibit B-18, BUC IR 140.1.

also has a Municipal Access Agreement with the City of Vancouver allowing it to build infrastructure in the streets of the city without acquiring a right of way or individual permits.⁴⁵ This agreement is valid until 2029.⁴⁶ An executed SRW has not been filed with the BCUC and no information has been provided regarding when the parties contemplate execution of the SRW.

2.1.4.2 Beatty Plant property 720 Beatty

Creative Energy and the Developer intend to enter into a Trust Agreement.⁴⁷ The Trust Agreement provides that Creative Energy will become the bare trustee of all the property to be developed by the Developer and considered by Creative Energy to be surplus to what is defined in the Trust Agreement as the “Utility Assets.” Pursuant to the Trust Agreement, Creative Energy will transfer to the Developer the land and airspace that Creative Energy owns and which Creative Energy states are surplus to its needs in its operation as a utility. Creative Energy will hold all rights and title in the Trust Property as a bare trustee, in trust for the benefit of the Developer. The Developer will own and hold all the rights to the Trust Property for the purpose of developing its office tower project in accordance with the Trust Agreement. At the Stabilization Date, the property is subdivided such that the utility property is contained in the airspace parcels or an “equivalent form of tenure expressly contemplated” in the Trust Agreement.

Creative Energy will hold the legal title to the Trust Property as bare trustee until the lands are subdivided when the airspace parcel housing the utility is created (the Stabilization Date). There are risks associated with Creative Energy holding legal title for a period of time. However, Creative Energy’s obligation as bare trustee is limited in time pursuant to the Trust Agreement. Legal title can be transferred to a nominee in the following cases:

- a) the Developer so directs prior to the Stabilization Date;
- b) Creative [Energy] Vancouver so directs (when the Developer does not meet the reporting Requirements) as defined in the Trust Agreement;
- c) The Airspace Parcels have not been created within 4 years of the commencement of demolition of the Existing Plant and at the option and direction of Emanate; or
- d) is required by any government authority.⁴⁸

In summary, the Developer will acquire the beneficial interest in the portion of the lands at 720 Beatty and 701 Expo Boulevard that are not required for utility purposes. Creative Energy would be the owner of the airspace parcel containing the Beatty Plant and the Expo Plant and the SRW. Creative Energy would be a bare trustee for the Developer of the remaining property at 720 Beatty Street and 701 Expo Boulevard until the property is subdivided to create the air parcel to be occupied by the utility.

Creative Energy states that the airspace parcel provides fee simple title to the airspace for Creative Energy. The alternative to an air space parcel would be to secure a long-term exclusive use (e.g. pursuant to a 999 year lease), but Creative Energy states a fee simple title is preferable.⁴⁹ The City would be required to agree to the creation of the air space parcel.

⁴⁵ Exhibit B-18, BCUC IR 140.3.

⁴⁶ Exhibit B-6, CEC IR 4.1.

⁴⁷ Exhibit B-1, Appendix A.

⁴⁸ Ibid., Appendix A, p. 68.

⁴⁹ Exhibit B-5, BCUC IR 27.7, B-6, CEC IR 403.

2.2 Proposed Project scheduling

Creative Energy states that the construction of the Expo and Beatty Plants will not commence until it receives approval from the BCUC and it has received approval from the City. The expected sequence for construction has been listed in Table 2-4 which outlines the key construction milestones. A detailed project schedule has not yet been developed and will be done as part of the detailed design process.⁵⁰

Table 2-4: Construction Milestones⁵¹

1	BCUC Approval	Dec. 31, 2018
2	Order Expo boilers	Dec 2018
3	Start of Expo Plant construction	Jan 2019
4	Early works (new fuel tanks & interconnection)	May 2019
5	Completion of Expo Plant and early works	Oct 2019
6	Phase 1 commissioning	Nov-Dec 2019
7	Relocation of office staff	Jan 2020
8	Shutdown #1 of Beatty Plant - Abatement and demolition of Boilers #1, #2 and #4 - Relocation of gas service - Relocation of feedwater pumps	April 2020
9	Restart #1 of Beatty Plant	Oct 2020
10	Demolition and excavation of east area	Oct 2020 – April 2021
11	Shutdown #2 of Beatty Plant - Relocation of BC Hydro service - Temporary water service - Install temporary flue for Boiler #3	April 2021
12	Restart #2 of Beatty Plant	Oct 2021
13	Below grade to L4 slab (below flues)	Oct 2021-April 2022
14	Shutdown #3 of Beatty Plant	April 2022
	- Extend breeching to L18 - Connect boilers to breeching - Remove temporary flues - Reinstate permanent water service	
15	Restart #3 of Beatty Plant (final)	Oct 2022
16	Complete office tower development	2023

As noted in Table 2–4 above, the expected construction schedule was premised on obtaining BCUC approval by December 31, 2018, which has not occurred. In addition, Creative Energy has not advised that it has received approval regarding rezoning from the City to date. It is presumed that the dates outlined in Table 2–4 are subject to change since no proposed revised schedule has been filed by Creative Energy.

⁵⁰ Exhibit B-1, pp. 55–56; Exhibit B-5, BCUC IR 25.2.

⁵¹ Ibid., pp. 56–57.

A key part of the schedule is the completion of the Expo Plant. Once complete this will allow the Beatty Plant to be shut down from April to October each year of the construction. These are the low demand months, which will allow work to be completed on cold equipment at the Beatty Plant and reduce costs and risks. Creative Energy states that the components of the Proposed project are sequenced to ensure there is no interruption of steam service to customers. The key components are as follows:

- The first phase is construction of the Expo Plant including the interconnection to connect it to the Beatty plant and steam distribution system headers at Beatty. Creative Energy does not intend to commence detailed design work and place fabrication and delivery orders until it receives BCUC approval.
- Completion of the Expo Plant will allow the Beatty Plant to be shut down from April to October of 2020, during the low demand months. During the first shutdown the building housing the steam plant will be removed, boilers #1, #2, and #4 will be abated and demolished as FortisBC Energy gas services will be disconnected and relocated.
- The Beatty plant will be restarted in October 2020, and the interconnected Beatty and Expo Plants will provide steam service to the customers during the high demand winter period.
- The Beatty Plant will be shut down a second time from April to October 2021, at which time the BC Hydro service will be disconnected and relocated, a temporary water service installed and a temporary flue installed.
- The Beatty Plant will be restarted in October 2021 for the interconnected plants to provide steam service to the customers during the high demand winter period.
- The Beatty Plant will be shut down a third time from April to October of 2022, at which time the flues will be extended to the top of the Developers office tower, temporary flues will be removed and permanent water service will be reinstated.
- The Beatty Plant will be restarted on a final basis in October 2022.
- The Developer's project is expected to be completed in 2023, at which time Creative Energy will move into office space in the Developer's tower.⁵²

As indicated in Table 2–4, the Beatty Plant is scheduled to be shut down three times in April of 2019, 2020 and 2021. Each of these shutdowns will require a restart in October which underlines the importance of completing the scheduled work over the summer months into early fall. A failure to restart on time will mean that customers will be reliant solely on the Expo Plant until a restart can be completed.

2.3 Required permits and approvals

Creative Energy states that in addition to the BCUC approval, it requires the following additional government approvals as outlined in Table 2.5.

⁵² Creative Energy Final Argument, pp. 12–13.

Table 2-5: Required Approvals⁵³

Approval	Government Authority
Air Quality Permit	Metro Vancouver
Operating Permit(s)	Technical Safety BC
Rezoning Enactment	City of Vancouver
Development Permit	City of Vancouver
Building Permit	City of Vancouver
Occupancy Permit	City of Vancouver

No proposed schedule or estimated dates for these government approvals has been provided.

Creative Energy advises that the Developer submitted a rezoning letter of enquiry to the City in February 2018. This letter was used to obtain early advice about the Proposed Project prior filing a formal rezoning application. The Developer submitted a formal application to the City in May 2018 and City staff raised some setback issues arising from their “parallel review of the road geometries around the site as a result of the viaduct removal.” The Developer met with City staff and Creative Energy advises that as of the date of final argument, the Developer was in the process of submitting a revised package.⁵⁴ The Company also advises that the City has provided a letter of support for the proposed project.⁵⁵

In addition, Creative Energy has clarified that rezoning approval for 720 Beatty and 701 Expo is not required to begin the Proposed Project. Creative Energy advises that construction of the Expo Plant at BC Place Stadium does not require rezoning and will commence prior to rezoning of the Beatty property.⁵⁶

3.0 Project justification

3.1 Project need

As outlined in Section 2.0, Creative Energy’s proposal to construct the Expo Plant and renovate the Beatty Plant is designed to replace boilers and related equipment that is either near or at the end of its design life. In determining whether there is a need for the Proposed Project, the Panel will examine Creative Energy’s assessment of the existing plant and equipment, the current office space, and the load/resource balance.

⁵³ Exhibit B-1, p. 86.

⁵⁴ Creative Energy Final Argument, p. 14.

⁵⁵ Exhibit B-1, Appendix J.

⁵⁶ Creative Energy Final Argument, p. 16.

3.1.1 Assessment of the existing plant and equipment

The Structure

As noted in Section 2.1, the current plant located on the property between Beatty Street and Expo Boulevard was built in 1949 with the structure added to in the 1960s and first occupied by a utility in 1968. Creative Energy states that due to its age the plant structure does not conform to modern standards for seismic and fire resistance nor does it conform to current building codes. Because of this, Read Jones Christoffersen Ltd. (RJC) was engaged to conduct a structural assessment of the building. RJC assessed the seismic resistance of the building to be poor noting that with the exception of the portion of the building completed in 1994, the building was constructed before local building codes had seismic specifications. Specifically, the only structural components with seismic resistance are the steel braces in the 1994 expansion and the concrete walls around the stairwell in the south of the building. The concrete walls that are above grade were described as relatively small and “have reinforcement details which are known to exhibit poor performance during earthquakes.” RJC provided a series of recommendations for improvements to upgrade the structure of the building with associated drawings and sketches. RJC also provided a preliminary Class D cost estimate as prepared by BTY Group of approximately \$4.5 million.⁵⁷

Creative Energy also engaged Pinchin Ltd. (Pinchin) to conduct a hazardous building materials assessment. Pinchin reports that there are hazardous materials like asbestos, silica, lead, mercury, PCBs and ozone-depleting substances present from the original construction. Asbestos was found in numerous locations throughout the structure and recommendations for removal of these and other materials prior to demolition were provided.⁵⁸

Boilers and other major equipment

The Beatty Plant contains the following major equipment: six natural gas/ no.2 fuel oil-fired boilers, deaerators, a generator and feedpumps producing 225 psig steam. An assessment of the condition of the utility plant was conducted by Fosdick & Hilmer (F&H) in May 2013, and updated in 2018. It is unclear as to which parts of the report were updated and the depth of any additional assessments that were conducted to prepare the June 2018 update. In broad terms, the Report states that the plant is in “acceptable condition” and is “adequately maintained.” The boilers are considered relatively old with Boilers #1 and #2 being installed in 1967 and having no expected remaining life, Boiler #3 an expected remaining life of 2 years and Boiler #4 a life expectancy of 6 years. F&H states that in this case it is difficult to project the remaining life of the boilers because those that are oldest are used sparingly with the newer boilers handling the brunt of the load. Thus, the life of these older boilers may be longer than life expectancy “simply because they are not used.” Based on information compiled in the 2013 report, it appears that both Boiler #1 and #2 contribute well below 10 percent of the load requirements while Boiler #3 in most of the preceding years was at or slightly above 20 percent of the load and Boiler #4 contributed 30 to 60 percent of the load.⁵⁹

⁵⁷ Exhibit B-1, pp. 16-18; Exhibit B-1, Appendix E.

⁵⁸ Ibid., Appendix F, Executive Summary.

⁵⁹ Ibid., p. 18, Exhibit B-1, Appendix G, Appendix A, Beatty Street Condition Assessment, pp. 2–3.

Table 3–1 outlines a risk matrix prepared by F&H as part of its report. Most pertinent of the Evaluated Disciplines to the assessment of the plant condition are Maintenance, Control Systems and General Condition. A low risk evaluation has been assigned to each of these areas.⁶⁰

Table 3-1: F&H Risk Matrix

CHDL	Risk Level Allocation			
	1	2	3	
Evaluated Disciplines				
Plant Capacity		X		Firm capacity short of peak demand.
Staffing & Operations		X		Good day-to-day management and operations team Heavy dependence on the two boilers connected to the condensing economizer
Environment		X		Future low NOx emission requirements relative to existing burner capabilities; age and materials of construction leave existing fuel oil tanks vulnerable to leak and cleanup hazards
Maintenance	X			No major maintenance items observed.
Control Systems	X			Outdated pneumatic controls on boilers no. 1 and 2. Not all auxiliaries on plant DCS.
General Condition	X			Plant is generally well kept given less than optimal layout of boilers and auxiliaries

3.1.2 Assessment of current office space

As noted in Section 2.1.3 of this Decision, Creative Energy reports that it has 8600 sq. ft. of total office space available and its office staff use 2,500 sq. ft. of this with the balance being leased to other organizations. As noted previously, Creative Energy has engaged DIALOG, a consultant, to provide an assessment of the current office space and outline options for use of the premises to handle future growth over the next 20 years. DIALOG's assessment of the current office space includes the following physical and environmental limitations:

- Building shape, structure (column) spacing and exits make the space inefficient with respect to layouts for workstations.
- Non-conformity with the newest City of Vancouver regulations for accessibility /universal design. These regulations are increasing with each building code revision to ensure that workplaces do not, through their design, discriminate against staff and visitors with physical impairment.
- Limited or no access to natural light for over 50% of the employees.
- Potential exposure to vibration from the steam generation plant.
- Meeting space is inadequate and there is no dedicated lunchroom or other space to support a collaborative workplace.⁶¹

⁶⁰ Exhibit B-1, p. 16.

⁶¹ Ibid., pp. 25-26.

In addition, DIALOG conducted an assessment of the mechanical and HVAC systems. It describes the HVAC systems in the building as a patchwork of different equipment types that appear to be added to, modified and, over the years, had repairs done on an “as needed” basis. As such, there is no central HVAC plant as most of the spaces are served by local equipment with stand-alone controls. Creative Energy reports that in summary, DIALOG’s assessment is there are a large number of upgrades required to bring the office up to standard building codes with a replacement of the entire mechanical system required. With respect to the HVAC system the following was identified:

- The majority of the equipment is nearing the end of its expected service life.
- The other existing equipment primarily consists of city-water-cooled heat pumps. Due to their high water usage, the use of this type of HVAC equipment is restricted by the City of Vancouver Waterworks Bylaw Section 3.8.
- The HVAC controls in the building are generally standalone and do not allow communication with other equipment in the building. Heating and cooling equipment can operate simultaneously, wasting energy.⁶²

3.1.3 Load/resource balance

A key consideration is the balance between the current and expected peak loads, the capacity of the current boiler system to meet these peak loads and whether, once the work has been completed on the Proposed Project, the capacity will be sufficient to handle future peak demand.

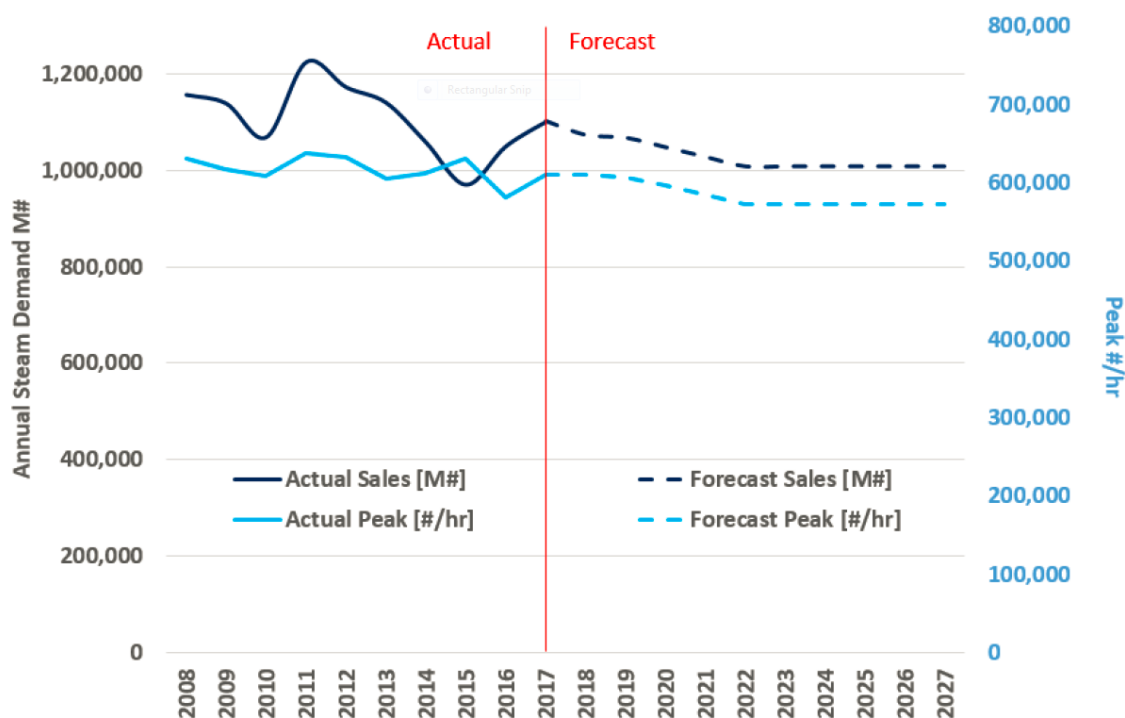
Creative Energy currently reports having 204 steam customers and through NEFC, an additional 3 hot water customers.⁶³ It states that fluctuation in demand on a year to year basis is based on weather and other temporary events like major building renovations or new customers.⁶⁴ Figure 3–1 outlines Creative Energy’s actual annual load and peak load from 2008 through 2017 and the forecast annual load and peak load from 2018 through 2027.

⁶² Exhibit B-1, p. 26.

⁶³ Ibid., p. 27.

⁶⁴ Ibid., p. 28.

Figure 3-1: Creative Energy Actual and Forecast System Load



Note: Sales forecast is based on average weather. Peak forecast is based on design weather.

Creative Energy states that load forecasts are a reflection under average weather conditions of customer demand “based on average demand from the past three years adjusted for known customer additions and losses.” As noted in Figure 3–1 above, these customer additions and losses will also result in a corresponding reduction in forecast peak demand. Peak demand has been fairly steady and shows little correlation with annual energy sales. Creative Energy explains that peak demand is affected more by weather and additions or losses of large customers while annual energy sales are more affected by changes within individual buildings, such as building upgrades or changes in occupancy or use.

To meet current and forecast demand conditions Creative Energy must be able to meet a 580,000 pounds per hour peak demand requirement. Creative Energy states that it has carried a capacity reserve of approximately 8 percent in recent years (i.e. the system is capable of producing 8 percent more energy than demand). However, this has declined due to a decision made by their operations staff to reduce the functional capacities of Boilers #1 and #2 as a result of cracks in the external and internal casings/walls. While these have been repaired, the functional capacities will continue to be reduced to below 8 percent to mitigate the risk of further cracks.⁶⁵ Looking forward, the forecast by 2023 is for a net load reduction of 6 percent. Creative Energy states that to meet current and forecast demand conditions it must be able to meet a 580,000 pounds per hour peak demand requirement. However, the Company acknowledges there is uncertainty regarding the exact timing of individual building additions and losses due to the circumstances of these customers. In preparing this Application, the impacts of known gains and losses have been phased in between 2018 and 2023 although some of these may occur after this point.⁶⁶ Creative Energy has assumed that future loads remain flat beyond the known losses and additions noted above because it is impossible to prepare a credible forecast of loads over the longer term. This

⁶⁵ Exhibit B-1, p. 30.

⁶⁶ Ibid., p. 29.

is because there are a myriad of factors which cannot be credibly forecast affecting the addition of new customers and the impact of those additions on load. In the absence of a long-term forecast, Creative Energy has taken into account known losses and additions and has assumed flat future loads otherwise.⁶⁷

Table 3–2 outlines total boiler capacity, as it exists today. Total functional capacity is 630,000 lb/hr.

Table 3-2: Existing Boiler Capacity⁶⁸

Boiler ID	Manufacturer	Year Built	Rated Capacity (lb/hr)	Functional Capacity (lb/hr)	Contribution to 2012 Annual Steam Load (%)	Expected Remaining Life (based on 50 yr useful life) (yrs)
No. 1	Foster-Wheeler	1967	100,000	50,000	6	0
No. 2	Foster-Wheeler	1967	100,000	60,000	4	0
No. 3	B&W	1969	120,000	100,000	20	2
No. 4	B&W	1973	215,000	180,000	39	6
No. 5	Cleaver-Brooks	1983	75,000	70,000	3	16
No. 6	Foster-Wheeler	1991	200,000	170,000	28	23
Total Rated Capacity			810,000			
Total Functional Capacity				630,000		

F&H states in its report that from 2008 to 2012 there were five instances where steam loads exceeded 610,000 lb/hr with the highest of these being 638,000 lb/hr in February of 2011. This part of the 2013 report does not appear to be further updated since that time and whether there were similar high peaks over the last five years is unknown. The report further states that the firm capacity of an optimally designed plant will have to be able to meet peak demand with 10 percent reserve capacity which it defines as the capacity of the steam plant with the largest steam generator eliminated from service. With reference to Table 3–2, F&H observes that if any of the boilers were out of service due to an outage or other reason, the plant would fall short of being able to satisfy the maximum load.⁶⁹

Based on Table 2-1 in Section 2 of this Decision, the functional capacity of the system once the Proposed Project has been completed will be 740,000 lb/hr. Creative Energy states that this is sufficient firm capacity to meet peak demand with a 10 percent capacity reserve. This is based on the continued reliance on Boiler #3 which is at the end of its design life. Creative Energy states that it has deferred replacement of Boiler # 3 due to uncertainties about the timing of any additions and known changes in load. In the event of a failure of Boiler #3, the capacity will drop to 640,000 lb/hr and, as a consequence, the Proposed Project will still have the capacity to meet peak demand with a 10 percent capacity reserve based on Creative Energy’s forecast.⁷⁰

⁶⁷ Exhibit B-5, pp. 28–29; Exhibit B-5, BCUC IR 11.1 and 20.0.

⁶⁸ Exhibit B-1, Appendix G, Appendix A, p. 3.

⁶⁹ Ibid., Appendix G, Appendix A, pp. 3-5.

⁷⁰ Exhibit B-1, p. 30; Exhibit B-18, BCUCIR 89.2.

Is there a need for the Proposed Project?

Creative Energy states that central to the Proposed Project is a need to replace boilers that are at the end-of-life. However, in addition, there are other issues with the plant which are long-standing and need to be addressed. In the Company's view, the Proposed Project offers an opportunity to address these multiple drivers as part of a single project. Creative Energy argues that the opportunity afforded by the Proposed Project allows multiple needs to be addressed simultaneously and is better for the public and customers than relying upon the status quo with equipment replacements and upgrades being done in situ.⁷¹

Positions of Interveners

CEC's position is that while there may be a need for improvements that could be made to the utility over time, there is not an urgent need for the Proposed Project. CEC argues that instead, the parent corporation wanting to capitalize on the utility's land assets is driving the project. CEC notes that in 2014, when the utility was acquired, Creative Energy confirmed it was in excellent condition and later as part of its Long Term Resource Plan filing, asserted that the existing plant would be sufficient for many years to come.

With reference to Creative Energy forecasting decreases in load and peak demand over the foreseeable future, CEC submits that typically such significant mechanical and space improvements are not undertaken in such instances unless "they can be expected to increase sales or significantly reduce immediate risks". It also opines that the seismic and reliability risks that are being mitigated by the Proposed Project could potentially be done less expensively at a future point in time. Moreover, the resulting rate increase of almost 4 percent could lead to further load losses and higher rates for remaining customers.⁷²

CEC submits that the evidence on the record does not support a need to replace boilers or upgrade equipment. It is CEC's position that Creative Energy was aware of the building's age and history as well as CHDL management's views on the seismic vulnerability of the structure when it was originally acquired. Moreover, Creative Energy chose not to deal with these seismic and boiler issues in a major way and despite the seismic report being completed failed to disclose it as part of the Long Term Resource Planning process.

Concerning the new office space, CEC acknowledges that the responsibility for the cost rests with the Developer but submits "the negotiation between the parties result in a whole 'deal' in which the utility ultimately pays for what it receives." In its view, this could be accomplished at significantly lower cost than what is proposed and the brand new office tower workspace is not a requirement to allow the utility to properly function.⁷³

None of the other interveners took a position on the need for the Proposed Project.

Creative Energy reply

Creative Energy, in reply, states that the Proposed Project is a superior option when compared to the In-situ equipment replacement strategy. In its view there is an opportunity to move forward now and this is better from a customer standpoint than any feasible alternative inclusive of doing nothing for several years. Creative Energy argues that a "run-to-failure" strategy is not prudent due to the lack of N+1 redundancy, the accessibility

⁷¹ Creative Energy Final Argument, pp. 9-11.

⁷² CEC Final Argument, pp. 22-23.

⁷³ Ibid, pp. 24-25.

of the oldest boilers and the long lead-time to secure replacements. It is, however, prudent for the utility to take this opportunity to proactively renew its ageing plant at a lower risk and cost than other alternatives.

With respect to CEC's comments on the need for new office space, Creative Energy states that CEC fails to realize that this is being provided at no cost to the utility and is not included in the \$15 million being charged to the utility for the total project. In its view "[i]t would be absurd for Creative Energy to pass on the opportunity of new office space at no cost."⁷⁴

Panel determination

Creative Energy's position is that there is a need to replace boilers that are at or near the end of life. On the other hand CEC has argued that while there may be a need for improvements over time, there is not an urgent need for the Proposed Project to be completed at this time.

The Panel notes that the functional capacity of the system is 630,000 lb/hr as outlined in Table 3-2 above. While Creative Energy has forecast peak demand of 580,000 lb/hr, it has acknowledged its forecasts are conservatively low and the timing of the gains and losses included within these forecasts are not firmly established. In addition, the fact that Creative Energy has had at least five instances since 2008 when the peak demand was well above 600,000 lb/hr and the potential for the current peak demand capacity to be exceeded certainly exists. Moreover, while the current ability to meet peak demand may be sufficient based on the forecast, the Panel notes that a failure of any of Boilers #1 through #4, which are at or nearing end of life will result in a reduction of capacity such that the estimated peak demand will be at or exceed the capacity that the plant is able to deliver. Add to this Creative Energy's acknowledgement that its forecasts are conservatively low and the potential for a major capacity shortfall is significant. **Therefore, the Panel finds the Proposed Project with a functional capacity of 740,000 lb/hr will establish a wider capacity margin and better ensure Creative Energy's peak demand needs are met.**

The work completed by F&H indicates that the Beatty plant is in an acceptable condition and is adequately maintained. Moreover, Boilers #1 and #2 which are the oldest are used only sparingly and, as a result, F&H notes that these older boilers may last longer due to their lack of use. On the other hand, the Panel notes that Boilers #1 and #2 have had cracks and the evidence is not conclusive as to how long these boilers can be expected to last beyond their expected remaining life or the additional cost of maintenance that may be required in the event of equipment failure over the short term. **Given the issues raised with respect to the potential for demand to exceed capacity, the Panel finds that while an immediate need for key boiler replacement has not been established, we agree it would be prudent to plan on a replacement of at least Boilers #1 and #2 over the next few years.** Once completed, the reliability of the plant would be greatly improved and the potential for costly shutdowns over peak or high use periods greatly reduced.

In addition to replacement of the boilers and related equipment, the Proposed Project will also address structural issues related to the building structure and, at the Developer's expense, undertake to upgrade the office space thereby bringing it up to modern standards. As previously noted, Creative Energy has engaged the services of RJC to provide an assessment of the building structure, Pinchin to conduct a hazardous materials assessment and DIALOG to assess the current office space. RJC has pointed out that there are many deficiencies in the building structure and the seismic resistance of the building is judged to be poor while Pinchin has

⁷⁴ Creative Energy Reply Argument, pp. 30-31.

confirmed that hazardous materials remain from the initial construction, with asbestos being most prevalent. DIALOG found numerous physical and environmental deficiencies with the existing office space and describes the HVAC systems as a patchwork of stand-alone units and a large number of upgrades are necessary to bring the office up to standard building code. DIALOG recommends replacement of the entire mechanical system. The Panel notes that CEC does not dispute the assessments but instead submits that such mechanical and space improvements should not be undertaken unless there is an increase in sales or there is a significant reduction in risk. Moreover, brand new office tower workspace is not a requirement and the work could be done for less money. **The Panel disagrees and finds the assessments of RJC, Pinchin and DIALOG to be sufficiently compelling to justify the need for work to be completed to mitigate the deficiencies.**

The Panel notes that the circumstances of this Application are unique. The immediate need for the Proposed Project may not have been established but the Panel has been persuaded the work will be needed relatively soon. The opportunity exists for substantial upgrades to Creative Energy's building structures and mechanical capability resulting in improvements in the areas of safety, efficiency, reliability, emission control and working environment at far less than actual cost with any overages being borne by the Developer. However, if the Proposed Project is delayed or put off for a number of years a similar offer may not be available. **The Panel finds that moving ahead at this time with the Proposed Project or an alternative solution to replace aging boilers and bring the plant up to current standards better represents the interests of ratepayers and is more in the public interest than deferring it for a number of years. The Panel believes this to be justified given the greater potential cost of delaying the Proposed Project and the need to complete some, if not all of the work related to the existing plant and structure housing it.**

3.2 Project alternatives

Creative Energy states that in addition to the Proposed Project it considered two other alternatives:

1. New Plant Construction in a Different Location

This alternative would retire the existing Beatty Plant and replace it with a new plant in a new location.

The primary issue with the option of new plant construction is that it would involve having to acquire land that would be within reach of the existing main distribution legs, have access to gas, electric and water utilities and would require the construction of a new plant on the property. The cost to acquire the land would be expensive, as would the construction of a new plant. In addition, undertaking to build a new plant elsewhere would not leverage existing equipment at the end of life. Further, Creative Energy had F&H conduct an economic evaluation of this option and based on a Class 5 estimate, the Net Present Value (NPV) of the capital was estimated to be in excess of \$130 million, an amount far in excess of the other alternatives. Because of these costs this alternative was eliminated.⁷⁵

2. In-situ Equipment Replacement

This alternative considers maintaining the Beatty Plant and undertaking renovations to address immediate needs only. This would involve the replacement of Boilers #1 and #2, bringing the building up to standards for seismic and fire resistance, abatement of hazardous materials and the replacement of other equipment when needed.⁷⁶

⁷⁵ Exhibit B-1, pp. 76–77; Appendix G, Comparative Analysis of Options, p. 9.

⁷⁶ Ibid., p. 76.

Creative Energy states that In-situ replacement is the only feasible alternative. With this approach an additional plant building capable of accommodating a 300,000 pounds per hour steam boiler would first be built. This boiler, referred to as Boiler #7, is planned to be of sufficient size to meet peak demands after removal of Boilers #1 and #2 and would also provide for capacity during the future period when the next boiler (either #3 or #4) is replaced. The next step would be to undertake building seismic upgrades, abate hazardous materials and demolish and remove Boilers #1 and #2. Boilers #3 and #4 would be completed as required at a later time. Creative Energy points out that with this alternative there would be no office tower, no new office space, none of the public improvements and no work done on the stacks to improve local air quality.

Creative Energy notes that pursuing this alternative presents challenges associated with replacing Boilers #1 and #2. First, because they were originally installed at an end of the building and expansion followed, it would not be possible to replace these boilers without deconstructing significant parts of the building. The second challenge as described by Creative Energy is that “the time to deconstruct and replace these boilers poses considerable service risks without alternative capacity.” For these reasons, it has concluded that expansion of the existing building and construction of the new boiler needs to be completed prior to decommissioning and removal of Boilers #1 and #2. Creative Energy states that while this is being undertaken it would be appropriate to also make seismic upgrades and replace some ancillary equipment in the plant.⁷⁷

In total, the In-situ Alternative is expected to include the following:

- a 6,000 foot addition to the Beatty Plant;
- seismic upgrades to the existing fuel oil tanks, and abate hazardous materials;
- construct a new 300,000 lb/hour (Boiler #7) to replace Boilers #1 and #2;
- demolish and remove Boilers #1 and #2; and
- add a new economiser to replace the end-of life Clear Sky economizer.

Creative states that this would provide larger installed capacity than the Proposed Project as long as both Boilers #3 and #4 operate and capacity will be similar to the Proposed Project when Boiler #3 is removed. If Boilers #3 and #4 are both removed, the functional capacity will be reduced to 540,000 lb/hr.⁷⁸

Creative Energy estimates the costs of the five steps listed above total \$34.4 million. This is more than double the total cost of the Proposed Project and the Company takes the cost escalation risk whereas with the Proposed Project, the Developer takes such risks. Creative Energy explains that the In-situ Alternative would result in higher electricity costs due to electrification to some equipment and likely increase property taxes due to the utility bearing a higher tax portion related to the expansion. In addition, there would be less natural gas savings due to their being less new and more efficient boiler capacity (for purposes of simplicity neither the loss of fuel savings or the potential tax differential were considered as part of the Company’s comparative analysis). Moreover, the work for the In-situ Alternative will be done while the Beatty Plant is in operation. This increases both costs and risks when compared to the Proposed Project where the work will be done when the Beatty Plant will not be operating.⁷⁹

⁷⁷ Exhibit B-1, p. 77.

⁷⁸ Ibid., p. 78; Exhibit B-5, BCUC IR 42.1.

⁷⁹ Exhibit B-1, pp. 80-81; Creative Energy Final Argument, pp. 42–43.

Table 3–3 outlines the NPV of the In-situ Alternative from the standpoint of varying completion dates starting in 2020 as compared to the NPV of the Proposed Project.

Table 3-3: Net Present Value of In-situ Alternative⁸⁰

	Present Value Cost (Benefit) (\$million)
NPV of Alternative (2020 Completion)	29.5
NPV of Alternative (2025 Completion)	24.3
NPV of Alternative (2030 Completion)	20.8
NPV of Alternative (2035 Completion)	17.9
NPV of Proposed Project (2020/23 Completion)	3.9

Creative Energy points out that this analysis does not take into account increased operating costs or sustaining capital expenditures resulting from the increased costs due to a higher likelihood of failures that would be expected from deferring replacement of end-of-life equipment. In all scenarios the NPV of the Proposed Project is far less than that of the Alternative.⁸¹

Intervener submissions

CEC made no specific submissions with respect to the In-situ Alternative.

Panel determination

Creative Energy has provided two alternatives to the Proposed Project to address issues related to its plant where many of its boilers and related equipment are nearing the end of life and its building structure has many deficiencies. It is Creative Energy’s position that neither of these alternatives offers an optimal solution to the issues it faces.

While building a new plant in a different area has some appeal from the perspective of being able to complete a new facility and run it through the necessary tests prior to moving the operation, the cost of \$130 million far exceeds the others and, in the Panel’s view, would result in rate impacts that could induce its customers to consider other options. **Therefore, the Panel agrees with Creative Energy and finds that building a new plant at a different location is far from optimal as a solution to deal with the problem.**

As outlined in CEC’s submissions, the decision of whether to move forward with approval of a CPCN for the Proposed Project or rejecting it in favour of pursuing the In-situ Alternative is not as simple as reviewing the cost and immediate benefits related to the two options. It also entails balancing the more immediate costs and benefits against the potential risks to future ratepayers of a 40-year agreement that is not renewed. Therefore, moving forward with the Proposed Project involves longer-term risks related to renewal of a 40-year SRW that

⁸⁰ Exhibit B-1, p. 81.

⁸¹ Ibid., p. 80.

do not exist with the In-situ Alternative. In the Panel's view, these need to be considered prior to any determination being made on granting the requested CPCN for the Proposed Project. This matter is considered further in Section 5.1 of the Decision.

3.3 Proposed Project risks

There are a number of risk-related issues with the CPCN Application for the Proposed Project the Panel must consider. These include roles and responsibility for various project risks, financial over expenditures, indemnities and contingency planning. In addition, the Panel needs to consider whether there are risks related to turning down the Application for the Proposed Project and the impact this may have on ratepayers.

3.3.1 Roles and responsibility for managing Proposed Project risks

The roles and responsibilities of Creative Energy and the Developer in relation to the design and construction of the Beatty Plant (including ancillary equipment), the Expo Plant and the office tower development as well as the financing of project costs and allocation of project risks are set out in the Trust and Development Agreement.

Creative Energy describes the general principles as follows:

- Creative Energy has the role of general contractor for the Expo Plant and in respect of the utility equipment within the Beatty Plant premises, while the Developer has that role for the office tower, including the build-out of the Beatty Plant premises;
- Creative Energy is responsible to design and construct the Expo Plant, including the Interconnection, and the utility equipment within the Beatty Plant premises; and
- The Developer is responsible to design and construct the office tower including Creative Energy's New Office Space within the tower and the structure enclosing the renovated Beatty Plant.

Creative Energy states that a joint project committee will be setup with the Developer pursuant to Section 3.1 of the Trust Agreement for coordination of the detailed design and construction activities for the Expo and Beatty Plants. This will include managing change orders and the overall coordination with the Developer's project. An important element of this is the Beatty Plant shutdown which will require Creative Energy's approval following completion of the Expo Plant. As outlined in the Trust Agreement, the Developer is responsible for any losses resulting from any delay caused by the Developer in restarting the plant following an approved shutdown. A summary of the described responsibilities and the responsible party for the Management of Design/Specifications/Permitting and the Management of Construction is listed on Schedule G of the Trust Agreement. Further, in Section 6.5 it is specified that the Developer will:

- assume all risks associated with the Trust Property;
- be responsible to ensure that the development of the Trust Property (that is, the office tower redevelopment project) does not cause the degradation or disruption of service to the customers of Creative Energy; and
- not take any action which or omit to take any action the omission of which would expose Creative Energy to unreasonable levels of legal, financial or reputational risk or liability.

In addition, Schedule F of the Trust Agreement sets out the provisions for changes in the design or construction. Changes requested by Creative Energy are subject to Developer approval and the costs are generally the responsibility of Creative Energy.⁸²

3.3.2 Financial risks

The total capital cost of the Proposed Project is estimated at \$53.1 million. Of this amount Creative Energy is responsible for a total of \$15 million and the Developer with the balance of \$38.1 million plus any amounts in excess of that amount. In addition, if Creative Energy increases its net generating capacity above 139 megawatts (MW) at the Beatty Plant within the first 20 years following completion of the Proposed Project, an amount of \$70,000 for each additional MW up to a maximum of 75 MW of additional generation capacity will be paid to the Developer. These are clearly laid out as part of the Trust Agreement.

According to the Trust Agreement the Developer is responsible for and will be required to compensate Creative Energy for losses caused by the Developer due to delays related to restarting the Beatty Plant following an approved shutdown. In addition, and as noted, Creative Energy will be responsible for the costs related to changes as well as any costs arising from schedule delays caused by or in the control of Creative Energy which result in additional cost to the project.⁸³

3.3.3 Indemnities

In response to the Panel's IR with regard to the indemnities from the Developer and Westbank Holdings Ltd. and the mechanism in place to ensure that the Developer and Westbank Holdings Ltd. have the ability to meet financial requirements when exposed to the risks, Creative Energy stated:

With respect to the Developer, it will have equity in the Trust Property, which Creative Energy will have recourse against if the Developer does not indemnify Creative Energy as required under the Trust and Development Agreement. With respect to Westbank Holdings Ltd., under section 9.3 of the Trust and Development Agreement, Westbank Holdings Ltd. is required to deliver such comfort letter or other document or statement to Creative Energy as is agreed upon in writing by Westbank Holdings Ltd. and Creative Energy from time to time in order to confirm the strength of Westbank Holdings Ltd.'s indemnity. If the reporting requirements of Westbank Holdings Ltd. are not met, then Creative Energy may require that legal title to the Beatty Street property be transferred to a nominee in order to mitigate any risk associated with holding registered title.⁸⁴

Creative Energy also provided that the amount of equity that the Developer will have in the Trust Property will generally be equal to the difference between the value of the Trust Property as a whole less the amount of construction financing for the Developer's project at any given time. Creative Energy anticipates that the Developer in this project will be required to contribute construction costs in excess of the customary 25-30 percent range prior to the Stabilization Date, given the constraints placed under section 6.2 of the Trust Agreement. Creative Energy states this will serve to increase the amount of equity the Developer will have in the Trust Property during the periods of highest risk (while the new plant is under construction and before the Lands have been subdivided).

⁸² Exhibit B-1, pp.58-60.

⁸³ Ibid., pp. 62-64; Exhibit B-18, BCUC IR 106.1.

⁸⁴ Exhibit B-9 BCUC IR 2.0.

Creative Energy confirms it is willing to provide copies of the Westbank Holdings Ltd. comfort letter or other documents or statements on a confidential basis upon request.⁸⁵

3.3.4 Contingency plans

As outlined in Section 2.0, Creative Energy plans to shut the Beatty Plant down on three separate occasions to allow it to demolish and replace Boilers #1, #2 and #4 and to complete the installation of gas, water and electric services. These shutdowns will occur only after the Expo Plant is up and running and will be scheduled during off-peak periods of April to October for three successive years. Creative Energy states that if it is unable to restart or there was a delay in starting the Beatty Plant in time to meet winter demand “a prearranged mobile steam boiler plant would be delivered to the site and operated to provide steam to customers to supplement the generation capacity of the Expo plant.” The boiler plant would be sized in accordance with the length of delay and the forecast peak demand over the period to be covered.⁸⁶

Creative Energy confirms that in addition to the 400,000 lbs/hr from the Expo Plant, the maximum capacity of alternative generation to meet customer load would be 225,000 lbs/hr and requirements would depend upon the season. Creative Energy confirms it has contacted a number of potential suppliers but detailed plans have not been developed at this stage. Some of the elements of the contingency plan will need to be planned during the design stage and those that would be implemented during construction have been estimated to require 2-3 months to implement.⁸⁷

With respect to risks related to interruption or degradation of service to customers, Creative Energy explained that in advance of construction it would develop a fulsome contingency plan which would include “contractual arrangements with boiler suppliers, space reservation on site permitting and service arrangements, and all other steps taken to prepare for such a need in advance.” An identified risk it considers difficult to control is if there is a sudden need to implement the contingency plan. If there is a sudden unexpected demand it might prove difficult to implement the plan on short notice as the contingency plan must assume a certain implementation period for boilers to be delivered and started up. Creative Energy explains that in such an instance it would not be a full customer outage but rather, a partial supply shortage during the early morning daily peak demand period. If this were to occur it would be mitigated by having customers implement temporary demand side measures to reduce their peak loads or adjust the timing of their peaks. However, Creative Energy confirms that temporary boilers will only be installed if the project falls behind and the Beatty Plant restart is expected to be delayed.⁸⁸

With respect to the magnitude of the risk, Creative Energy states the highest level of risk will be for the Beatty Plant shutdown in 2020 due to the work being undertaken during the shutdown being complex. By that time the contingency plan will be in place to bring in steam generation capacity if necessary. The work scheduled for the second and third Beatty plant shutdowns is described as minor with the major item being the extension of flues as the building gets higher. Because of this, the risk of being unable to restart the plant is very minor. Creative Energy states that the financial burden of this risk is to be borne by the Developer. This would include any requirements to bring in temporary steam generation.⁸⁹

⁸⁵ Exhibit B-18, BCUC IR 133.1.

⁸⁶ Exhibit B-1, pp. 55–57; Exhibit B-5, BCUC IR 28.1.

⁸⁷ Exhibit B-5, BCUC IR 28.1.1 and 28.1.3.

⁸⁸ Ibid., BCUC IR 28.1.5; Exhibit B-18, BCUC IR 105.1.1

⁸⁹ Creative Energy Final Argument, pp. 18-19.

Intervener submissions

CEC takes issue with the lack of clarity related to compensation for any delay caused by the Developer. CEC submits “the contingency to handle the potential maximum duration of delay is inadequately defined or presented in evidence to the Commission.” CEC also takes issue with the provision for a secondary payment of \$70,000 for each additional MW of capacity added over the 20-year period following completion of the Proposed Project. These submissions will be outlined and addressed in Section 5.3.⁹⁰

Creative Energy reply

Creative Energy made no reply to CEC’s submissions related to risks related to the definition of “the contingency to handle the potential maximum duration of delay.”

Panel determination

The responsibilities for project risk related to the design and construction of the Beatty Plant, the Expo Plant and the Office Tower Development are set out in the Trust Agreement. The roles and responsibilities for the various aspects of the project are shared between the parties. The Developer has assumed all risk and liability with respect to the Trust Property arising from and after the Effective Date. One of the more significant risks associated with the project is the requirement to shut down the Beatty Plant following the completion of the Expo Plant which will require it to be restarted once the work is complete. Any losses which occur as a result of a delay in restarting the plant caused by the Developer will be borne by the Developer. Given the level of risk to be borne by the developer as outlined in the Trust Agreement, the Panel accepts that the terms do not place unnecessary risk on the utility and its ratepayers.

Of some concern however, are the financial risks. While the Panel accepts that the Developer is bearing the larger part of the costs and will be responsible for general cost overruns, we do have some concerns with the provision for a payment of \$70,000 per MW up to a maximum of 75 MW for capacity additions. As noted above, this will be addressed further in Section 5.3. In addition, the Panel notes that there may be instances where Creative Energy will be responsible for costs arising for changes in design or construction as well as those arising from any schedule delays caused by or in the control of Creative Energy. While the Panel accepts that these terms are reasonable, we note that any such additional costs would be subject to prudence review. Notwithstanding these concerns, the Panel accepts that the handling of financial terms in the Trust and Development Agreement do not put unnecessary risk on the utility and its ratepayers.

Concerning indemnities, the Panel notes that while the Trust Agreement provides Creative Energy with recourse on all of the Developer’s equity in the Trust Property as well as recourse against Westbank Holdings Ltd., the proffered comfort letter or other documents will not provide indemnification. A comfort letter can only confirm the financial strength of Westbank Holdings Ltd. to fulfill the indemnities made pursuant to Section 9.0 of the Trust Agreement. The issue arising is whether this is sufficient to protect Creative Energy from financial burdens arising from default. This will be addressed further in Section 5.2.

Creative Energy has yet to develop fulsome contingency plans to deal with potential restart problems following a shutdown of the Beatty Plant. Creative Energy has expressed its intention to complete its preparation of

⁹⁰ CEC Final Argument, pp. 25-27.

contingency plans well in advance of any planned shutdown and the Panel acknowledges that work has already started on sourcing potential suppliers and on some of the logistics. However, we are not satisfied that this is adequate given the potential problem and impact on ratepayers that could exist following a failed restart. Therefore, in our view Creative Energy has not taken adequate steps to develop its contingency plans to allow them to be reviewed and agreed to as part of the CPCN approval process. Put more simply, the Panel has inadequate information to determine the extent of risk being placed on the ratepayer in the event of unforeseen problems with restarting the Beatty Plant.

As an example, the Panel notes that a key element of the contingency plan will be the time required to put temporary corrective measures in place. If the gap between the timing of the failed restart and the ability to put in place the necessary temporary boilers is substantial, it could have a major impact on ratepayers depending on when the problem occurs. This needs to be known at the outset as well as any options the Company has considered to mitigate it. If, for instance, the amount of time required to put in place a temporary corrective measure is long then it might be prudent to have back-up boiler equipment on site while if it were short, this may not be necessary. **Given the acknowledged potential for a problem and the potential impact on ratepayers, the Panel finds the Application lacking with respect to the provision of a detailed contingency plan outlining the actions to be taken in the event of an unforeseen shutdown or a failed start-up.**

3.4 Proposed Project benefits

Creative Energy states that the heart of its Proposed Project is addressing a need to replace end of life boilers. In support of this much of the Application has considered the impacts of the various alternatives to address this need. In addition, the Company has outlined a range of project drivers or long-standing issues with the plant and building that need to be addressed and approval of the Proposed Project is expected to deliver. Creative Energy argues that the opportunity to address these needs simultaneously is more beneficial to customers and the public than relying on the existing plant and making in-situ equipment replacements and upgrades. This section will first examine each of these project drivers and assess the expected benefits to be derived from the Proposed Project. Following this, the Panel will examine the financial implications of implementing the Proposed Project as opposed to the other alternative of replacing project components on an in-situ basis.

3.4.1 Proposed Project drivers

Creative Energy has identified the following drivers for the Proposed Project:

- Maintain Reliable Service to customers;
- Improve Safety;
- Improve Efficiency;
- Improve Emissions; and
- Improve Staff Work Spaces and Accessibility.

Maintain reliable service to customers

Creative Energy states that it has had a laudable history of reliability over the last 35 years with no major interruptions and no system-wide outages occurring over that time. It points out that in a competitive

marketplace its reliability and service are differentiators and to maintain this level of service in the face of potential emergencies or natural disasters, the Beatty Plant needs to be replaced.⁹¹

Improve safety

Creative Energy states that there are three areas where there will be improvements to safety. The first of these relates to equipment replacement where much of the equipment that has reached its design life will be replaced with modern units with advanced, sophisticated and reliable safety features. However, Creative Energy does acknowledge that remaining in-situ equipment will not be made materially safer as a result of the Proposed Project. Secondly, as noted in Section 3.1.1 of the Application, there are hazardous materials from original construction embedded in the plant. Key among these is the presence of asbestos in almost all of the pipe insulation and the boiler refractory and insulation that will be removed as part of the Proposed Project. While Creative Energy acknowledges it has operated with procedures which consider the presence of hazardous materials and enable high worker and public safety, the remaining safety risk will be removed. However, it does acknowledge that Boilers #3, #5 and #6 which are not being replaced also contain hazardous materials and proposes to remove them from the exterior of the boilers and from the associated wiring and piping. Finally, as noted in Section 3.1.1, the plant fails to conform to modern seismic and fire resistance standards. Creative Energy states that the majority of the Proposed Project's safety improvement will come from replacement of the structure housing the plant.⁹²

Improve efficiency

Creative Energy has claimed efficiency gains through both the reduction in fuel and the reduction of water requirements resulting from the Proposed Project. Specifically, the post-project plant gate efficiency is expected to be 84 percent compared to its baseline of 80.4 percent. According to Creative Energy the steam systems plant gate efficiency is currently 82.7 percent. F&H explains that this was arrived at by dividing total 2017 steam sales by total fuel input resulting in estimated system efficiency of 74.4 percent. Then based on 90 percent distribution system efficiency (as estimated by F&H) a plant gate efficiency of 82.6 percent is yielded. It is further estimated this would decline to 80.4 percent due to the removal in 2020 of the Clear Sky economizer unit designed to recover thermal energy, resulting in fuel cost savings. When requested to provide a spreadsheet the daily efficiencies used to calculate Overall Plant efficiency Creative Energy responded as follows:

Creative Energy does not have the data to calculate efficiency on a daily basis, due to a lack of reliable metering within the plant. The two reliable pieces of data are the monthly FEI metered gas consumption of the plant and the monthly customer steam meter readings. These two pieces of data help us to understand the system efficiency with good accuracy on an annual basis. Calculating the efficiency at the plant gate requires assumptions about the boiler efficiency and the amount of thermal losses in the distribution network...⁹³

Clear Sky installed the economizer unit at its cost in 2003 and shares the savings with Creative Energy on a 75-25 basis. F&H explains that the Clear Sky economizer, which is common to Boilers #3 and #4, has been very effective and has made these the most popular boilers to run from an overall plant efficiency standpoint.

⁹¹ Exhibit B-1, p. 31.

⁹² Ibid., p. 32; Exhibit B-5, BCUC IR 12.4; Exhibit B-18, BCUC IR 92.2; 93.1.1.

⁹³ Exhibit B-5, BCUC IR 16.1.

Without the availability of Boiler #3 or #4 or their secondary economizer, F&H states that the efficiency of the plant suffers.⁹⁴

A baseline of 80.4 percent efficiency has been established by Creative Energy for the Proposed Project which is in consideration of the Clear Sky economizer being removed at the end of the contract term. F&H further estimates that the new Expo Plant will have a gate efficiency of 86.4 percent. The efficiency calculations for the two plants are outlined in Table 3-4. When the percentage of load applied to both of the plants is taken into account the weighted average is 84 percent. Creative Energy states that this will result in a reduction of natural gas consumption of 4.2 percent.⁹⁵

Table 3-4: Total System Efficiency

	Est. Gate Efficiency	% Load	Weighted Average
Beatty Street Plant	80.5%	40.0%	32.2%
Expo Plant	86.4%*	60.0%	51.8%
TOTALS		100.0%	84.0%

*Expo plant gate efficiency is greater due to improved burner efficiency (~3%), feedwater economizer (~2%), and secondary economizer (~1%)

As part of the Proposed Project, Boilers #3, #5 and #6 which have 1, 15 and 23 years of design life remaining respectively, are to be retained at the Beatty Plant. However, Creative Energy does not propose to include primary and secondary economizers at the plant. Creative Energy explains that this is because the Beatty Plant will be used primarily as a peaking and backup facility and it “makes more sense to install economizers at the time of boiler replacement so that they can be designed to work well for the full life of the boilers.”⁹⁶

In response to BCUC IR 95.1 as to why plant efficiency was derived based on total steam sales of one year and not 5 years, Creative Energy gave the following response:

Plant efficiency was derived based on total sales of steam over the most recent one year period because plant efficiency has been declining slightly over time due to the deteriorating performance of the Clear Sky unit. Creative Energy believes that efficiency from prior years is not representative of the efficiency of the current plant. For this reason, and as described in the response to BCUC IR 1.15.5, Creative Energy used 2017 system efficiency as opposed to earlier calculations of efficiency or an average of such earlier calculations.

In spite of what Creative Energy states is deteriorating performance of the Clear Sky Economizer F&H estimates that its use resulted in savings of 2.73 percent in 2017.⁹⁷ The capital cost of replacing the economizer is \$1.4 million.⁹⁸

⁹⁴ Exhibit B-1, p. 23; Exhibit B-5, BCUC IR 1.2, Attachment 1.2, p. 8.

⁹⁵ *ibid.*, pp. 32–33; Exhibit B-5, BCUC IR 15.1; Exhibit B-5-2, Attachment 15.3., p. 4.

⁹⁶ *Ibid.*, pp. 20, 48; Exhibit B-18, BCUC IR 85.1, 85.1.2.

⁹⁷ Exhibit B-5-2; Attachment 15.3, p. 3.

⁹⁸ Exhibit B-1, p. 23.

Improve emissions

Creative Energy states that Boilers #1 and #2 have no burner management or Low-NOx burners. The new units will be equipped with state of the art burner management systems and Low-NOx burners. After installation NOx emissions are expected to meet the Metro Vancouver 30ppm standard. In addition, the flues of both plants will be higher than those currently in place and will improve local dispersion of emissions. Creative Energy has provided no specific data on expected improvements to emissions.⁹⁹

Creative Energy acknowledges that it does not have continuous emissions monitoring on any of its existing boilers and does not currently conduct any regular emissions testing. Currently \$14,980 is paid to Metro Vancouver for Emissions Fees. This is expected to decrease somewhat with the installation of the new boilers.¹⁰⁰

Improve staff work spaces and accessibility

Creative Energy states that the current offices and related facilities are dated, have minimal access to daylight, poor ventilation and poor ergonomics and “are not handicap accessible.” The new office space will be designed to address these issues.¹⁰¹

Creative Energy states that central to the Proposed Project is a need to replace boilers that are at the end-of-life. However, in addition, there are other issues with the plant which are long standing and need to be addressed. In the Company’s view, the Proposed Project offers an opportunity to address these multiple drivers as part of a single project. Creative Energy argues that the opportunity afforded by the Proposed Project allows multiple needs to be addressed simultaneously and is better for the public and customers than relying upon the status quo with equipment replacements and upgrades being done in situ.¹⁰²

Intervener submissions

CEC made no specific submissions on most of the project drivers outlined by Creative Energy. Exceptions to this include its comments regarding seismic concerns and the need for improved staff workspaces which were addressed in Section 3.1.

Panel determination

Creative Energy has outlined the following drivers for the Proposed Project; to maintain reliable service and improve safety, efficiency and emissions as well as workspaces and accessibility. **Creative Energy has addressed each of these drivers and based on the evidence the Panel finds that the Proposed Project upgrades and refurbishment of the plant and equipment will collectively lead to some level of improvement in all of these areas.** However, that being said, the Panel has had difficulty determining the level of improvement in some areas that can be expected once the Proposed Project has been completed and is operating. The primary area of concern is that related to the claimed efficiencies resulting from the Proposed Project.

The Panel notes that there is currently an issue with the lack of reliable metering within the plant. This has resulted in Creative Energy having to make assumptions on boiler efficiency and the amount of distribution network thermal losses. Since these are an important part of determining future fuel savings this brings into

⁹⁹ Exhibit B-1, p. 34.

¹⁰⁰ Exhibit B-18, BCUC IR 88.1 and 88.2; Exhibit B-5, Attachment 5.1, p. 2.

¹⁰¹ Exhibit B-1, p. 34.

¹⁰² Creative Energy Final Argument, pp. 9-11.

question whether the predicted 4.2 percent in fuel savings will occur once the Proposed Project has been completed.

A further concern of the Panel is with Creative Energy's calculation of baseline efficiency. The Panel notes that the savings generated by the Clear Sky economizer accrue primarily to Clear Sky and, as result, have not been relied upon in calculating the base efficiency of 80.4 percent. However, the Panel notes that 25 percent of the savings do accrue to Creative Energy. This brings into question whether 80.4 percent is a reasonable baseline efficiency upon which to estimate fuel cost savings. Furthermore, F&H's assessment of the plant confirms that the addition of a secondary economizer has been very effective. This is in spite of the fact that the Beatty Plant will continue to meet 40 percent of the load and the addition of an economizer could mitigate the reduction in efficiency arising from the removal of the Clear Sky economizer and work to further reduce fuel consumption. In the Panel's view Creative Energy has not adequately justified the use of 80.4 percent as the baseline efficiency in estimating the fuel cost savings and this brings into question the 4.2 percent being claimed. Given the importance of fuel cost saving to the financial model, the accuracy of the baseline efficiency losses could have a material effect on Creative Energy's rate impact estimate of 3.7 percent in 2023. This will be examined further in Section 4.3.1.

3.5 Consultation

Creative Energy states that it initiated a public engagement process to communicate information about the Proposed Project to its customers and provide an opportunity for queries. To assist with this process Brook Pooni Associates was engaged. In addition to a public Open House a customer survey was conducted. The public Open House was held at the Sandman Hotel on West Georgia on November 16, 2017, to share details for the forthcoming proposal and provide the public an opportunity to meet the project team and learn more about Creative Energy's role as an energy provider. The Open House was supported by flyer notifications to Creative Energy customers and an advertisement in the Vancouver Sun. Only three people were in attendance, all of which represented either property management or real estate development companies in downtown Vancouver. Discussions were focused on efficiency improvements and greenhouse gas (GHG) reductions, potential rate increases and questions about shutdowns and sequencing during the construction process.¹⁰³

Creative Energy also conducted a customer survey following its submission of the CPCN Application. There were a total of 10 respondents. Creative Energy provided a copy of the survey and the responses to each of the questions posed in the questionnaire. No analysis or commentary was provided.¹⁰⁴

Intervener submissions

CEC submits that the lack of attendance at the Open House should not be interpreted as ratepayer disinterest and notes that results of the customer survey revealed that only 30 percent of the 10 respondents were aware of the Open House.

With respect to the customer survey CEC submits that the questions were posed to elicit specific answers and provides no evidence of public support. Overall, CEC submits Creative Energy's consultation process does not support approval of Creative Energy's proposal for this land transaction with the Developer.¹⁰⁵

¹⁰³ Exhibit B-1, pp. 94-95.

¹⁰⁴ Exhibit B-16.

¹⁰⁵ CEC Final Argument, pp. 28-29.

Creative Energy reply

Creative Energy had no reply to CEC's submissions.

Panel determination

The Panel notes the response to the Open House was disappointingly low and while Creative Energy may have learned some qualitative information, it is unlikely that this could be quantified. Similarly, the response to the customer survey was also low with only 10 respondents.

Creative Energy provided no analysis or interpretation of the results but the Panel was able to glean the following information from the responses to the questions posed:

- most held positions in a decision making or managerial capacity;
- a third are considering other sources of heating with reliability cited as the primary reason;
- almost all consider it important for Creative Energy to provide service after an earthquake;
- most felt the information provided about the proposal to be clear although some indicated they had questions;
- customers generally acknowledged that some rate increase is reasonable due to the project.

The Panel notes that the questionnaire was designed to elicit specific answers as submitted by CEC, but we are unsure as to what conclusions can be drawn from this information other than respondents seem to understand what the Proposed Project will entail. Somewhat surprising are the number of customers who are considering a change to another source of heating citing reliability as the reason. This seems to indicate that there have been reliability problems in the past which is contrary to Creative Energy's assertions regarding reliability in Section 3.4.1. Whether the Proposed Project will reduce concerns with reliability remains unknown since little was known as to the specifics of the concerns raised.

Overall, the Panel accepts that Creative Energy took some steps to meet the consultation requirement in the CPCN Guidelines. The lack of response, while disappointing, is not uncommon. However, the Panel is satisfied that Creative Energy did take sufficient steps to try to involve its customers and other stakeholders.

3.6 Clean Energy Act

A requirement of the CPCN Guidelines is for the applicant to include a discussion of how the project is consistent with and will advance the government's energy objectives as set out in the *Clean Energy Act* (CEA). Creative Energy states that many of the government's energy objectives are not applicable to Creative Energy or at least the Proposed Project. However, there are a number that do have application.

Use and foster the development in British Columbia of innovative technologies that support energy conservation and efficiency and the use of clean renewable resources

Creative Energy notes that the Proposed Project includes both energy efficient technologies and waste heat recovery technologies.

To reduce greenhouse emissions

Creative Energy points out that the Proposed Project will result in greater efficiencies with a reduction in natural gas consumption and reduction in GHG emissions.

To reduce waste by encouraging the use of waste heat, biogas and biomass

Creative Energy states that the Proposed Project includes a waste heat recovery component.

To encourage economic development and creation and retention of jobs

Creative Energy states that all existing jobs will be maintained and there will be jobs added to engineer and construct the project.

Panel discussion

The Panel notes that the Proposed Project directly addresses a number of British Columbia's energy objectives. In addition, there is no evidence to suggest that completion of this project will be in misalignment with the CEA or contrary to British Columbia's energy objectives. Therefore, the Panel is satisfied that approval of the Proposed Project will be in alignment with the CEA.

4.0 Financial modeling

In this section, the Panel will examine Creative Energy's assessment of the financial impacts of the Proposed Project and determine whether the work performed and the estimated 3.7 percent increase in rates proposed by Creative Energy are reasonable.

4.1 Load demand and energy forecast

A key consideration in determining the rate impact is the accuracy of the load forecast. If the load forecast is overestimated, it will result in higher bill impacts than what has been anticipated. If, conversely, the load forecast is underestimated it will result in more favourable customer rate impacts.

Creative Energy generates a load forecast based on a bottom-up estimate of individual customer loads using historical trends for each customer and further adjustments based on known or anticipated changes in customer buildings that are derived from discussions with customers.¹⁰⁶ Creative Energy submits this methodology is justified because it serves over 200 customers, each with very unique characteristics in terms of building size, age, use, occupancy, and other building characteristics that drive heating demand. For new customers, Creative Energy derives initial estimates based on building size, use and design, as well as input from mechanical designers and architects, and benchmarks from other existing customers, where available.¹⁰⁷ The Company uses a weather-adjusted load forecast which is derived from observations of historical average demand under a range of weather conditions and judgment where there is a lack of sufficient historical data or there have been major changes recently in building use and characteristics.¹⁰⁸

¹⁰⁶ Exhibit B-5, BCUC IR 11.1.

¹⁰⁷ Ibid.

¹⁰⁸ Ibid.

Creative Energy has assumed the loss of St. Paul's Hospital will occur by 2023, and also included the impact of known growth in sales to the NEFC hot water network.¹⁰⁹ It describes the load forecast as conservatively low and states this is because St. Paul's Hospital, which represents a very large load, is removed entirely, even though the actual timing of the full closure of the current hospital is not known and no assumptions have been made about a replacement customer at that site.¹¹⁰

Figure 3-1 in Section 3.1.3 of this Decision depicts the actual sales and demand peak from 2008 through 2017 as well as the forecast demand and peak demand through 2027. Creative Energy has assumed that future loads remain flat beyond the known losses and additions noted above and explains that it is not possible to prepare a credible forecast of long-term loads for a confined geographic area with significant existing development. As noted in Section 3.1.3, the addition of new customers and the impact of those additions on load are contingent on a myriad of uncertain factors that cannot be forecast with any credibility. These include the form, use, density, rate, and location of a new development as well as building codes and individual developer preferences.¹¹¹

In response to BCUC IR 49.1, Creative Energy provides Table 4–1 depicting the sensitivity of +/-10% of load on the 2023 steam rate impact, the 2023 bill impact and, 30-year net present value, and 40-year net present value calculations. With an additional load of 10 percent, the bill impact will be reduced from the projected 3.7 percent increase to a 3.2 percent increase. Conversely, if the load is 10 percent lower than forecast, the bill impact will be increased to 4.2 percent:

Table 4-1: Load Impacts on Customer Bill and PV Calculations¹¹²

Scenario	2023 Steam Rate Impact	2023 Bill Impact	30 Year PV (\$million)	40 Year PV (\$million)
Load -10%	15.8%	+4.2%	\$4.8	\$3.9
Load -5%	15.7%	+3.9%	\$4.3	\$3.5
Load +5%	15.5%	+3.5%	\$3.5	\$2.5
Load +10%	15.4%	+3.2%	\$3.0	\$2.0

Panel discussion

The Panel has reviewed Creative Energy's demand forecast and forecast methodology and finds the demand forecast appropriate as an input into the financial model. The Company has taken a decidedly conservative approach to future forecasts taking into account only those additions and losses that are known thereby minimizing the potential for an over-optimistic forecast. If it had taken a more aggressive approach to its future forecast of demand, the potential negative impact on future rate forecasts would be less. Therefore, the Panel is

¹⁰⁹ Exhibit B-5, BCUC IR 11.1.

¹¹⁰ Ibid., BCUC IR 10.2; Exhibit B-1, p. 29.

¹¹¹ Ibid., BCUC IR 11.1; Exhibit B-1, p. 28

¹¹² Ibid., BCUC IR 49.1.

persuaded that Creative Energy’s conservative demand forecast has a greater likelihood to result in rate increases being at or below forecast levels.

4.2 Capital cost

Creative Energy submits that the \$53.1 million capital cost estimate is a Class 3 AACE cost estimate with a low range accuracy of -10 percent to -20 percent and a high range accuracy of +10 percent to +30 percent at an 80 percent confidence level.¹¹³ In addition, Creative Energy stated that certain costs which are included, such as Expo Plant and Beatty Plant detailed design fees and Expo Plant boiler supply, may be considered to have “at minimum a Class 3 cost estimate” as it obtained vendor pricing proposals for these items through a competitive bid process.¹¹⁴

Creative Energy states that the total capital cost of \$53.1 million includes \$4.2 million in construction financing costs and “broadly” a 20 percent applied contingency. However, this amount does not include certain project elements, such as demolition costs, contaminated soil remediation costs, and new plant Beatty Plant structure costs. These costs “fall under the costs of the Developer’s project” and are not borne by the Company.¹¹⁵

In support of the total capital cost, Creative Energy provided a breakdown of the cost estimate, before construction financing costs, by project element and year in Attachments 31.2.1.a and 31.2.1b of its response to BCUC IR 31.11.

4.2.1 Cost to Creative Energy

As noted in Section 1.2, Creative Energy seeks BCUC approval for \$15 million out of the total capital cost to be added to rate base.¹¹⁶ The Company states that its portion of the total capital cost will be paid in two instalments to the Developer: i) \$9 million when the Expo Plant is in service; and ii) \$6 million when the Beatty Plant is in service; and these amounts “will be added to rate base respectively.”¹¹⁷ The portion of the \$15 million payable at the completion of each plant is based on the “ratio of the direct budget cost of each plant (i.e., excluding common costs and other costs paid directly by the Developer as part of its development budget), and was rounded.”¹¹⁸

In addition, as noted in Section 3.3.2 of the Decision, Creative Energy states that in accordance with the Trust Agreement it is responsible for any costs arising in connection with change orders requested by, or schedule delays caused by, or in the control of the Company.¹¹⁹ Creative Energy considers that “the most likely scenario” is that it will not be responsible for any additional costs due to “limited potential for Creative Energy to cause delays,” “mitigation measures” that have been undertaken and “resources dedicated to Creative Energy’s project oversight.”¹²⁰

¹¹³ Exhibit B-1, p. 60; Exhibit B-5, BCUC IR 31.1.

¹¹⁴ Exhibit B-5, BCUC IR 31.5 and 31.8.

¹¹⁵ Exhibit B-1, p. 5; Exhibit B-5, BCUC IR 31.5.1 to 31.5.1.1 and 31.8.

¹¹⁶ Ibid., p. 7; Exhibit B-20, Panel IR 1.1.

¹¹⁷ Ibid., p. 64; Exhibit B-20, Panel IR 1.4.

¹¹⁸ Exhibit B-5-2, BCUC IR 33.7.

¹¹⁹ Exhibit B-1, p. 83.

¹²⁰ Exhibit B-5, BCUC IR 51.5; Exhibit B-5-2, BCUC IR 51.6.

4.2.2 NPV analysis and rate impacts

Creative Energy forecasts a negative NPV on a revenue requirements basis for the Proposed Project (a net cost). The NPV methodology is based on the following assumptions:

- The present value analysis uses a 30-year term beginning in the expected in-service year of the Expo Plant (2020).
- Present value of all costs and benefits are calculated using a discount rate of 5.78 percent based on the Company's approved capital structure of a debt cost of 4.1 percent and ROE of 9.5 percent.
- Sustaining capital is to be reduced for 15 years beginning in 2022. Creative Energy states that the methodology conservatively assumes the reduction in sustaining capital to be \$110,000 per year and, under the status quo, assumes no escalation in sustaining capital.¹²¹

Creative Energy estimates the total NPV of its project cost payment, operating cost impacts, natural gas impacts and sustaining capital impacts to be \$3,904,700. During the IR process it identified certain items which have resulted in minor changes to the forecast NPV on a revenue requirements basis. These changes were not material and the revised NPV on a revenue requirements basis remains at approximately -\$4.0 million.

The Company states that this is conservative as it assumes none of the benefits of avoided capital or increases in sustaining capital as part of the baseline over the entire term.¹²²

The estimated a bill impact is 3.7 percent relative to the business as usual baseline. This is comprised of a 15.6 percent increase to steam rates offset by a -4.2 percent decrease to the Fuel Cost Adjustment Charge (FCAC) rate rider.¹²³ Creative Energy explains that the baseline has been used to calculate indicative rate and bill impacts of the proposed project in comparison to what would be expected to be in place otherwise. The Company points out that it does not include any major capital costs and thus, is not a viable long-term path. Key assumptions in preparing the baseline are as follows:

- No capital investments beyond sustaining capital amounts at historic levels;
- The underlying 2017 revenue requirement escalates at 2 percent. This is in keeping with the Creative Energy 2018-2022 Revenue Requirements Application which has since been rejected by the BCUC;¹²⁴
- All known load changes will occur by 2023;
- The baseline plant gate efficiency is 80.4 percent;
- Natural gas prices are forecast per the April 30, 2018 Sproule forecast for the Sumas hub;
- FortisBC transportation charges for Rate 22 are escalated at 2 percent per year; and
- No costs to upgrade or replace Creative Energy's office space.¹²⁵

¹²¹ Exhibit B-1, p. 74.

¹²² Exhibit B-5, BCUC IR 37.5.

¹²³ Exhibit B-1, p. 64.

¹²⁴ Creative Energy 2018-2022 Revenue Requirements Application Decision and Order G-208-18, p. 21.

¹²⁵ Exhibit B-1, pp. 65–66.

Looking ahead to 2023 the indicative rate and bill impacts reflect the following assumptions:

- 50 percent of the land value currently in rate base will be removed as a result of the project;
- As noted, Creative Energy's \$15 million project cost will be made in two phases;
- There is no change to the existing capital structure;
- O&M costs will increase for higher electricity consumption, lease payments for the SRW, higher insurance costs for new equipment and higher Municipal Access Agreement payments to the City of Vancouver related to the higher revenue requirement;
- Property tax costs will be decreased due to them being spread over a larger pool of users.
- Natural gas consumption will decrease by 20,600 MWh per year because of greater plant efficiency;
- Baseline natural gas prices, carbon taxes and FortisBC transportation charges remain unchanged; and
- The load forecast remains the same as in the baseline.

The described changes result in an increase to Creative Energy's revenue requirement totalling \$1,436,900 in 2023.¹²⁶

Details of Creative Energy's revised calculations are provided in confidential Exhibit B-5-1, Attachment 37.2 and the underlying assumptions to the calculations are described in Sections 13.2 and 13.5 of the Application. Of note, Creative Energy states that the financial analysis "does not include explicit baseline values for all components of Creative Energy's revenue requirement. Instead, the analysis calculated incremental impacts (for those costs where Creative Energy forecasts an incremental impact) relative to a baseline revenue requirement escalating at 2 [percent] per year."¹²⁷

With respect to the forecast 2023 bill impact of +3.7 percent, Creative Energy notes that its analysis is meant to be indicative and not intended to calculate final rates. To this end it states:

The final rate and bill impacts will depend on the actual timing of the utility's project cost payments (occurring at construction milestones), expected refinements to depreciation and tax treatment of the project / project cost to Creative Energy, the treatment of retired assets, other changes in the revenue requirement not attributable to the Proposed Project, and actual system loads.¹²⁸

Notwithstanding, the Company submits that "[t]he indicative rate impacts presented in [the Application] are conservative such that actual incremental rate impacts are likely to be lower."¹²⁹ After 2023, the magnitude of the Steam Tariff impact in relation to the baseline is expected to decrease.¹³⁰

¹²⁶ Exhibit B-1, pp. 67–68.

¹²⁷ Exhibit B-18, BCUC IR 102.6.

¹²⁸ Exhibit B-1, p. 70.

¹²⁹ Ibid.

¹³⁰ Ibid., p. 64.

4.3 Operating costs and related issues

Given the significance of the previously discussed assumptions to the financial model some of these warrant further clarification. Therefore, in the following section these will be examined in further detail.

Natural gas cost savings

In Section 3.4.1, the Panel notes that one of the drivers of the Proposed Project is to improve efficiency. Specifically, Creative Energy submits that the steam system's plant gate efficiency will increase from a baseline efficiency of 80.4 percent to 84 percent under the Proposed Project, and this will result in reduced natural gas consumption of 4.2 percent, or 20,600 MWh per year.¹³¹ The Company expects this level of reduced natural gas consumption will equate to a present value of natural gas savings of approximately \$8.6 million over 30 years.¹³² However, as noted in Section 3.4.1, the Panel has questioned the veracity of the estimated 80.4 percent baseline efficiency upon which fuel savings are derived. This could have a significant negative effect on the Creative Energy's estimate of a 3.7 percent rate impact for 2023.

Electricity cost

Creative Energy expects electricity consumption to increase by 1,339 MWh per year due to the replacement of some steam-powered equipment with electricity-powered equipment in the Proposed Project.¹³³ This results in a forecast incremental electricity cost of approximately \$146,000 per year¹³⁴ starting in 2020, escalated annually by an assumed inflation of BC Hydro's rate of 3 percent per year through 2023 and 2 percent per year thereafter.¹³⁵

Capital costs including depreciation expense

Creative Energy assumes no major capital renewal costs during the analysis period and that the cost of sustaining capital will decrease by \$110,000 per year for a 15 year period beginning in 2022. Following that, it is expected that sustaining capital will "eventually increase" to current levels.¹³⁶

Depreciation of the \$15 million cost to Creative Energy of the Proposed Project will be "applied to asset classes using the weighted average depreciation period of the assets being constructed as part of the Proposed Project." For the purposes of the NPV on a revenue requirements basis and forecast bill impact calculations, this is assumed to be 40 years.¹³⁷

Staffing requirements/cost

Creative Energy assumes no change to the staffing requirements of maintaining and operating the core steam system as a result of the Proposed Project, and therefore, no change to staffing costs.¹³⁸

¹³¹ Exhibit B-1, pp. 33, 68.

¹³² Ibid., p. 75.

¹³³ Exhibit B-1, p. 68.

¹³⁴ Exhibit B-5-1, Attachment 37.2

¹³⁵ Exhibit B-1, p. 68; Exhibit B-5-1, BCUC IR 2.2.

¹³⁶ Ibid., pp. 65, 74.

¹³⁷ Ibid., p. 67.

¹³⁸ Exhibit B-18, BCUC IR 102.6.

Creative Energy submitted that exact details of staffing have yet to be determined and many factors of the detailed design and operation of both plants will be considered.¹³⁹ However, in its view the Expo Plant and Beatty Plant are to be operated under a single control system and “will be treated as a single operating facility by Technical Safety BC as per the Power Engineers, Boiler, Pressure Vessel and Refrigeration Safety Regulation, as the two plants are connected to a common header.” Creative Energy stated this has been confirmed in preliminary discussion with Technical Safety BC. Accordingly, the Company anticipates that the twenty-three “Management & Office” and “Steam Plant” staff required to operate the existing plant and the proposed Beatty Plant and Expo Plant will remain the same.¹⁴⁰

To the extent that Creative Energy is also focussed on the development of other new energy systems which are in addition to its core steam business, Creative Energy stated that “[t]he projected growth in office staff is for additional project managers, regulatory staff and accounting staff to support the growing business”.¹⁴¹ Whether staff work on the regulated or non-regulated part of the business will depend on the projects and at this time, the projected future office staff cannot be broken down into regulated and non-regulated.¹⁴²

Expo Plant lease payments

Pursuant to the SRW Agreement, Creative Energy expects to pay annual lease payments of \$178,376.58 to PavCo from the in-service date of the Expo Plant. The lease payments are expected to increase every five years based on the percentage change in consumer price index (CPI) over the previous five-year period.¹⁴³

With respect to Expo Plant SRW payments in the financial model, Creative Energy assumes an annual average change in CPI of 2 percent. In addition, it stated that it did not “explicitly model” the discounted rent (50 percent of the annual lease payment) which is applicable to the first six months of the SRW Agreement.¹⁴⁴

Insurance costs

Creative Energy assumes higher insurance costs of approximately \$50,000 per year starting in 2022, and escalated annually by inflation of 2 percent,¹⁴⁵ or \$51,400 in 2023, due to the replacement cost of new equipment from the Proposed Project.¹⁴⁶ Creative Energy states:

The increase in insurance costs is due to the increased value of new plant equipment, which will require carrying additional insurance. Creative Energy currently carries \$30 million in insurance coverage related to its existing plant equipment (which is less than replacement cost). With the completion of the Proposed Project, the value of Creative Energy’s plant will increase to approximately \$50 million. Assuming a proportional increase in Creative Energy’s Boiler, Machinery and Property insurance costs results in an increase of \$35,000 per year. Creative Energy has included an additional allowance of \$15,000 per year for other potential increases in insurance costs to result in an overall increase of approximately \$50,000 per year.¹⁴⁷

¹³⁹ Exhibit B-5, BCUC IR 23.1.1.

¹⁴⁰ Exhibit B-18, BCUC IR 102.1.1 and 102.2.

¹⁴¹ Exhibit B-5, BCUC IR 27.5.1.

¹⁴² Ibid.

¹⁴³ Exhibit B-1, Appendix K, Schedule B.

¹⁴⁴ Exhibit B-5-1, BCUC IR 3.1., 3.2, Attachment 3.2, and Attachment 37.2.

¹⁴⁵ Ibid., Attachment 37.2.

¹⁴⁶ Exhibit B-1, p. 69.

¹⁴⁷ Exhibit B-5-1, BCUC IR 3.6.

Creative Energy submits that this insurance will include “sufficient coverage” to meet the requirements in Section 9.1 and 9.2 of the SRW Agreement.¹⁴⁸ In addition, it “does not anticipate any impact” on its costs arising from additional insurance to be carried by PavCo with respect to the Expo Plant, which Creative Energy must pay pursuant to Section 4.5 of the SRW Agreement.¹⁴⁹

Property taxes

Creative Energy expects that its Beatty Plant property taxes will decrease by \$474,600¹⁵⁰ and does not anticipate that the Expo Plant will attract any real property taxes.¹⁵¹ With respect to calculating the amount of the expected decrease, the Company states the following:

The forecast reduction in taxes for the Beatty Plant reflects the reduction in space for the Beatty Plant and the reduction of land value and improvements that would be allocated to space occupied by Creative Energy vs. the remainder of the development... the total property taxes for 720 Beatty and 701 Expo will be apportioned between the Developer and Creative Energy, with Creative Energy’s portion limited to the amount directly attributable to the utility operations.¹⁵²

Municipal access agreement payments

Municipal Access Agreement payments are calculated by applying 1.25 percent to the Company’s annual steam revenue plus a “flat fee” per an agreement with the City of Vancouver.¹⁵³ Creative Energy forecasts higher payments to the City of Vancouver of approximately \$47,000 due to an increased revenue requirement from the Proposed Project.¹⁵⁴

4.4 Other O&M costs

Office space cost

As stated in Section 2.1.3, the Developer will provide a “temporary replacement” office space for Creative Energy at no cost during the period that the Beatty Plant is under construction.¹⁵⁵ In addition, following the completion of the new office tower, the Developer will provide the Company with new office space (with improvements) at the Developer’s “sole cost and expense” in exchange for Creative Energy relinquishing the air space of the existing office space to the Developer.¹⁵⁶ Accordingly, the NPV on a revenue requirements basis does not factor in any cost or rate base impact, including annual depreciation expense or financing cost, arising from the temporary or new office spaces.¹⁵⁷

Further, Creative Energy stated there will be maintenance costs and property taxes associated with the new office space for which it will be responsible. Creative Energy expects these costs will be allocated among steam customers and other activities according to similar principles today.¹⁵⁸ However, it is not able to estimate the

¹⁴⁸ Exhibit B-5-1, BCUC IR 3.6.

¹⁴⁹ Ibid., BCUC IR 3.1.

¹⁵⁰ Exhibit B-1, p. 69.

¹⁵¹ Exhibit B-5-1, BCUC IR 3.6.

¹⁵² Ibid., BCUC IR 3.4.

¹⁵³ Creative Energy 2018-2022 Revenue Requirements Application Decision and Order G-205-18, p. 38.

¹⁵⁴ Exhibit B-1, pp. 68–69.

¹⁵⁵ Exhibit B-1, p. 57; Exhibit B-5, BCUC IR 27.1.

¹⁵⁶ Exhibit B-1, p. 57; Exhibit B-5-2, BCUC IR 33.4.1.

¹⁵⁷ Exhibit B-5-2, BCUC IR 33.4.1.

¹⁵⁸ Ibid., BCUC IR 33.4.1.

future costs to operate and maintain the new office space at this time because the amount attributed to regulated and non-regulated uses of the space will be allocated based on the projects the Company is working on at the time.¹⁵⁹ Therefore, no changes in O&M expenses associated with the new office space in the financial model are assumed.

When asked why it could not estimate future costs to operate and maintain the new office space Creative Energy stated that the “best estimate” it can give for O&M is based on current O&M expenses for the office, which includes “a bi-weekly cleaner and electricity only.” It further stated:

The cleaner is \$1,300 per month and electricity attributable to the office is approximately \$400. Because the space will be approximately double, Creative Energy estimates the costs will be double.”¹⁶⁰

Notwithstanding, Creative Energy notes that O&M for office space represents approximately 0.1 percent of its revenue requirement and “increases or decreases in these cost will have a negligible impact on rates.”¹⁶¹ The amount attributed to regulated and non-regulated uses of the space will be allocated based on the projects that are being worked on at that time.¹⁶²

As stated in Section 4.2.2 of the Decision, other than the costs specifically adjusted above, Creative Energy assumes that other O&M costs, including financing costs and ROE will be the same as what was in the approved 2017 revenue requirement, escalated at 2 percent per year.¹⁶³

Panel determination

The Panel has reviewed Creative Energy’s methodology for estimating the NPV on a revenue requirements basis of the Proposed Project and the forecasted 2023 bill impact of +3.7 percent.

Given that \$8.6 million in fuel cost savings are a key component of the calculations, the Panel first considered whether the projected savings can be relied upon. As noted in Section 3.4.1 of the Decision, the Panel has some concerns. In particular, we question whether an 80.4 percent baseline efficiency compared to the expected redevelopment plant efficiency is a reasonable basis on which to calculate the expected savings. F&H stated that based on its study, the Clear Sky economizer resulted in natural gas consumption savings of 2.73 percent in 2017 and that the economizer’s removal is relied upon in the calculation of the steam system’s baseline plant gate efficiency. However, given that 25 percent of existing fuel cost savings related to the Clear Sky economizer have been accruing to the utility, this proportion of savings should be included in the baseline efficiency if an accurate estimate of the differential in fuel cost savings is to be determined. Due to the importance of fuel cost savings in estimating future rates, this needs to be clarified. Furthermore, Creative Energy does not propose to install economizers at the Beatty Plant as part of the Proposed Project, despite the fact that the plant will continue to meet 40 percent of the load and Boilers #5 and #6 have remaining design lives of 15 and 23 years respectively. The addition of economizers could improve efficiency and increase fuel cost savings, and in the view of the Panel, should be considered.

¹⁵⁹ Exhibit B-5, BCUC IR 27.9.

¹⁶⁰ Exhibit B-18, BCUC IR 111.3.

¹⁶¹ Ibid., BCUC IR 111.4, 111.4.1.

¹⁶² Ibid., BCUC IR 27.9.

¹⁶³ Ibid., p. 65.

The Panel has considered Creative Energy's assumptions with respect to its future system operating costs and other general O&M costs and considers them to be generally reasonable. Creative Energy has provided its forecasts for the incremental changes to its revenue requirements corresponding to the expected timing for when those increases or decreases to its costs/revenues would occur. For some components (e.g. new Expo Plant lease payments, Municipal Access Agreement payments and decreased Beatty Plant property taxes), the changes are more predictable and can be accepted with some certainty with respect to the amount. However, for certain other components of Creative Energy's revenue requirement (e.g. capital costs, electricity costs and ongoing staffing requirements/costs), the changes are less predictable. For instance, sustaining capital costs have been estimated to decrease by \$110,000 for a period of 15 years. While the Panel accepts there will be a reduction we are not persuaded the level of these savings will be maintained for a period of 15 years. However, it is acknowledged that the baseline sustaining capital expenditures have been set at historical levels and given the age of the plant, would likely increase going forward. Similarly, electricity costs have been set assuming a rate increase of 3 percent until 2023 and 2 percent thereafter. It is difficult to predict electricity rates going forward and Creative Energy's estimates will be subject to BC Hydro's revenue requirements that may change over time. With respect to staffing Creative Energy's estimates for steam staff requirements remain unclear. In the Panel's view they are very much dependant on future direction of Technical Safety BC. With respect to office staff Creative Energy has made no future projections regarding the break down of regulated and non-regulated. The Panel accepts that it may be premature for such estimates but notes that the steam business is expected to be stable with limited growth. Therefore, It would be reasonable to expect that unless there is greater steam growth, much if not all of the growth in staff will be applied to the non-regulated business.

Notwithstanding some of these areas that are less predictable and with the exception of the concerns raised with respect to the veracity of efficiency gains and their impact on fuel cost savings, the Panel accepts, as a whole, that the work undertaken by Creative Energy to estimate the financial impacts of the Proposed Project is reasonable. Given that the estimates have been prepared so far in advance and some future costs/revenues have been examined more rigorously than others, the Panel is persuaded that the estimated NPV on a revenue requirements basis and forecast 2023 bill impact is not unreasonable and will likely be within an acceptable range of reasonableness. As noted by Creative Energy, the bill impact will ultimately depend on what the costs of operating and maintaining Creative Energy's core steam business will be once the Proposed Project is finished.

5.0 Issues arising

5.1 Change in land ownership and PavCo Statutory Right of Way

An important component of this Application is Creative Energy's proposed changes with respect to land ownership of the property at 720 Beatty and a proposed SRW Agreement with PavCo for the use of space at BC Place Stadium for the construction and operation of the Expo Plant. Currently Creative Energy is the owner of the property on which the utility is housed as well as the property it states is surplus to utility use. As outlined in Section 2.0, Creative Energy proposes to have two small facilities, one housed in a property at the Beatty site which will be either the subject of an air parcel or a long term lease, and the other housed at the BC Place subject to a SRW for 40 years. Put simply, Creative Energy's Proposed Project entails a change from being a land owner with full rights to the property on which it is housed to splitting its plant and operating a smaller plant in BC Place under a 40-year SRW while maintaining its existing plant with a smaller footprint which will no longer allow the utility the option of fulfilling customer consumption requirements from the single location. In exchange for this the utility, for a capital expenditure of \$15 million, will receive the benefit of the estimated

\$53.1 million Proposed Project. Therefore, the issue the Panel must consider is whether the work on updating all of the facilities as prescribed by the Proposed Project is a reasonable exchange for accepting a change in land ownership and agreeing to a SRW for 40 years to house the Expo Plant. Related to this is the secondary issue of the consequences of turning down this Application in terms of the costs that will need to be undertaken to maintain the existing plant.

Intervener submissions

CEC has made submissions on both the change from the current fee simple land ownership of the utility property and the SRW on the Expo Plant. However, CEC focuses its submissions primarily on the change from landowner to holder of a SRW for the Expo Plant. CEC observes that as a bare trustee under the Trust Agreement related to the Proposed Project, Creative Energy “will have no powers or responsibilities with respect to the trust property.” CEC argues that this transition from land owner to leasee for a significant part of its operations results in a loss of security and increased risks to ratepayers as Creative Energy will not be preserving its right to secure favourable locations at a reasonable price if land values continue to rise. Specifically, CEC points out that at the end of 40 years Creative Energy could be required to relocate at high cost to its ratepayers noting the utility’s comments with regard to the difficulty of moving and lack of affordable options that are currently available. CEC submits that it is in the public interest to preserve its title to lands that are used and useful today and will likely be used and useful in the future.¹⁶⁴ CEC states that the public interest is not conserved “as the utility is converted to in effect a tenant as opposed to a property owner with the long term security land ownership provides.” And further, the loss of fee simple interest in the property is long-term risk to the utility that is not properly mitigated by the level of benefit proposed in the Application. CEC continues by stating that in its view the Application could be approved if:

1. Creative Energy was able preserve a fee simple interest in lands sufficient to support current and future steam plant production needs with a prudent allowance for growth.
2. Re-establish the utility with appropriate upgraded equipment necessary and following this continue the utility operation at no cost to ratepayers in exchange for facilitating the release of current owned lands from the public utility to third party private interests and as compensation for not preserving sufficient lands future redevelopment.

This would result in the utility not giving up its landowner rights and would eliminate the need for the SRW.

Notwithstanding the preceding arguments, CEC also has concern with the fact the Application seeks approval of a SRW Agreement with PavCo for the use of space to house the Expo Plant in BC Place Stadium. In CEC’s words “retaining the land value would be remaining ‘in the market’ and its relative position if it wished to move in the future would not change”. It argues that the loss of land title and the opportunity cost to the utility and its ratepayers is significant “and should not be permitted without significant protection and corresponding compensation to the public utility to keep ratepayers whole.” In summary, CEC recommends the Commission find the transition from landowner to the holder of an SRW is neither in the ratepayers’ interest nor does it conserve the public interest.¹⁶⁵

¹⁶⁴ CEC Final Argument, p. 18.

¹⁶⁵ Ibid., pp. 17-18.

Creative Energy reply

Creative Energy notes that CEC's proposed conditions for approval might sound good but is not achievable except "at considerably higher cost and risk to ratepayers as compared to the Proposed [P]roject." Creative Energy argues that if a footprint as described by CEC were to be retained, it would result in higher costs to Creative Energy but would also limit the surplus property available for redevelopment. This would "impose a *major physical obstacle* to any redevelopment of such surplus property, drastically reducing the redevelopment potential". Creative Energy explains that this would, in turn, reduce the value resulting from redevelopment and the amount that might be allocated to ratepayers. Moreover, without the offsite Expo Plant, costs and risks would be significantly increased to Creative Energy's customers as all the work would need to be done at the Beatty site. Creative Energy also notes that it retains fee simple ownership at Beatty, allowing for 75 MW of additional generating capacity if growth requires.¹⁶⁶

With respect to the Expo Plant, Creative Energy counters that the SRW is for 40 years and is a strong form of land tenure, which is used by other small thermal energy utilities in the Lower Mainland, although it provides no examples. Creative Energy submits the most important issue is that the Proposed Project enables Creative Energy to renew its ageing plant at significantly lower cost and risk than other alternatives. Moreover, the CEC position that Creative Energy should retain more fee simple land at the Beatty site because the CEC "guesses it might be needed to serve unidentified future customers" is rejected by Creative Energy as a worse outcome for its customers.¹⁶⁷

Panel determination

The issue of land title ownership is a complex one. If the Application contemplated the sale of property excess to the needs of the utility, while the utility remained whole and continued to operate on the site, there would be much less controversy. However, in this case, the Application is much more complex involving the utility ceding property rights and, in doing so, undertaking longer-term risks in exchange for the Developer providing substantial financial assistance to complete refurbishment of a major part of the existing utility plant and the building housing it. Further complicating this is the Panel's determination, as stated in Section 3.1.3 of this Decision, that "moving ahead with the Proposed Project or an alternative solution to the key issues at this time better represents the interests of ratepayers rather than deferring it for a number of years." Thus, simply accepting or rejecting the CPCN Application is not necessarily an end in itself. There are consequences with turning down the CPCN as significant work is required either now or in the next few years. The Panel notes that the only viable alternative to moving forward with this CPCN is to move forward with the In-situ Alternative (or some form of it) at a cost estimated to be \$34 million. Thus, the consequences of denying this Application will result in a further application with far greater rate impacts that are likely to occur if the CPCN is granted. This could result in the potential loss of customers and further rate increases as the utility is forced to spread its costs over a smaller group of customers. **As a consequence, the Panel determines the impact of these additional costs on rates is an important consideration that needs to be given considerable weight when determining whether the "deal" as described in this Application represents a reasonable exchange.**

CEC takes the position that the level of benefit proposed does not mitigate the loss of the fee simple interest in the property. On this point the Panel does not agree. While the Developer in our view has much to gain by approval of the CPCN the same can be said for Creative Energy. There is a need to refurbish a significant part of

¹⁶⁶ Creative Energy Reply Argument, pp. 3–4, p. 28.

¹⁶⁷ Ibid., p. 28.

the plant and the structure housing it and the work needs to be done now or in the near future. The opportunity presented will allow this work to be fully completed at less than a third of the estimated cost and, as a result, the impact on customer rates will be relatively minor. The only viable alternative would be to reduce the scope of the Proposed Project and undertake work that was absolutely necessary. This could be accomplished at an estimated cost of \$34 million but the risk of cost overruns would be with the utility not the Developer as is the case with the Proposed Project. Moreover, all the work would be completed at the Beatty site and any additional risks for this would be borne by Creative Energy as there would be no Developer involved. The impact on rates of moving forward with this approach is not known but given the additional costs, the loss of benefits related to completion of the Proposed Project as designed and the potential future costs to complete the necessary work, it is likely to be substantial. **Therefore, given the benefits of completing the Proposed Project at a cost to Creative Energy of \$15 million and putting weight on the need for and the negative impacts related to undertaking another alternative, the Panel finds the level of benefit is a fair exchange for Creative Energy's loss of the fee simple interest in the Beatty property and bearing the risk related to the SRW.**

CEC has also argued that the transition from landowner for a significant part of its operations to what is effectively a leasee results in a loss of security and increased risks to rate payers. The Panel agrees. As noted by CEC after the next 40 years Creative Energy could be required to relocate and runs the risk that it will not be able to secure reasonably priced land. If this were to occur, the Panel agrees that Creative Energy would be in a difficult position and ratepayers at that time could face potentially higher rates. However, the Panel notes that this describes what might be a worst-case scenario. There is nothing in the PavCo Agreement that precludes it being extended or renewed, but rather, it is up to PavCo to agree to such an extension or renewal. Moreover, as described in Section 2.4.1, the potential for future renewal of the SRW does receive some support from the evidence that the PavCo structural consultant indicated that a BC Place lifespan of greater than 50 years is achievable. If the stadium is still used and useful at that time the potential for renewal or extension of the SRW is likely to be increased. Further, in the view of the Panel 40 years is a long time and, given the level of change in energy generation over recent years, the future is very hard to predict. Therefore, while the Panel finds there is increased risk and a loss of security related to Creative Energy agreeing to a change in land ownership and the PavCo SRW, we are not persuaded that the future of energy generation can be predicted with any degree of confidence nor are we persuaded that suitable cost-effective arrangements cannot be made 40 years from now when the SRW comes to an end. That said the Panel notes that there is no requirement in the SRW for PavCo to advise Creative of its intentions with regard to renewing the agreement. In the view of the Panel, there is a need to modify the SRW to add a 5-year notice provision requiring PavCo to advise Creative Energy as to whether it is willing to extend the lease. This will help mitigate some of this risk by providing Creative Energy and its customers suitable notification of its intentions.

In addition, CEC has argued that the public interest is not conserved as the utility is effectively a tenant and the long-term security land ownership provides is lost. As noted, CEC suggests the project could be approved if it provided for additional fee simple lands and all of the work could be done at the Beatty location. Then the needed work on the utility plant and structure could be done in exchange for facilitation of the release of current owned lands to third party interests. Creative Energy responded that what was suggested would be a physical obstacle and drastically reduce the development potential and in turn reduce the redevelopment value. In addition, there would be increased risk to customers due to all of the work being done at the Beatty site. The Panel notes that the option outlined by CEC has not been explored in evidence and as claimed by Creative Energy, is a "hypothetical option." In addition, it does not deal with the constraints on Creative Energy which it considers to be very real. The Panel agrees that the CEC proposal is a hypothetical option and there is no

evidence to suggest that it is either practical from a spatial standpoint or the extent to which it would suit the needs of the Developer if it were adopted. **Given these constraints the Panel finds that consideration of CEC's option should be given little weight.**

5.2 Management of Proposed Project risks

5.2.1 Role of Project Manager

As outlined in Section 3.3.1, Creative Energy has the role of general contractor for the Expo Plant and in respect of the utility equipment within the Beatty Plant premises whereas the Developer has responsibility for the office tower and build-out of the Beatty Plant premises. Accordingly, Creative Energy is responsible for the design and construction of the Expo Plant, including the interconnection and the utility equipment within the Beatty Plant.

Creative Energy acknowledges that it does not have all the required skills and people to execute a project of this scale and complexity. Creative Energy will establish the utility's design requirements and specifications in both the schematic and design phases but will not undertake the work itself. It reports that WSP, an experienced and leading engineering consultant, has been engaged to complete the schematic design and may be relied on to take on the full engineering role for both plants once the Proposed Project is approved. With regards to construction, Creative Energy states its intention is to engage a large construction firm with experience in constructing large complex projects as a General Contractor. To date, the Developer has been working on the preparation of materials for the Beatty Plant pre-construction with Ellis Don, a large construction firm with experience in large complex projects like that proposed. Creative Energy states that Ellis Don will likely act as General Contractor for both the Beatty and the Expo Plants noting that they are a world leading company handling in excess of \$3.5 billion of construction annually.

Creative Energy describes its role in the construction process as that of a Construction Manager that will interface between the General Contractor and the Project Committee (Creative Energy and the Developer). It will be Creative Energy's role to manage the General Contractor contract for delivery of the scope defined by Creative Energy and as such it "will have rights of approvals and oversight to ensure the final product meets the designs and specifications." It will also be responsible for deciding whether to request variances to the plans and specifications from the Project Committee.

Creative Energy is clear that it is not relying solely on its internal resources and those staff that are involved are very experienced in the design and construction of new district energy systems. Creative Energy is also clear that the Proposed Project will be executed by teams of experts that will have appropriate management and oversight and any cost risk is being borne by the Developer.¹⁶⁸

Panel discussion

The Proposed Project is a complex one involving not only serious coordination and scheduling challenges, but complex construction and timing issues. The Panel accepts that both WSP for design and Ellis Don have the necessary experience and qualifications to handle such a project. We consider both of these to be appropriate if they are engaged to complete the work as described by Creative Energy. However, the Panel notes that to date neither of these contractors has been formally engaged to complete the work on both the design and the construction phases. This, while understandable, raises a concern with the Panel given the importance of having

¹⁶⁸ Exhibit B-18, BCUC IR 104.10.

the appropriate management resources available to ensure steps are taken to mitigate issues that arise during construction and boiler restart phases.

5.2.2 Indemnification related to construction

As set out in Section 3.3.3, the Developer is required to indemnify Creative Energy under the Trust Agreement. The issue with any agreement of indemnification is whether and how it can be relied upon. Although a contract requiring the Developer to indemnify Creative Energy is indicative of an attempt to deal with risks, it may not provide any comfort if the Developer has limited assets to provide pursuant to the indemnification. The Developer is required to deliver a comfort letter or other document to Creative Energy in order to confirm the strength of the Developer's indemnity. If the reporting requirements of the Developer are not met, then Creative Energy may require that legal title to the Beatty Street property be transferred to a nominee in order to mitigate any risk associated with holding registered title.

Panel determination

Although the mechanism of the comfort letter to deal with concerns regarding the strength of the indemnification is helpful, the Panel finds it still potentially leaves Creative Energy with considerable risk it would not have operating as a utility or developing its own site. In this case the Panel is of the view that a comfort letter provided by the Developer from time to time is not adequate to deal with the potential risk to Creative Energy and therefore not in the public interest. **The Panel finds that a Performance or Construction Bond would provide the appropriate additional financial assurance.**

5.2.3 Scheduling

The scheduling for this project is one of the key challenges of the project. The Expo Plant must be built in 2019 in order to allow the Beatty Plant to shut down during the low consumption summer months and worked on in 2020 and 2021. This will provide significant logistical challenges and add to what is a very complex project. As noted in Section 2.2, Creative Energy has provided an outline of the key project milestones and dates where they are expected to be achieved. The Company is clear that this is not considered to be a detailed schedule but does not provide any information as to when this will be completed.¹⁶⁹

Panel discussion

Given the complexity of the Proposed Project and the potential for unplanned difficulties the Panel is concerned that there is at this point not even a preliminary project schedule and a description of process that will be in place to manage the schedule.

5.3 Acceptance of Secondary Capital Expenditures

5.3.1 Overview

The Amended and Re-stated Trust Agreement provides for secondary capital expenditure payments to the Developer in the following circumstances. If Creative Energy should, within 20 years from the service commencement date, increase aggregate steam output of the new plant above 139 MWs then a payment of \$70,000 per MW will be made to a maximum of 75 MW or \$5.25 million.¹⁷⁰

¹⁶⁹ Exhibit B-18, BCUC IR 94.4.

¹⁷⁰ Exhibit B-1-2, p. 33.

As part of the Proposed Project, the Developer will provide for additional space and certain infrastructure to accommodate increased capacity if needed in the future. This will be at no cost to ratepayers unless additional steam output is required.¹⁷¹ Creative Energy confirms that once the Proposed Project is complete, there will be no incremental costs incurred by the Developer related to additional steam capacity.¹⁷² Having this capacity available at the agreed cost per MW in Creative Energy's view will be more cost effective than having to undertake an expansion when demand exceeds 139 MWs.¹⁷³

Creative Energy is unable to assess the likelihood of the additional capacity being required nor the potential rate impact in such an eventuality.¹⁷⁴ However, Creative Energy confirms that this secondary payment to the Developer should the requirement for steam output increase is considered integrally important. If the BCUC were to withhold approval for this provision the Trust Agreement would be terminated.¹⁷⁵

Creative Energy emphasizes that it is not responsible for the full capital cost nor the financing costs of the Proposed Project.¹⁷⁶ The secondary payment of \$70,000 per MW of incremental energy:

... was negotiated to reflect the substantial cost of the Proposed Project being subsidized by the Developer, the constraints on rates for existing customers, and excess space and capacity of ancillary equipment that will be available to install additional generating capacity in the future.¹⁷⁷

Intervener submissions

CEC describes the secondary payment as an "unnecessary payment for ratepayers and windfall for the [D]eveloper."¹⁷⁸ In its view the utility should not have agreed to the secondary payments, as they are not necessary to ensure the Developer creates a successful project and in the event Creative Energy increases its generating capacity, the Developer does not incur additional costs. Moreover, the Developer does not require the additional income for the project to succeed since the additional capacity will be provided with no guarantee that it will be used and that the Developer's costs do not increase when the additional capacity is used.

CEC argues that Creative Energy's assertion that adding capacity at the plant would be less costly than adding capacity elsewhere is a red herring pointing out that the load and capacity requirements are forecast to decrease. It states that Creative Energy has no plans to expand generating capacity beyond the Proposed Project and any future expansion is contingent on a major load addition directly or indirectly connected to the present system. The thermal energy systems currently under development will not be directly or indirectly connected to the existing system. In CEC's view, the secondary agreement represents a potential windfall benefit to the Developer and the public utility failed to maximize the value of its negotiating position.

CEC states that the BCUC should deny approval for future secondary charges as not conserving the public interest noting that charging the utility \$5.25 million in the future if space is required is clear evidence Creative Energy has not "negotiated consistent with balancing ratepayer interest against shareholder interest."¹⁷⁹

¹⁷¹ Exhibit B-1, p. 70.

¹⁷² Exhibit B-6, CEC IR-1, 44.3.

¹⁷³ Exhibit B-5, BCUC IR-1 38.4.

¹⁷⁴ Ibid., BCUC IR-1 38.2.

¹⁷⁵ Ibid., BCUC IR-1 38.9.

¹⁷⁶ Creative Energy Final Argument, pp. 21–22.

¹⁷⁷ Ibid., p. 21.

¹⁷⁸ CEC Final Argument, p. 25.

¹⁷⁹ CEC Final Argument, pp. 26–27.

Creative Energy reply

Creative Energy states that in the event the additional capacity is required, it can be obtained under the proposal at much less cost than the alternatives available. In addition, Creative Energy remains free to seek further alternatives.

Creative Energy argues that secondary payments are not a windfall to the Developer as CEC has characterized them. Rather, it is a component of the Developer's overall consideration for bearing risk, and cost subsidy to the utility providing an opportunity to "recoup some (but not even close to all) costs associated with the Proposed Project, in the event that Creative Energy adds net additional generation at Beatty to serve new load."¹⁸⁰

Panel determination

As stated by Creative Energy the secondary payment of \$70,000 per MW up to \$5.25 million has been negotiated in recognition of what it has described as "the substantial cost of the Proposed Project being subsidized by the Developer." As a consequence, regardless of whether Creative Energy decides to add more capacity, the cost to the Developer remains the same.

CEC's position is that this secondary agreement represents a windfall for the Developer and can be described as a red herring as the capacity and load requirements are forecast to decrease and there are no plans to expand the steam facility beyond the inclusions of the Proposed Project. The Panel agrees and is not persuaded that these potential additional capital expenditures are justified. As noted by CEC, the terms of the agreement are such that there is no requirement for the additional income related to the secondary payment nor do the Developer's costs increase if additional capacity is required at some future date. Moreover, there is no guarantee or even likelihood that additional capacity will be required and, in the Panel's view little expectation that this provision will be relied upon by the Developer.

In the event that there is no further need for capacity both parties have agreed through the Trust Agreement on Creative Energy paying a principle amount of \$15 million as its share of the total capital expenditures for the Proposed Project. In doing so the Panel infers that both parties have agreed to accept this as a fair exchange for Creative Energy giving up its rights to the land on which the Beatty Plant sits and bearing the future risk that the SRW Agreement for the property housing the Expo Plant being renewed. This was discussed in Section 5.1 where the Panel found that the additional risk taken on by Creative Energy as a result of agreeing to the loss of a fee simple interest in the Beatty property and taking on a 40-year SRW with no firm renewal clauses is fair exchange for the Developer agreeing to pay for the capital expenditures in excess of \$15 million. **Therefore, the Panel finds the addition of a further capital expenditure in the event of there being a need to increase capacity at the Beatty Plant beyond the Proposed Project's 139 MW is not in the public interest with reference to 44.2 of the UCA.**

5.4 Deferral account for undepreciated assets

Creative Energy states that the proposed project will result in the retirement of assets as well as the removal of land currently in rate base. Creative Energy proposes that any determination of an amortization period be left for a future revenue requirement as the treatment will not change the overall magnitude of revenues that need

¹⁸⁰ Creative Energy Reply Argument, pp. 23–24.

to be recovered from customers. The Company notes that in a future application it may propose a mechanism to smooth out the impact these retirements will have on rates.¹⁸¹

Table 5–1 provides an estimate of the rate base items to be retired.

Table 5-1: Estimated Retired Assets and Land¹⁸²

Steam Production Plant	Net Rate Base 2017	Est. % to be Retired	Est. Retired Amount	Notes
Land	565,500*	50%	282,800	
Structures & Improvements	1,360,100	100%	1,360,100	Completely removed
Boiler Plant Equipment	3,381,100	30%	1,014,300	Boilers #1 and #2 already 100% depreciated
Boiler Tanks Equipment	42,100	100%	42,100	Completely removed
Boiler Auxiliary Equipment	235,200	50%	117,600	
Accessory Electric Equipment	110,500	50%	55,200	
Total Steam Production Plant	5,694,500		2,872,200	
Total Excluding Land	5,129,000		2,589,400	

Creative Energy explains that it will not be able to determine the final amount and the timing of retirements until the detailed project design is completed and timelines for construction determined. A detailed accounting of these costs and a proposal for treatment will be part of a future application. Creative Energy states that as part of this Application it seeks only approval to establish a regulatory deferral account to record the undepreciated net book value assets which will be retired as part of the Proposed Project. This will enable their recovery in future rates.¹⁸³

Creative Energy’s position is that it is common and prudent to retire and replace assets proactively, instead of waiting for a catastrophic failure or waiting for the asset to become fully depreciated. Creative Energy argues that the recovery of such losses is consistent with the BCUC’s past determinations where utilities have been allowed to recover the remaining undepreciated book value if the retirement of an asset is beneficial to customers. Moreover, this is accepted practice in other jurisdictions. Creative Energy argues that the Proposed Project provides for cost-effective upgrades noting that it would not be cost-effective if ancillary equipment, which may not be fully depreciated, were not replaced at the same time. Nor would it be cost effective or prudent from a safety perspective to replace Boilers #1 and #2 without replacing the structure housing just because it has remaining book value. Creative Energy also states that upgrading facilities that are exposed to

¹⁸¹ Exhibit B-1, p. 71.

¹⁸² Ibid., p. 72.

¹⁸³ Ibid., pp. 71–72.

seismic risks is common for facilities especially where there are significant consequences related to facility failure.¹⁸⁴

Intervener submissions

CEC argues that the obsolescence of the assets is due to the Proposed Project and Creative Energy would not otherwise require early retirement. CEC submits there should be no cost to ratepayers for asset retirements. Further, if the BCUC approves the deferral account, payments for any amortization should fall to the Developer not the utility “particularly because the proposal is deficient in providing land for future development requirements.”¹⁸⁵

Creative Energy reply

Creative Energy states that asset retirement is an unavoidable feature of this type of project and it is prudent to replace the ancillary equipment at the same time. If work is deferred until all equipment and building components requiring replacement are fully depreciated, it would not be either cost-effective or prudent from a risk perspective.¹⁸⁶

Panel determination

The Panel agrees with Creative Energy that asset retirements such as those being contemplated are an unavoidable feature of this type of project. While it is true that the Developer stands to gain in the event the Proposed Project is approved, it is also true it is in the interests of the customer as well. If it were not in the public interest it would not pass the test for granting a CPCN. **Therefore, in the event that the Proposed Project is granted a CPCN, the Panel is prepared to approve a deferral account for recording the non-depreciated assets.**

However, the Panel will not approve any amounts for the land to be added to the deferral account. While it may be normal practice for utilities to be allowed to recover prudently incurred costs if a retirement is in the normal course of business, it is not typical for utilities to be allowed to capture the value of a non-depreciable asset such as land. Typically, where land is no longer found to be used and useful, it is removed from rate base with a return no longer allowed. Examples of this can be found in Order G-66-14 and Order G-166-17.

6.0 Panel determination on CPCN

The Panel does not approve Creative Energy’s Application for a CPCN for the Beatty and Expo Plants in its present form. The Panel acknowledges that the Application has a number of positive attributes making it attractive. However, at the same time there are other attributes and issues that have raised concerns. **Balancing the positive and negative aspects of the Application the Panel has determined that moving forward with the Proposed Project as outlined in the Application does not represent a reasonable exchange for the utility and its customers and as filed, is not in the public interest.**

On the positive side, the Panel acknowledges there are a number of very attractive attributes related to the Proposed Project. For a capital cost of \$15 million, Creative Energy will have significant upgrades made to its

¹⁸⁴ Creative Energy Final Argument, pp. 31-35.

¹⁸⁵ CEC Final Argument, pp. 3, 21.

¹⁸⁶ Creative Energy Reply Argument, pp. 24-25.

plant and the structure of the building housing it. This is significantly less than the estimated \$53.1 million for the project and the additional expenses for non-project work that will also be completed. In addition, the risk for construction cost overruns not initiated by Creative Energy will be borne by the Developer.

The two new boilers for the Expo Plant will replace boiler units that are at or near the end of expected life and, in all likelihood, will need to be replaced in the near future. This will result in an increase in capacity as both of the new units have a 200,000 lb/hr functional capacity as compared to the functional capacity of 290,000 lb/hr for the boiler units being replaced. In addition, the building housing the Beatty Plant will be replaced and upgraded to modern seismic and fire resistance standards and with it many of the hazardous materials that were part of the original construction will be removed. Further new administrative office space will be provided to replace the existing space which has limitations. As a result of these changes and enhancements, Creative Energy will realize improvements in safety, efficiency, and emissions control while ensuring reliable service is maintained.

A key consideration within this Decision is the change in land ownership and the ramifications related to the PavCo 40-year SRW. The Panel acknowledges the concerns of CEC but on balance is prepared to consider granting a CPCN in spite of there being increased risk and loss of security as we were not persuaded that future energy generation needs can be credibly predicted and if the Expo Plant is still required, whether suitable cost effective arrangements cannot be made 40 years from now. Further, when the alternatives to satisfy the need for work to be completed on the existing facility were taken into consideration, the Panel found that the benefits to the ratepayer at a cost of \$15 million were a fair exchange for the loss of the fee simple interest in the Beatty property and bearing the risk related to the SRW. The Panel notes that these findings are a reflection of there being a balance between the interests of ratepayers now and in the future.

However, within this Decision there are a number of issues that have arisen and make the Proposed Project less attractive. These have resulted in the Panel rejecting the Application in its present form. These are as follows:

Potential additional capital expenditures

As outlined in the Trust Agreement, Creative Energy agrees that if at any time over the 20 year period following completion of the Beatty Plant, the aggregate steam output is increased above 139 MW, it will pay the Developer a secondary amount of \$75,000 for each additional MW up to a maximum additional generation capacity of 75 MW. This is stated as being in consideration for the Developer's costs to provide upgraded space and ancillary equipment to accommodate additional generation capacity and its subsidization of the Proposed Project. As noted in Section 5.1, the Panel found the additional risk taken on by Creative Energy as a result of agreeing to a 40-year lease with no firm renewal clauses was fair exchange for the Developer agreeing to pay for the capital expenditures in excess of \$15 million. Further, as noted in Section 5.3, the Panel has found these additional secondary capital expenditure payment requirements to be unjustified. Given these findings there should be no requirement for the inclusion of additional after the fact secondary payments to the Developer.

Contingency planning

In Section 3.3 the Panel found that Creative Energy had taken inadequate steps to develop its contingency plans to allow them to be reviewed and agreed to as part of the CPCN approval process. The potential for a shutdown or a failed restart of the Beatty Plant is a very real risk and, depending upon when it occurs, could have significant consequences for ratepayers. Yet, Creative Energy's contingency planning is not sufficiently developed to even provide information as to how and when it would deem temporary boilers to be necessary

or, whether there are any other options that could be considered. If this is only a few days it may be possible to handle the problem by curtailing supply. If however, the timeline for installation is longer other options must be considered.

Uncertainty of the impact on ratepayers

Creative Energy has estimated a 3.7 percent increase resulting from the Proposed Project. The Panel has for the most part accepted the estimates of the financial impact of the Proposed Project as being in a range of reasonableness based on the assumptions. The one exception to this is fuel cost savings. As noted in Sections 3.4.1 and 4.3.1, the Panel questions whether the 80.4 percent baseline efficiency can be relied upon for the calculation of fuel savings noting that currently 25 percent of the fuel savings from the Clear Sky economizer accrue to the utility. Since the 80.4 percent efficiency is based on there being no economizer, it would follow that it would be more appropriate if this were taken into account and the baseline set higher. As noted previously, the addition of a replacement fuel economizer as part of the Proposed Project would further improve the plant efficiency and increase fuel cost savings and potentially mitigate this fuel savings shortfall.

Indemnification

As outlined in Section 5.2, the Panel has raised concerns with the level of indemnification provided and leaves Creative Energy with considerable risk. To mitigate this risk the Panel has found that a Performance or Construction Bond would be appropriate additional financial assurance.

Lack of clarity with respect to a Construction Manager

In Section 5.2.1, the Panel raised concern with respect to Creative Energy's capacity and capability to project manage an undertaking the size and magnitude of the Proposed Project. Given the importance of having the appropriate resources in place to manage the project, the Panel requires more certainty as to the General Contractor.

Notice provision for the SRW

Creative Energy proposed that the SRW with PavCo would include a 5-year notice provision which it currently does not include. Such a provision would help mitigate risks related to the SRW.

Given these issues that Panel finds that the Application for the Proposed Project and the related Trust Agreement as they have been filed do not represent a just and reasonable exchange for Creative Energy and its customers. However, while this Application has been rejected in its present form the Panel believes that the Proposed Project has merit. Creative Energy may file a revised application addressing the Panel's concerns within one year from the date of this Decision, failing which the application is dismissed. BCUC approval of the requested CPCN will require approval by this Panel of the following changes and explanations:

1. Changes and Explanations related to the Trust Agreement:

- i) **Elimination of clauses dealing with the potential secondary capital expenditures related to increases in capacity;**
- ii) **Provision of additional financial security such as performance or construction bond for an appropriate amount and duration;**

- iii) Creative Energy to provide an explanation in response to the Panel's concerns with respect to whether the 80.4 percent baseline efficiency as claimed by Creative Energy is accurate in light of the fact that 25 percent of the fuel savings from the Clear Sky economizer accrue to the Company. In the event this cannot be adequately explained, Creative Energy is required to outline what it is prepared to do to ensure the predicted fuel savings are achieved.

2. Other Requirements:

- i) Development of a comprehensive Contingency Plan to deal with identified issues;
- ii) Confirmation that Ellis Don and WSP have been or will be engaged to take on the Proposed Project. In the event an agreement with either of them cannot be reached, the Panel will make any CPCN subject to Creative Energy confirming the selection of a General Contractor and Design Engineering Company with the requisite experience that is acceptable to the BCUC;
- iii) Completion and submission of a Preliminary Project Schedule and within 60 days of engaging the General Contractor, a detailed Project Schedule outlining the construction and operation schedule, including critical dates of key events, a chart of major activities showing the critical path (e.g. GANTT chart), and the timing of approvals required from other agencies;
- iv) Removal of Land from the Deferral Account proposal; and
- v) Filing of an executed PavCo SRW Agreement with a 5-year notice provision.

In addition to these changes the Panel notes that Creative Energy's Application did not provide for project reporting once the CPCN had been granted. While not a requirement of the CPCN Guidelines, it is not uncommon for a reporting regimen to be included as part of the Decision of approving a CPCN. **Given the complexities of the current Application and the potential impacts if problems occur, the Panel finds that it would be appropriate to apply a reporting regimen in this instance.** Therefore, if the Proposed Project is granted a CPCN, the Panel will require Creative Energy to adhere to a schedule of reporting on various aspects of the Proposed Project Implementation process. Details of these reporting requirements will accompany the CPCN if and when approved.

7.0 Other Issues

7.1 Corporate reorganization

Creative Energy states that the proposed Corporate Reorganization is planned to occur following the BCUC's approval of the CPCN. The Panel notes that Creative Energy states that the approvals it has requested in its Application are to be considered as whole and that no approval is needed unless other approvals are granted. Therefore, if the CPCN is not approved there is no need for acceptance of the proposed reorganization steps. Given that the CPCN and related approvals have not been granted and there has been a request to expedite this Decision, the Panel will not consider the proposed Corporate Reorganization at this time. If Creative Energy addresses the requirements as outlined in Section 6.0, the Panel will rule on the proposed corporate reorganization at that time.

7.2 Customer Service Agreement between PavCo and Creative Energy

In addition, the Application included a request for approval pursuant to sections 60 and 61 of the UCA of a new Customer Service Agreement between PavCo and Creative Energy. Since this is also depending upon approval of the CPCN the Panel will defer making any determination on this until a CPCN has been approved.

DATED at the City of Vancouver, in the Province of British Columbia, this 19th day of February 2019.

Original signed by:

D. A. Cote
Panel Chair / Commissioner

Original signed by:

D. J. Enns
Commissioner

Original signed by:

M. Kresivo, QC
Commissioner



ORDER NUMBER

G-38-19

IN THE MATTER OF

the *Utilities Commission Act*, RSBC 1996, Chapter 473

and

Creative Energy Vancouver Platforms Inc.
Application for a Certificate of Public Convenience and Necessity
For Beatty-Expo Plants and Reorganization

BEFORE:

D. A. Cote, Panel Chair/Commissioner
D. J. Enns, Commissioner
M. Kresivo, Commissioner

on February 19, 2019

ORDER

WHEREAS:

A. On June 29, 2018, Creative Energy Vancouver Platforms Inc. (Creative Energy) filed an application with the British Columbia Utilities Commission (BCUC) for a Certificate of Public Convenience and Necessity pursuant to sections 45 and 46 of the *Utilities Commission Act* (UCA) to construct and operate new and renovated steam plant works and related facilities at Creative Energy's existing site at 720 Beatty Street in Vancouver and at an adjacent site within BC Place Stadium (Proposed Project), and additional approvals required in connection to the Proposed Project (Application);

B. In the Application, Creative Energy seeks the following approvals:

- Pursuant to sections 45 and 46 of the UCA, a certificate of public convenience and necessity (CPCN) for the construction and operation of the following components of the Proposed Project at an estimated total capital cost estimated at \$53.1 million:
 - the Expo Plant, including facilities to interconnect steam, condensate and fuel oil services between the Expo and Beatty Plants;
 - the Beatty Plant renovation;

Creative Energy estimates the total capital cost for the Project at \$53.1 million, of which Creative Energy's contribution is limited to \$15 million, subject to adjustments approved by the BCUC to additional costs in connection with any change orders requested by Creative Energy or project delays caused by Creative Energy and to any secondary payment;

- Pursuant to section 44.2 of the UCA, acceptance of additional capital expenditures of up to \$5.25 million that will only be payable by Creative Energy if it expands generating capacity at the Beatty Plant within the first 20 years after completion of the Proposed Project;
 - Pursuant to sections 56 and 60 of the UCA, approval to establish a regulatory deferral account to record the undepreciated net book value of the Creative Energy assets that are retired as part of the Proposed Project;
 - Pursuant to sections 60 and 61 of the UCA, approval of a new long-term customer service agreement between B.C. Pavilion Corporation (PavCo) and Creative Energy for heating service to the BC Place Stadium;
- C. Further, Creative Energy seeks approval of the following steps related to a corporate reorganization involving Creative Energy:
- Amalgamation involving a public utility requiring the BCUC endorsement and Lieutenant Governor in Council (LGIC) consent pursuant to section 53 of the UCA;
 - Corporate structure changes requiring BCUC approval, including:
 - Repurchase and issuance of shares in a public utility, pursuant to section 50 of the UCA;
 - Disposition of shares or other property of a public utility, other than in the normal course of business, pursuant to section 52 of the UCA;
 - Transfer of shares in a public utility that results in a person acquiring a reviewable interest in the public utility, pursuant to section 54 of the UCA; and
 - Disposition of Creative Energy's interest in "Trust Property" (as defined in the Application, the Trust Property is the interest in the lands, spaces and improvements on 720 Beatty Street and 701 Expo Boulevard, Vancouver, including all development rights that are surplus to the requirements of the utility), pursuant to section 52 of the UCA;
- D. On July 13, 2018, the BCUC issued Order G-128-18 establishing a regulatory timetable which included a workshop, the first round of BCUC and intervener information requests (IRs) with further process to be determined;
- E. On October 12, 2018, the BCUC issued Order G-194-18 establishing a further regulatory timetable, including filing of the Land Value Assessment Report by Grover, Elliott & Co. Ltd., BCUC and Intervener IR No. 2, a round of IRs from BCUC, Creative Energy and Intervener IR No. 1 on the Land Value Assessment Report as well as Final Arguments from the parties and Reply Argument from Creative Energy;
- F. By Order G-216-18 dated November 15, 2018, the BCUC issued an amended regulatory timetable, changing dates for Creative Energy Final and Reply Arguments, Intervener Final Argument; and
- G. The BCUC has reviewed the Application and evidence filed in the proceeding and makes following determinations.

NOW THEREFORE pursuant to sections 44.2, 45, and 46, of the *Utilities Commission Act* and for the reasons outlined in the decision issued concurrently with this order, the BCUC orders as follows:

1. Creative Energy's Application for a CPCN for the Beatty Expo Plants is not approved at this time.
2. Approval of the additional capital expenditure of \$70,000 per MW up to \$5.25 in the event of increasing capacity at the Beatty Plant beyond the Project's 139 MW is rejected.

3. Creative Energy may file a revised application addressing the Panel's concerns within one year from the date of this Decision failing which the application is dismissed. BCUC approval of the requested CPCN will require approval by this Panel of the following changes and explanations:

- I. Changes and Explanations related to the Trust Agreement:
 - i. Elimination of clauses regarding the potential secondary capital expenditure related to increases in capacity;
 - ii. Provision of additional financial security such as performance or construction bond for an appropriate amount and duration;
 - iii. An explanation in response to the Panel's concerns with respect to whether the 80.4 percent baseline efficiency as claimed by Creative Energy is accurate in light of the fact that 25 percent of the fuel savings from the Clear Sky economizer accrue to the Company. In the event this cannot be adequately explained, Creative Energy is required to outline what it is prepared to do to ensure the predicted fuel savings are achieved.
- II. Other Requirements:
 - i. Development of a comprehensive Contingency Plan, which addresses identified issues;
 - ii. Confirmation that Ellis Don and WSP have been or will be engaged to take on the Proposed Project. In the event an agreement with either of them cannot be reached, the Panel will make any CPCN subject to Creative Energy confirming the selection of a General Contractor and Design Engineering Company with the requisite experience that is acceptable to the BCUC;
 - iii. Completion and submission of a Preliminary Project Schedule and within 60 days of engaging the General Contractor, a detailed Project Schedule outlining the construction and operation schedule, including critical dates of key events, a chart of major activities showing the critical path (e.g. GANTT chart), and the timing of approvals required from other agencies;
 - iv. Removal of Land from the Deferral Account proposal; and
 - v. Filing of an executed PavCo SRW Agreement with a 5-year notice provision.

DATED at the City of Vancouver, in the Province of British Columbia, this 19th day of February 2019.

BY ORDER

Original signed by:

D. A. Cote
Commissioner

LEGISLATIVE FRAMEWORK

As stipulated in Section 45 of the UCA, the [BCUC] must not give its approval for a CPCN unless it determines that the privilege, concession or franchise proposed is necessary for the public convenience and properly conserves the public interest. In giving its approval, the BCUC

- a) must grant a certificate of public convenience and necessity, and
- b) may impose conditions about
 - i. the duration and termination of the privilege, concession or franchise, or
 - ii. construction, equipment, maintenance, rates or service,

as the public convenience and interest reasonably require.

Section 46 of the UCA stipulates that in deciding whether to issue a CPCN applied for by a public utility other than the authority (as defined in the UCA), the [BCUC] must consider

- a) the applicable of British Columbia's energy objectives,
- b) the most recent long-term resource plan filed by the public utility under section 44.1, if any, and
- c) the extent to which the application for the certificate is consistent with the applicable requirements under sections 6 and 19 of the *Clean Energy Act*.

As specified in Section 44.2 of the UCA, in considering whether to accept an expenditure schedule filed by a public utility other than the authority, the [BCUC] must consider

- a) the applicable of British Columbia's energy objectives,
- b) the most recent long-term resource plan filed by the public utility under section 44.1, if any,
- c) (c) the extent to which the schedule is consistent with the applicable requirements under sections 6 and 19 of the *Clean Energy Act*,
- d) if the schedule includes expenditures on demand-side measures, whether the demand-side measures are cost-effective within the meaning prescribed by regulation, if any, and
- e) the interests of persons in British Columbia who receive or may receive service from the public utility.

British Columbia's energy objectives are specified in Section 2 of the *CEA* and include the following:

- a) to achieve electricity self-sufficiency;
- b) to take demand-side measures and to conserve energy;
- c) to generate at least 93% of the electricity in British Columbia from clean or renewable resources;

- d) to use and foster the development in British Columbia of innovative technologies that support energy conservation and efficiency and the use of clean or renewable resources;
- e) to ensure the authority's ratepayers receive the benefits of the heritage assets;
- f) to ensure the authority's rates remain among the most competitive of rates charged by public utilities in North America;
- g) to reduce BC greenhouse gas emissions;
- h) to encourage the switching from one kind of energy source or use to another that decreases greenhouse gas emissions in British Columbia;
- i) to encourage communities to reduce greenhouse gas emissions and use energy efficiently;
- j) to reduce waste by encouraging the use of waste heat, biogas and biomass;
- k) to encourage economic development and the creation and retention of jobs;
- l) to foster the development of first nation and rural communities through the use and development of clean or renewable resources;
- m) to maximize the value, including the incremental value of the resources being clean or renewable resources;
- n) to be a net exporter of electricity from clean or renewable resources;
- o) to achieve British Columbia's energy objectives without the use of nuclear power;
- p) to ensure the commission, under the Utilities Commission Act, continues to regulate the authority with respect to domestic rates but not with respect to expenditures for export, except as provided by this Act.

GLOSSARY AND LIST OF ACRONYMS

Acronym / Glossary	Description
Application	Application for a Certificate of Public Convenience and Necessity for Beatty-Expo Plants and Reorganization
BCUC	British Columbia Utilities Commission
CEA	<i>Clean Energy Act</i>
CEC	Commercial Energy Consumers Association of British Columbia
CPCN	Certificate of Public Convenience and Necessity
CPI	Consumer price index
Creative Energy Canada	Creative Energy Canada Platforms Corp.
Creative Energy Developments LP	Creative Energy Canada and Emanate
Creative Energy or Company	Creative Energy Vancouver Platforms Inc.
Developer	Westbank Projects Corp.
ECR	energy centre
ETS	Energy Transfer Station
F&H	Fosdick & Hilmer
FAES	FortisBC Alternative Energy Services Inc.
FCAC	Fuel Cost Adjustment Charge
FEI	FortisBC Energy Inc.
InstarAGF	InstarAGF Asset Management Inc.
LGIC	Lieutenant Governor in Council
NEFC	North East False Creek
NPV	Net present value
O&M	Operations and Maintenance
PavCo	B.C. Pavilion Corporation
Pinchin	Pinchin Ltd.
RJC	Read Jones Christoffersen Ltd.
ROE	Return on Equity
SRW	Statutory Right of Way

The Beatty plant	Existing plant at Beatty
the City	The City of Vancouver
The Expo plant	a new plant
The Proposed Project	Construction and operation of new and renovated steam plant works and related facilities at Creative Energy's existing site at 720 Beatty Street in Vancouver and at an adjacent site within BC Place Stadium
Trust Agreement	The Trust and Development Agreement
UCA	<i>Utilities Commission Act</i>

IN THE MATTER OF
the *Utilities Commission Act*, RSBC 1996, Chapter 473

and

Creative Energy Vancouver Platforms Inc.
Application for a Certificate of Public Convenience and Necessity for
the Expo and Beatty Plant Project and Approvals Related to Reorganization

EXHIBIT LIST

Exhibit No.	Description
<i>COMMISSION DOCUMENTS</i>	
A-1	Letter dated July 11, 2018 - Appointing the Panel for the review of Creative Energy Vancouver Platforms Inc. Application for Certificate of Public Convenience and Necessity for the Expo and Beatty Plant Project and Approvals Related to Reorganization
A-2	Letter dated July 13, 2018 – Establishing a Regulatory Timetable and Public Notice
A-3	Letter dated July 17, 2018 – Amending the Panel for the review of the application
A-4	Letter dated July 20, 2018 – Information regarding August 2, 2018 Workshop
A-5	Letter dated August 17, 2018 – Information Request No. 1 to Creative Energy
A-5-1	CONFIDENTIAL Letter dated August 17, 2018 – Information Request No. 1 to Creative Energy
A-6	Letter dated August 22, 2018 – Parties Submissions on Terms of References for an Independent Appraisal of Surplus Land
A-7	Letter dated August 31, 2018 – BCUC response to Creative Energy extension request
A-8	Letter dated September 7, 2018 – BCUC Independent Appraiser’s Reply Comments regarding scope of the Terms of Reference
A-9	Letter dated September 19, 2018 – BCUC response regarding Submissions on the Terms of Reference and Land Value Assessment
A-10	Letter dated September 26, 2018 – BCUC letter regarding confidentiality of material, with Panel Questions regarding the Amalgamation in Appendix A
A-11	Letter dated September 28, 2018 – BCUC letter regarding submissions on amalgamation

- A-12 Letter dated October 9, 2018 – BCUC request Creative Energy provide a response regarding CEC’s Information Request No. 1.7.4
- A-13 Letter dated October 10, 2018 – BCUC request Creative Energy file as evidence the Appendices 1-4
- A-14 Letter dated October 12, 2018 – BCUC Order G-194-18 establishing a further regulatory timetable
- A-15 Letter dated October 12, 2018 – BCUC Submitting the Appraisal Report for 720 Beatty Street and 701 Expo Boulevard, Vancouver, BC
- A-16 Letter dated October 23, 2018 – BCUC Order G-203-18 with reasons for decision
- A-17 Letter dated October 23, 2018 – BCUC Response to CEC Request
- A-18 Letter dated October 25, 2018 – BCUC Information Request No. 2 to Creative Energy
- A-18-1 **CONFIDENTIAL** Letter dated October 25, 2018 – BCUC Confidential Information Request No. 2 to Creative Energy
- A-19 Letter dated October 25, 2018 – BCUC Information Request No. 1 to Grover Elliot
- A-20 Letter dated November 13, 2018 – Grover Elliot response to BCUC Information Request No. 1
- A-21 Letter dated November 14, 2018 – Grover Elliot response to CEC Information Request No. 1
- A-22 Letter dated November 14, 2018 – Grover Elliot response to Creative Energy Information Request No. 1
- A-23 Letter dated November 15, 2018 – BCUC Order G-216-18 amending the regulatory timetable
- A-24 Letter dated November 15, 2018 – Panel Information Request No. 1 to Creative Energy
- A-25 Letter dated December 13, 2018 – BCUC request Creative Energy comment regarding CEC’s sur-reply request
- A-26 Letter dated December 18, 2018 – BCUC response regarding CEC’s request for Sur Reply
- A-27 **CONFIDENTIAL** Letter dated February 1, 2019 – BCUC requesting confirmation regarding confidentiality of data
- A-28 Letter dated February 4, 2019 – BCUC response regarding confidentiality of data and statements in Appendix A of Exhibit B-22

APPLICANT DOCUMENTS

- B-1 **CREATIVE ENERGY VANCOUVER PLATFORMS INC. (CREATIVE ENERGY)** – Letter dated June 29, 2018 Application for Certificate of Public Convenience and Necessity for the Expo and Beatty Plant Project and Approvals Related to Reorganization
- B-1-1 **CONFIDENTIAL** Letter dated June 29, 2018 – Creative Energy Submitting **CONFIDENTIAL** Appendix C Financial Model
- B-1-2 Submission dated August 30, 2018 – Creative Energy Submitting Amended and Restated Trust and Development Agreement (Fully Executed) – Agreement dated August 10, 2018
- B-2 Submission dated August 2, 2018 – Workshop Presentation
- B-3 Letter dated August 24, 2018 – Creative Energy Comments on Scope of Terms of Reference
- B-4 Letter dated August 31, 2018 – Creative Energy Submitting Extension Request
- B-5 Letter dated August 31, 2018 – Creative Energy Submitting Responses to BCUC IR No. 1
- B-5-1 **CONFIDENTIAL** Letter dated August 31, 2018 – Creative Energy Submitting Responses to Confidential BCUC IR No. 1
- B-5-2 Letter dated September 7, 2018 – Creative Energy Submitting Supplementary Responses to BCUC IR No. 1
- B-5-3 **CONFIDENTIAL** Letter dated September 7, 2018 – Creative Energy Submitting Supplementary Confidential Attachment 36.1 to BCUC IR No. 1
- B-5-4 Submission received September 19, 2018 - Creative Energy Supplemental Response to BCUC IR 19.3 and 19.4, Naviworks file attached
- B-6 Letter dated August 31, 2018 – Creative Energy Submitting Responses to CEC IR No. 1
- B-7 Letter dated September 13, 2018 – Creative Energy Submitting letter regarding material relevant to the Independent Land Value Assessment
- B-8 Letter dated September 28, 2018 – Creative Energy Response to BCUC request for clarification of Confidential Attachment
- B-9 Submission dated October 1, 2018 – Creative Energy Response to Exhibit A-10, BCUC letter regarding confidentiality of material, with Panel Questions regarding the Amalgamation in Appendix A
- B-10 Letter dated October 3, 2018 – Creative Energy Submission on Amalgamation
- B-11 Letter dated October 9, 2018 – Creative Energy reply to CEC regarding clarification of Attachment 4 to letter to Grover Elliot and reasons for confidentiality
- B-12 Submission dated October 10, 2018 - Creative Energy submitting as evidence Appendices 1-3 previously provided to Grover, Elliot & Co. Ltd.

- B-12-1 **CONFIDENTIAL** - Submission dated October 10, 2018 - Creative Energy submitting as evidence Confidential Appendix 4 previously provided to Grover, Elliot & Co. Ltd.
- B-13 Letter dated October 11, 2018 – Creative Energy response to Exhibit A-12 regarding CEC Information Request
- B-14 Letter dated October 15, 2018 – Creative Energy reply submission regarding amalgamation
- B-15 Letter dated October 25, 2018 - Creative Energy submitting Information Request No. 1 to Grover Elliot
- B-16 Letter dated October 31, 2018 – Creative Energy submitting customer survey
- B-17 Letter dated November 8, 2018 – Creative Energy submitting responses to CEC Information Request No. 2
- B-18 Letter dated November 8, 2018 – Creative Energy submitting responses to BCUC Information Request No. 2
- B-18-1 **CONFIDENTIAL** - Letter dated November 8, 2018 – Creative Energy submitting **CONFIDENTIAL** Attachments 85.12 and 134.1 to BCUC Information Request No. 2 responses
- B-19 Letter dated November 15, 2018 – Creative Energy submitting timetable extension request
- B-20 Letter dated November 19, 2018 – Creative Energy submitting responses to BCUC Panel Information Request No. 1
- B-21 Letter dated December 14, 2018 – Creative Energy submitting response to BCUC regarding CEC’s sur-reply request
- B-22 Letter dated February 1, 2019 – Creative Energy submitting response to BCUC Exhibit A-27 regarding confidentiality of data and statements

INTERVENER DOCUMENTS

- C1-1 **CITY CENTRE CARE SOCIETY (CCCS)** Letter dated July 17, 2018 – Request for Intervener Status by James Lee – Changed Status to Interested Party Exhibit D-3
- C2-1 **FORTISBC ALTERNATIVE ENERGY SERVICES INC. (FAES)** Letter dated July 17, 2018 – Request for Intervener Status by Grant Bierlmeier
- C3-1 **COMMERCIAL ENERGY CONSUMERS ASSOCIATION OF BRITISH COLUMBIA (CEC)** Letter dated July 31, 2018 – Request for Intervener Status by Christopher Weafer
- C3-2 Letter dated August 17, 2018 – CEC Information Request No. 1 to Creative Energy
- C3-3 Letter dated August 24, 2018 – CEC Submitting Comments on Scope of Terms of Reference
- C3-4 Letter dated October 4, 2018 – CEC follow up on Information Request to Creative Energy
- C3-5 Letter dated October 4, 2018 – CEC Submitting Comments on Attachment 4

- C3-6 Letter dated October 10, 2018 – CEC Submission regarding Amalgamation
- C3-7 Submission dated October 10, 2018 – David Craig submitting Confidential Undertaking on behalf of CEC
- C3-8 Submission dated October 10, 2018 – Christopher Weafer submitting Confidential Undertaking on behalf of CEC
- C3-9 Letter dated October 15, 2018 – CEC submitting response regarding Exhibit B-13, Creative Energy response regarding CEC request for information
- C3-10 Letter dated October 25, 2018 – CEC submitting Information Request No. 1 to Grover Elliot
- C3-11 Letter dated October 25, 2018 – CEC submitting Information Request No. 2 to Creative Energy
- C3-12 Letter dated December 14, 2018 – CEC response to Creative Energy’s response to BCUC regarding CEC’s sur-reply request
- C4-1 **FORTISBC ENERGY INC. (FEI)** Letter dated July 25, 2018 – Request for Intervener Status by Diane Roy
- C4-2 Letter dated October 10, 2018 – FEI Submission regarding Amalgamation
- C5-1 **BC PAVILION CORPORATION (BCPC)** Letter dated July 30, 2018 – Request for Intervener Status by Clark Ledingham

INTERESTED PARTY DOCUMENTS

- D-1 **CITY OF VANCOUVER (CoV)** Letter dated July 20, 2018 – Request for Interested Party Status by Ashley St. Clair
- D-2 **EMANATE ENERGY SOLUTIONS INC. (EES)** Letter dated August 1, 2018 – Request for Interested Party Status
- D-3 **CITY CENTRE CARE SOCIETY (CCCS)** – Letter dated August 2, 2018 – Request for Interested Party Status by James Lee – Changed Status from Intervener Exhibit C1-1