



IN THE MATTER OF

CREATIVE ENERGY VANCOUVER PLATFORMS INC.

**CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY APPLICATION
FOR A LOW CARBON NEIGHBOURHOOD ENERGY SYSTEM FOR NORTHEAST FALSE
CREEK AND CHINATOWN NEIGHBOURHOODS OF VANCOUVER**

DECISION

December 8, 2015

Before:

**D. M. Morton, Commissioner/Panel Chair
C. A. Brown, Commissioner
I. F. MacPhail, Commissioner**

TABLE OF CONTENTS

Page No.

EXECUTIVE SUMMARY	(i)
1.0 INTRODUCTION.....	1
1.1 The applicant	1
1.2 Approvals sought.....	1
1.3 Interveners and interested parties.....	3
1.4 Regulatory process	3
2.0 PROJECT DESCRIPTION	3
2.1 Project history.....	3
2.1.1 The NEFC Review Report	5
2.1.2 The Phase 2 Study.....	5
2.1.3 Additional CoV direction.....	7
2.1.4 The Neighbourhood Energy Agreement.....	7
2.2 Project scope and description for Phase 1	8
2.3 Project build out schedule, load analysis and demand at full build out in 2024, forecasts.....	10
3.0 APPROACH TO THE DECISION	11
4.0 APPROVALS SOUGHT	14
4.1 CPCN	14
4.1.1 Project alternatives	14
4.1.2 Project alternatives to a district energy system.....	20
4.1.3 Alignment with <i>Clean Energy Act</i> and Provincial Government Policy	21
4.1.4 Consultation	24
4.1.5 Project costs	29
4.1.6 Project risks	35
4.1.7 Mandatory connection	38
4.2 Neighbourhood Energy Agreement between Creative Energy and the City of Vancouver	40
4.2.1 Carbon Reduction Rider.....	40
4.2.2 Mandatory connection	44
4.2.3 Benchmark Rate and Premium Cap	49
4.2.4 Limiting FEI's CPCN.....	53

TABLE OF CONTENTS

Page No.

4.3	Connection Agreement.....	54
4.4	Chinatown Extension Policy.....	56
4.5	Rate parameters.....	59
4.5.1	Revenue deficiency deferral account (RDDA)	59
4.5.2	Allowed return.....	60
4.5.3	Long-term debt rate.....	62
4.5.4	Cost Allocation principles.....	63
4.5.5	Operator, maintenance, lease and other costs.....	66
4.5.6	Fixed versus variable rate design.....	68
4.6	Exemption from Long-Term Resource Plan requirements.....	69
5.0	ISSUE ARISING	71
5.1	Allocation of Hearing costs.....	71
6.0	REPORTING REQUIREMENTS	72
6.1	CPCN Annual Project Progress reporting	72
7.0	SUMMARY OF DIRECTIVES	73

COMMISSION ORDER C-12-15

APPENDICES

APPENDIX A	Regulatory Process
APPENDIX B	List of Acronyms
APPENDIX C	List of Exhibits

EXECUTIVE SUMMARY

Creative Energy Vancouver Platforms Inc. (Creative Energy) filed this application on April 17, 2015, seeking approval for a Certificate of Public Convenience and Necessity (CPCN) for Phase 1 of a Low Carbon Neighbourhood Energy System (NES) for Northeast False Creek (NEFC) and Chinatown Neighbourhoods of Vancouver (Application). The Application proceeded by way of an oral hearing, with several interveners filing evidence.

The proposed NES is to proceed in two phases. Phase 1 consists of a hot water piping network in NEFC and Chinatown, connected to Creative Energy's existing natural gas fuelled steam system, through steam to hot water conversion stations. Creative Energy seeks a CPCN for Phase 1 of an NES in the NEFC and an approval for an extension test to develop the NES in Chinatown with no firm plan to connect the two networks. Phase 2 envisions a switch to a fuel source that produces less greenhouse gases than natural gas, either just for NEFC and Chinatown or to include the existing steam system. However, the scope of this application is Phase 1 only.

The Application also seeks approval for a Neighbourhood Energy Agreement (NEA) between Creative Energy and the City of Vancouver (CoV), which provides Creative Energy with an exclusive franchise to supply a district energy system (DES) in NEFC and Chinatown. The NE Bylaw provides for mandatory connection to the DES, along with restrictions on the use of other energy sources for new buildings in NEFC and Chinatown. It has been passed by the CoV council and will be enacted pending Commission approval of the NEA.

Creative Energy seeks approval of a Connection Agreement and various rate parameters, which define a methodology upon which a future rate application will be based.

The Panel has considered the evidence and submission of the parties and makes the following determination with regard to the CPCN:

The CPCN, in the amount of \$9,345,400 plus PST, interest during construction and capitalized development costs are approved for NEFC. The Panel finds that the project alternative and risk analysis, stakeholder consultation was adequate for the purposes of the CPCN Guidelines. The Panel finds there is a need for the Project, which arises from the CoV policy respecting DES requirements in NEFC that require developers to connect to a district energy system, the fact that several developers are waiting for this approval in order to continue, and there is some alignment with the *Clean Energy Act* objectives.

The following determinations are made with regard to the Neighbourhood Energy Agreement:

1. The Panel does not approve the Neighbourhood Energy Agreement. In particular, the Panel rejects the Carbon Reduction Rider and the Benchmark Energy Costs. The Carbon Reduction Rider is not sufficiently distinguished from a similar rider that was rejected in the Corix Multi-Utility Services Inc. Application for a Certificate of Public Convenience and Necessity for Phase 1 of the Neighbourhood District Energy System at the University of British Columbia proceeding, and as it collects rates currently for future purposes, it is inconsistent with cost of service rate design principles. The Benchmark Energy Costs relate to Phase 2 of the project that is not within the scope of this application.
2. Approval of the Cost Premium Cap in the NEA is denied, as it relates to Phase 2 and is out of scope. No determination is made on the Benchmark Energy Cost as it relates to the Cost Premium Cap.
3. The Panel has concerns about directly or indirectly approving the CoV's Neighbourhood Energy Bylaw (NE Bylaw). These concerns are two-fold: that the CoV purports not to activate its NE Bylaw unless the

Commission approves the NEA; and that the language of the NEA, while not authorizing mandatory connection, makes reference to the NE Bylaw. Creative Energy and the CoV have made considerable submissions respecting the CoV's right to enact mandatory connection, and parties have suggested that the Commission lacks authority to determine the validity of such. The Panel makes the following comments:

- a. While there is no specific clause in the NEA that provides for mandatory connection, there is language in the NEA that may leave the impression that the Commission is, indirectly, approving the NE Bylaw, which will mandate connection. The Panel prefers to see an NEA that is clear and unequivocal, in terms of what is to be approved by the Commission, and does not imply that CoV enactments are supported by the Commission.
- b. The Panel is concerned that enactment of the NE Bylaw is conditional upon Commission approval of the NEA. In our view, this could raise a public perception that the Commission has reviewed and approved the NE Bylaw. The existing rezoning policy that requires mandatory connection contains no such link to BCUC approval. We note the submission of the CoV that the NE Bylaw "supplements the existing rezoning policy that requires mandatory connection to the NES. If enacted, the NE Bylaw would add regulatory support to the existing connection policy." The Panel would prefer that the CoV enact bylaws and policies that are not linked to approvals by the BCUC; otherwise, confusion arises, and the public may perceive that the BCUC approves the CoV's mandatory connection.

The Panel denies the application for the Chinatown extension policy as there is not sufficient certainty about the load in Chinatown. In addition, there is insufficient evidence concerning a plan to connect to NEFC, and, as such, Chinatown appears to be a separate DES development.

The proposed Connection Agreement is not approved. The Panel outlines further information that is required from Creative Energy.

The following determinations with regard to the applied for rate parameters are made:

1. The Revenue Deficiency Deferral Account is approved.
2. Return on equity (ROE) Premium is set at the same premium as the existing steam utility. No determination is made on stranded asset risk as the ROE premium is determined on a utility basis.
3. Creative Energy's requested Long Term Debt Rate is approved.
4. Creative Energy's Cost Allocation Principles are approved in principle.
5. No determination is made on operator, maintenance, lease and other costs.
6. Creative Energy's 67 percent fixed 33 percent variable rate design is approved.
7. Creative Energy's is required to file a long-term resource plan (LTRP) when the LTRP for the core is filed, as required by the 2015 RRA.

Creative Energy requested that a portion of the hearing costs be allocated to certain interveners. This request is denied.

Creative Energy is directed to file Annual Progress Reports and Material Change Reports.

1.0 INTRODUCTION

1.1 The applicant

Creative Energy Vancouver Platforms Inc. (Creative Energy) operates as a public utility selling energy in the form of steam, serving over 210 customers in the downtown core of the City of Vancouver (CoV). Creative Energy (formerly Central Heat Distribution Ltd. [CHDL]) was acquired by Creative Energy Canada Platforms Corp. (Creative Energy Canada), in March 2014. Its customers include residential buildings, hotels, office buildings, social housing, small manufacturers, a major hospital and other institutions. Creative Energy's central steam plant, for which a Certificate of Public Convenience and Necessity (CPCN) was received in 1968, is located at 720 Beatty Street. Creative Energy describes the plant as comprising six gas-fired boilers currently installed at the plant with a combined nameplate capacity of 810,000 pounds per hour or 240 MW. The company also owns and maintains approximately 13 km of steam distribution mains in downtown Vancouver. Creative Energy has a Municipal Access Agreement with the CoV dated September 1, 1999 for a term of 30 years.

Creative Energy states that it is a wholly owned subsidiary of Creative Energy Canada. Creative Energy Canada is a privately held energy infrastructure business with a focus on district energy service in urban areas. Creative Energy describes the goals of Creative Energy Canada as being to deliver innovative, cost-effective, reliable and low carbon energy solutions in urban areas. Creative Energy Canada's only active business at this time is Creative Energy.¹

1.2 Approvals sought

Creative Energy filed its application for a CPCN for a Low Carbon Neighbourhood Energy System (NES) for Northeast False Creek (NEFC) and Chinatown Neighbourhoods of Vancouver (Application) on April 17, 2015. In the Application, Creative Energy seeks the following:

1. Approval of the Neighbourhood Energy Agreement (NEA) between the CoV and Creative Energy under section 45(7) of the *Utilities Commission Act* (UCA).
2. A CPCN for NEFC under section 45(9) of the UCA for the full build out of the distribution network in the NEFC subarea outlined within the NEA.
3. Approval of the NEFC & Chinatown Connection and Service Agreement under sections 59-61 of the UCA as filed by Creative Energy on September 8, 2015.
4. Approval of the NEFC Extension Test under sections 59-61 of the UCA and consistent with the Thermal Energy System (TES) Guidelines as filed in Section 2.6 of the Application, which will govern extensions to the Chinatown subarea within the NEA. For the purpose of the extension test only with the TES Guidelines, the British Columbia Utilities Commission (Commission) finds the initial TES capital cost is \$11,281,283 in real 2015 dollars.
5. The creation of a revenue deficiency deferral account (RDDA) under sections 59-61 of the UCA, as described in Section 5.14 of the Application and Creative Energy's after-tax weighted average cost of capital (WACC) as the carrying cost for the RDDA.

¹ Exhibit B-1, p. 8.

6. A Commission requirement to file a Long-Term Resource Plan (section 44.1 of the UCA) for NEFC as soon as practicable after completion of further feasibility work on low carbon energy sources and with the filing of an application for a CPCN for Energy Supply Phase 2 as described in Section 2.5 of the Application.
7. Imposition of the following conditions under section 45(9)(ii) of the UCA for rate-making purposes for NES as described in Section 5 of the Application:
 - a. A deemed capital structure of 57.5 percent debt and 42.5 percent equity for directly assigned capital costs;
 - b. Approval of long-term debt costs equivalent to Creative Energy's overall projected third party debt costs (currently forecast at 4 percent) for directly assigned capital costs;
 - c. Approval of a return on equity (ROE) of 9.5 percent for directly assigned capital costs, which is equal to the currently approved Creative Energy ROE for core ratepayers and is also equivalent to the current benchmark equity return plus 75 basis points awarded to new stand-alone small-scale Stream B TES with comparable risks;
 - d. Approval of operating costs as described in Section 5.5 of the Application, which includes the following:
 - i. incremental costs directly associated with NEFC Neighbourhood Energy System (NES) as described in the Application;²
 - ii. NES Fuel Recovery Cost Allocation as set forth in Exhibit A2-1; and
 - iii. NES Meter Cost Allocation as set forth in the Application³ consisting of the following four components:
 - Steam Production Costs;
 - Steam Distribution Costs;
 - Corporate overheads including office, building, selling and general expenses, insurance, property and income taxes, using the Massachusetts formula as a basis of allocating Corporate Overheads; and
 - Management Salaries;
 - e. The creation of the Carbon Emission Rider and associated Carbon Reduction Fund, as required in the NEA, which will accumulate interest equal to Creative Energy's weighted average cost of debt;
 - f. Approval of the two-part rate design as described in Section 5.13 of the Application, consisting of a fixed charge and a variable energy recovery charge based on the approximate share of fixed and variable costs in the indicative NEFC *pro forma*, which is comparable to the rate design for other new hot water systems in BC; and
 - g. The direct assignment of the initial capital costs, including project development costs incurred to date of approximately \$935,209 in 2015 dollars, and all future capital costs for the NEFC system to the NEFC customers.

² Exhibit B-1, Section 5.5, p. 1, para. 1.

³ Exhibit B-1, Section 5.4, Table 17, p. 71.

1.3 Interveners and interested parties

The following interveners registered in the proceeding:

- City of Vancouver (CoV)
- Commercial Energy Consumers Association Of British Columbia (CEC)
- British Columbia Old Age Pensioners' Organization, Active Support Against Poverty, Disability Alliance BC, Counsel Of Senior Citizens' Organizations Of BC and The Tenant Resource and Advisory Centre (BCOAPO)
- FortisBC Alternative Energy Services Inc. (FAES)
- Hollyburn Properties Limited
- LandlordBC
- FortisBC Energy Inc. (FEI)
- Urban Development Institute (UDI)
- Corix Utilities Inc.
- Onni Hastings Holdings Corp. and the Onni Group (Onni)
- GeoExchange BC
- Energy Canvas Ltd.

FEI and FAES filed intervenor evidence. FEI, FAES, CoV, UDI, CEC and BCOAPO submitted final arguments.

Pacific Northern Gas Ltd. (PNG) registered as an interested party.

1.4 Regulatory process

The regulatory process included the following:

- A Procedural Conference held on July 10, 2015.
- Two sets of intervenor and Commission information requests (IRs) to Creative Energy.
- One set of Panel IRs to Creative Energy.
- Intervenor evidence, filed by the CoV, FEI and FAES.
- One set of IRs on intervenor evidence.
- Rebuttal evidence filed by Creative Energy.
- An oral hearing held on September 14, 2015 through September 16, 2015, inclusive.
- Written final arguments.

2.0 PROJECT DESCRIPTION

2.1 Project history

NEFC, one of the largest undeveloped areas in the downtown peninsula,⁴ is an area of Vancouver bounded by the neighbourhoods of Yaletown and Downtown to the west, International Village and Chinatown to the north, the Citygate towers to the east and False Creek to the south. Creative Energy's existing steam plant is nearby at

⁴ Exhibit B-1, p. 20.

the corner of Beatty and Georgia Streets. NEFC is one of the largest undeveloped areas in downtown Vancouver, and has several large development sites owned by various entities.

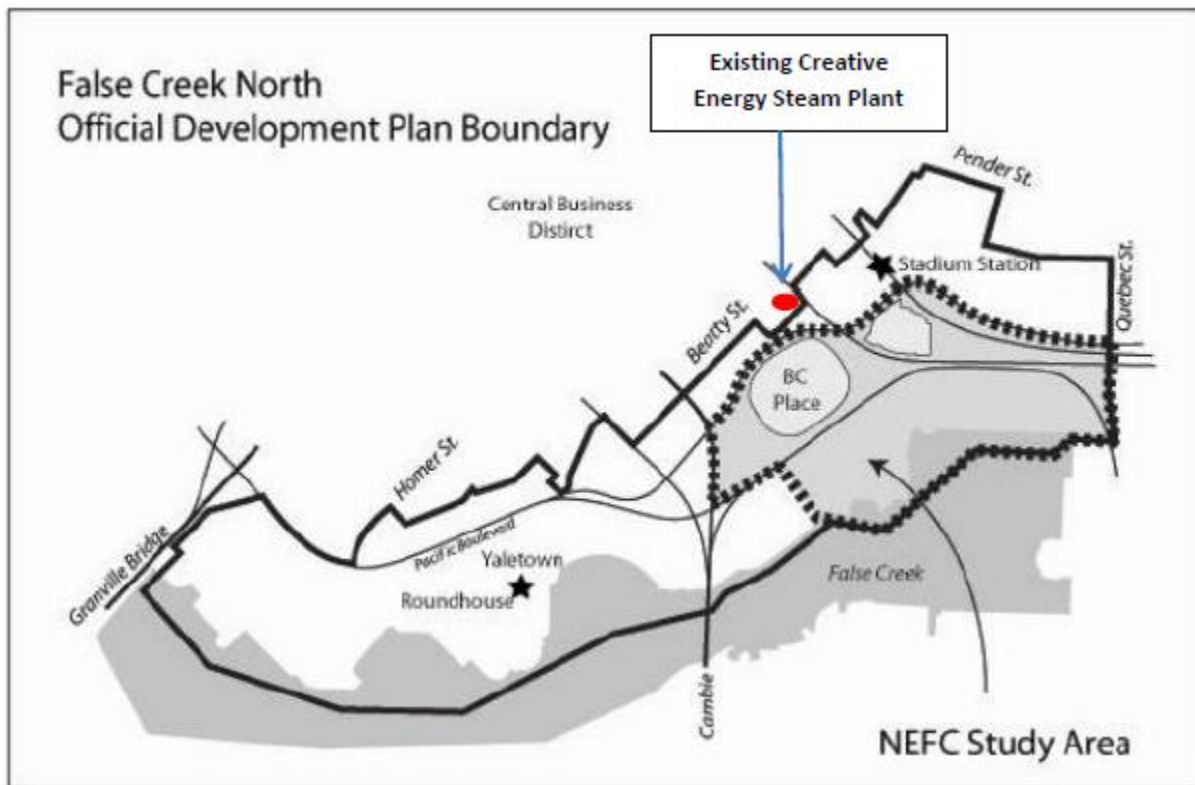


Figure 1 - False Creek North Official Development Plan Boundary⁵

In addition to local planning policies within NEFC and Chinatown, Creative Energy submits that this project is also driven by citywide policies. Creative Energy submits that the CoV's interest in low-greenhouse gas (GHG) energy sources for NEFC is rooted in a sequence of CoV council decisions to drastically reduce the City's GHG emissions. Creative Energy explains that in June 2008, the CoV council unanimously approved the EcoDensity Charter and the majority of the proposed initial actions, including any rezoning for sites over two acres to undergo a more detailed analysis and consideration of green energy (including district energy). Creative Energy submits that following a community consultation process, in 2011, the CoV council adopted the Greenest City 2020 Action Plan (GCAP) with a specific 2020 target to reduce GHG levels 33 percent city-wide below 2007 levels.

In 2009, the CoV council approved the NEFC Directions for the Future Report. This report called for the creation of a high density, mixed use development centred on Rogers Arena and BC Place and a civic plaza. As part of the approval of the report, the CoV council directed CoV staff to undertake local area energy planning and implement feasible campus or district energy systems for the area that reduce carbon dependency.⁶

⁵ Exhibit B-1, p. 20.

⁶ Exhibit B-1, pp. 20–21.

2.1.1 The NEFC Review Report

In response to this direction and in recognition of Vancouver's Sustainable Large Sites rezoning policy, that requires any rezoning for sites over two acres to undergo a more detailed analysis, the CoV partnered with various property owners (Aquilini Development, BC Pavilion Corporation, Canadian Metropolitan Properties and Concord Pacific) in the NEFC to screen neighbourhood energy potential. This preliminary feasibility study, the High-Level Review of Sustainable District Energy Options for North East False Creek (NEFC Review Report⁷), was dated May 2010.

The NEFC Review Report was prepared by Compass Resource Management Ltd. (Compass Management) for the "exclusive use and benefit" of its clients, "the City of Vancouver, BC Hydro, Central Heat Distribution Ltd. and the NEFC Landowners, which include Aquilini Development, BC Pavilion Corporation, Canadian Metropolitan Properties and Concord Pacific."⁸

The NEFC Review Report concludes, "NEFC presents a unique opportunity for a district energy solution because it is a large contiguous neighbourhood that is being developed under an umbrella planning framework. There are several innovative district energy opportunities for NEFC landowners collectively to meet LEED and GHG policy requirements at equal or lower cost and with greater ease and certainty than on-site solutions."

It further concludes that a:

... key uncertainty affecting the viability of district energy and the ranking of options is the degree to which cooling will be expected or required in the residential spaces ... Biomass, cogeneration, and sewer heat will likely prove more cost-effective where there is limited residential cooling. GX [Ground Source Heat Pump System] may be competitive if there are large amounts of residential cooling contemplated. A central GX system could prove more cost-effective than individual on-site systems. The report also states that, besides the extent of cooling, it will also be important to understand the manner in which developers would propose to meet LEED and GHG neutrality goals in the absence of a district energy system.⁹

Creative Energy submits that this study confirmed the potential viability of a low carbon neighbourhood energy system, and noted that Creative Energy "would be a key partner."

2.1.2 The Phase 2 Study

In May 2010, the CoV and Central Heat Distribution Ltd. (CHDL) entered into a Memorandum of Understanding to undertake a more detailed investigation of the potential low-carbon heat sources and the appropriate method of distributing heat in NEFC (steam versus hot water). This study is entitled Northeast False Creek District Energy Study Phase 2 and is dated February 2011 (Phase 2 Study).¹⁰

⁷ Exhibit B-1, Schedule 3, High-Level Review of Sustainable District Energy Options for North East False Creek.

⁸ Ibid., p. 1.

⁹ Exhibit B-1, Schedule 4, Northeast False Creek (NEFC) District Energy Study Phase 2 Final Report, prepared by Compass Resource Management Ltd., dated February 2011, pp. 47-48.

¹⁰ Exhibit B-1, p. 21.

Compass Management also prepared the Phase 2 Study. However, unlike the NEFC Review Report, which was prepared for a number of stakeholders, including developers, the Phase 2 Study was prepared for the exclusive use and benefit of only the CoV and CHDL.

The Phase 2 Study authors concluded that it is difficult to find the deep reductions in GHG emissions required to meet the CoV's requirements at individual building sites. Further, there are few ways to hold buildings accountable for those reductions in the long term. The Phase 2 Study also found that "[d]istrict Energy is not always the best solution to achieve GHG reduction goals, but in a dense redevelopment next to an existing district energy system, this is one of the most promising options."

Accordingly, the Phase 2 Study recommends that "[t]he City establish a stand-alone retail hot water district energy franchise for NEFC that has long-term GHG reduction requirements but provides some flexibility in how those requirements are met." It goes on to suggest that a "separate franchise is likely necessary to establish neighbourhood-specific GHG intensity targets and to ensure any incremental costs associated with those targets can be allocated and recovered from NEFC residents."¹¹

Figure 2 illustrates the Phase 2 Study supply option costs and GHG emissions.

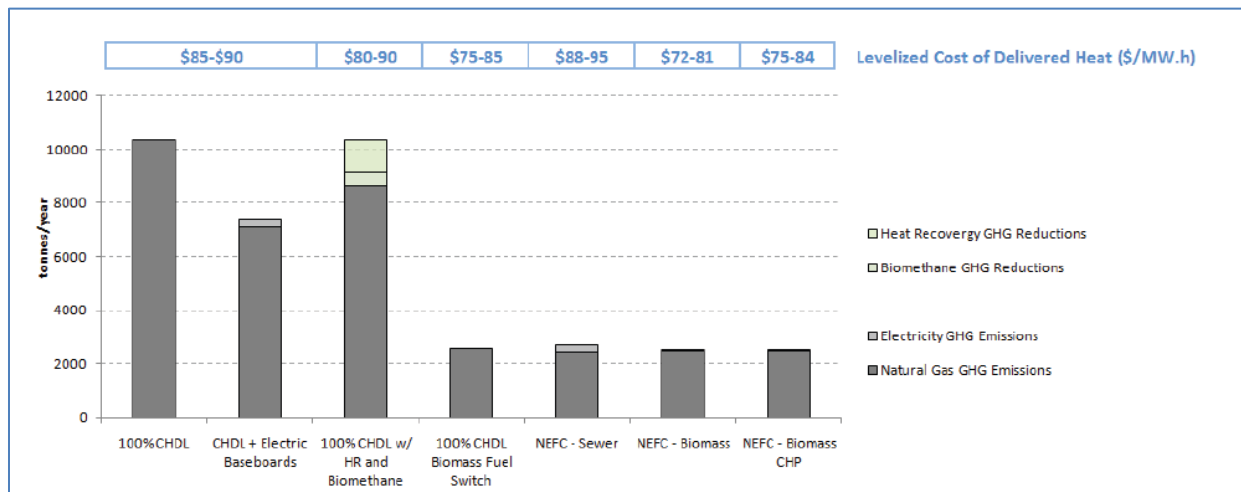


Figure 2 - Supply Option Cost and GHG Emission Comparison¹²

Creative Energy submits that the Phase 2 Study recommended constructing a hot water distribution system to serve all new customers in the neighbourhood, integrated with Creative Energy's existing system via two or more steam to hot water converters (S2HW). This study also recommended the implementation of a low carbon energy system to serve either all of Creative Energy's customers, or NEFC buildings only.

Subsequently, the CoV entered into discussions with Creative Energy to plan a system to serve the NEFC. Creative Energy initially selected FortisBC Inc. (FortisBC) as their partner to deliver the system. However, after the acquisition of CHDL by Creative Energy Canada, FortisBC was notified that Creative Energy would

¹¹ Exhibit B-1, Schedule 4, NEFC District Energy Study Phase 2 Final Report, prepared by Compass Resource Management Ltd., dated February 2011, pp. v-vii.

¹² Ibid., p. 24.

independently pursue NEFC. Creative Energy subsequently entered into negotiations with the CoV for a Neighbourhood Energy Agreement.

Creative Energy submits that since the NEFC is adjacent to Chinatown and the scale of Chinatown developments are not large enough to support a stand-alone NES, the CoV and Creative Energy incorporated Chinatown into the Neighbourhood Energy Agreement. In April 2011, the CoV council approved the neighbourhood energy connection policy for Chinatown, which requires that all new developments in this area be designed to be compatible with a neighbourhood energy system and connect if a system is available.

2.1.3 Additional CoV direction

In January 2011, the CoV council approved amendments to the planning policy for NEFC to require all new developments subject to rezoning to connect to a neighbourhood energy system for space heating and domestic hot water.¹³

In 2012, the CoV council approved a Neighbourhood Energy Strategy and Energy Centre Guidelines to address the GCAP objective of reducing 120,000 tonnes of carbon dioxide per year through the deployment of sustainable energy systems for high density neighbourhoods. The CoV's strategy involves converting the existing steam heat systems to a low carbon fuel and establishing new neighbourhood energy systems in high-density areas.¹⁴

In March 2014, the CoV council adopted the Downtown Eastside Local Area Plan, which includes Chinatown. This plan requires designs of all new developments in the Downtown Eastside over 2000 square metres to use hydronic (hot water) heating systems, and requires new development to connect to a low carbon neighbourhood energy system when one is in place.

2.1.4 The Neighbourhood Energy Agreement

The NEA between Creative Energy and the CoV was executed on May 26, 2014, subject to the Commission approving the agreement and granting a CPCN for the construction and operation of the Franchise Area NES.¹⁵ Creative Energy describes the NEA, in part, as follows:¹⁶

- Nothing in the Agreement varies or amends the provisions of the Municipal Access Agreement (MAA) dated September 1, 1999, between the CoV and Creative Energy, which governs the general terms for access by Creative Energy to streets and other CoV property. The Agreement establishes rights and obligations that are incremental to the MAA.
- The term of the Agreement is for 30 years, with options to renew subject to mutual agreement.
- The Agreement provides Creative Energy with an exclusive franchise in NEFC and Chinatown.
- The CoV will mandate connection of all new development in the NEFC area via a Service Area Bylaw (proposed) or rezoning conditions (for any rezoning prior to the conditions precedent in this

¹³ Ibid., p. 21.

¹⁴ Exhibit B-1, pp. 19–26.

¹⁵ Exhibit B-1, Schedule 2, Restated and Amended False Creek and Chinatown Neighbourhood Energy Agreement, Schedule A, p. 3.

¹⁶ Exhibit B-1, pp. 27–28.

Agreement being met and enactment of the Service Area Bylaw). Connection in Chinatown is also mandatory but the connection and obligation to serve is subject to an extension test.

- Creative Energy can meet the NEA carbon performance requirements through multiple means, all subject to Commission approval. These include a local solution within the NES hot water network (the Franchise Area Low-Carbon Solution) or by converting the fuel source of the energy supply upstream of the NES. This could supply the NES, along with some portion of Creative Energy's existing customers and other potential new downtown franchise areas.

2.2 Project scope and description for Phase 1

Creative Energy proposes to serve the NEFC area with a new hot water network, fed by two S2HW converter stations, which will receive steam from the existing Creative Energy steam network. Hot water supply and return pipes will circulate the water to customer buildings. The S2HW converter stations were initially planned to be located in the first two connected customer buildings (Project).¹⁷

The hot water distribution system and energy transfer station (ETS) design is similar to the existing SEFC system. This is to provide consistency and will enable possible interconnection of the systems in the future. The system will provide heating service only. Any cooling service will be on-site and the responsibility of developers. Connection to the NES is mandatory for all new development in the core NEFC area.¹⁸

Creative Energy proposes that new developments within the Chinatown area will be subject to an extension test. The initial step in the Chinatown proposal is an on-site boiler plant at a new development located at Main and Keefer Streets. The plant has the ability to expand to serve other nearby development. Creative Energy believes this is the most viable strategy to knit together sufficient load to enable an economic connection between NEFC and Chinatown, and to secure long-term carbon performance benefits for Chinatown.¹⁹

Creative Energy submits that since the NES receives energy generated by the existing Creative Energy steam network, the project includes a methodology for allocating costs associated with existing infrastructure. Creative Energy submits there is sufficient projected boiler capacity at the existing steam plant therefore no additional capacity is anticipated to serve the NEFC and Chinatown NES.

Creative Energy submits that for projects with significant on-site cooling systems, waste heat recovery from cooling is encouraged. However, on-site heat production through other means (e.g. air or water source heat pumps operating in heating mode only, heat recovery from sewage, geexchange, etc.) is precluded.²⁰

Figure 3 illustrates the core NES service area and proposed pipe routing. Table 1 provides a schedule of expected regulatory filings and major milestones.

¹⁷ Exhibit B-22, BCUCIR 2.1.1.

¹⁸ Exhibit B-1, p. 35.

¹⁹ Ibid., p. 36.

²⁰ Exhibit B-1, pp. 35–36.



Figure 3 - Core NEFC Service Area²¹

Schedule Item	Date
Initial CPCN Application – Submission	April 2015
Initial CPCN Application - Approval	July 2015
Detailed Design	Q3 2015
Commence Construction*	Q4 2015
NES Rates Application – Submission	Q1 2016
First Occupancy	Q3 2016
Second CPCN Application for Energy Supply Phase 2	Q2 2018
50% Buildout of Loads (NEFC)	2018
100% Buildout of Loads (NEFC)	2024

*First Steam – HW converter stations and energy transfer stations. A small extension (10 m) of existing steam system is anticipated in Q3 2015 based on current site development scheduled

Table 1 – Project Schedule²²

Figure 4 shows the anticipated distribution piping system build out.

²¹ Exhibit B-1, Figure 7, p. 37.

²² Exhibit B-1, pp. 35–38.

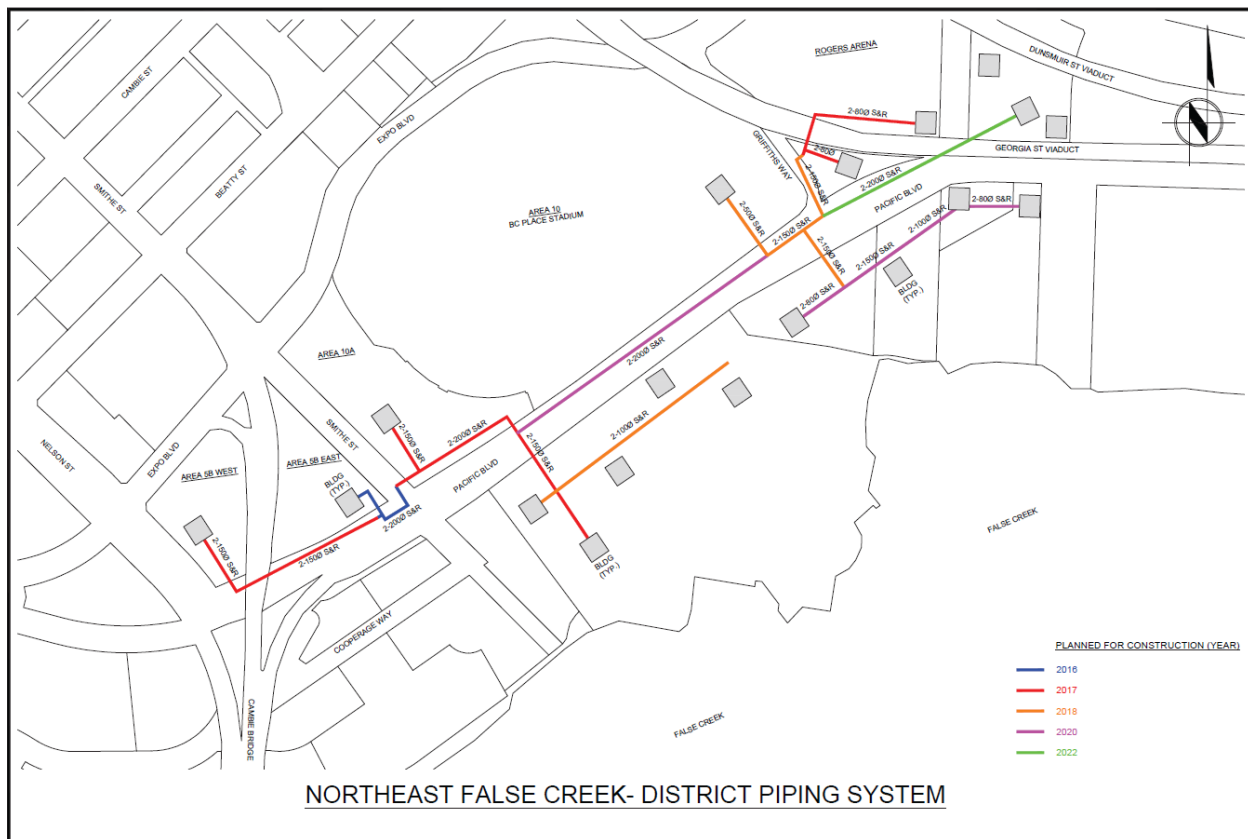


Figure 4 - Anticipated Distribution Piping System Build Out²³

2.3 Project build out schedule, load analysis and demand at full build out in 2024, forecasts

Energy loads are forecast based on floor space and energy use intensity (EUI) factors obtained from the Phase 2 Study,²⁴ Creative Energy's experience with recent buildings in Vancouver and information provided by the development teams for NEFC buildings are currently under development.²⁵

At full build out in 2024, the NEFC NES is forecasted to serve 506,300m² of floor space, with 86 percent (437,300m²) located in high rise residential buildings with some ground-floor retail and the remaining 14 percent (69,000m²) located in a hotel and casino development.²⁶ When Energy Supply Phase 1 ends at the end of 2019, the NEFC NES is forecasted to serve 290,700m² of floor space including the 69,000m² of hotel and casino floor space. There are four developers in the NEFC area: Aquilini Development; Concord Pacific; Canadian Metropolitan Properties (Plaza of Nations); and Paragon Gaming.²⁷ Creative Energy submits that as redevelopment in Chinatown is less certain, smaller in scale and more spread out, extensions to Chinatown are

²³ Exhibit B-6-1, Appendix 3, p. 3.

²⁴ Exhibit B-1, Schedule 4, NEFC District Energy Study Phase 2 Final Report, prepared by Compass Resource Management Ltd., dated February 2011, pp. 5–10.

²⁵ Exhibit B-1, p. 58.

²⁶ Exhibit B-6, BCUC IR 1.30.1.

²⁷ Exhibit B-1, p. 33.

not included in this CPCN Application. The load forecast model assumed peak EUI factors of 50 W/m² and 92 W/m² for the high rise residential buildings and the hotel and casino development, respectively.²⁸

The NEFC NES is forecasted to have an annual energy sales forecast of 48,100 MWh by 2024, with a diversified peak energy demand of 24 MW. At the end of Energy Supply Phase 1, Creative Energy forecasts annual energy sales to be 27,600 MWh with a diversified peak energy demand of 15.7 MW.²⁹

Creative Energy's existing central steam plant at 720 Beatty Street would supply the existing steam customers and the forecasted NEFC NES hot water loads until a low carbon solution has been developed.³⁰ Creative Energy forecasts the diversified peak load for its existing steam customers to be 210 MW in 2016 with a reduction to 196 MW by 2025. When combined with the NEFC NES, the forecast diversified peak demand is 213 MW in 2016; 221 MW in 2019; and 221 MW in 2024. The existing steam plant has six boilers with a maximum continuous rated capacity of 280 MW³¹ (810,000 pph [pounds per hour]) when fired on natural gas.³² No additional capacity is anticipated to serve the NEFC NES, as there is sufficient boiler capacity at the existing steam plant.

The energy demand forecast was prepared in the context of a mandatory connection policy in a Service Area Bylaw previously approved by the CoV council, with enactment pending Commission approval of the Neighbourhood Energy Agreement included in this Application. Once enacted, this Service Area Bylaw would secure customer energy demand and ensure that adequate loads and economies of scale would be achieved to cost-effectively establish a low carbon energy source. If the Service Area Bylaw is not enacted, the CoV could instead mandate connection and related conditions through land use and building policies such as city zoning conditions and development permits.³³ Five development sites at NEFC have already received rezoning from the CoV and approximately 40 percent of anticipated load in NEFC is already under development.³⁴ Each of the five re-zonings includes the requirement to connect to the NEFC NES.³⁵

Commission determination

The Panel finds that the load forecast is reasonable. In making this determination, we note that approximately 40 percent of anticipated load in NEFC is already under development and that five development sites at NEFC have already received rezoning from the CoV that will require them to connect to the NEFC DES.

3.0 APPROACH TO THE DECISION

In the final argument stage, parties provided submissions concerning whether the CoV has acted beyond its scope or in excess of its legal authority (*ultra vires*), in enacting policies and bylaws respecting the mandatory connection by developers to the DES. However, no intervener asked the Panel to determine the CoV's bylaws or policies to be *ultra vires*. Rather some parties have pointed out that it is not the Commission's jurisdiction to

²⁸ Exhibit B-6, BCUCIR 1.30.1.

²⁹ Exhibit B-6-2, BCUCIR 1.31.1, Tables 1 and 2, pp. 1–2.

³⁰ Exhibit B-1, p. 29.

³¹ Exhibit B-6-2, BCUCIR 1.31.1, Table 1, p. 1.

³² Exhibit B-6, BCUCIR 1.32.1, p. 92.

³³ Exhibit C1-2, Panel IR 1.3.3, pp. 7–8.

³⁴ Exhibit B-9, CECIR 1.2.1, p. 9.

³⁵ Exhibit B-25, CECIR 2.2.1, pp. 5–6.

determine the validity of the CoV's policies or bylaws. Others suggest it is in the jurisdiction of the Commission to consider mandatory connection, so long as it relates to its core statutory mandate.

Creative Energy states that "as a regulatory agency, the Commission must presume that the actions taken by the City in entering into the Franchise Agreement and approving the NE Bylaw were *intra vires*."³⁶

However, in FEI-FAES' joint legal submission on the issue of the CoV's mandatory connection policy and bylaws adopted by UDI and CEC, FEI and FAES argue that:

[I]t is both appropriate and important for the Commission to consider *as part of exercising its statutory public interest mandate* whether the [CoV] has jurisdiction to take the steps upon which the NEA and Project are premised. The [CoV] has overstepped its authority and, in doing so, has infringed upon on the Commission's core statutory mandate to (i) issue a CPCN, (ii) approve franchises, and (iii) determine who can and cannot take service from public utilities, and on what terms. The Commission should not approve the Project and franchise agreement as being in the public interest when it is premised on legal constructs that unlawfully fetter the Commission's jurisdiction.³⁷

In support of their argument regarding the fettering of the Commission's decision making powers, FEI-FAES cite the case of *Innisfil (Township) v. Vespra (Township)*:

[E]ven if the external policy is relevant, the rule against fettering requires the delegate to exercise its own discretion in deciding whether and how to accept the policy. In particular, the delegate cannot simply treat the external policy as a given, and may be required to permit cross-examination and refutation of that policy. [...]

In theory, all fetters on the ability of a delegate to exercise its discretion are an abuse, and result in a loss of jurisdiction [...]³⁸

FEI-FAES also note that the paramountcy of the Commission's jurisdiction was also affirmed in *Surrey (District) v. British Columbia Electric Co.*³⁹ in which the Court found the Commission to have "the duty of safeguarding the interests of municipalities and their inhabitants, to the extent that they may be affected by the operations of public utilities" irrespective of municipal powers that purported to regulate utility companies and facility construction. As a result, FEI-FAES argue that in exercising its public-interest mandate, the Commission therefore cannot be bound by the CoV's opinions regarding its own jurisdiction under the Vancouver Charter and the merits of its own plan to meet its policies and objectives.

BCOAPO contends that the legislature has provided a number of methods for the review and challenge of municipal enactments, all of which provide for the jurisdiction of the Supreme Court of BC and none of which provide for the jurisdiction of the British Columbia Utilities Commission.⁴⁰ In support, BCOAPO cites section 524

³⁶ Creative Energy Final Argument, p. 55, para. 205.

³⁷ FEI-FAES Joint Submission on Law, p. 11.

³⁸ *Innisfil (Township) v. Vespra (Township)*, [1981] S.C.R. 145.

³⁹ *Surrey (District) v. British Columbia Electric Co.*, [1957] S.C.R. 121 *per* Locke J, Rand and Nolan JJ concurring.

⁴⁰ BCOAPO Final Argument, p. 4, paras. 17–19.

of the Vancouver Charter, which states: “On the application of...a person interested in the by-law or resolution, a Judge may declare the by-law or resolution void in whole or in part for illegality.”⁴¹

There are two instruments that the CoV uses, or proposes to use, to require mandatory connection : one is the NE Bylaw, the other is zoning policy. The CoV explains that:

The mandatory connection requirement for NEFC and Chinatown is already embedded within existing rezoning policy in NEFC and Chinatown. The BCUC decision on this application does not alter the CoV's authority to require new developments to connect to the NES. The NES By-law has been approved by Council, but not enacted. It supplements the existing rezoning policy that requires mandatory connection to the NES. If enacted, the NES By-law would add regulatory support to the existing connection policy.⁴²

Commission discussion

The Panel finds no reason to opine on the legitimacy of the CoV's mandatory connection policies and bylaws. Regardless of the legitimacy of the CoV's jurisdiction, the Panel agrees with the interpretation of FEI and FAES regarding paramountcy: if there were a conflict, the specific jurisdiction of the UCA is paramount to, and in effect trumps, the more general jurisdiction of the CoV, in the context of mandatory connection. Accordingly, the Panel has considered whether the steps taken by the CoV, upon which the NEA and Project are premised, are in conflict with the Commission's jurisdiction. Upon review of the Application, the Panel is clear that Creative Energy has not applied to the BCUC for approval of mandatory connection provisions. Therefore the Panel finds no conflict between the jurisdiction of the CoV and the jurisdiction of the BCUC, in the context of the facts as presented in this Application (see Section 4.2.2 of this decision for further discussion).

The Project and the NEA are, from an approval perspective, independent. For example, the NEA could be approved and the CPCN for the project not approved and vice versa. In the latter case, it is possible that the project could proceed without the NEA. In this regard, we note Creative Energy's submission that “under its existing Municipal Access Agreement, it has the ability to extend infrastructure (whether steam or hot water) to NEFC, assuming it can secure customers under whatever policies the CoV eventually implements.”⁴³

Accordingly, the Panel separately considers the CPCN for the project (in Section 4.1 of this decision) and the approval of the NEA (in Section 4.2 of this decision). In those sections, we consider whether approval is premised on the concept of mandatory connections, and its possible impact on the public interest. This approach is consistent with the Commission's approach to previous CPCN and franchise agreement applications: consider the need for the project; consider alternatives; consider project justification; consider consultation; and consider whether the franchise agreement is necessary for the public convenience and properly conserves the public interest.

⁴¹ BCOAPO Final Argument, p. 4, para. 17.

⁴² CoV Final Argument, p. 2, paras. 9–10.

⁴³ Creative Energy Final Argument, p. 62, para. 237.

4.0 APPROVALS SOUGHT

4.1 CPCN

Creative Energy has applied for a CPCN based on a DES Project. This section will analyze the Project, based on the Project description, the CPCN Guidelines, the UCA, applicant and intervener submissions and the context of mandatory connection.

Commission determination

For the reasons set out in the subsequent sections, the Panel finds that a CPCN for the NEFC DES Project limited in scope to exclude Chinatown, and as otherwise described in the Application, is in the public interest. A CPCN is granted to build infrastructure in NEFC in the amount of \$9,345,400 plus PST, interest during construction and capitalized development costs. Further determinations regarding capitalized development costs are made in Section 4.1.4.2 of this decision.

4.1.1 Project alternatives

Section 2 of the 2015 CPCN Guidelines provide that an applicant should identify feasible alternatives and compare the costs, benefits, associated risks, revenue requirements, rate impacts and social and environmental impacts of the project and those feasible alternatives.

Many interveners argue that there are more feasible alternatives to the project – such as individual in-building Stream A systems and the use of renewable natural gas (RNG) to fuel gas boilers.

Commission discussion

The alternatives put forward by the interveners are discussed in the next section of this decision – Section 4.1.2 Alternatives to a District Energy System. While these alternatives may be relevant to the City's screening studies and its choice of a DES, they are not realistic alternatives that Creative Energy must consider in order to satisfy the CPCN Guidelines requirements.

The Panel will therefore consider the following alternatives: the use of hot water versus steam, a steam extension of the existing utility, temporary or permanent boilers and staging and sizing of hot water converter stations.

4.1.1.1 Hot water versus steam

Creative Energy submits that, as required in the Neighbourhood Energy Agreement, it will utilize a modern hot water network instead of steam to serve NEFC and Chinatown. Hot water offers advantages in terms of lower thermal energy losses, lower maintenance costs and the ability to integrate lower grade heat sources. Hot water based systems, although common in Europe, are becoming the new standard in North America for district heating in residential and commercial developments where steam is not typically required. The use of hot water represents a new approach to heat distribution and will require a new tariff for the NES.⁴⁴

⁴⁴ Exhibit B-1, p. 3.

Creative Energy remains “extremely committed to hot water as a modern distribution technology.” However, it also states that in a market driven system it must be able to consider the merits and feasibility of a hot water extension versus a steam extension within the context of each specific customer addition and on the basis of actual or reasonable customer commitments.⁴⁵

Commission determination

The use of hot water, as opposed to steam, was explored in the NEFC Phase 2 Study. The Panel is satisfied that the hot water alternative offers sufficient advantages over steam, especially by providing flexibility to connect to a wider range of heat sources, including, for example, waste heat recovered from sewage, thereby offering an opportunity to be aligned with some *Clean Energy Act* objectives.

Accordingly, the Panel finds the proposed use of hot water to be appropriate in this circumstance.

4.1.1.2 Steam extension of the existing utility

Although Creative Energy did not propose this alternative, or provide any analysis of it in its application, it was explored by a number of parties in the proceeding. The Commission, for example, posed this question to Creative Energy:

Considering that the development of a new low carbon energy source is not expected until 2020, possibly through the conversion of the existing Downtown steam plant, and that a feasibility analysis for this conversion is currently underway, please discuss why it is appropriate, at this time, to propose that the NEFC and Chinatown NES be separate from the existing utility, rather than be considered extensions of the existing utility, with a separate rate class.⁴⁶

In response, Creative Energy stated that it does not see any practical difference between considering the NEFC and Chinatown NES as separate from the existing utility or an extension of the existing utility with a separate rate class. If NEFC is considered an extension subject to the approval required under section 45(7), Creative Energy contends that a new tariff is required that reflects hot water service (versus steam) and the current and future costs specific to hot water service in NEFC/Chinatown and the Performance Requirements established in the Neighbourhood Energy Agreement.⁴⁷

Creative Energy states that the NEFC extension is a large neighbourhood addition and not comparable to the addition of a single customer. It submits that the proposal should be evaluated in that context.⁴⁸ Creative Energy also notes that it does not have a formal Commission approved system extension test and in its view, its extension policies for the core are not in the scope of this proceeding.⁴⁹ Creative Energy submits that if this Project is considered a main extension to the Existing Core a contribution in aid of construction would be necessary for the project to pass a standard main extension.

⁴⁵ Creative Energy Final Argument, p. 70.

⁴⁶ Exhibit B-6, BCUC IR 1.40.1.

⁴⁷ Exhibit B-6, BCUC IR 1.40.1.

⁴⁸ Exhibit B-6, BCUC IR 1.14.1.

⁴⁹ Exhibit B-17-1, FEI IR 1.8.1; Exhibit B-23, FEI IRs 2.17.1–2.17.4.

Commission determination

The Panel finds that Creative Energy cannot extend its existing steam facility into NEFC without a CPCN as Creative Energy does not have a Commission approved extension policy. In the absence of a Commission approved extension policy, the TES Stream B Extension Guidelines apply to any extension of Creative Energy's existing system. The Guidelines allow extensions without requiring a CPCN, provided the cumulative capital costs of all extensions do not exceed the initial capital costs and rates for existing customers do not increase by an amount greater than 10 percent. **The Panel finds there is not sufficient evidence on the record to establish whether the proposed NEFC DES meets the CPCN exclusion criteria as outlined in the TES Guidelines.**

4.1.1.3 Temporary or permanent boilers

Creative Energy states that the NES will consist of two central S2HW converter stations connected upstream to Creative Energy's existing steam plant at Beatty and Georgia Streets adjacent to NEFC. Thus, the entire heating energy needs for the NES will initially be met from Creative Energy's existing steam plant. The use of the existing plant avoids the need for any temporary or permanent gas boilers in the neighbourhood. This will also lower the costs of establishing the new system and will also benefit existing Creative Energy customers through sharing of fixed plant costs and overheads.⁵⁰

Creative Energy provided evidence on the details of temporary boilers versus permanent boilers as an alternative to its proposed hot water system. Creative Energy submits that temporary gas boilers are not an appropriate solution for Energy Supply Phase 1. Temporary gas boilers are typically used as a short-term solution for meeting the needs of the first few customers of a district energy system, before establishing a permanent energy centre. In addition to deferring the cost of a larger permanent energy centre, temporary boilers are also used to help with phasing network development (e.g., to defer connections between non-adjacent loads). Temporary gas boilers require appropriate sites. There are limited options for siting a container plant in NEFC given the density/timing of development and availability/location of open spaces. Temporary boilers would most likely need to be sited within initial buildings, specifically the location of the proposed steam to hot water converter stations on either side of the NEFC portion of the Franchise Area. Temporary boilers in buildings are more costly because they require dedicated space that is difficult to repurpose after removal, they require hook-up and venting infrastructure through permanent structures, and there are added costs to installation and removal. The costs are almost no different than a permanent boiler plant.⁵¹

For these reasons, Creative Energy submits that the appropriate comparison is between the proposed solution, and one or more permanent standalone gas boiler plant in NEFC, which would provide a similar level of service. This is in part because there are no suitable locations in this dense area for temporary boiler plants. The May 2010 screening study included analysis of this option (a new standalone boiler plant) and concluded that it would be more cost-effective to rely on the existing Beatty Street plant than to install a new standalone plant.

In summary, Creative Energy submits the most viable alternative to the S2HW converter stations proposed in the Application would be to replace the two stations with permanent boiler plants. Two on-site boiler plants are most practical because of the phasing of loads, the added distribution system support and the lack of available

⁵⁰ Exhibit B-1, p. 3.

⁵¹ Exhibit B-6, BCUC IR 1.1.

space for a large stand-alone boiler plant. The actual incremental cost of Creative Energy's proposed solution is approximately \$2.9 million. In comparison, the present value of capital costs for two stand-alone boiler plants (with some phasing of boiler capacity) would be approximately \$9.4 million. This excludes any additional allowance for a future interconnection to take advantage of a larger fuel switch for the Creative Energy core.

The satellite boiler plants would require more space than the proposed S2HW converter stations, and the potential cost (or availability) of this additional space is not included in the analysis. In addition, the satellite boiler plants would be subject to a higher gas delivery tariff than the existing Beatty Street plant.

On balance, Creative Energy submits the proposed solution has lower incremental capital costs than the permanent boiler option and also preserves maximum flexibility for Energy Supply Phase 2 (it is compatible with both the larger fuel switch and a local sewer heat recovery plant). Even with the proposed allocation of embedded costs and operating costs for the Beatty Street plant, the present value cost of the proposed solution for NES ratepayers is lower than the satellite boiler plants. Finally, this technical solution coupled with the proposed cost allocation methodology results in some recovery of embedded costs and sharing of overheads for the core.⁵²

Commission determination

The Panel agrees that based on the timing and location of new development, two separate boiler plants would likely be required. The Panel also agrees that of the alternatives, the most likely solution would be to replace the proposed steam to hot water converter stations with two boiler plants as two plants at these locations would provide some redundancy and distribution system support. The Panel also acknowledges that through the use of the Beatty street plant there could be benefits from more efficient use of capacity, sharing of operating expenses and lower commodity costs. **For these reasons, the Panel finds that connecting to the Beatty Street plant through two new steam to hot water converter stations, as opposed to using temporary or permanent gas boilers, is an appropriate choice and also notes that it is the applicant's proposed approach.**

4.1.1.4 Staging and sizing of steam to hot water converter stations

Creative Energy explains that "[s]team-HW Converter Stations are currently planned for the first two connected customers. Each station includes a converter and distribution pumps for the hot water DPS [distribution piping system]. Each station is sized to meet 75% of the design load for NEFC"⁵³ and Energy Supply Phase 2 is expected to be in service by 2020.⁵⁴

Creative Energy explains that, given the development profile for NEFC which during initial stages of build-out has two nodes on either side of BC Place stadium, two steam lines and splitting the network into two roughly equal parts with a future connecting line is the optimal approach and will provide high resiliency with prudent investment.⁵⁵

⁵² Exhibit B-6, BCUC IR 1.1.1.

⁵³ Exhibit B-1, p. 60.

⁵⁴ Exhibit B-1, p. 4.

⁵⁵ Exhibit B-6, BCUC IR 1.10.10.

Creative Energy elaborates further that:

Within the first three years of build out, the peak load (diversified) is expected to reach 15,700 KW, which represents 45% of the installed S-HW capacity at both location (35,200 kW). By build out, the load is approximately 68% of installed capacity at both locations combined (equivalent to 2*75% of peak diversified demand). The cost of this excess capacity is minimal and it provides distribution system support (comparable to looping in distribution systems) and some flexibility for load uncertainty and growth.⁵⁶

The 75% estimate is a general target and will depend on the final space provided. 75% gives sufficient capacity in the system that one S2HW [steam to hot water] converter station could meet 75% of the peak demand (at full build out) if the other S2HW converter station shut down.⁵⁷

At the time of the Application, the design of each station allowed for 4 x 4.4 MW heat exchangers, which would provide a potential capacity at each station of 17.6 MW and a combined potential capacity of 35.2 MW. This is equivalent to each station being able to serve 75 percent of the diversified load of 23.8 MW.

However, the capital and operating cost estimates in the Application allow for only three heat exchangers at each steam to hot water converter station (3 x 4.4 = 13.2 MW or 26.4 MW total). This is sufficient to meet the full build-out system peak demand while providing a small level of reserve for building peak demands. The space and header allowance for a fourth heat exchanger has minimal cost and is a prudent strategy in the event peak demands are higher than forecast and to allow for some future expansion of the network, including possible interconnection to Chinatown.⁵⁸

Each converter station also allows for multiple redundant pumps. The number and size of the pumps will be determined at the final design stage.

The phasing of capital costs in the Application assumes all three heat exchangers and all pumps (including redundant pumps) at each station are installed in the first year. Creative Energy submits that this was a conservative assumption for the purposes of the Application. Creative Energy will consider further refinement to the phasing of this equipment in the final design stage. Phasing will not alter the total capital costs of these stations, but could modestly reduce the indicative levelized rates/costs in the Application. Creative Energy expects to refine the phasing for the purposes of the rate application. Creative Energy notes that regardless of the phasing assumptions used for establishing initial rates, customers will receive the benefits of further optimization because this will reduce the actual balance in the proposed revenue deficiency deferral account.⁵⁹

Creative Energy's current phasing of the loads and converter station capacities is as follows:⁶⁰

⁵⁶ Exhibit B-1, BCUCIR 1.10.12.

⁵⁷ Exhibit B-1, BCUCIR 1.10.11.

⁵⁸ Exhibit B-22, BCUCIR 2.1.1.

⁵⁹ Exhibit B-22, BCUCIR 2.1.2.

⁶⁰ Exhibit B-22, BCUCIR 2.1.4.

	2016	2017	2018	2019	2020*
10B Converter Station					
Cumulative Diversified Demand [MW]	1.8	10.4	13.1	13.1	13.6
S2HW Capacity [MW]	8.8	13.2	13.2	13.2	13.2
Diversified Demand / Installed Capacity	20%	79%	99%	99%	N/A
7A Converter Station					
Cumulative Diversified Demand [MW]	0.8	0.8	2.7	2.7	6.8
S2HW Capacity [MW]	8.8	8.8	8.8	8.8	13.2
Diversified Demand / Installed Capacity	9%	9%	31%	31%	N/A
Combined Diversified Demand (After Link Pipe Installed) [MW]	N/A	N/A	N/A	N/A	20.4
Combined Installed Capacity (After Link Pipe Installed) [MW]	N/A	N/A	N/A	N/A	26.4
Combined Diversified Demand / Combined Installed Capacity	N/A	N/A	N/A	N/A	77%

**Link pipe between two converter stations is installed in 2020.*

In terms of a back-up S2HW converter station, there is no back-up station proposed *per se*. The system will start as two separate nodes served by individual stations. During this period, multiple heat exchangers at each station will provide some redundancy and one future heat exchanger will be held in inventory for emergency replacement at either station, and as a buffer for uncertainty in the timing of future loads. Each station will also have room for one additional heat exchanger beyond what is included in the current capital cost estimates. Once the stations are interconnected, there is additional flexibility introduced in the supply of the NES in the event of higher demands or service disruption at one station.⁶¹

Creative Energy also plans to have one heat exchanger in inventory to use as an emergency replacement unit until it is required in the S2HW station at Aquilini 7A and until the interconnection between the two converter stations.⁶²

Commission determination

The Panel finds that optimizing the size of the steam to hot water converter stations to meet the anticipated demand can provide benefits to ratepayers through reduced carrying costs. As such, the Panel approves Creative Energy to phase the installation of the steam to hot water converters and distribution pumps into the steam to hot water converter stations to meet the anticipated demand. The excess capacity and the

⁶¹ Exhibit B-22, BCUCIR 2.1.11.

⁶² Exhibit B-22, BCUCIR 2.1.12.

number of installed S2HW converters and distribution pumps are to be minimized. As described in Section 6, Creative Energy is to report annually to the Commission:

1. An update on its phasing and spares plan and to explain and justify any deviations from the CPCN application forecast;
2. The number of spare steam to hot water converters and distribution pumps;
3. The actual peak hourly demand of each sub-system that was recorded in the previous reporting period;
4. The peak hourly demand forecast for the next one-year reporting period;
5. The capacity of each installed S2HW station; and
6. The plans and justification for any changes to the installed capacity.

4.1.2 Project alternatives to a district energy system

Many interveners argue there are viable alternatives to a district energy system with mandatory connection and therefore there is no need for the Project. These alternatives were explored during the course of the proceeding. Table 2 depicts a comparison of the levelized rates and levelized costs of the NEFC Phase 1 and Phase 2 of the proposed NEFC DES, as well as other DES and stand-alone thermal energy systems from Creative Energy's rebuttal evidence (although several interveners contest these numbers). A summary of the evidence on each of the alternatives to a DES is attached as Appendix A.

	Levelized Rate	Levelized Cost
NEFC NES, Energy Supply Phase 1	\$96	\$100
NEFC NES, Energy Supply Phase 2 (Low Bookend)	\$100	\$105
NEFC NES, Energy Supply Phase 2 (High Bookend)	\$119	\$130
NEFC NES, Energy Supply Phase 2 (With RNG)	\$113	\$122
Creative Energy Steam Service	\$71	\$74
100% Electricity Version B	\$126	\$131
Gas / Electric Mix	\$98	\$99
On-Site Boilers, 100% Natural Gas	\$87	\$83
On-Site Boilers, RNG 67% starting 2020	\$104	\$106
On-Site Boilers, RNG 67% starting 2016	\$113	\$110
SEFC	\$115	N/A
UBC NDES	\$121	N/A
River District Energy	\$145	N/A
PCI Marine Gateway	\$148	N/A
SOLO / Seylynn / Sovereign	\$129	N/A
Telus Garden	\$129	N/A

Table 2 - Levelized Costs and Rates of Various Thermal Energy Systems⁶³

Commission determination

The Panel acknowledges the view of those parties that argue that there are alternatives to a DES, which could have been considered by Creative Energy. However, the Panel makes no determination on these particular alternatives as they are not realistic for Creative Energy to pursue, because Creative Energy has put forward this application in response to the CoV's requirement for a DES in NEFC. Alternatives within the realm of DES projects are more realistic (see paragraph 4.1.1).

There are buildings currently under development that are required to connect to a DES and a number of other sites for which development permits have been issued that require connection.⁶⁴ This generates sufficient need to justify the Project. **Accordingly, the Panel finds sufficient justification for the Project to proceed.**

4.1.3 Alignment with *Clean Energy Act* and Provincial Government Policy

Creative Energy submits that the NEFC NES aligns with the provincial government objectives set out under the *Clean Energy Act* and the 2007 BC Energy Plan: A Vision for Clean Energy Leadership.⁶⁵

⁶³ Exhibit B-33, Table 17, p. 37.

⁶⁴ Exhibit B-1, p. 32.

⁶⁵ Exhibit B-1, p. 107.

A significant issue identified by interveners in this proceeding is that the subject CPCN Application is only for Phase 1 of the project and the specific details of Phase 2 have not been determined at this point. Creative Energy has maintained that Phase 2 is out of scope for this proceeding and will be the subject of a separate CPCN. Intervenors have questioned the certainty of proceeding to Phase 2 and the timing of such and noted the uncertainty regarding the specific technology and fuel supply that Creative Energy will employ to meet the low-carbon performance targets in the NEA makes it difficult to determine the extent to which the project is in alignment with the BC Energy Objectives.

In Table 32 of the Application, Creative Energy describes how the NES contributes, or is not applicable, to each of the sixteen BC Energy Objectives listed in section 2 of the *Clean Energy Act*.⁶⁶ For a number of these objectives, specifically (d), (g), (h), (i) and (j), those objectives most relevant to this Application, Creative Energy's description of the alignment with those specific objectives applies to Phase 2 of the project rather than Phase 1.

Intervener arguments

Several interveners argue that the Application before the Commission does not advance the BC Energy Objectives because Creative Energy has stated that the Application is only for Phase 1 and that Phase 2 is not within the scope of the subject Application.

In its final argument, FEI includes a table showing an evaluation of how Phase 1 on its own aligns with BC Energy Objectives (g), (h), (i) and (j) to show that Phase 1 on its own compares much less favourably against the BC Energy Objectives than Creative Energy sets out in the Application.

⁶⁶ Exhibit B-1, pp. 107–109.

66. "British Columbia's energy objectives"	67. Creative Energy's evidence about how objectives met	68. The reality, accounting for Creative Energy's position on scoping
69. (j) "to reduce waste by encouraging the use of waste heat, biogas and biomass."	70. "The low carbon alternatives under consideration include waste heat recovery from sewer and the use of waste wood".	71. Creative Energy will be using the Beatty St. boiler plant. There are no alternatives under consideration.
72. (g) "to reduce BC greenhouse gas emissions"	73. "The project will reduce GHG emissions upwards of 4,000 tonnes per year at full build out relative to BAU."	74. Energy Supply Phase 1 will increase GHG emissions relative to BAU.
75. (h) "to encourage the switching from one kind of energy source or use to another that decreases greenhouse gas emissions in British Columbia"	76. "The project will result in reduced gas-fired heat production in BC."	77. Energy Supply Phase 1 will result in increased gas-fired heat production in BC.
78. (i) "to encourage communities to reduce greenhouse gas emissions and use energy efficiently."	79. "The project reduces COV community emissions."	80. Energy Supply Phase 1 increases COV community emissions.

Table 3 - FEI's evaluation of project alignment with BC's Energy Objectives⁶⁷

FAES refers to Table 32 of Creative Energy's Application and in regard to the analysis in that table regarding alignment of each energy objective submits:

Creative [Energy] confirmed that when it refers in this Table to 'the project' or 'this project' or 'the low carbon alternatives under consideration' it actually refers to Energy Supply Phase 2, rather than the Energy Supply Phase 1 for which Creative [Energy] is seeking a CPCN in this Application. Creative [Energy] has therefore failed to properly address the BCEO applicable to its Application. Creative [Energy]'s position is that the details of Energy Supply Phase 2 are 'out of scope'. With respect, Creative [Energy] cannot simultaneously refuse to allow the examination of the Phase 2 component of its proposed build out, and rely on Phase 2's promised effects in purported satisfaction of the BCEO.⁶⁸

On this basis, FAES submits that Creative Energy's applied for CPCN does not meet BC Energy Objectives (d), (g), (h), (i) and (j).⁶⁹

⁶⁷ FEI Final Argument, pp. 30–31.

⁶⁸ FAES Final Argument, p. 44.

⁶⁹ Ibid., pp. 44–45.

CEC submits that there are cost-effective alternatives to Phase 1, the natural gas fuelled hot water distribution system and that the Application is “deficient in reviewing alternatives because it locked in on the CoV solution and has not adequately looked at important and available alternatives which the Commission must assess in considering the public interest.”⁷⁰

UDI submits that proceeding with Phase 1 hampers other initiatives and alternatives. It further submits that alternative energy technology may develop to the point in future where Creative Energy’s competitors would be able to offer services that are both lower-cost and lower-carbon, but because of Creative Energy’s exclusivity, developers, residents and local businesses would be deprived of these choices.⁷¹

Commission determination

The Panel acknowledges the submissions of FEI that Phase 1 of the project does not meet BC Energy Objectives (g), (h), (i) and (j). Creative Energy’s assertions regarding these objectives appear to be based on Phase 2 of the project. However, there is not sufficient evidence of Phase 2 for the Panel to make any assessment, and Creative Energy’s position is that Phase 2 is out of scope.

However, the Panel finds that Phase 1 of the Project aligns with BC Energy Objective (a), to achieve electricity self-sufficiency, by reducing the amount of electricity potentially used for heating.⁷²

Evidence has been put forward by parties suggesting that alternative approaches to DES – such as on-site thermal energy systems utilizing ground source heat pumps or the use of renewable natural gas - would allow new buildings in the NEFC area to meet BC’s Energy Objectives such as (g) (reduce BC greenhouse gas emissions). However, as previously determined, these alternatives are not practical alternatives for Creative Energy to consider. Accordingly, the Panel will not consider the alignment of these alternative approaches with the *Clean Energy Act* and Provincial Government Policy any further.

4.1.4 Consultation

In this section, the Panel will consider whether consultation was adequate in the context of “public” and the public interest. This includes identification of those impacted by the project, whether there is sufficient evidence to show that there was adequate consultation or other evidence to conclude that the project is in the public interest.

4.1.4.1 Identification of the “public”

The CPCN Guidelines provide that applicants ought to identify the community stakeholders, including First Nations, who may be impacted by the project and the project alternatives. If an applicant is of the view that First Nation interests are not impacted by the project, the applicant ought to provide reasons to support this view.⁷³

⁷⁰ CEC Final Argument, pp. 11–12.

⁷¹ UDI Final Argument, p. 2.

⁷² *Clean Energy Act*, SBC 2010, c. 22, s. 2(a).

⁷³ 2015 Certificate of Public Convenience and Necessity Application Guidelines (2015 CPCN Guidelines), dated February 2015, Application Requirements, Section 3.

It is important to note that while the CPCN Guidelines assist both applicants and the Panel, they are just that: guidelines. As was discussed in the British Columbia Hydro and Power Authority (BC Hydro) Application for a CPCN for the Dawson Creek/Chetwynd Area Transmission (DCAT) Project Reasons for Decision, the Supreme Court of Canada is clear, that there is no recipe for the determination of what “public convenience and necessity” means. Each situation must be determined by the Commission, and cannot be determined without a substantial amount of administrative discretion, based on the particular facts of the application and in context of the regulatory framework.⁷⁴ Whether an application meets the test of the public convenience and necessity is not a simply objective fact, but is a matter of opinion.⁷⁵

Creative Energy suggested that there has been considerable consultation process during the development of the NEFC project, primarily conducted by the CoV. These consultation processes include:

1. The consultation for the CoV Greenest City Action Plan (GCAP);⁷⁶
2. District Energy Strategy Consultation, which included key stakeholders;⁷⁷
3. Public consultation of the NEFC amendment to the False Creek North Official Development;⁷⁸ and
4. Chinatown development, which is part of the Downtown Eastside Local Area Plan.

Specifically, the District Energy Strategy Consultation identified the stakeholders of the CoV for a District Energy Strategy, depicted in the following table:⁷⁹

Utilities	Developer/Landowner/Customer	Government/Institutions/NGO
Central Heat Distribution Ltd BC Hydro Fortis BC Corix Cofety Dalkia / Veolia	Urban Development Institution Urban Land Institute Bental Westbank Parklane Building Owners & Managers Association Condominium Homeowner's Association Cadillac Fairview Convention Centre	Metro Vancouver City of North Vancouver City of Richmond Vancouver School Board University of BC BC Climate Action Secretariat BC Housing Port Metro Vancouver Natural Resources Canada BC Sustainable Energy Association Navius Research Community Energy Association

Table 4 - Stakeholder Consultation⁸⁰

The stakeholders were identified in two workshops. While Creative Energy in its Application suggests that there was support, generally, for a district energy system, the results of the workshop identified that developers had concerns. In particular, the developers were concerned with possible cost premiums, and needed clarity around connection policies and extension policies.

⁷⁴ *Union Gas Co. of Canada Ltd. v. Sydenham Gas & Petroleum Co.* [1957] S.C.R. 185 [S.C.C.].

⁷⁵ BC Hydro Application for a CPCN for the Dawson Creek/Chetwynd Area Transmission Project, Order G-56-12 with Reasons for Decision, p. 95.

⁷⁶ Exhibit B-1, p. 49.

⁷⁷ Ibid.

⁷⁸ Ibid.

⁷⁹ Exhibit B-1, p. 51.

⁸⁰ Exhibit B-1, Table 8, p. 51.

4.1.4.2 Stakeholder consultation

In BCUC IR 35.1, Creative Energy indicated while they did not create a formal process to engage with all stakeholders, they met with specific property owners in the NEFC area to determine that the NEFC met their needs.⁸¹

The CoV submits that they have conducted extensive public consultation to support the neighbourhood energy strategy.⁸² In particular, the CoV filed, at the oral hearing, the District Energy Options Dialogue, A BC Clean Air Research Project Final Report dated March 30, 2012. This was a document prepared by Compass Resource Management Ltd. to summarize the findings of a collaborative research project between CoV and its partners, BC Hydro and BC Clean Air Research. This report was conducted to better understand public values and perceptions respecting air quality and green energy. The report suggested that the CoV (through its agent, Compass Management) was not only providing information to the stakeholders about DES, generally, but that the CoV received information as well, and was responsive to the Stakeholder comments, in determining objectives, options and policies.⁸³ The CoV stated that it has strong support for a Neighbourhood Energy Strategy.⁸⁴

Table 5 summarizes the CoV's consultations with developers following the NEFC Review Report.

Date	Location
April 23 rd , 2013	Discuss Legal Agreement terms for Roger's Towers with Aquilini
August 22, 2013	NEFC Energy System update with Aquilini staff
August 22, 2013	NEFC Energy System update with Concord staff
Sept 5 th 2013	City update on NEFC energy System with Concord Senior staff
Sept 17 th 2013	Meeting with Concord re NES vision for SEFC
Feb 27, 2014	NEFC Energy System discussion with Aquilini
April 17 th , 2014	Building Design discussion with Aquilini
June 13, 2014	Meeting with Applicants on NES Connection – Urban Resort/PARQ
June 16, 2014	Urban Resort NES Connection meeting – PAVCO/PARQ
July 8, 2014	Urban Resort Green Building and NES requirements – PARQ/360 Vox
Sept 30, 2014	Options for satisfying energy requirements - Urban Resort/PARQ
Feb 5, 2015	Utility Servicing Coordination for Urban Resort and Concord 5b East

Table 5 - Consultation meetings initiated and led by the City.⁸⁵

With respect to public consultation, FAES submits that there has been no consultation by the applicant. It argues that Creative Energy cannot rely on the consultation conducted by the CoV, and in any event “even were Creative [Energy] permitted to rely on CoV's consultations, those consultation activities were inadequate and

⁸¹ Exhibit B-1, pp. 55–56.

⁸² See Exhibit B-1, pp. 49–57; Exhibits C1-2; C1-6; C1-7; C1-8; C1-9; C1-10; C1-11.

⁸³ Exhibit C1-6, determining objectives, p. 8; consequences, p. 12; shareholders provided input on expert selection, trade-offs, p. 18.

⁸⁴ Exhibit C1-2, p. 9.

⁸⁵ Exhibit B-1, Table 9, p. 54.

are now critically outdated.”⁸⁶ FAES further suggests that the CoV’s consultations revealed a general discomfort with a prescriptive approach to DES and a general lack of understanding among those who participated and that Creative Energy’s consultation did not address the need of a DES from a stakeholder’s perspective, nor did it include suppliers.⁸⁷

UDI submits that the consultation is inadequate, but generally is concerned about the impact of a lack of consultation on the monopolistic nature of the Application and the deficiencies of the various agreements proposed by the applicant. UDI notes that the CoV has not consulted the public or developers on the agreements.⁸⁸ UDI concludes that the impacts on “developers, owners and consumers were never considered in determining how the system will be enacted.”⁸⁹ UDI concedes that Creative Energy did consult, at a late hour, two developers who would require early service. Further, UDI concedes that some amendments to the agreement were made during the written and oral hearing process.⁹⁰ UDI states, “the burden is on the applicant to establish that it has engaged in sufficient consultation so that concerns held by stakeholder can be properly identified and raised in the application, as required by the CPCN Guidelines.”⁹¹

CEC, as a representative of commercial ratepayer interests, submits that if Creative Energy had implemented its own stakeholder engagement process, in accordance with the CPCN Guidelines, there may be a better understanding of ratepayer concerns reflected in the applicant’s submissions. Regardless, CEC contends that the Application transfers risk of uncertainty of the Project to future ratepayers. It also points out that the risk of FAES and Fortis Utilities challenging the Franchise Agreement and its ancillary agreements is a business risk that does not conserve the public interest.

BCOAPO supports the ideals behind the Project –to meet low carbon targets quickly and to take advantage of innovations in alternative energy developments. BCOAPO cites the CoV’s consultations on the Neighbourhood Energy Strategy as comprehensive. In particular, BCOAPO cited the CoV’s District Energy Options Dialogue⁹² as helpful in considering the public interest in terms of the DES. BCOAPO has submitted that even though the District Energy Options Dialogue was not specific to this application, there is relevance in the content of the dialogue.⁹³ BCOAPO submits the following:

We submit that the Commission must assess the adequacy of the consultation and is not entitled to simply check a box that consultation was adequate based on the mere fact that the City held a consultation. ...[T]he Commission would not be assessing the City’s consultation for the purpose of determining whether the City’s decision was validly taken... rather, the Commission must assess whether the City’s consultation is adequate to satisfy Creative [Energy]’s requirement for consultation in relation to the CPCN.⁹⁴

⁸⁶ FAES Final Argument, p. 41.

⁸⁷ Ibid., pp. 41–42.

⁸⁸ UDI Final Argument, p. 13.

⁸⁹ Ibid.

⁹⁰ Ibid., p. 14.

⁹¹ Ibid., p. 14.

⁹² Exhibit C1-6.

⁹³ BCOAPO Final Argument, p. 18.

⁹⁴ Ibid., p. 20.

While FEI has said very little about the consultation process of the CoV, in terms of how it may or may not support the CPCN, FEI submits that the Application for the Project – a DES – should be denied because it is predicated on an NEA that does not conserve the public interest.⁹⁵ FEI submits that “the Commission should deny the CPCN if it concludes that the NEA should not be approved.”⁹⁶ This is based on the Creative Energy submission that mandatory connections provide load security and economies of scale necessary to support the DES.⁹⁷

4.1.4.3 First Nations consultation

Creative Energy submits that there are no First Nations issues or claims within NEFC.⁹⁸ No other party identified any First Nations concerns.

Commission determination

The Panel finds that public consultation for the Project is adequate, in the context of a CPCN application for a DES project. The Panel acknowledges the submissions from interveners that Creative Energy has not conducted its own stakeholder engagement process. However we do not agree with FAES that Creative Energy cannot rely on the consultation conducted by the CoV. While the Guidelines lay out consultation requirements for the applicant, they are guidelines only. To grant a CPCN the Commission Panel must be persuaded that the Project is in the public interest. The purpose of consultation is to provide the Commission with sufficient evidence to determine whether the Project is in the public interest. The goal is to provide evidence that the public necessity and convenience requires the Project. In this context, the Panel relies on the consultation conducted by the CoV.

Accordingly, provided there has been adequate consultation regarding the Project, the Panel does not necessarily require Creative Energy to have conducted that consultation itself.

As outlined below, the Panel is satisfied with the CoV’s stakeholder engagement efforts regarding the Project as distinct from engagement regarding the NEA, the Connection Agreement, or other related agreements.

1. **Identification of Stakeholders:** The Panel is satisfied that the appropriate stakeholders impacted by the Project have been identified. While FAES provides that the consultation process did not include suppliers, the Panel finds that the developers’ interests are connected to suppliers and the public interest determination can rely on the evidence of developers.
2. **Stakeholder Engagement and Impact:** While the Panel acknowledges all of the submissions regarding the consultation process conducted by the CoV, the Panel is particularly persuaded by the District Energy Options Dialogue.⁹⁹ The CoV and its partners¹⁰⁰ developed a hypothetical scenario based on an archetypal neighbourhood.¹⁰¹ Based on the concerns raised by stakeholders, the CoV created a list of objectives and performance measures, which included cost, GHG emissions, health (the impact of emissions on respiratory and cardiovascular health), regional visibility, upstream

⁹⁵ FEI Final Argument, p. 16.

⁹⁶ Ibid.

⁹⁷ Exhibit B-1, p. 2.

⁹⁸ Exhibit B-1, p. 57.

⁹⁹ Exhibit C1-6.

¹⁰⁰ BC Hydro and the BC Clean Air Research Fund; Ibid., p. 4.

¹⁰¹ Ibid., p. 7.

environment, local liveability, local economy and energy resilience.¹⁰² While not all of the objectives are considerations for and relevant to the Commission, there are public interest issues that the Panel finds relevant, including cost, GHG emissions and energy resilience.

- 3. Hearing Process:** During the hearing process, evidence and final arguments from the CoV, other interveners and the applicant, were put on the record. This allowed the Panel to consider more fully, the public interest. Included were responses to IRs from Creative Energy which described its consultation with some developers and that construction has begun in the NEFC.

Regarding First Nations consultation, the Panel finds that there is no evidence of any impact on First Nations' interests, so no consultation is required.

4.1.5 Project costs

4.1.5.1 Project capital costs

In the Application, Creative Energy explains that there are three major capital costs for the NES: the S2HW converter stations, the hot water distribution pipe system (DPS) and the energy transfer stations. There are also 90 m of incremental steam line constructed from existing steam mains to each of the two S2HW converters.¹⁰³ In Tables 6 and 7, the capital cost estimates are provided in 2015 dollars and in nominal dollars.

	2016	2017 – 2019	2020	2022	2024	Total
5B Steam-HW Station	906	-	-	-	-	906
7A Steam-HW Station	906	-	-	-	-	906
Steam Line Extension	200	-	-	-	-	200
DPS	196	1,596	1,687	78	613	4,170
ETS	367	1,430	738	297	330	3,163
Total	2,576	3,026	2,425	375	943	9,345
Total (nominal \$000s)	2,627	3,169	2,678	431	1,127	10,031

Table 6 - NES Capital Costs (real 2015 \$000s, before taxes)

¹⁰² Ibid., pp. 7–9.

¹⁰³ Exhibit B-1, p. 60.

In Table 15, Creative Energy inflates the total capital costs to nominal dollars assuming an average annual inflation rate of 2 percent. The nominal capital cost estimates include provincial sales tax (PST) (for 70 percent of capital costs) and Interest During Construction (IDC), reflecting an average expected lead-time for all assets.¹⁰⁴

	2016	2017 – 2019	2020	2022	2024	Total
Nominal Total from Table 13	2,627	3,169	2,678	431	1,127	10,031
Development Costs	413	-	-	-	-	413
PST	184	222	187	30	79	702
Interest During Construction	102	107	91	15	38	353
Total	3,326	3,498	2,956	476	1,244	11,499

Table 7 - NES Capital Costs (nominal \$000s)¹⁰⁵

All costs estimates are considered Class 3 with an accuracy of -15 percent to +30 percent. All items include 10 percent contingency, with some additional contingency included in DPS costs as noted below. Creative Energy submits that its estimates meet the AACE definition of Class 3 estimate because the estimates are:

1. Sufficient detail for budget approval.
2. Sufficient detail (assembly level and semi-detailed unit cost items) for initial cost control.
3. Based on a level of project engineering progress of 10-40 percent, i.e. a detailed schematic design that defines the main components, layouts, process flow organization (based on best information available at time of estimate), plus major equipment quantities with semi-detailed unit costs and assembly level costs.¹⁰⁶

Creative Energy also submits:

Engineering for project definition and schematic design is approximately 15-20% of total engineering required. This matches standard practice for ACEC Class 3 requirements. Note, the early schematic design phase is the highest value engineering phase and defines the project for class estimating purposes. The rest of the engineering of the project (or project definition) is the necessary detail including specs and working drawings.¹⁰⁷

¹⁰⁴ Exhibit B-1, p. 62.

¹⁰⁵ Exhibit B-1, pp. 60–61.

¹⁰⁶ Exhibit B-6, BCUCIR 1.7.2.

¹⁰⁷ Exhibit B-6, BCUCIR 1.7.2.4.

Creative Energy's preliminary contracting strategy is to be based on managing risk. Creative Energy intends to purchase the key equipment components via a tender process. Creative Energy submits this will allow it to manage quality, schedule and save on contractor mark-ups. Creative Energy also intends to break up the work according to work type, i.e. mechanical contractors for ETS and steam to hot water converters, and specialist contractors for buried district heating piping.¹⁰⁸

Creative Energy explains the estimate was prepared starting with reference to previous studies and updated based on a project definition of between 15-20 percent. It submits that the cost estimate accuracy range it selected is appropriate because the level of definition is estimated at 15-20 percent, and given the evolving customer designs possibly affecting ETS costs and a large portion of the costs are related to buried piping with associated risks.¹⁰⁹

Creative Energy submits that the preparation effort it expended in developing the cost estimate was \$149,000 (\$100,000 in technical analysis and cost estimation in studies overseen by the CoV and \$49,000 in internal and external costs to update and refine the estimates). Creative Energy explains this represents approximately 1.6 percent of the uninflated capital costs of Energy Supply Phase 1 included in the Application.¹¹⁰

Distribution Piping System

Distribution Piping System (DPS) costs reflect a two-pipe system (supply and return) and conservative routing assumptions. Creative Energy will endeavour to lower costs where possible by running lines through parkades, but this approach is dependent upon development phasing and developer consent. DPS costs include reinstatement to as-is condition, and additional contingency (on DPS only) of 5 percent for underground installation.

Creative Energy submits that the lengths of the DPS were determined based on measurements of the proposed layout of the network, and as the customer buildings are added, and the pipe sizes are based on capacity required downstream and the design temperatures of the system.¹¹¹ Creative Energy explains that the cost estimates are based on bonded pre-insulated pipe system with EN253 equivalency. However, wall thicknesses are not assumed as they vary depending on nominal pipe sizes per manufacturer specifications.¹¹²

The material costs for the DPS are based on quotes for similar projects, as noted above. As this is Creative Energy's first project based on a hot water concept, it does not have recent quotes or previous work for the mechanical installation, civil installation and engineering estimates. For these items, Creative Energy has discussed with other operators, suppliers, etc., including reviewing actual installed costs for SEFC in addition to in-house knowledge and experience to develop the cost estimates.¹¹³

¹⁰⁸ Exhibit B-6, BCUCIR 1.7.2.1.

¹⁰⁹ Exhibit B-6, BCUCIRs 1.7.3, 1.7.4.

¹¹⁰ Exhibit B-22, BCUCIR 2.2.1.

¹¹¹ Exhibit B-6, BCUCIRs 1.8.2, 1.8.3.

¹¹² Exhibit B-6, BCUCIR 1.8.4.

¹¹³ Exhibit B-6, BCUCIR 1.8.7.

The DPS per trench meter estimates used were similar to the estimates used in Corix Multi-Utility Services Inc.'s Certificate of Public Convenience and Necessity for Phase 1 of the Neighbourhood District Energy System at the University of British Columbia Neighbourhood District Energy System (Corix-UBC NDES) application.¹¹⁴

Creative Energy does not include contaminated soil treatment in the cost estimate for DPS as it submits it has internally:

... installed over 14 km of buried infrastructure and only in rare cases has it come across soils that need special disposal treatment. Nearby NEFC, [Creative Energy] has infrastructure that did not have contaminated soils requiring special treatment. However, [Creative Energy] has knowledge of the general history of this area and its industrial past and based on discussions with the City have allowed an extra contingency for this possibility.¹¹⁵

Creative Energy also confirms that the DPS has been reviewed for utility conflicts and none are expected.^{116 117}

Creative Energy explains that 15 percent contingency is a standard in industry at an AACE Class 3 estimate level for buried piping in areas that have existing buried infrastructure and historical knowledge.¹¹⁸

Creative Energy also submits that the potential risk related to extraordinary pumping (e.g. a water line break) is minimal. It is assumed, based on Creative Energy's history of putting district heating pipe in the ground in Vancouver over 45 years that this risk is manageable.¹¹⁹

Energy Transfer Stations

Energy Transfer Stations (ETS) costs reflects two heat exchangers per building (one for space heating and one for domestic hot water). The location is assumed to be in basement level mechanical room within 10m of the outside wall. Costs include controls and metering and are based on peak temperatures of 95° C supply/55° C return. As with other modern hot water systems, NEFC will vary actual supply and return temperatures based on ambient temperatures.

Creative Energy's cost estimate per ETS in 2015 dollars for the NEFC is \$175,700 which is slightly higher than the cost estimate in 2014 dollars for the Corix-UBC NDES of \$110,400. Creative Energy submits that the difference is primarily that the buildings served by the NEFC NES are larger than in Wesbrook Phase 1 of the Corix-UBC NDES.¹²⁰

¹¹⁴ Exhibit B-6, BCUCIR 1.8.5.

¹¹⁵ Exhibit B-6, BCUCIR 1.8.10.

¹¹⁶ Exhibit B-6, BCUCIR 1.8.11.

¹¹⁷ Exhibit B-22, BCUCIR 2.4.1.

¹¹⁸ Exhibit B-6, BCUCIR 1.8.13.

¹¹⁹ Exhibit B-6, BCUCIR 1.8.14.

¹²⁰ Exhibit B-6, BCUCIR 1.9.4.

Steam to hot water converters

Creative Energy explains that the 10 percent contingency selected for the steam to hot water converter stations is a “[r]easonable amount given the team’s collective experience and understanding of the project at the time of the estimate.”¹²¹

Creative Energy submits that the probability of suitable space not being provided is low as Creative Energy has been coordinating with the developers and they have known of the requirements of connection to district energy from the initial design phase. Creative Energy also submits that the consequence, if not enough space were provided, would result in extra costs to relocate the steam to hot water converters, which is considered part of the contingency.¹²²

Creative Energy justifies requiring two steam to hot water converters as opposed to one because of the development profile of the NEFC, which during initial stages of build-out has two nodes on either side of BC Place stadium.

With two steam lines, i.e. energy sources and the network split into two roughly equal parts with a future connecting line (looped), this approach will provide high resiliency with prudent investment. Furthermore, this is recommended in the Phase 2 Study and is considered by Creative Energy to be the best solution going forward. Installation of one station, although lower in unit cost would reduce resiliency in the system and would also require Creative Energy to invest “prematurely” in a long buried portion of the mains, with increased diameter, up front to serve just a small amount of load at the opposite end of the system. More than two stations would result in more complexity and higher investment with little relative benefits.¹²³

Commission determination

The Commission finds that the Project capital cost estimates are acceptable.

4.1.5.2 Capitalization of Project development costs

Creative Energy requests approval to capitalize project development costs and to recover these costs from NEFC ratepayers. In Creative Energy’s original Application, it projected total project development costs in the amount of \$413,000.¹²⁴ However, in response to BCUC IR 2.5.3, Creative Energy indicated that project development costs are now forecast to total \$935,209.¹²⁵

Creative Energy provided a breakdown of the \$935,209 forecast project development costs in the following table:

¹²¹ Exhibit B-6, BCUC IR 1.10.5.

¹²² Exhibit B-6, BCUC IR 1.10.6.

¹²³ Exhibit B-6, BCUC IR 1.10.10.

¹²⁴ Exhibit B-1, Table 14, p. 62.

¹²⁵ Exhibit B-22, BCUC IR 2.5.3.

	2013	2014	2015 (March 31)	2015 (April 1- July 28)	2015-2016 (projected)
Pre-CPCN-Internal					
Regulatory			\$41,536	\$135,122	\$50,000
Negotiation, Communications and Opportunity Development		\$14,464	\$24,129		\$ -
Engineering		\$25,537	\$13,260	\$22,030	\$ -
Pre-CPCN-External					
Engineering			\$10,492	\$14,513	\$ -
Legal			\$79,386	\$34,545	\$40,000
Negotiation, communication support, strategic planning	\$7,490	\$20,422	\$6,434	\$ -	\$ -
Regulatory / financial support	\$12,645	\$51,200	\$27,650	\$56,017	\$50,000
Post-CPCN-Internal (Rate Application)					
Regulatory	\$ -	\$ -			\$80,000
Negotiation, Communications	\$ -	\$ -			
Post-CPCN-External (Rate Application)					
Legal	\$ -	\$ -			\$50,000
Negotiation and communication support	\$ -	\$ -			
Regulatory / financial support	\$ -	\$ -			\$50,000
Total	\$20,135	\$111,623	\$202,886	\$280,565	\$320,000

Table 8 - Actual and Forecast Project Development Costs¹²⁶

Creative Energy submits that costs related to the regulatory process have “more than doubled” due to the following:

[T]he increased level of intervention than previously expected, primarily due to the regulatory process associated with the preparation of responses for the two rounds of IRs, preparation for the Oral Hearing, plus the expectation that the rate application process will be more rigorous than previously anticipated.¹²⁷

The impact to the levelized rate from the increased project development costs is an increase of \$1 per MWh (an increase of \$95 per MWh to \$96 per MWh).¹²⁸

Creative Energy submits that it is “seeking approval of the principles for assigning project development costs as part of this Application and will seek final approval for project development costs related to NEFC with a combined core and NEFC RRA application (including NEFC rate design) to be filed in December 2015.”¹²⁹

¹²⁶ Ibid.

¹²⁷ Ibid.

¹²⁸ Ibid.

¹²⁹ Exhibit B-22, BCUCIR 2.6.3.

The \$935,209 forecast project development costs are comprised of costs solely incurred by Creative Energy and do not include any project development costs incurred by the CoV. However, Creative Energy notes that there are provisions in the NEA for the CoV to undertake “concurrent activities to advance other alternatives in order to meet target dates for Energy Supply Phase 2” and that the CoV may request Creative Energy to seek recovery of these costs in future rates, subject to Commission approval. Creative Energy submits, however, that “no such costs are included in the current Application” and that it “sees no need to speculate about activities or costs that have not yet occurred, and that would be subject to review by the Commission in a future Application if and when the need arises.”¹³⁰

No interveners commented on the appropriateness of Creative Energy’s proposed treatment for project development costs.

Commission determination

The Panel approves in principle the capitalization of project development costs incurred by Creative Energy for direct recovery from NEFC ratepayers. The Panel makes no determination at this time on the appropriate recovery period or on the amount of project development costs to be recovered from NEFC ratepayers as these costs are not yet known with a sufficient degree of certainty. Creative Energy must file for final approval of project development costs as part of a future rate application.

4.1.6 Project risks

Creative Energy submits that four key uncertainties with respect to Energy Supply Phase 1 (the full network with conventional energy supply) are annual energy consumption, natural gas prices, final capital costs and actual timing of full build out.

Annual energy consumption has one of the largest impacts on the levelized rate calculations. However, Creative Energy states that it is confident in the current energy consumption estimates based on historical experience and comparators with other recent projects such as SEFC.

In Creative Energy’s view, the risks for Energy Supply Phase 1 are minimal and potential impacts remain within tolerable bounds.¹³¹

¹³⁰ Exhibit B-6, BCUC IR 1.11.6.

¹³¹ Exhibit B-1, p. 104.

	Levelized Rate	% Difference from Base Case	Note
Base Case Levelized Rate	\$91	-	
Annual Energy +20%	\$85	-7%	Assumes no impact on peak or capital
Annual Energy -20%	\$100	+10%	Assumes no impact on peak or capital
Gas Prices +20%	\$96	+5%	Reflects possible changes in gas commodity costs only, including carbon taxes
Gas Prices -10%	\$89	-2%	Reflects possible changes in gas commodity costs only, including carbon taxes
Capital Costs +10%	\$93	+2%	
Capital Costs -10%	\$89	-2%	
Buildout Delayed Until 2029	\$94	+3%	

Table 9 - Impact on levelized rate of energy supply cost variances¹³²

In response to Commission IRs, Creative Energy provided examples of how it is managing risk. For example, it explained its contracting strategy is based on managing risk and goes on to detail its expected contracting strategies for each stage of the project and how it plans to assess, allocate and manage risk.¹³³

Creative Energy also discussed specific risks and how it is mitigating for those risks. For example, the risk of suitable space not being provided, the risk of contaminated soil treatment, the potential risk in costs related to pumping water from trenches and the associated delays in construction, and the risk of utility conflicts.^{134 135 136}

¹³⁷ Creative Energy explained that the “risk” includes both probability of this happening and consequence. For the risk of suitable space not being provided, Creative Energy submitted that the probability is low as they have been coordinating with the developers and they have known of the requirements of connection to district energy from the initial design phase. The consequence, Creative Energy submitted, would result in extra costs to relocate. As such, Creative Energy allocates contingency to address this risk. Creative Energy also explains why the risk of not finding suitable space for the steam to hot water converters is not applicable as providing space is a condition of rezoning for the buildings which are expected to house this equipment.¹³⁸

In relation to the risk of soil contamination, Creative Energy submits it discussed soil conditions internally and with the CoV Engineering Department to better understand likely soil conditions and what level of risk this would potentially impose. Creative Energy submits it has installed over 14 km of buried infrastructure and only in rare cases has it come across soils that need special disposal treatment. Creative Energy explains near NEFC it

¹³² Exhibit B-1, Table 30, p. 105.

¹³³ Exhibit B-6, BCUCIR 1.7.2.

¹³⁴ Exhibit B-6, BCUCIR 1.10.6.

¹³⁵ Exhibit B-6, BCUCIR 1.8.10.

¹³⁶ Exhibit B-6, BCUCIR 1.8.1.4.

¹³⁷ Exhibit B-22, BCUCIRs 2.4.1, 2.4.2.

¹³⁸ Exhibit B-22, BCUCIR 2.8.6.

has infrastructure that did not have contaminated soils requiring special treatment. However, Creative Energy has knowledge of the general history of this area and its industrial past and based on discussions with the City have allowed an extra contingency for this possibility.

In regards to risk of excess water pumping, Creative Energy explained that the potential risk is in costs related to pumping water from the trench and associated delays in construction. Creative Energy submitted that based on its history of putting district heating pipe in the ground in Vancouver for over 45 years, that this risk is manageable.

In regards to utility conflicts, Creative Energy explained it had reviewed the proposed steam line extensions pipe routing and, based on all available base maps and coordination with the City and other stakeholders, Creative Energy does not anticipate utility conflicts. However, Creative Energy will monitor and liaise with relevant developers who have excavation work ongoing in the relevant areas. For the hot water distribution network, Creative Energy submits it is coordinating with the City and other stakeholders to establish line assignment that minimizes conflicts. Creative Energy also explains, if required at the construction phase, it will do spot exposures at higher risk locations to confirm and has provided a 5 percent extra contingency on the piping estimate to account for these potential risks.¹³⁹

Creative Energy also explained it allocates 10 percent and 15 percent contingencies for the various components that make up the capital costs¹⁴⁰ and explains that it chose a cost estimate accuracy range of -15 percent to +30 percent based on its level of project definition of 15 to 20 percent, the evolving customer designs possibly affecting ETS costs, and that fact that a large portion of the costs are related to buried piping with associated risks.¹⁴¹

Creative Energy also provided sensitivity analyses for ETS, DPS and steam to hot water converter capital costs,¹⁴² and on the functionalization of the core utility's costs and how this affects the proposed NES meter cost allocation.¹⁴³ Creative Energy provided even more sensitivity analyses assuming the largest potential load/building does not connect, assuming gas commodity rates increase by 50 percent, assuming capital costs come in 30 percent higher than estimates and assuming 15 percent lower than estimates.¹⁴⁴

Intervener arguments

In its final argument, FAES submits:

The two-page risk analysis provided by Creative Energy is plainly inadequate, and does not meet the requirements of the 2015 CPCN Guidelines. Most glaringly, Creative [Energy] fails even to mention, let alone to evaluate, the single biggest risk associated with the NES – the risk associated with the complete lack of information regarding the Energy Supply Phase 2 technology, on which the business case for the NES and the entire Project is completely dependent.

¹³⁹ Exhibit B-22, BCUCIRs 2.4.1, 2.4.2.

¹⁴⁰ Exhibit B-6, BCUCIRs 1.8.13, 1.10.5.

¹⁴¹ Exhibit B-6, BCUCIR 1.7.4.

¹⁴² Exhibit B-6, BCUCIRs 1.8.2.1, 1.9.3, 1.10.1.

¹⁴³ Exhibit B-6, BCUCIRs 2.11.7, 2.11.8.

¹⁴⁴ Exhibit B-6, BCUCIRs 1.29.1, 1.29.2, 1.29.3.

Even assuming that Creative [Energy] has identified ‘all significant risks’ to successful completion of the Project, Creative [Energy] has failed to analyze the risk probability or evaluate the risks on a matrix as required. Creative [Energy] has also failed to provide any discussion of risk mitigation or mitigation costs, opting instead for the soporific statement that ‘the risks for Energy Supply Phase 1 are minimal and potential impacts remain within tolerable bounds.’ FAES submits that this risk assessment is inadequate, and thus that Creative Energy has failed to properly address the 2015 CPCN Guidelines.¹⁴⁵

BCOAPO “accepts the Risk Analysis for Energy Supply Phase 1 provided in the pre-filed evidence and notes that the risks appear to be generally small for levelized rates, the exception being the risk that load is 20% below that assumed. BCOAPO’s view is that, based upon the evidence, the Phase 1 ratepayer risks are small.”¹⁴⁶

Commission determination

The Panel finds that Creative Energy’s risk analysis is adequate to enable full consideration of this matter. The Panel disregards FEI’s comments about the lack of information about Phase 2 given that Phase 2 is not within the scope of this decision.

4.1.7 Mandatory connection

Creative Energy has indicated that the success of the Project relies on mandatory connection, in order to achieve a critical mass of customers to secure loads.¹⁴⁷ Creative Energy is clear that, for the purposes of this Project, it receives its authority for mandatory connection from the CoV’s policies and bylaws.¹⁴⁸ Creative Energy submits that it is not applying for mandatory connection approval by the Commission.¹⁴⁹

Intervenors have raised concerns that approving the CPCN is unique for the province of BC, in that approving this CPCN will, in effect, directly or indirectly, allow Creative Energy to take advantage of the CoV’s mandatory connection bylaws.¹⁵⁰

Commission determination

The Commission finds that the CPCN is in the public interest, for the reasons as outlined below.

The bulk of resistance to this Project is respecting the franchise agreement and not the project itself. This project is a DES, which is consistent with various DES projects previously approved by the Commission. While the Panel acknowledges that this Project is not supported by all of the public or all of the intervenors, the Panel is persuaded, on a balance of probabilities that this project is in the public interest because it addresses an immediate need for a DES for NEFC.

While the Commission has general authority to determine mandatory connection issues as they relate to the public interest component of CPCN applications and related franchise agreements, the Panel finds that this

¹⁴⁵ FAES Final Argument, p. 43, paras. 135–137.

¹⁴⁶ BCOAPO Final Argument, pp. 20–21, para. 89.

¹⁴⁷ Exhibit B-1, p. 2.

¹⁴⁸ Ibid.; Creative Energy Final Argument, p. 69.

¹⁴⁹ Creative Energy Reply Argument, p. 45.

¹⁵⁰ FAES Final Argument, pp. 24–25; CEC Final Argument, p. 39.

Application does not require the Panel to approve a mandatory connection requirement for this Project. The applicant has not indicated in its CPCN application or the draft order, that the Commission must approve the mandatory connection requirement. Further, the NEA does not provide for mandatory connection. The applicant will not derive its authority to invoke mandatory connection from the Commission, but rather, mandatory connection stems from the CoV's policies and bylaws. Therefore, the Panel makes no determination on the issue of mandatory connection in this Application.

The Panel is fully aware that the granting of a CPCN for this Project in a situation where the CoV imposes mandatory connection requirements on its developers has the effect of establishing a monopoly in the franchise area. However, the Panel exercises its discretion to approve a CPCN for this project because it finds the Project to be in the public interest, in large part because of the demonstrated need for the project, which has arisen because the CoV has determined a need for a DES, the Project is supported by CEA policy by supporting electricity conservation, and there are several developers ready, willing, and able to move forward with their developments. In the Panel's view, the fact that the zoning has been subject to a public process and that development is proceeding in accordance to those zoning requirements is sufficient *prima facie* evidence to support a conclusion of the Project justification.

In summary, the Commission grants a CPCN to Creative Energy for the Project as outlined in the Application, subject to the exclusion of the Chinatown area from the extension policy as set out in the next section. The Panel has considered all of the evidence and all of the submissions, and determines that the granting of this CPCN for a DES Project is in the public interest, for the following reasons:

- While many project alternatives were discussed, the Panel only considered those projects that provide a reasonable DES configuration alternative. In that regard, the Panel agrees that a hot water DES is preferable to steam.
- Several developers are waiting to receive service and constitute 40 percent of the Project, in terms of forecasted load.
- While Creative Energy conducted very little consultation on the Project, the Panel finds that the evidence for consultation is adequate. Creative Energy responded to a request by the CoV to provide a DES in NEFC and in doing so relied upon the CoV to have conducted its own consultation. There is no persuasive evidence that the consultation conducted by the CoV in regard to the DES - as opposed to the NEA - is not adequate. There is no persuasive evidence that the NEFC zoning requirements, which dictate mandatory connection to a DES, were not properly enacted.

In addition:

- The Panel approves the Project costs and the capitalization of the Project development costs, subject to the limitations and directives provided in this section.
- The Panel is satisfied that there appears to be minimal risk respecting Phase 1 of the Project.
- The Panel makes no determination on mandatory connection, noting the impact of the CoV's mandatory connection policies and bylaws. Notwithstanding, the Panel finds, on a balance of probability, and in consideration of the various and competing public interest issues, the Panel grants the CPCN as applied for with the limitations described herein.

4.2 Neighbourhood Energy Agreement between Creative Energy and the City of Vancouver

For the reasons outlined below, the Panel denies approval of the NEA. In particular, the Panel does not approve the Carbon Reduction Rider, the Benchmark Rate and the Cost Premium Cap. In addition, while there is no specific clause in the NEA that provides for mandatory connection, the wording of the agreement suggests that the Commission is approving the NE Bylaw.

4.2.1 Carbon Reduction Rider

Creative Energy requests approval to establish a Carbon Reduction Rider (CRR)¹⁵¹ and associated Carbon Reduction Fund and to accrue interest on the Carbon Reduction Fund based on Creative Energy's Weighted Average Cost of Debt (WACD). The Carbon Reduction Fund is included as a requirement in Article 10 of the NEA, which states that Creative Energy:

will for the duration of Phase 1, subject to the approval of the BCUC, collect as part of the Franchise Area utility rates an amount of at least \$25 / tonne (escalated at CPI commencing 2014) for all GHG emissions from the Franchise Area NES in excess of the agreed Carbon Intensity Cap for the Franchise Area.¹⁵²

The Carbon Intensity Cap is defined in the NEA as a carbon intensity level equal to 0.07 tonnes of carbon dioxide (or equivalent) per megawatt hour of sales.¹⁵³

Creative Energy further submits that the CRR is a "key condition" of the NEA required by the CoV and "City policy in granting the franchise agreement should receive significant weight in approval under Section 45 (7) [of the UCA]."¹⁵⁴

During Phase 1, Creative Energy will collect the CRR funds from ratepayers and hold these funds "in trust" until Phase 2. The expected use of the funds is to offset the costs of implementing either the larger "Fuel Switch" (as described in the NEA) or a "Franchise Area Low-Carbon Solution" by applying the cumulative balance in the Carbon Reduction Fund as a Contribution In Aid of Construction (CIAC) towards the capital cost of Phase 2. However, as outlined in the NEA, the CoV could require Creative Energy to use the Carbon Reduction Funds for other purposes related to carbon emissions reduction if the planned Phase 2 solution is delayed significantly or indefinitely. Creative Energy forecasts an accumulated balance in the Carbon Reduction Fund at the end of 2020 (i.e. the anticipated transition to Phase 2) of \$440,000.¹⁵⁵

As noted by Creative Energy, "carbon regulation is a relatively new area" and while there are "certainly examples of levies collected by utilities on behalf of governments to support policy objectives" (such as the Carbon Tax and the Innovative Clean Energy Fund levy), "[t]hese funds are transferred to the Province which

¹⁵¹ Throughout the evidence in this proceeding, the terms Carbon Reduction Rider and Carbon Emissions Rider are used interchangeably by various parties. For the purposes of this Decision, the Panel uses the term Carbon Reduction Rider (CRR).

¹⁵² Exhibit B-1, Schedule 2, p. 22.

¹⁵³ Exhibit B-1, Schedule 2, Schedule A, p. 1.

¹⁵⁴ Ibid., p. 78.

¹⁵⁵ Exhibit B-24, FAES IR 2.9.1.

accumulates them and funds future programs.” Creative Energy submits, “[i]n that sense it is pre-collection but operates more like tax.”¹⁵⁶

The closest example to Creative Energy’s requested CRR is the Carbon Emissions Rider, which was included as part of the approvals sought by Corix in its Application for a Certificate of Public Convenience and Necessity for Phase 1 of the Neighbourhood District Energy System at the University of British Columbia (UBC NDES CPCN). Pursuant to Order C-11-14A issued on December 12, 2014, the Commission denied approval of the Carbon Emissions Rider.

In the Application, Creative Energy submits that it signed the NEA with the CoV prior to the Corix UBC NDES CPCN Decision and the parties have “reviewed the UBC Decision and have elected to request approval of the proposed Carbon Reduction Rider for the NES on the basis of additional arguments and facts unique to the NES.”¹⁵⁷ As support for the CRR, Creative Energy addresses the following four questions/issues raised by the Commission in the Corix UBC NDES CPCN Decision:

1. *Does collecting amounts in rates now, to finance a construction of a subsequent phase give rise to issues of intergenerational equity?*

Creative Energy draws a distinction between intergenerational equity issues arising from generational changes in customer composition, and intergenerational equity issues arising from a change in access to service. In Creative Energy’s view, only the first type of intergenerational equity issue is relevant to the NEFC NES whereas in the case of the UBC NDES, both types of issues were applicable. Creative Energy submits that unlike the UBC NDES, the NEFC NES does not have a “Phase 1 geographical area” and a “Phase 2 geographical area.” Creative Energy argues that the service to Chinatown is “not equivalent to the UBC geographical area phases because all new customers in Chinatown must connect immediately to the system, subject to the requirements of the NES System Extension Test in which they would not later benefit from the Carbon Reduction Rider.” Accordingly, the fairness issue raised by the Commission in the UBC NDES Decision related to “access to service” intergenerational inequity is not applicable to the NEFC NES.¹⁵⁸

2. *Is it reasonable to recover in rates amounts to offset potential costs of a phase around which uncertainty exists?*

Creative Energy “rejects the framing of the Carbon Reduction Rider as a means to offset the costs of Energy Supply Phase 2” and argues that the CRR is “first and foremost a means of ensuring early connectors understand the NES performance requirements and contribute to those performance requirements.”¹⁵⁹

3. *Is it fair to levy the CER [Carbon Emissions Rider] on early connectors to the NDES?*

There is a direct benefit to customers in Phase 1 because even with the inclusion of the CRR energy costs are the same or lower than any of the alternatives for providing low carbon energy for early connectors or under a “business as usual” scenario. Creative Energy also submits that “early connections

¹⁵⁶ Exhibit B-6, BCUC IR 1.20.7.

¹⁵⁷ Exhibit B-1, p. 77.

¹⁵⁸ Creative Energy Final Argument, pp. 24–25.

¹⁵⁹ Exhibit B-1, p. 79.

should not receive an additional windfall (very low costs) by virtue of a phasing strategy that in fact is intended to benefit them by allowing flexibility in the implementation of low carbon.”¹⁶⁰

4. *Is it fair to levy an emission rider on emissions generated by carbon, which has already been taxed by the provincial government?*

Creative Energy views the similarities between the CRR and the provincial government’s Carbon Tax as “superficial” and states that the proceeds of the CRR are not submitted to the provincial government but are instead held in trust by the utility. Creative Energy further submits that the CRR is not a tax because the revenues are retained for the benefit of customers and that the CRR is comparable to the offset requirements for public service organizations, except that the CRR funds are accumulated and applied to the low carbon solution for the Franchise Area rather than used to purchase third party offsets immediately.¹⁶¹

Intervener arguments

BCOAPO argues that rejection of the CRR will provide a “double benefit” to ratepayers during Phase 1 as these ratepayers will be paying a lower cost for fuel through consumption of natural gas and will also be pushing the effects of carbon emissions onto future generations of ratepayers. BCOAPO also argues that it is likely that most ratepayers who are charged the CRR in Phase 1 will receive the benefit of those funds in Phase 2 due to the anticipated short time period between Phase 1 and Phase 2.¹⁶²

The CoV argues that rejection of the CRR would “increase the potential for rate shock associated with the transition from Phase 1 to Phase 2, increase the financing costs paid by customers for Phase 2, and potentially delay the NES in its meeting of CoV GHG reduction policy objectives.”¹⁶³

CEC submits that the CRR “is not in keeping with the cost of service principle of rate-setting, in that it is not being charged to reflect either the present cost of service or the future cost of service, but is instead being collected to offset the utility’s cost in possibly developing future infrastructure which is neither approved nor identified.” With respect to the issue of rate smoothing, CEC argues that this issue can be addressed at the time of Creative Energy’s application for the implementation of Phase 2. CEC also argues that the CRR is unfair because it assigns an additional cost to ratepayers within the NES for carbon emissions, which ratepayers outside the NES using similar services do not have to pay.¹⁶⁴

UDI refutes Creative Energy’s statement that the CRR “is not a tax, in part, because it is not being levied by a government authority.” UDI argues that this statement “ignores the fact that the Carbon Reduction Rider is an essential element of the NEA between Creative Energy and the City” and that “it is clear that the City is levying the Carbon Reduction Rider, and is simply requiring Creative [Energy] to administer it under the terms of the NEA.”¹⁶⁵

¹⁶⁰ Exhibit B-1, p. 80.

¹⁶¹ Exhibit B-1, p. 81.

¹⁶² BCOAPO Final Argument, pp. 10–11.

¹⁶³ CoV Final Argument, p. 21.

¹⁶⁴ CEC Final Argument, pp. 42–43.

¹⁶⁵ UDI Final Argument, p. 10.

UDI further argues that “[b]y including the Carbon Reduction Rider as an essential term in the NEA, the City is attempting to do indirectly what it cannot do directly: impose a municipal carbon tax. Yet, this tax will be imposed on some developers and end-users and not others simply as a result of geography.”¹⁶⁶

FEI notes in its final argument that the NEA “contemplates the potential for the [CRR] funds not being returned to Creative Energy ratepayers at all” and that there is the possibility that the CoV could use the funds as a financial contribution to other CoV low carbon projects or to purchase carbon offsets. FEI argues: “This feature reinforces the CRR’s appearance as a municipal tax or levy rather than a rate construct...”¹⁶⁷

FEI submits that Creative Energy’s description in its final argument, which states that the CoV requires the establishment of the CRR to facilitate the transition to low carbon energy through investments made in Phase 1 “very much sounds like a pre-collection of funds.”¹⁶⁸ FEI further submits that the “availability of rate mechanisms like deferral accounts also makes the CRR unnecessary to manage rate shock.”¹⁶⁹

FAES makes no specific submissions on the CRR other than stating that the NEA in its entirety should be denied.¹⁷⁰

Creative Energy reply

Creative Energy argues that customers in Phase 1 are the same or better off with the inclusion of the CRR when compared to the alternatives to the CRR (offsets or immediate performance requirements) because the funds collected via the CRR will be retained for use in a low carbon project to serve the end users rather than paying for external offsets immediately. Additionally, in the long run, all customers in the NEFC are better off with the proposed phasing-in of low carbon energy supply because it reduces costs and risks.

In response to UDI’s concerns with the possibility of the funds not being returned to ratepayers, Creative Energy submits that the Carbon Reduction Fund will be a “regulated account under the full authority of the Commission and balances in the account will only be used as directed by the Commission.”¹⁷¹

Creative Energy further submits that while there may be other mechanisms to fund Phase 2 and to smooth rates, these are not the “primary benefits” of the CRR, which are to share the benefits among Phase 1 and Phase 2 ratepayers of the phased-in approach to implementing low carbon energy. Creative Energy also points out that alternative rate smoothing mechanisms would result in additional financing costs for customers in Phase 2.

With regard to interveners’ submissions that the CRR is akin to a tax, Creative Energy argues that the “rider in no way meets the definition of a tax” for the following two reasons: (i) the CoV has no direct access to the CRR

¹⁶⁶ Ibid., p. 11.

¹⁶⁷ FEI Final Argument, p. 80.

¹⁶⁸ Ibid., p. 81.

¹⁶⁹ Ibid., p. 82.

¹⁷⁰ FAES Final Argument, p. 5.

¹⁷¹ Creative Energy Reply Argument, p. 23.

funds; and (ii) the CRR is only applied to the difference between the Performance Requirements and actual emissions, not to gross emissions, whereas a carbon tax is applied on total emissions.¹⁷²

Commission determination

The Panel denies the creation of the Carbon Reduction Rider and associated Carbon Reduction Fund. While the Panel acknowledges there are certain differences between the proposed Carbon Reduction Rider and the previously denied Carbon Emissions Rider proposed by Corix in the UBC NDES CPCN Application, the similarities are significant. In both cases, the amount collected from pioneer ratepayers will be accumulated for future use. Under those circumstances, such a rider would be inconsistent with ‘Cost of Service’ rate design principles. Accordingly, the Panel finds any differences to be insufficient to warrant approval of the CRR.

The Panel shares the concerns raised by interveners, particularly with regards to the uncertainty as to the purpose of the future deployment of the CRR and the appearance of the CRR acting as an additional form of taxation.

In addition, the fact that the Phase 2 is not within the scope of this application and that Phase 2 Energy Supply is yet to be determined creates sufficient uncertainty in the Panel’s view to raise concerns over the reasonableness of collecting the CRR from initial NEFC ratepayers to be held “in trust” by Creative Energy, particularly given the wording in the NEA which contemplates these funds could be used for other low carbon projects unrelated to the NEFC.

The Panel also agrees with FEI and CEC that there are other rate mechanisms available to deal with rate shock, if this issue arises when transitioning to Phase 2 and that the appropriate time to address issues of rate shock is during the review of a Phase 2 application.

4.2.2 Mandatory connection

Creative Energy contends that mandatory connection is a necessary consideration for its commitment to construct a new hot water distribution network and to pursue long-term carbon reductions for the NEFC, as well as support a DES sustainably over the long term.¹⁷³ With that goal, Creative Energy notes that the CoV will mandate connection by developers in the NEFC by implementing a Connection Bylaw¹⁷⁴ or through re-zoning requirements. The NEA is subject to Commission approval of both the NEA and the CPCN; it is also subject to enactment of the Service Area Bylaw by the CoV council.¹⁷⁵

It should be noted that while Creative Energy maintains that the Panel is not invited to rule on mandatory connection,¹⁷⁶ mandatory connection is a fundamental aspect of the CoV strategy for this Project, thus impacting the CPCN and the Franchise Agreement and the Connection Agreement. In addition, the CoV has not yet enacted the Connection Bylaw. A report from the General Manager of Engineering Services of the CoV to the

¹⁷² Creative Energy Reply Argument, pp. 21–25.

¹⁷³ Ibid., p. 2.

¹⁷⁴ Exhibit B-2, p. 1.

¹⁷⁵ Exhibit B-1, p. 28.

¹⁷⁶ Creative Energy Final Argument, p. 14, para. 54.

CoV council suggests that the Connection Bylaw would not be brought forward to Council for enactment until the NEA is approved by the Commission.¹⁷⁷

In this context, this section will consider the evidence and arguments of the applicant and interveners.

4.2.2.1 BCUC jurisdiction respecting mandatory connection

Creative Energy submits that mandatory connection issues and the exclusivity requirement intrinsic to the NEA are within the inherent jurisdiction of the CoV and not within the jurisdiction of the Commission. Creative Energy suggests that the Commission has no authority to grant mandatory connections. The CoV has made similar submissions.¹⁷⁸

On the other hand, FEI and FAES submit that a mandatory connection is beyond the jurisdiction of the CoV and is the exclusive jurisdiction of the Commission.¹⁷⁹

UDI provides that it is particularly concerned with the impacts of the mandatory connections sought by Creative Energy, and UDI argues that Creative Energy is essentially applying for monopoly rights.¹⁸⁰ UDI adopts all of FEI-FAES joint final submissions on law.¹⁸¹

CEC submits that the Panel should approach this question in terms of whether mandatory connection conserves the public interest.¹⁸² FEI and FAES approach the question in the same way: that the Panel must determine the impact of the application, in the context of the mandatory connection bylaws and policies of the CoV, as the Panel deliberates on the public interest component of this application.¹⁸³

BCOAPO argues that the Commission does not have jurisdiction to determine the validity of bylaws relating to mandatory connection and cites section 524 of the Vancouver Charter. However, BCOAPO does not discuss the jurisdiction of the Commission to consider the use of such a clause in the NEA, and whether it may be in the public interest.¹⁸⁴

FEI points out that the CoV intends to implement mandatory connection regardless of the Commission's determination on the NEA: it indicates that "the bylaw would likely be brought forward by staff to Council for enactment regardless of whether or not the BCUC approves the exclusivity provision" in the NEA.¹⁸⁵ It has also alluded to zoning requirements being used to accomplish the same purpose, such that a CoV witness characterized the debate over the NEA as a "moot point."¹⁸⁶

¹⁷⁷ Exhibit B-2, p. 1.

¹⁷⁸ CoV Final Argument, p. 18.

¹⁷⁹ FAES Final Argument, p. 6; FEI-FAES Joint Final Submission on Law, para. 60.27.

¹⁸⁰ UDI Final Argument, para. 5.

¹⁸¹ UDI Final Argument, p. 11.

¹⁸² CEC Final Argument, p. 34.

¹⁸³ FEI Final Argument; FAES Final Argument.

¹⁸⁴ BCOAPO Final Argument, para. 17.

¹⁸⁵ FEI Final Argument, p. 5.

¹⁸⁶ Ibid.

FEI and FAES suggest that the Commission ought to consider whether the Application is premised on the CoV exceeding its statutory jurisdiction.¹⁸⁷ FEI and FAES are concerned with the fact that Creative Energy is asking the Panel to effectively rubber-stamp the CoV's policies.¹⁸⁸ FEI and FAES argue that the UCA wording under section 45(8) provides a prohibition to approve a franchise agreement unless "it is necessary for the public convenience and properly conserves the public interest."¹⁸⁹ Further, they suggest that the Commission's public interest mandate ought not to be constrained by a competing public interest determination by another authority.¹⁹⁰

Creative Energy argues that the Commission must presume the CoV's authority to pass the mandatory connection bylaw is lawful.¹⁹¹ FEI and FAES disagree, and contend that the Commission must consider whether the CoV has such jurisdiction, in the context of the BCUC mandate.¹⁹²

4.2.2.2 Mandatory connection provisions as part of the Application

In terms of the directives sought by the applicant, the order does not specifically request the Panel to find in favour of mandatory connection. Nor is mandatory connection an explicit provision in the NEA or the Connection Agreement.

Creative Energy suggests that since the CoV has the authority to establish mandatory connection, it would be inconsistent with the legislative scheme for the Commission to turn down the NEA for reasons related to the mandatory connection.

4.2.2.3 Mandatory connection provisions in previous BCUC decisions

While Creative Energy argues that the Commission has no jurisdiction to consider mandatory connection, it submits that mandatory connection provisions have been embodied in other franchise agreements approved by the Commission in prior cases citing the Corix UBC NDES CPCN Decision and stating that those provisions are substantially the same as in the Creative Energy NEA. In the Corix-UBC NDES case, the franchise agreement between Corix and UBC provided a mandatory connection for developers, including developers of low-rise buildings.

FAES submits that the Corix UBC NDES CPCN application should be distinguished from the Creative Energy Application, in that UBC was a "master developer."¹⁹³ FAES suggests that as UBC is the owner of all of the lands subject to the franchise agreement, and was also the author of the mandatory connection provision, there was a level of consent that is to be distinguished from a case like the CoV requiring mandatory connection where landowners do not have control over the implementation of a mandatory connection, had no notice and were not consulted respecting the new requirement. FAES submits that a master plan development ought to be

¹⁸⁷ FEI-FAES Joint Final Submission on Law, p. 2.

¹⁸⁸ Ibid., p. 8.

¹⁸⁹ *Utilities Commission Act*, RSBC 1996, c. 473, s. 45(8).

¹⁹⁰ FEI-FAES Joint Final Submission on Law, p. 9.

¹⁹¹ Creative Energy Final Argument, p. 55, para. 205.

¹⁹² FEI-FAES Joint Final Submission on Law, p. 11.

¹⁹³ Oral Hearing Transcript Volume 3, p. 585.

distinguished because a master developer takes the risk that the decision to impose mandatory connection may not be supported by the market.¹⁹⁴

4.2.2.4 The NEA, Mandatory connection and the CoV's reliance on the Vancouver Charter

Section 2.2 of the NEA provides that the franchise is being granted "[p]ursuant to section 153A of the [City of Vancouver] Charter, to the extent that it is legally permitted and capable of doing so but not otherwise..." The City of Vancouver Charter states:

The Council may, by agreement, grant to any person a franchise for a term not exceeding thirty years for the supply of telegraph, steam-heat, or hot water service and may in such agreement prescribe how and where mains, pipes, conduits, poles, and wires shall be installed and, without restricting the generality of the foregoing, may prescribe the other terms, conditions, and restrictions, including payments to the city, for and in connection with such franchise.¹⁹⁵

FEI-FAES, supported by UDI and CEC, submit that "Section 153A does not authorize the type of franchise - i.e., exclusivity over end uses - contemplated by the NEA. The Commission should not approve a franchise agreement as conserving the public interest when that franchise is premised on a misapplication of the [CoV]'s authority to enter into the agreement from the outset."¹⁹⁶ In their view, "Creative Energy and the [CoV] are extending the application of section 153A well beyond what can reasonably be supported by applicable fundamental principles of statutory interpretation and contract law."¹⁹⁷

4.2.2.5 Consultation, the NEA and mandatory connection

The CPCN Guidelines provide that an applicant ought to consult with "the public who may be directly impacted by the project."¹⁹⁸

Creative Energy's evidence was that they did not consult landowners or developers respecting their application. They argue that "In this case, it was unnecessary for Creative [Energy] to engage in public consultation given the comprehensive nature of the public consultation conducted by the CoV, which has led the land use planning processes and all related consultation for the area governed by the NEA. Nevertheless, Creative [Energy] did consult with customers."¹⁹⁹

The CoV provided evidence that they have conducted consultation,²⁰⁰ but not with respect to the cost of mandatory connection, and the impact on project costs and rates.

During negotiation of the NEA, Creative Energy started communicating with developers,²⁰¹ primarily related to specific development projects. Furthermore, Creative Energy has been reviewing the projects with Concord

¹⁹⁴ Oral Hearing, Transcript Volume 3, p. 585; Exhibit C4-8, p. 27.

¹⁹⁵ City of Vancouver Charter, s. 153A [Emphasis added].

¹⁹⁶ FEI-FAES Final Joint Submission on Law, para. 51.

¹⁹⁷ Ibid., para. 53.

¹⁹⁸ 2015 CPCN Guidelines, dated February 2015, Project Description, Section 4, p. 6.

¹⁹⁹ Creative Energy Final Argument, p. 7.

²⁰⁰ Exhibit C1-2.

²⁰¹ Exhibit B-1, p. 54; A list of those meetings are in Exhibit B-1, pp. 55–56 and further detailed in Exhibit B-6, BCUCIRs 35.1, 35.2.

Pacific and Pavco, two of the first customers in the NEFC area.²⁰² These discussions have been related to engineering and design. Customers received an update letter in June 2014.²⁰³

UDI argues that it is the burden of the applicant to show that consultation was meaningful and that the agreements resulting from those consultations are fair and reasonable. UDI suggests that the agreements drafted by Creative Energy and the CoV that impact the developers (including the mandatory connection provisions, but not limited to that) are one-sided.²⁰⁴ UDI submitted that the CoV did not consult developers on the topics of agreements.²⁰⁵

Commission determination

The Panel finds that while the CoV may have jurisdiction to invoke mandatory connection, through its policies and zoning conditions or bylaws, the Commission has jurisdiction to consider mandatory connection in the context of franchise agreements and related and ancillary agreements, for the purposes of compliance with section 45(8) of the UCA. In that context, the Commission has jurisdiction to determine whether a mandatory connection, if it is a provision in a franchise agreement specifically empowering a utility, is necessary for the public convenience and properly conserves the public interest.

Indeed, the Commission has approved mandatory connections as part of franchise agreements in previous decisions, for example, River District²⁰⁶ and Corix UBC.²⁰⁷ However, the Creative Energy Application is distinguished from those decisions as those decisions all involved a master developer. A master developer, such as UBC, makes policy decisions regarding its own property. In the circumstances of this Application, the CoV is not a master developer, but has drafted a mandatory connection bylaw and enacted various zoning requirements. The CoV is making policy decisions regarding the property owned by other developers. If the Panel were asked to consider mandatory connection in the context of a franchise agreement, where the only distinguishing feature was one of the non-existence of a master developer, then the Panel would need to consider the broader implications of the public interest, the impact on developers.

The Panel also notes a further distinguishing feature, the applicant's authority for mandatory connection stems not from the NEA but rather from a CoV bylaw - a crucial distinction in this case. Creative Energy does not derive any authority from the franchise agreement to demand its developers to connect: that authority originates from the mandatory connection bylaw and zoning requirements.

Consequently, Creative Energy is not requesting that the Commission make a determination on mandatory connection as it is the developer that must connect to the DES, and developers are not party to the NEA. In its submissions, Creative Energy suggests that the NEA is effective on two conditions precedent: that the Commission approves of the NEA and the associated CPCN; and the CoV has enacted a Service Area Bylaw, which, among other things, provides for a mandatory connection to the NEFC DES.²⁰⁸ Further, in Section 3.1 of

²⁰² Exhibit B-10, FAES IR 1.39.2.

²⁰³ Exhibit B-1, p. 54.

²⁰⁴ UDI Final Argument, p. 13.

²⁰⁵ Ibid., p. 13.

²⁰⁶ Order C-14-11, River District Energy Decision, p. 22; Exhibit C4-7-1, p. 16.

²⁰⁷ Corix UBC NDES CPCN Application, Exhibit B-1, p. 56.

²⁰⁸ Exhibit B-1, p. 28.

the NEA (Franchisee Covenants and Mutual Covenants), CoV covenants to enact the Service Area Bylaw upon the Commission approving the NEA. Indeed the NEA (and the Connection Agreement) appear to have been drafted based on the assumption that the CoV will enact the Service Area Bylaw upon Commission approval of the NEA.

On a related note, the Panel is concerned that enactment of the NE Bylaw is conditional upon Commission approval of the NEA. In our view, this could raise a perception that the Commission has reviewed and approved the NE Bylaw. The existing rezoning policy that requires mandatory connection contains no such link to BCUC approval. We note the submission of the CoV that the NE Bylaw “supplements the existing rezoning policy that requires mandatory connection to the NES. If enacted, the NES By-law would add regulatory support to the existing connection policy.”²⁰⁹ The Panel is concerned with public perception that CoV bylaws are approved by the Commission. The Panel makes the following comments:

- While there is no specific clause in the NEA that provides for mandatory connection, there is language in the NEA that may leave the impression that the Commission is, indirectly, approving the Neighbourhood Energy Bylaw, which will mandate connection. The Panel prefers to see an NEA that is clear and unequivocal, in terms of what is to be approved by the Commission, and does not imply that CoV enactments are supported by the Commission.
- The Panel is concerned that enactment of the NE Bylaw is conditional upon Commission approval of the NEA. In our view, this could raise a public perception that the Commission has reviewed and approved the NE Bylaw. The existing rezoning policy that requires mandatory connection contains no such link to BCUC approval. We note the submission of the CoV that the NE Bylaw “supplements the existing rezoning policy that requires mandatory connection to the NES. If enacted, the NES By-law would add regulatory support to the existing connection policy.”²¹⁰ The Panel would prefer that the CoV enact bylaws and policies that are not linked to approvals by the BCUC; otherwise, confusion arises, and the public may perceive that the BCUC approves the CoV’s mandatory connection.

With regard to the submissions of the parties that section 153A of the CoV Charter does not support the imposition of end-use restrictions, the Panel is not approving the NEA, and therefore makes no determination on this issue.

4.2.3 Benchmark Rate and Premium Cap

The Benchmark Energy Cost and the Cost Premium Cap are terms included in the NEA. These two terms are interrelated and are used in the NEA to establish certain Phase 1 and Phase 2 performance requirements, which the CoV expects Creative Energy to achieve.

With respect to the performance requirements for Phase 1, Article 8.1(b) of the NEA states that Creative Energy will “charge Franchise Area NES customers only rates approved by the BCUC, which rates are expected to include the effects of the Carbon Reduction Fund and to result in costs that, at the time of initial approval by BCUC, do not exceed the Cost Premium Cap.”²¹¹

²⁰⁹ CoV Final Argument, p. 2, paras. 9–10.

²¹⁰ Ibid.

²¹¹ Exhibit B-1, Schedule 2, Article 8.1(b), p. 20 [Emphasis added].

This performance requirement is similar to Article 8.2(a) which states that in addition to complying with the Phase 1 performance requirements, Creative Energy will comply with the following: "...at the time of initial approval of Phase 2 by BCUC, the Projected Energy Cost will not exceed the Cost Premium Cap, as determined by the BCUC..."²¹²

The Cost Premium Cap is defined in the NEA as "110% of the Benchmark Energy Cost."²¹³

The Benchmark Energy Cost is defined, in part, as "a competitive benchmark accepted by the BCUC for the cost of heating for new development comparable to the Franchise Area Buildings."²¹⁴ The definition further specifies that this "competitive benchmark" will consider other low carbon energy options, including the CoV's SEFC NES, other comparable neighbourhood energy systems, and electric heat, but "it will not be based on the cost of service for gas-fired steam in Creative [Energy]'s existing service area."²¹⁵

Two key issues raised by the Commission and interveners with regard to the Cost Premium Cap and the Benchmark Energy Cost are:

- Is it appropriate for the Panel to approve a Cost Premium Cap as part of the NEA?
- Should the Panel make a determination on the Benchmark Energy Cost as part of this proceeding, and if so, what should it be?

4.2.3.1 Inclusion of the Cost Premium Cap in the NEA

The wording of the performance requirement raises questions as to how this cap would practically be applied, and whether the Commission's rate-setting abilities are constrained by the inclusion of the Cost Premium Cap.

During the Oral Hearing, Creative Energy was asked by Commission counsel to explain why inclusion of the Cost Premium Cap in the NEA is necessary given the Commission's mandate under the UCA to ensure that rates charged by public utilities are just and reasonable. Mr. Berry, the expert witness for Creative Energy, responded that "the city wanted confidence that it was sending a signal to the Commission of – even if you determine that 120 percent was in the public interest, its [CoV] view is that there should be a cap on that determination.....from the city's perspective, Creative [Energy] should not [be] putting forward, and the Commission should not be accepting something that exceeds 110 percent."²¹⁶

The CoV, who is registered in the proceeding as an intervener but is also a party to the NEA, further explains:

[t]he basic concept of that cap is that the City recognizes that we are mandating connection, and therefore, in the public good, we are not going to mandate connection to a system that we don't believe is reasonably affordable. And we wouldn't want Creative [Energy] to submit an application that was outside those limits. Once they submit an application, it's entirely up to the BCUC to determine whether the rates fit your [Commission] criteria... It's meant to be a

²¹² Ibid., Article 8.2(a), p. 21.

²¹³ Ibid., Schedule A, p. 4.

²¹⁴ Exhibit B-1, Schedule A, Restated and Amended Northeast False Creek and Chinatown Neighbourhood Energy Agreement, Schedule A, p. 1 [Emphasis added].

²¹⁵ Ibid., Schedule A, p. 1.

²¹⁶ Oral Hearing, Transcript Volume 2, p. 338.

benchmark for the start-up of the various phases of the system. But, in our view, it really only is relevant to phase 2.²¹⁷

Regarding the derivation of the Cost Premium Cap of 110 percent, Mr. Baber of the CoV indicated that:

There's no analysis on the 10 percent figure...it was a result of discussions between city staff and stakeholders in the development of the Southeast False Creek neighbourhood energy utility...And based on those discussions with stakeholders, it was – 10 percent seemed to be the most, you know, common threshold, and of course individuals all have different...values and different tolerances, but that was one that was agreeable to most stakeholders and to City Council...²¹⁸

At the conclusion of the Oral Hearing, the Panel Chairperson asked all parties to respond to a variety of questions as part of the parties' final arguments. One of the questions put forth by the Panel Chairperson was : "What is the Panel's authority to consider a rate cap in a franchise agreement?"²¹⁹

In its final argument, Creative Energy points to the fact that Article 8.1(b) refers to "costs" of the NES and that Articles 8.1(b) specifies that these costs must not exceed the Cost Premium Cap at the time of initial approval by the Commission. Therefore, in Creative Energy's view, upon approval of the Application, Article 8.1(b) will have no further effect. With regards to the wording in Article 8.2(a) related to Phase 2, Creative Energy submits that the "Projected Energy Cost" referenced in this section refers to the levelized cost of various alternatives in comparison to the proposed Phase 2 project and therefore is not intended to be used for rate-making purposes. Given Creative Energy's view that the Cost Premium Cap is not to be used for rate-making purposes, it submits that inclusion of the cap will not impact the authority of the Commission to set rates under sections 59-61 of the UCA.²²⁰

Intervener arguments

FEI states that it "understands the intent is for the Cost Premium Cap to apply at the time of the Energy Supply Phase 2 CPCN Application, and that it is not intended to apply as an ongoing rate cap *per se*" and that the "Commission Panel hearing the CPCN Application would not be constrained by the Cost Premium Cap."²²¹

However, FEI submits that approving the Cost Premium Cap for inclusion in the NEA appears to indicate that Creative Energy would not bring forward an application for Phase 2 if the costs/rates were higher than that amount which increases the uncertainty in the current Application regarding what Phase 2 "may look like" and whether it will be able to "yield the full emission reduction benefits."²²² FEI further submits that the determination of the size of the Cost Premium Cap is "arbitrary."²²³

²¹⁷ Oral Hearing, Transcript Volume 2, p. 420.

²¹⁸ Oral Hearing, Transcript Volume 2, p. 372.

²¹⁹ Oral Hearing, Transcript Volume 3, p. 617.

²²⁰ Creative Energy Final Argument, pp. 98–99.

²²¹ FEI Final Argument, p. 77.

²²² Ibid.

²²³ Ibid., p. 78.

FAES views the Cost Premium Cap as an “intrusion into the authority of the Commission to set just and reasonable rates.” However, FAES also states that a future panel would be justified in “ignoring” the cap when setting rates.²²⁴

UDI submits that the Cost Premium Cap “is in reality a double premium because the benchmark that is used to determine the cap already has a significant premium built into it” as a result of the comparators being low carbon energy sources.²²⁵

BCOAPO is “very supportive” of the Cost Premium Cap and agrees with Creative Energy that the cap “is not an intrusion into the Commission’s rate setting jurisdiction.” BCOAPO views the cap as a way to ensure that proposals are not brought forward that would be unaffordable to ratepayers. BCOAPO also submits that “a company need not decide to bring an application for a particular project to the Commission because of a cost; in the same way, the cost premium rate cap ensures, particularly in Phase 2 of the project, that ratepayers are not now signing up for a potentially much higher rate.”²²⁶

Creative Energy reply

Creative Energy submits that the Cost Premium Cap is not “permissive”; it puts a constraint on what project it can bring forward to the Commission but that the result of this constraint is that the CoV, interveners and the Commission are able to test whether Creative Energy has proposed the least cost solution. Creative Energy further submits, “such opportunities do not exist when the developer selects an on-site system.”²²⁷

Commission determination

The Panel declines to approve the NEA as long as it contains a Cost Premium Cap. While the Cost Premium Cap may not have any impact on cost or rate determinations in Phase 1, the Panel does not consider it appropriate to approve a cap for Phase 2 at this time, particularly when Creative Energy has yet to provide any degree of certainty as to the source of the Phase 2 Energy Supply. The Panel agrees with FEI, FAES and Creative Energy that the Cost Premium Cap does not constrain the Commission’s rate-setting authorities under the UCA; however, inclusion of the Cost Premium Cap as part of the Phase 2 Performance Requirements in the NEA could constrain the alternatives brought forward by Creative Energy for CPCN consideration. Given that Phase 2 has not yet been presented to the Commission for approval, nor has Creative Energy provided a clear proposal for the energy supply to be utilized in Phase 2, the Panel finds it unreasonable to codify a specific cost cap within the NEA at this time.

4.2.3.2 Benchmark Energy Cost

The Benchmark Energy Cost is a defined term in the NEA and is used to determine the Cost Premium Cap. In the Application, Creative Energy put forth three levelized rate and levelized cost benchmarks as comparators to its proposed Phase 1 and Phase 2 Energy Supply Phases. These benchmarks included the Southeast False Creek (SEFC) neighbourhood energy system, 100 percent residential electricity and Creative Energy’s core steam

²²⁴ FAES Final Argument, p. 8.

²²⁵ UDI Final Argument, p. 6.

²²⁶ BCOAPO Final Argument, pp. 12–13.

²²⁷ Creative Energy Reply Argument, p. 34.

service.²²⁸ Through Commission and intervener IRs, questions were raised as to the scope of alternative benchmarks considered and the assumptions under each alternative as well as the calculations of levelized costs and levelized rates for the various alternative benchmarks.²²⁹

Creative Energy explains that “Levelized rates are the present value of the stream of rates in \$ per MWh, divided by the present value of a stream of 1 MWh of energy. It is not weighted for changes in consumption levels over Time... Levelized costs are the present value of customer costs, divided by the present value of the stream of energy provided. It is weighted for changes in consumption levels over time.”²³⁰

Commission determination

The Panel declines to make a determination on the appropriate Benchmark Energy Cost in this proceeding. The Panel has already denied inclusion of the Cost Premium Cap in the NEA, therefore finds no need to specify a Benchmark Energy Cost at this time.

4.2.4 Limiting FEI’s CPCN

FEI argues that it has the right, by virtue of its CPCN, to provide natural gas service thereby earning a fair return on and of its invested capital. In FEI’s view, this is a fundamental component of the essence of the regulatory compact. It further submits that the NEA purports to prevent FEI from offering natural gas in an entire neighbourhood for end uses that represent a significant portion of FEI’s business, and that by approving the NEA and the exclusivity that it contemplates, the Commission would derogate from important statutory rights held by FEI and violate the regulatory compact.²³¹

Creative Energy replies that “FEI suggests, without ever expressly stating so, that its CPCN to construct and operate a natural gas system in the [CoV] somehow prevents the [CoV] from requiring mandatory connections and exclusivity of end-uses. FEI never identifies legislation or regulations that it relies upon for this argument, but does say that the ‘restrictions on natural gas service being sought by Creative Energy contradict the powers and authorization of FEU under the *Gas Utility Act*.’”²³²

Commission determination

The Panel is not approving the NEA for the reasons outlined above relating to the CRR, the Benchmark Rate, Cost Premium Cap and potential linkage to mandatory connection policies, including the NE Bylaw. Therefore we make no determination on the issue raised by FEI regarding the NEA limiting FEI’s existing CPCN.

²²⁸ Exhibit B-1, pp. 100–101.

²²⁹ Exhibit B-22, BCUCIR 2.19.0.

²³⁰ Exhibit B-22, BCUCIR 2.19.2.

²³¹ FEI Final Argument, para. 219.

²³² Creative Energy Reply Argument, para. 56.

4.3 Connection Agreement

Creative Energy requires Commission approval of a proposed NEFC Connection Agreement and Service Agreement (Connection Agreement) pursuant to sections 59-61 of the UCA.²³³ Creative Energy intends that the Connection Agreement be executed by Creative Energy and developers, and contain the following key terms:

1. The process for developers to apply for connection (consistent with the proposed CoV bylaw);
2. Design guidelines and a review process to ensure compatibility with the NES;
3. A rate tariff, set out in Schedule A to the Connection Agreement; and
4. Provisions for statutory rights of way.

The Connection Agreement arises pursuant to the CPCN approval, the Franchise Agreement approval, and the enactment of the CoV Connection Bylaw.²³⁴

In addition to the rate tariff implications, the Connection Agreement is important to Creative Energy as the tool for implementing its franchise rights and obligations, and in particular, for implementing the Mandatory Connection Bylaw.

The Connection Agreement sets out the legal framework for the relationship between the utility and the developer of lands and the end use customer that will be connected to the NES. The connections and service agreements are required by all who will be connected to and take service from the NES in NEFC to ensure compatibility of the building systems with the NES, to permit Creative Energy to install infrastructure on developer's lands to serve only that development and to allow success to Creative Energy.²³⁵

The key issue is whether the Connection Agreement, as a tariff, represents an undue prejudice or disadvantage or an agreement that is not "regularly and uniformly extended to all persons under substantially similar circumstances and conditions for service of the same description."²³⁶

UDI raises concerns that Creative Energy's shareholder is also a developer and may influence discrimination against other developers for competitive advantage (delays to entering into a connection agreement, i.e. design reviews for compatibility) given the connection agreement is a prerequisite for applying to the city for a building permit. (Draft city bylaw requires a signed connection agreement for the city to issue a building permit).²³⁷ The agreement states that Creative Energy will "undertake the review within 90 days, and developer should apply at least 90 days before seeking a building permit."²³⁸

Creative Energy updated the Connection Agreement in the proceeding following IRs made by UDI, except for UDI IRs 20.2 and 20.3 with reasons provided in Exhibit B-31. Creative Energy further stated it would remove Section 4(j) of the Connections Agreement during the oral hearing and re-file, which it did in Exhibit B-44.

²³³ Exhibit B-1, p. 41.

²³⁴ Exhibit B-1, Schedule 6 recitals.

²³⁵ Creative Energy Final Argument, p. 6.

²³⁶ *Utilities Commission Act*, RSBC 1996, c. 473, s. 59.

²³⁷ Oral Hearing, Transcript Volume 2, p. 240.

²³⁸ Oral Hearing, Transcript Volume 2, pp. 256, 257.

UDI submits that the “Agreements contain serious inadequacies and are unreasonably favourable to Creative [Energy]. Compounding these problems is the fact that, if the Commission approves mandatory connections, developers will have no choice but to sign these agreements.”²³⁹ Further, UDI submits that the burden is on Creative Energy to prove the agreements are just and reasonable and consultation has been adequate. Creative Energy submits that the amendments made to the agreements during the course of the proceeding and lack of consultation demonstrates that Creative Energy has failed to meet that burden.²⁴⁰

Creative Energy argues that the terms and conditions of the Connection Agreement are not internally inconsistent²⁴¹ and are no more onerous than other city or utility connection agreements in dealing with indemnities, covenants and statutory rights of way (SRW) as examples. Creative Energy further argues that, “contrary to the views expressed by UDI, developers and customers have recourse to the Commission before agreeing to a SRW. After the developer or customer have agreed to and signed a SRW, a dispute related to the terms of the SRW may be a matter for the courts, as suggested by UDI.” Creative Energy also argues that the customer service agreement is akin to a tariff with Commission oversight.²⁴²

Finally, “Creative [Energy] submits that the agreements in their current form should be approved, subject to any direction the Commission may have. In addition, Creative [Energy] is committed to improving these agreements moving forward and will apply to the Commission for the approval of any changes, where such approval is necessary.”²⁴³

Commission determination

The Commission must consider whether the Connection Agreement is just and reasonable and “regularly and uniformly extended to all persons under substantially similar circumstances and condition for service of the same description.”²⁴⁴ The Connection and Service Agreement(s) represent the terms and conditions of service as part of the “tariff” and would not be negotiable by developers. In fact, negotiation by individual developers could lead to lack of uniformity and questions of fairness.

The Panel notes Creative Energy’s argument that the provisions of the Connection Agreement are consistent with other city or utility connection agreements. However, the Panel requires more information from Creative Energy. **Therefore, approval of the Connection Agreement is denied. Creative Energy may resubmit the Connection Agreement with its next rate application; at such time that Creative Energy files the Connection Agreement, Creative Energy must include the following evidence to support approval of this agreement:**

- 1. A comparison of the statutory right of way provisions of tariffs of other similar utilities, with a view of supporting that this provision is in the public interest and meets the standards applicable in sections 59-61 of the UCA.**

²³⁹ UDI Final Argument, p. 12, para. 50.

²⁴⁰ Ibid., pp.12–13, para. 51.

²⁴¹ Creative Energy Reply Argument, paras. 212–220. At para. 218, Creative Energy provides a table comparing similar provision in similar Utility Connection Agreements.

²⁴² Ibid., pp. 63–66.

²⁴³ Ibid., p. 67.

²⁴⁴ *Utilities Commission Act*, RSBC 1996, c. 473, s. 59.

2. **A fulsome analysis of an alternative to the requirement that developers must not apply for a building permit until Creative Energy has approved the developer's design.**
3. **A revised section 2.2 that indicates that the requirement to have exclusive end-use is a part of the CoV policy and bylaws, and that the developer is required to comply with such policy/bylaws.**
4. **Evidence that the design guidelines and review process is consistent with other similar utilities.**
5. **Evidence that the other terms and conditions of concern raised by UDI and others do not go further than necessary in order to provide like service by other utility operators.**

4.4 Chinatown Extension Policy

Creative Energy proposes the following “formal extension policy” for the Chinatown sub-area of the Franchise Area and submits that it is consistent with the TES Guidelines:

Creative Energy may undertake extensions of the NEFC NES subject to the NEFC and Chinatown Neighbourhood Energy Agreement up to a cumulative capital cost (net of any customer Contributions in Aid of Construction) of \$10,742,000 (the Initial TES capital cost approved by the Commission under the NEFC CPCN) provided the extensions do not increase rates for existing customers (after any Contributions in Aid of Construction) greater than 10 percent above what they are or would have been in the absence of the extension. Where cumulative capital costs exceed the Initial TES Capital Cost and/or rate impacts exceed 10 percent, Creative [Energy] may not undertake extensions without prior approval of the Commission. This extension policy excludes the addition of any low carbon energy supply alternatives required under the Neighbourhood Energy Agreement. Creative [Energy] must apply to the Commission for approval of any low carbon energy supply alternatives, regardless of capital costs or rate impacts.²⁴⁵

Although Creative Energy is seeking formal approval of its NEFC Extension Policy as part of this Application, it is not seeking specific approvals for loads or capital expenditures within Chinatown. Creative Energy states that it is providing information on its vision and activities in relation to Chinatown as further context for this Application and to illustrate a viable strategy for future interconnection of Chinatown to NEFC. Creative Energy is completing negotiations with the pending development and broader planning studies, which it expects to file as part of future applications, as required.²⁴⁶

Creative Energy also states that in order to secure loads in Chinatown, it is:

[P]ursuing the creation of a local node initially served from a local boiler plant within a pending development located in Chinatown. Creative Energy plans to submit a Stream A application for the establishment of the Energy Centre since it will serve only the building in which it is located. The plant will be slightly oversized for the initial development and include space for future expansion. When other loads are identified and secured, Creative Energy would apply for expansion of this plant within the NEFC franchise via the extension test. This methodology will provide the opportunity for Chinatown to access the low carbon solution.²⁴⁷

²⁴⁵ Exhibit B-1, p. 39.

²⁴⁶ Exhibit B-1, p. 40.

²⁴⁷ Ibid.

Since this Application was filed, an application for the Stream A system referred to above was submitted and, by Order G-101-15, approved. In that application, Creative Energy noted, “the system capacity will be slightly oversized to facilitate future connections. Initial plant capacity is the size of the current plant that will serve 188 Keefer Street plus potentially additional buildings that meet the Stream A TES Guidelines.”²⁴⁸

Creative Energy was asked, considering the NES in Chinatown appears to be its own green-field separate and distinct future NES, to justify why extensions into Chinatown should be subject to an extension test based on the rates and initial capital cost of the NEFC Stream B NES. It was also asked to justify why the Commission should approve an exclusive franchise to Creative Energy for Chinatown at this time. Creative Energy responded:

The Commission should approve the Chinatown franchise because this is aligned and planned by the City of Vancouver. Chinatown is immediately adjacent to NEFC, and has Council policy for district energy establishment. By including Chinatown in the NEFC franchise, Council can have confidence that it will be low carbon. Since the scale of anticipated development in Chinatown is modest. Integrating with the NEFC franchise preserves the long-term opportunity to interconnect with the NEFC system and benefit from the economies of scale associated with a larger system.²⁴⁹

Given the average size and pattern of individual developments expected in Chinatown, and the distance to the NEFC core system, Creative Energy considers it prudent to first establish a local network to aggregate several loads that could then justify and sustain a physical connection to either Creative Energy’s existing network or to the new NEFC network to access low carbon energy as required under the Neighbourhood Energy Agreement. In Creative Energy’s submission, “this is no different than the temporary energy centres being deployed at the UBC NDES to knit together initial developments on different sides of the Wesbrook Neighbourhood [in the Corix CPCN Application for the UBC NDES].”²⁵⁰

Regarding the Corix CPCN Application for the UBC NDES, Creative Energy further argues that “the Commission Panel in that proceeding decided: ‘If CMUS [Corix] plans to expand service to Acadia East, Acadia West, Stadium, East Campus, Block F or other areas not included in the Project Plan, the Panel directs CMUS to follow the TES Guidelines.’”²⁵¹

Intervener arguments

BCOAPO has no concerns about the extension test as it “mirrors the Commission’s approved extension test for Stream B utilities.”²⁵²

CEC recommends that the Commission deny the NEFC Extension Test as part of its denial of the application, although it does not provide any rationale for this recommendation.²⁵³

²⁴⁸ Creative Energy Stream A Thermal Energy System Registration for 188 Keefer Street

²⁴⁹ Exhibit B-6, BCUC IRs 1.46.2, 1.46.2.1.

²⁵⁰ Exhibit B-6, BCUC IR 1.4.3.1.

²⁵¹ Creative Energy Reply Argument, p. 36.

²⁵² BCOAPO Final Argument, p. 14.

²⁵³ CEC Final Argument, p. 47.

FEI submits that mandatory connection and exclusivity calls into question the appropriateness of applying an extension test that is based on the Commission's TES Regulatory Framework Guidelines.²⁵⁴

FEI further submits that Creative Energy has excluded the facilities in Chinatown from its requested CPCN, instead proposing to use a system extension test to extend the NES to Chinatown because the demand from redevelopment in Chinatown is too uncertain, too small in scale, and too spread out to justify its inclusion in a CPCN application. In FEI's view, this is an admission that the inclusion of Chinatown in the requested CPCN for the build out and Energy Supply Phase 1 would reduce the cost effectiveness of the NES to the point that it would not make sense to pursue it. FEI suggests that the Commission should question the use of an extension test of this nature to incorporate neighbourhoods that are fully expected to be included within the system, and have only been excluded from the initial CPCN because it improves the business case, stating that "[i]f the rationale for excluding Chinatown is that there is no business case for its inclusion, then Creative Energy should be required to demonstrate to the Commission in a CPCN application that a business case exists when it comes time to incorporate Chinatown in the NES."²⁵⁵

FAES submits, "Creative [Energy]'s proposal for providing service to Chinatown is also entirely inconsistent with the TES Guidelines."²⁵⁶ It summarizes Creative Energy's proposal with respect to Keefer Street to:

- Permit a Stream A TES (questionably registered only with the benefit of a competition eliminating zoning agreement with the CoV) to expand and operate like a Stream B TES to exclusively aggregate load in Chinatown;
- Bundle, under the same rate, physically disconnected systems under the cover of the NEA;
- Permit the original customer of the Keefer Street Stream A TES to continue to receive service under a separate (and undisclosed) rate; and
- Provide Creative Energy with a "right of first refusal" in Chinatown whereby it may accept or reject new load without being exposed to competition.

FAES summarises that "[v]iewed as a whole, it is clear that the order sought from the Commission with respect to Creative Energy's plans in Chinatown is extraordinary. It is equally clear, in FAES' submission, that the evidence on the record cannot support a conclusion that such extraordinary relief is in the public interest".²⁵⁷

Commission determination

The Panel does not approve the proposed Chinatown Extension Policy.

The Panel is not persuaded that there is sufficient certainty about the load in Chinatown area to justify allowing the development of the DES to proceed as an extension to NEFC. Further, the Chinatown area is not contiguous to the NEFC area, and it is not part of the same district energy system. Creative Energy is proposing to develop the DES in Chinatown from a local heat source and provides no plan regarding connecting Chinatown to NEFC.

²⁵⁴ FEI Final Argument, p. 78.

²⁵⁵ FEI Final Argument, pp. 42, 99.

²⁵⁶ FAES Final Argument, pp. 42, 99.

²⁵⁷ FAES Final Argument, p. 18.

Accordingly, the Panel finds any district energy system planned for Chinatown to be a separate development at this time.

While in the case of the Corix UBC NDES application, the Commission did approve a similar extension policy for Acadia and Block F, with respect to the original DES at Wesbrook; in that case there was sufficient evidence on the record of a plan to connect those areas to the Wesbrook DES.

4.5 Rate parameters

4.5.1 Revenue deficiency deferral account (RDDA)

Creative Energy requests approval to establish a revenue deficiency deferral account (RDDA) and to accrue carrying charges on this account at Creative Energy's after-tax weighted average cost of capital (WACC).²⁵⁸ The purpose of the RDDA is to smooth rates during Energy Supply Phase 1 by setting rates in the initial years, which are below the actual revenue requirement, and recording the resulting revenue shortfalls in the RDDA. As the load develops, revenues will grow and the accumulated balance in the RDDA will be drawn down to zero.²⁵⁹

The RDDA is forecast to reach a peak balance of \$1.1 million in year 2020.²⁶⁰ Creative Energy proposes to recover the balance in the RDDA over a 15-year period resulting in the balance being fully recovered by 2030.²⁶¹ Creative Energy submits that a 15-year recovery period is appropriate because it results in a "relatively small step change in rates after full recovery and because it permits a fairly flat fixed charge during the initial recovery period."²⁶²

Creative Energy proposes to use the RDDA to accumulate forecast revenue shortfalls, but not to allow recovery of variances in "controllable" costs. Creative Energy characterizes controllable costs as "typical maintenance and operator costs", while non-controllable costs include capital costs, loads, allocated costs, taxes and sustaining capital costs. Variances between forecast and actual non-controllable are proposed to be recorded in the RDDA.²⁶³ In response to BCUC IR 1.25.1, Creative Energy provided a detailed list, which classifies each cost item as either "controllable" or "non-controllable".²⁶⁴

Creative Energy also argues that "[n]ot only has the Commission previously approved the purpose and design of an RDDA, but this RDDA is significantly smaller...than other RDDAs, and is proposed to be fully recovered in a shorter time than most."²⁶⁵ For instance, in the Corix UBC NDES CPCN Decision, the Commission approved the establishment of an RDDA. In the case of the UBC NDES, the RDDA's forecast peak balance is \$8 million and the approved recovery period is 20 years.²⁶⁶

²⁵⁸ Exhibit B-1-2, Directive 5.

²⁵⁹ Exhibit B-1, p. 95.

²⁶⁰ Exhibit B-6, BCUC IR 1.24.1.

²⁶¹ Exhibit B-1, p. 95.

²⁶² Exhibit B-6, BCUC IR 1.24.1.

²⁶³ Exhibit B-1, p. 95.

²⁶⁴ Exhibit B-6, BCUC IR 1.25.1.

²⁶⁵ Creative Energy Final Argument, p. 30.

²⁶⁶ Corix UBC NDES CPCN Decision, pp. 35, 42.

Intervener arguments

FAES does not specifically address the appropriateness of establishing the RDDA or the appropriate carrying charges to be applied to the RDDA. Instead, FAES argues that there is “no reasonable basis” for approving the rate parameters put forth by Creative Energy because, in FAES’ view, Creative Energy has not provided adequate justification and alternatives analysis as part of the Application.²⁶⁷

CEC recommends that the Commission deny the CPCN Application, including the request to establish the RDDA.²⁶⁸ CEC also states that in the event the Commission does approve the CPCN, CEC considers the RDDA to be an “appropriate means of smoothing rates and is in ratepayers’ interests.” CEC further states that it “accepts the RDDA on the basis that it is to cover Energy Supply Phase 1 only, and that additional deferrals are not included as a result of Phase 2 Energy supply.”²⁶⁹

No other interveners commented specifically on the creation of the RDDA.

Commission determination

The Panel approves the establishment of the RDDA and approves the accrual of carrying charges on the RDDA based on Creative Energy’s after-tax weighted average cost of capital. The RDDA is a reasonable mechanism to achieve a levelized rate structure and is consistent with previous Commission decisions on thermal energy service projects. While the forecast build-up of the RDDA is smaller than other similar thermal energy system projects such as the UBC NDES, the Panel agrees with Creative Energy that use of the RDDA is appropriate for Phase 1 of the NEFC NES given the anticipated small customer base and load in the initial years of the project.

The Panel acknowledges Creative Energy’s proposed treatment and classification of controllable and non-controllable costs with regards to the recording of variances between forecast and actual amounts in the RDDA; however, the Panel will defer any determinations on this issue to the final rate application. Additionally, the Panel notes that while Creative Energy described its proposal to recover the RDDA balance over 15 years throughout the Application and in its final argument, Creative Energy did not request approval of the 15-year recovery period as part of the revised draft order filed as Exhibit B-1-2 or in the draft order filed as part of its final argument. The Panel considers a 15-year recovery period to be reasonable given the relatively small balance forecast to accumulate in the RDDA and we expect the recovery period proposed in the final rate application to remain consistent with this Application.

4.5.2 Allowed return

Creative Energy seeks approval for a return on equity (ROE) of 9.5 percent, which is based on the current benchmark equity return plus 75 basis points to account for the additional risk related to the development of a small-scale alternative energy utility. This proposal is consistent with Creative Energy’s requested ROE for its core steam system.²⁷⁰

²⁶⁷ FAES Final Argument, pp. 11–12.

²⁶⁸ CEC Final Argument, p. 47.

²⁶⁹ Ibid., p. 46.

²⁷⁰ Exhibit B-1, p. 5.

Creative Energy states that the project risks are comparable to the risks of other projects recently approved by the Commission with the same capital structure and return on equity.²⁷¹

The projected capital structure, cost of debt, and return on equity for the NES rate base is summarized in Table 21 of the Application (and copied below):

Table 21: NES Capital Structure

	Share of Capital	Nominal Rate
Debt	57.5%	4.00%
Equity	42.5%	9.50%
WACC (after tax)		6.34%

Creative Energy is not proposing a project-specific ROE, in part because it states that there will be shared assets between the core and NEFC. Creative Energy also submits that it is not possible or appropriate to set a project-specific capital structure, debt rate or ROE given the tight linkage between the core and this project. Creative Energy also considers that it is not appropriate to consider changes to Creative Energy's capital structure or allowed ROE in the context of a single project approval.²⁷²

Various interveners suggest that the mandatory connection clause impact the project risks, however their final position on Creative Energy's ROE is on a wide spectrum:

- BCOAPO states that the risks of lower takeup (and load) and hence lower revenues is reduced by the mandatory connection clause. However, BCOAPO is in agreement with Creative Energy that the ROE usually reflects equity costs of the utility and not the project.²⁷³
- FAES makes no submissions on how the risks should be related to ROE.
- UDI submits that mandatory connections significantly reduce the risk to Creative Energy and points out that this is confirmed by Creative Energy's rebuttal evidence where it states that the mandatory connection policy "de-risks the project" and that the policy is important in order to "reduce the development risk for the energy provider." UDI submit that despite this coercive policy, it is also seeking to obtain a generous return on equity that would be more appropriate in circumstances where the utility must compete for customers.²⁷⁴ However, UDI makes no submissions on the quantum of adjustment the proposed ROE.
- CEC suggests that the mandatory connection has significant impact on the appropriateness of a risk premium but offered no meaningful analysis of how the risk in this project is different from other projects with comparable connection requirements that have been granted the same risk premium requested by Creative Energy.²⁷⁵

²⁷¹ Exhibit B-1, p. 82.

²⁷² Creative Energy Final Argument, pp. 87–88, paras. 318–319.

²⁷³ BCOAPO Final Argument, para. 82.

²⁷⁴ UDI Final Argument, para. 143.

²⁷⁵ CEC Final Argument, pp. 38–39, para. 110; Creative Energy Reply Argument, p. 51, para. 184.

The NEA provides that the CoV will indemnify Creative Energy for any Stranded Asset costs, under certain conditions and only up to a limit of \$3m. This clause has the potential to reduce the stranded assets risk for the Utility. At issue is whether this potential mitigation of some stranded asset risk should be reflected in the ROE.

Creative Energy agrees that this indemnity or recovery from the CoV reduces the potential stranded asset risk associated with this project.²⁷⁶ No interveners provided any submissions on this issue.

Commission determination

The Panel approves the ROE and capital structure as applied for. The applied for capital structure and ROE is consistent with the Commission determination for Creative Energy in Order G-85-15 and is also consistent with the default capital structure and risk premium established for all TES proponents for Stream B utilities.²⁷⁷

In the Generic Cost of Capital (GCOC) Stage 2 Decision, the Commission made several considerations on whether regulation is for the utility, the person or the project. Since the underlying factor in cost of capital determination is related to risk, the Commission determined that the first consideration must be made on who is the investor in the TES project, in other words, who is financing the project.²⁷⁸ In this case, Creative Energy is providing the financing, and it already has an approved default capital structure and risk premium.

Although other interveners have argued that the mandatory connection impacts risk, no parties have any submissions on what the quantum of any impact on the equity thickness and ROE being sought.

The Panel makes no determination on any potential impact of the stranded asset indemnity provided by the CoV on Creative Energy's ROE or equity thickness. The Panel has previously declined to approve the NEA, and accordingly, makes no determination on how this issue may affect Creative Energy's risk profile. In any event, the non-connection events/stranded costs/indemnities are not sufficiently relevant because the Panel has previously determined that Creative Energy's ROE and capital structure is established on an entity basis.

Furthermore, the Commission makes no determination on the effectiveness or reasonableness of this clause in the NEA.

4.5.3 Long-term debt rate

As discussed in the previous section, Creative Energy requests approval of a capital structure for the NEFC NES of 57.5 percent debt and 42.5 percent equity. This is the capital structure approved in the GCOC Stage 2 proceeding for directly assigned capital costs.²⁷⁹ Creative Energy further requests approval to set long-term debt costs equivalent to its overall projected third party debt costs which are currently forecast at 4 percent.

None of the interveners commented on the appropriateness of Creative Energy's proposed long-term debt cost.

²⁷⁶ Oral Hearing, Transcript Volume 2, p. 321.

²⁷⁷ GCOC Stage 2 Decision dated March 25, 2014, p. 124.

²⁷⁸ GCOC Stage 2 Decision dated March 25, 2014, p. 37.

²⁷⁹ GCOC Stage 2 Decision dated March 25, 2014, p. 37.

Commission determination

The Panel approves Creative Energy's request to base its long-term debt costs equivalent to its overall projected third party debt costs, which are currently forecast at 4 percent. This approach is consistent with the GCOC Stage 2 Decision.

4.5.4 Cost Allocation principles

Although Creative Energy is not seeking final rate approvals as part of the current Application, Creative Energy is seeking certain regulatory parameters for ratemaking purposes in future rate applications, including cost allocation principles. Creative Energy proposes a cost allocation that reflects all incremental costs of service to the NEFC to the core, together with a fair contribution towards fixed costs and overheads.²⁸⁰ Creative Energy indicates that the connection to the existing Creative Energy network will provide net benefits to the core, and will provide supply flexibility and other synergies. Accordingly, Creative Energy proposes to apply a two-part cost allocation methodology:

- NES Meter Cost Allocation for all other costs.²⁸¹
- NES Fuel Recovery Cost Allocation for gas consumption to serve the NES.²⁸²

In the following two sub-sections, the Panel examines Creative Energy's proposals and makes further determinations.

4.5.4.1 Meter Cost Allocation principle

At issue is whether the NES Meter Cost Allocation principle or formula is appropriate and whether the Massachusetts formula is appropriate for allocating overhead costs.

Creative Energy submits that NES customers will receive energy generated at the Beatty Street steam plant, delivered by existing steam lines and metered at the NES' two Steam-HW converter stations. It proposes a cost allocation that reflects all incremental costs of service to NEFC from the core towards fixed costs and corporate overheads.²⁸³ Creative Energy explains that "This allocation will benefit core customers because there is surplus capacity that will now be used and useful for service to NEFC customers. As a result, the use of existing infrastructure should benefit both NEFC customers and the core customers."²⁸⁴

Creative Energy proposes that the NES Meter Cost Allocation be calculated based on four components, each with its own allocation methodology:²⁸⁵

- 1) **Steam production**, including steam plant depreciation and earned return, plant maintenance, non-fuel consumable costs such as water and power and plant operating staff.
 - Allocation based on NEFC's share of total steam consumption at a rate of \$3.32 per million lbs of steam...later revised to \$2.97 per million lbs of steam.²⁸⁶

²⁸⁰ Exhibit B-1, p. 66.

²⁸¹ Exhibit B-6, BCUC IR 1.13.6; Exhibit B-1, p. 66.

²⁸² Ibid., Exhibit B-6, BCUC IR 1.14.

²⁸³ Exhibit B-1, p. 66.

²⁸⁴ Creative Energy Final Argument, para. 159.

²⁸⁵ Exhibit B-1, p. 69.

- 2) **Steam distribution**, including pipe network depreciation and earned return, distribution network maintenance and distribution network staff.
 - Allocation of a portion of the existing steam network based on NEFC's share of steam consumption at a rate of \$2.53 per million lbs of steam...later revised to \$1.58 per million lbs of steam.²⁸⁷
- 3) **Corporate overheads**, including office expenses, insurance, property and income taxes, but excluding management salaries.
 - Allocation based on the Massachusetts Formula (uses the weighted average of the main cost drivers, independent of the amount of energy consumed).²⁸⁸
- 4) **Management salaries**, allocated at 1 percent of management salaries of \$1,272,148.²⁸⁹

Creative Energy clarifies that it "is seeking approval for the principles relevant to the allocation of existing infrastructure costs from the core customers." However, it then goes on to say that it "believes that this is the time for the Commission to make the level of allocation determinations requested by Creative [Energy] in this proceeding."²⁹⁰

Based on the review of questions to date in this proceeding, Creative Energy states that it now intends to file a general revenue requirements application (RRA) that will include the revenue requirements for both the core customers and the NEFC customers, on or before December 1, 2015. This application will deal with the allocation of shared costs between the core customers and NEFC customers. For the purposes of this allocation, Creative Energy is seeking certain allocation determinations in this proceeding. The RRA will also include the final rates for NEFC, which will include cost allocations from shared infrastructure, direct assignment costs, and a final rate design.²⁹¹ Creative Energy submits that "any cost allocation determinations in this or any future proceedings will result in an adjustment for the 'core' customers, and that the Commission must consider the rate making principles of fairness and transparency in this proposal."²⁹²

No intervener commented on this issue.

Commission determination

The Panel approves the principle of cost allocations from the core business, given that a portion of the core infrastructure, corporate overhead and management will be used to provide service to NEFC. Further, the Panel considers the fundamental rate design principles of cost causation to be appropriate and therefore a commensurate portion of production and distribution costs based on the proportion of line used to serve NEFC is a reasonable method. **However, the Panel is not persuaded that approval of the proposed allocation rates for production and distribution costs is appropriate at this time.** The approval of the proposed allocation rates requires consideration of the regulatory principles of fairness, understandability and the recovery of revenue

²⁸⁶ Exhibit B-6, BCUCIR 1.15.2.

²⁸⁷ Exhibit B-6, BCUCIR 1.15.3.

²⁸⁸ Exhibit B-6, BCUCIRs 1.15.2, 1.15.9.

²⁸⁹ Exhibit B-6, BCUCIR 1.15.2.

²⁹⁰ Creative Energy Final Argument, paras. 159, 162;

²⁹¹ Exhibit B-22, BCUCIR 2.11.4.

²⁹² Exhibit B-6, BCUCIR 1.15.12; Creative Energy Final Argument, para. 167.

requirements. Accordingly, the allocation rates should be determined in the upcoming core RRA and NEFC rates and rate design application, subject to the further directions provided below. Setting allocation methodologies and costs in a proceeding that examines the rate design of both the core and NEFC will allow a more holistic approach and provide for proper representation and intervention on behalf of core customers in addition to potential NEFC customers.

In the upcoming RDA and RRA application, Creative Energy is directed to:

- 1. Include a discussion on whether the rates for both the core and NEFC should be considered as a separate classes of service under section 60(1)(c) of the UCA.**
- 2. Provide a clearer labelling of the proposed cost allocations.** The intent of the proposed cost allocations is to reimburse the Core business for the costs incurred by those customers to provide service to NEFC from the existing steam infrastructure. Therefore the labelling of this fixed cost allocation as a “Meter Cost” allocation appears to be misleading as it has nothing to do with meters or meter costs. In making this determination, the Panel notes that Creative Energy concedes that the better terminology could be “Core Cost Allocations to NES” and the Panel finds that a more appropriate label than “Meter Cost”.
- 3. Provide more clarity on the cost causation of the parameters of the Massachusetts formula, including a confirmation of whether the proposed methodology has been reviewed by its auditors.** The Massachusetts formula has generally been accepted by the Commission as a methodology for allocating costs that are not easily or directly assignable, such as overhead costs. However, the cost drivers to be used in the formula are not as obvious.

4.5.4.2 Fuel Recovery Cost Allocation principle or formulae

Creative Energy also requests approval of the NES Fuel Recovery Cost Allocation methodology proposed for the recovery of NEFC’s share of fuel costs from the existing core steam plant. This was subsequently revised in response to BCUC IRs in order that the energy content of the condensate return could be factored so as to be based on net pounds of steam.²⁹³

Creative Energy also states that it is prepared to accept direction on further refinement to clarify and implement the cost allocation principles as part of the approvals in this Application or alternatively, it would put forward further refinements as part of a future rates application.²⁹⁴

In the Creative Energy 2015-2017 RRA Decision (RRA Decision), the Commission addressed certain issues regarding the Fuel Cost Adjustment charge which, together with the Base Cost imbedded in the Steam Tariff, recovers the fuel costs for the existing core steam utility. In particular, that decision stated that “[t]he nature and magnitude of the Fuel Cost Adjustment charge raises a number of questions in regard to the appropriateness and applicability of the current fuel cost treatment methodology in the future, particularly in light of the contemplated business transformation.”²⁹⁵ The Commission also noted that “[t]he Fuel Cost Stabilization Account or ‘buffer account’ that Creative Energy employs to track the imbalance between fuel costs

²⁹³ Exhibit B-6, BCUC IR 1.14.18.

²⁹⁴ Exhibit B-6, BCUC IR 1.14.11.1.

²⁹⁵ Creative Energy 2015-2017 Revenue Requirements Application (2015-2017 RRA), Decision dated June 9, 2015, p. 15.

and recoveries of fuel costs balance, is in the Panel's view, an unconventional means for a thermal energy utility to manage and recover fuel costs."²⁹⁶

In that RRA Decision, the Commission expressed a number of specific concerns regarding Creative Energy's treatment of Fuel Costs including:

- The relative effectiveness of Creative Energy's use of the "buffer account" to smooth fuel cost volatility;
- The allocation of the recovery of the fuel costs between the Base Cost in the Steam Tariff and the Fuel Cost Adjustment charge;
- Creative Energy's apparent lack of an attempt to forecast of the natural gas component of the fuel costs over the RRA test period in spite of the significance of the Fuel Cost Adjustment charge portion of the customer bill; and
- The potential impact of a transition from natural gas to low-carbon fuel sources on the recovery of these costs.²⁹⁷

In the RRA Decision, the Commission directed Creative Energy to "file a Phase I rate design application within one year from the date of this Decision [June 9, 2016] specifically in regard to the recovery of fuel costs. The rate design should include discussion of any potential adverse impacts on existing core steam utility customers and new customers such as the NEFC utility and how these adverse impacts might be mitigated."²⁹⁸

Commission determination

The Panel is in agreement with Creative Energy's stated principle that the NEFC NES will recover its appropriate share of fuel costs. **However, approval of the proposed fuel cost allocation methodology is denied.** Given the Commission's concern with the current methodology for the recovery of fuel costs for the existing core steam utility and the expected filing of Creative Energy's 2016 RRA for the core and the RDA for the core and NEFC, the Panel is of the view that the fuel cost allocation methodology is more appropriately addressed in that proceeding.

4.5.5 Operator, maintenance, lease and other costs

Direct operating costs include fuel costs as well as a number of "non-fuel" costs. During Energy Supply Phase 1, the only direct fuel consumption by the NEFC will be electricity to fuel the DES pumps. Creative Energy calculates annual electricity costs using BC Hydro's Large General Service Rate, including BC Hydro's forecasts of residential electricity rate increases to escalate the Large General Service rate. For years where no BC Hydro forecast rate increase is available, Creative Energy assumes increases of 3 percent for annual inflation.²⁹⁹

Creative Energy forecasts the following non-fuel operating costs to be incurred annually to operate the NEFC: (i) maintenance costs for the S2HW converter stations, hot water distribution system, and customer energy

²⁹⁶ Creative Energy 2015-2017 RRA, Decision dated June 9, 2015, p. 19.

²⁹⁷ Ibid., pp. 24-25.

²⁹⁸ Ibid., p. 25.

²⁹⁹ Exhibit B-1, p. 64.

transfer stations; (ii) insurance costs; (iii) administration costs; (iv) municipal access fees (in lieu of property taxes); and (v) lease payments for the space required for the two steam-to-hot water converter stations.³⁰⁰

Creative Energy forecasts that during Phase 1, the non-fuel operating costs will increase from \$63 thousand in the initial year 2016 to \$181 thousand by year 2020.³⁰¹ Creative Energy states that the NEFC does not require a full-time operator in the initial years and that the forecast maintenance costs have been calculated by multiplying the plant in service cost for all assets by 1 percent, escalated at inflation. Creative Energy submits that the proposed method for forecasting maintenance costs is reasonable and is consistent with other systems. Creative Energy also submits that the maintenance costs can be reviewed periodically and updated for subsequent revenue requirement applications. Further, it views maintenance costs as a controllable cost and therefore any variances between forecast and actual maintenance costs would not be included as an adjustment to the RDDA.³⁰²

Similar to the calculation of maintenance costs, Creative Energy forecasts NEFC-specific administration costs by multiplying maintenance costs by 25 percent. The administration cost calculation is intended to capture the costs of billing and customer management directly allocated to the NEFC.³⁰³ These activities include billing processing, meter reading, setting up the tariff and customer management with respect to inquiries or customer relations.³⁰⁴

When asked why Creative Energy calculates the NEFC-specific administration costs as being 25 percent of annual maintenance costs, Creative Energy responded that “administration costs can be driven up through activities relating to maintenance” and that system maintenance would “drive increased back office support.”³⁰⁵ Creative Energy submits that another method for calculating administration costs is to directly allocate costs that are directly benefiting the NEFC where possible.³⁰⁶ Creative Energy explains that employees will be tracking their time spent on NEFC administrative activities as a percentage of their overall time but will not be tracking time spent on an hour by hour basis due to the fact that doing so would be administratively burdensome.³⁰⁷

Creative Energy estimates the amount of time spent on administrative activities per month to be 10 to 15 hours.³⁰⁸ Additionally, there is expected to be non-labour administrative costs such as office supplies, telephone and IT costs.³⁰⁹

No interveners commented on the proposed forecast of direct operating costs in their final arguments.

³⁰⁰ Exhibit B-1, p. 74.

³⁰¹ Ibid., p. 75.

³⁰² Exhibit B-22, BCUCIRs 2.8.3, 2.8.3.1.

³⁰³ Ibid., p. 74.

³⁰⁴ Exhibit B-11, FEIR 1.22.1.

³⁰⁵ Exhibit B-6, BCUCIR 1.19.1.

³⁰⁶ Ibid., BCUCIR 1.19.1.1.

³⁰⁷ Ibid., BCUCIR 1.19.2.1.

³⁰⁸ Exhibit B-22, BCUCIR 2.7.1.

³⁰⁹ Ibid., BCUCIR 2.7.3.

Commission determination

The Panel makes no determination on Creative Energy's forecasts for direct operating costs at this time. While the Panel finds the various categories of direct operating costs to be reasonable, it considers it most appropriate to review the forecast amounts, and methods for determining these amounts, in the context of a rate application. Accordingly, **the Panel directs Creative Energy to file an updated forecast for direct operating costs, as well as a detailed explanation of the proposed method for determining each type of operating cost, as part of the rate application for the NEFC.**

4.5.6 Fixed versus variable rate design

Creative Energy proposes a two-part rate design consisting of a fixed charge and a variable energy recovery charge based on a share of its fixed and variable indicative costs.³¹⁰ It explains that variable costs vary with actual consumption and could be avoided through changes in consumption: these include the NES Fuel Recovery Cost Allocation, some components of the NES Meter Cost Allocation and the Carbon Reduction Rider. Fixed costs are those that do not vary with actual load (e.g., carrying costs for sunk capital and fixed operating costs). On a net present value basis over 15 years, NES costs are approximately 63 percent variable and 37 percent fixed.³¹¹

Creative Energy states that this fixed/variable rate design is comparable to the rate design for other new hot water systems in BC including the CoV's SEFC.³¹²

No interveners made a submission on Creative Energy's proposed rate design.

Commission determination

The Panel approves the proposed two-part rate design consisting of a 37 percent fixed charge and a 63 percent variable energy recovery charge based on a share of its fixed and variable indicative costs.

The Panel is persuaded that the proposed rate design will reasonably recover the commensurate portion of fixed and variable costs of the NEFC system.

In approving this component of the rate design, the Panel notes that establishing a fixed component to the rate structure provides revenue stability and revenue assurance. As long as the fixed component is not overly burdensome, the Commission has previously generally been acceptable to rate structures that closely mirror the recovery of cost characteristics. For example, in the Corix UniverCity Decision, the Commission agreed that there is merit in designing a rate that structure that better matches revenue streams with cost characteristics.³¹³ Other examples include Dockside Green, River District and Corix UBC.

³¹⁰ Exhibit B-1, p. 17.

³¹¹ Exhibit B-1, pp. 17, 86.

³¹² Exhibit B-1, pp. 5, 17.

³¹³ Corix Application for a CPCN to Construct and Operate a District Energy System for the UniverCity Neighbourhood Utility Service Project in Burnaby BC, Decision dated May 6, 2011, p. 45.

4.6 Exemption from Long-Term Resource Plan requirements

Creative Energy seeks an exemption from filing a long-term resource plan (LTRP) until completion of further feasibility work on low carbon sources and the filing of a CPCN Application for Energy Supply Phase 2 of this project.³¹⁴ It proposes to file a second CPCN application for approval of a future low carbon energy source to meet the NEA carbon performance requirements (Energy Supply Phase 2), currently anticipated to be in-service in January 1, 2020.³¹⁵

In the Commission's RRA Decision, Creative Energy was directed to file an LTRP pertaining to the existing steam utility by no later than June 9, 2017 and prior to making an investment decision regarding any low carbon fuel switch that may impact the existing steam customers.³¹⁶

The Commission also expressed concerns with Creative Energy's assertion that "many of the issues and outcomes of a resource plan will be addressed in individual CPCN applications" and stated that this approach suggests that the planning issues specific to the existing core steam utility will not be addressed until it files the Energy Supply Phase 2 CPCN sometime in the future. The Commission found the suggested delay in filing an LTRP for the existing core steam utility to be unacceptable, because "the existing core steam utility is clearly part of the broader transition plan and the core steam utility customers are likely to be impacted in a variety of ways including:

- rate design issues arising from the methodology for recovering the steam utility cost of service and fuel costs from new hot water NEUs;
- transfer pricing policies for shared resources;
- the shape of the incremental load; and
- the potentially higher costs of low carbon fuel sources that may be required to meet the carbon reduction targets set out in the NEA."³¹⁷

Creative Energy clarified that the Energy Supply Phase 2 CPCN would assess the range of cost-effective resource alternatives together with reliability and security issues, risk factors, major uncertainties as intended in a long-term resource plan but would be limited to consideration of resource options which are consistent with contractual commitments in the NEA.³¹⁸

Creative Energy also confirmed it is "seeking an exemption from filing a long-term resource plan with respect to only the NEFC utility and that the request does not apply in regard to a long-term resource plan for the core steam utility."³¹⁹

Intervener arguments

In the Procedural Conference, CEC raised concerns that Creative Energy has no LTRP and submitted that "the Commission is being asked to assess the CPCN application in the context of not having information it would

³¹⁴ Exhibit B-1, p. 17.

³¹⁵ Exhibit B-1, p. 15.

³¹⁶ Creative Energy, 2015-2017 RRA, Decision dated June 9, 2015, p. 15.

³¹⁷ Ibid., p. 14.

³¹⁸ Exhibit B-6, BCUC IR 1.34.3.

³¹⁹ Exhibit B-6, BCUC IR 1.34.1.

typically have in the face of a CPCN, that is going to lock in how this utility will operate for the foreseeable future.”³²⁰

In its final argument, CEC recommends that the Commission deny an exemption from the filing of any LTRP³²¹ because “the Long Term Resource Plan is an integral planning document for the utility and is important for ratepayers in having a broader view of the utility and being able to influence direction in a timely manner.” CEC also submits that the NEFC is a highly important element of Creative Energy’s future directions and the opportunity for a review of the LTRP should not be delayed for two years. CEC argues that Creative Energy has not provided an adequate justification for not filing an LTRP for the NEFC as required.³²²

CEC also notes that Creative Energy’s requested directive does not have a specific deadline and as such that wording provides significant opportunity for the LTRP to be further delayed. CEC recommends that if the Commission does approve a delay to the filing of the LTRP, it provide a specific deadline by which it must be completed.³²³

FEI submits that approval of the NEA ties the Commission’s hands in regard to the scope of a LTRP, because “[a]ny decision made now regarding the build out and Energy Supply Phase 1 will also have the practical effect of limiting the scope of potential options for Energy Supply Phase 2”, citing Creative Energy’s statement that “[t]he Creative [Energy] contractual commitments in the NEA will restrict the range of resources that might be considered in a long-term resource plan filed subsequent to approval of the NEA.”⁵⁹

FAES also makes submissions regarding the limiting effect of the NEA on the review of resource options for the NEFC area:

Creative Energy suggests that its relationship to the CoV’s policies is analogous to BC Hydro’s relationship to long-term resource plans. BC Hydro is obliged to meet certain renewable energy objectives... The Commission is statutorily required to consider long-term resource plans and the BCEO when deciding whether to issue a CPCN to an applicant for a CPCN. Nothing in the law suggests that the Commission’s jurisdiction is modified or overridden by municipal policies, whatever their purpose. Municipal policies are not long-term resource plans, nor are they equivalent to the BCEO, both of which are prescribed by statute. There is simply no parallel with BC Hydro. In any event, Creative [Energy] confirmed that the project that is before the Commission in this Application is a gas-fired DES that will not reduce GHG emissions and does not satisfy British Columbia’s energy objectives as discussed in section 6.2.6.³²⁴

Commission determination

Creative Energy must comply with an order, issued in its most recent RRA Decision, to provide an LTRP for its core business. The Panel now considers whether this LTRP does, or should, also include the NEFC DES.

³²⁰ Procedural Conference, Transcript Volume 1, p. 67.

³²¹ CEC Final Argument, para. 126.

³²² CEC Final Argument, pp. 44–45.

³²³ Ibid., p. 45.

³²⁴ FAES Final Argument, pp. 35–36, para. 115.

In this proceeding, Creative Energy argues that “[t]he Application is not for a new Stream B utility. It is an extension and new class of service for an existing Stream B utility.”³²⁵ It also submits that it is not possible or appropriate to set a project-specific capital structure, debt rate or ROE given the tight linkage between the core steam utility and this project.³²⁶

Considering the arguments put forth by Creative Energy regarding the relationship of the NEFC to the existing utility, and that NEFC will be physically connected to the existing utility infrastructure, and that the NEFC will be physically connected to the existing utility infrastructure, the Panel finds that the NEFC is not a separate utility from the existing utility. In this circumstance, the Panel is also finds that the LTRP filing previously directed for the utility includes NEFC.

5.0 ISSUE ARISING

5.1 Allocation of Hearing costs

Creative Energy states that FEI and FAES are “very unusual participants in this process, because they do not represent customers. Their history with the project will perhaps become relevant later. We have not objected to their intervention, but their intervention has been surprising to Creative Energy, and that is why we, in our letter of May 29th, suggest that you consider costs relevant to this procedure.”

Creative Energy contends that “[t]hey have already made this process much more controversial than another would be. And that’s not necessarily a bad thing and we have not objected to their intervention. ...we believe that you should give full consideration...to imposing costs from this process on FEI. FEI is a utility that’s much larger than Creative Energy. The costs of this process are significant to Creative Energy. It is in that light that we’re very concerned about the costs.” Creative Energy argues that they had expected the proceeding would proceed by way of SRP and that wasn’t the case “largely because of FEI and FAES, and costs...should be a consideration...in your final conclusions with respect to the process.”³²⁷

FEI submits “Creative [Energy], in putting forward an application with the novel relief of asking for exclusivity over end uses in a way that impacts a number of stakeholders, including FEI, should be required to answer for it in a fulsome process and should pay the costs of doing so, and that it would be highly inappropriate...to require FEI to pay a portion of the hearing costs when all it is doing is defending the rights and duties that it has currently under its CPCN.”³²⁸

Commission determination

The Panel denies requests made to charge any portion of the proceeding costs to any party other than the applicant. In making this determination, the Panel notes that parties contributed to a robust evidentiary record which provided sufficient evidence on significant public interest issues raised, to which the participants significantly contributed, thereby contributing to a better understanding by the Panel. Further, many parties

³²⁵ Exhibit B-24-1, FAESIR 1.2.1.

³²⁶ Creative Energy, Final Argument, pp. 87–88, paras. 318–319.

³²⁷ Procedural Conference, Transcript Volume 1, pp. 19–20.

³²⁸ Ibid., p. 42.

have incurred significant costs in order to participate, and in the Panel's view, no party behaved in a frivolous or vexatious manner.

6.0 REPORTING REQUIREMENTS

6.1 CPCN Annual Project Progress reporting

As noted in Section 2.2, the project build out will take place over a number of years and small deviations from forecast can translate into long term carrying costs for ratepayers. The Panel is of the view that, during the project build out consistent progress reporting is required. To strike an appropriate balance between the Commission's oversight of the execution of the project and Creative Energy's responsibility for the ongoing management of the project, annual reporting is appropriate. Accordingly, the Panel directs Creative Energy to provide annual progress reports.

Each Annual Progress Report is required to detail:

- i. Actual costs incurred to date compared to the CPCN estimate highlighting variances with an explanation and justification of significant variances;
- ii. Updated forecast of costs, highlighting the reasons for significant changes in project costs anticipated to be incurred; and
- iii. The status of project risks, highlighting the status of identified risks, changes in and additions to risks, the options available to address the risks, the actions that Creative Energy is taking to deal with the risks and the likely impact on the projects' schedule and cost.

The Annual Progress Reports should be structured similar to the requirements outlined in Appendix A to Order C-2-09. The first report is for the period ending December 31, 2015. Annual Progress Reports are to be submitted within 30 days of the end of each reporting period.

The Panel directs Creative Energy to provide Material Change Reports on an exception basis, identifying deviations from forecasts that could affect costs and rates. A Material Change Report should identify and detail any significant delay (e.g. a six month delay in receiving materials or a six month delay to the anticipated connection date of a building as compared to what was forecast in the CPCN application) or a material cost variance (e.g. ETS or DPS actual costs being 30 percent or more higher than the estimates that approval of this CPCN is based on). Changes of this nature must be reported to the Commission as soon as practicable or within 60 days or, if within 60 days of the Annual Progress Report, be included in the Annual Progress Report. The Material Change Report must highlight the reasons for the delay or material cost variance, Creative Energy's consideration of the options available and actions Creative Energy is taking to address the issue.

7.0 SUMMARY OF DIRECTIVES

This summary is provided for the convenience of readers. In the event of any difference between the Directions in this Summary and those in the body of the decision, the wording in the decision shall prevail.

Directive	Reference
The Panel finds that the load forecast is reasonable	Page 11
For the reasons set out in the subsequent sections, the Panel finds that a CPCN for the NEFC DES Project limited in scope to exclude Chinatown, and as otherwise described in the Application, is in the public interest. A CPCN is granted to build infrastructure in NEFC in the amount of \$9,345,400 plus PST, interest during construction and capitalized development costs.	Page 14
Accordingly, the Panel finds the proposed use of hot water to be appropriate in this circumstance.	Page 15
The Panel finds that Creative Energy cannot extend its existing steam facility into NEFC without a CPCN as Creative Energy does not have a Commission approved extension policy.	Page 16
The Panel finds there is not sufficient evidence on the record to establish whether the proposed NEFC DES meets the CPCN exclusion criteria as outlined in the TES Guidelines	Page 16
For these reasons, the Panel finds that connecting to the Beatty Street plant through two new steam to hot water converter stations, as opposed to using temporary or permanent gas boilers, is an appropriate choice and also notes that it is the applicant's proposed approach.	Page 17
The Panel finds that optimizing the size of the steam to hot water converter stations to meet the anticipated demand can provide benefits to ratepayers through reduced carrying costs. As such, the Panel approves Creative Energy to phase the installation of the steam to hot water converters and distribution pumps into the steam to hot water converter stations to meet the anticipated demand.	Page 19
Accordingly, the Panel finds sufficient justification for the Project to proceed.	Page 21
However, the Panel determines that Phase 1 of the Project aligns with BC Energy Objective (a), to achieve electricity self-sufficiency, by reducing the amount of electricity potentially used for heating.	Page 24
The Panel finds that public consultation for the Project is adequate, in the context of a CPCN application for a DES project.	Page 28

Accordingly, provided there has been adequate consultation regarding the Project, the Panel does not necessarily require Creative Energy to have conducted that consultation itself.	Page 28
The Commission finds that the Project capital cost estimates are acceptable.	Page 33
The Panel approves in principle the capitalization of project development costs incurred by Creative Energy for direct recovery from NEFC ratepayers. The Panel makes no determination at this time on the appropriate recovery period or on the amount of project development costs to be recovered from NEFC ratepayers as these costs are not yet known with a sufficient degree of certainty. Creative Energy must file for final approval of project development costs as part of a future rate application.	Page 35
The Panel finds that Creative Energy's risk analysis is adequate to enable full consideration of this matter.	Page 38
The Commission finds that the CPCN is in the public interest, for the reasons as outlined below.	Pages 38
While the Commission has general authority to determine mandatory connection issues as they relate to the public interest component of CPCN applications and related franchise agreements, the Panel finds that this Application does not require the Panel to approve a mandatory connection requirement for this Project.	Page 38-39
In summary, the Commission grants a CPCN to Creative Energy for the Project as outlined in the Application, subject to the exclusion of the Chinatown area from the extension policy as set out in the next section.	Page 39
For the reasons outlined below, the Panel denies approval of the NEA.	Page 40
The Panel denies the creation of the Carbon Reduction Rider and associated Carbon Reduction Fund.	Page 44
The Panel finds that while the CoV may have jurisdiction to invoke mandatory connection, through its policies and zoning conditions or bylaws, the Commission has jurisdiction to consider mandatory connection in the context of franchise agreements and related and ancillary agreements, for the purposes of compliance with section 45(8) of the UCA.	Page 48
With regard to the submissions of the parties that section 153A of the CoV Charter does not support the imposition of end-use restrictions, the Panel is not approving the NEA, and therefore makes no determination on this issue.	Page 49
The Panel declines to approve the NEA as long as it contains a Cost Premium Cap.	Page 52
The Panel declines to make a determination on the appropriate Benchmark Energy Cost in this proceeding. The Panel has already denied inclusion of the Cost Premium Cap in the NEA, therefore finds no need to specify a Benchmark Energy Cost at this time.	Page 53

The Panel is not approving the NEA for the reasons outlined above relating to the CRR, the Benchmark Rate, Cost Premium Cap and potential linkage to mandatory connection policies, including the NE Bylaw.	Page 53
<p>Therefore, approval of the Connection Agreement is denied. Creative Energy may resubmit the Connection Agreement with its next rate application; at such time that Creative Energy files the Connection Agreement, Creative Energy must include the following evidence to support approval of this agreement:</p> <ol style="list-style-type: none"> 1. A comparison of the statutory right of way provisions of tariffs of other similar utilities, with a view of supporting that this provision is in the public interest and meets the standards applicable in sections 59-61 of the UCA. 2. A fulsome analysis of an alternative to the requirement that developers must not apply for a building permit until Creative Energy has approved the developer's design. 3. A revised section 2.2 that indicates that the requirement to have exclusive end-use is a part of the CoV policy and bylaws, and that the developer is required to comply with such policy/bylaws. 4. Evidence that the design guidelines and review process is consistent with other similar utilities. 	Page 55-56
The Panel does not approve the proposed Chinatown Extension Policy.	Page 58
Accordingly, the Panel finds any district energy system planned for Chinatown to be a separate development at this time.	Page 59
The Panel approves the establishment of the RDDA and approves the accrual of carrying charges on the RDDA based on Creative Energy's after-tax weighted average cost of capital.	Page 60
The Panel makes no determination on any potential impact of the stranded asset indemnity provided by the CoV on Creative Energy's ROE or equity thickness.	Page 62
The Panel approves Creative Energy's request to base its long-term debt costs equivalent to its overall projected third party debt costs, which are currently forecast at 4 percent.	Page 63
The Panel approves the principle of cost allocations from the core business, given that a portion of the core infrastructure, corporate overhead and management will be used to provide service to NEFC.	Page 64
However, the Panel is not persuaded that approval of the proposed allocation rates for production and distribution costs is appropriate at this time.	Page 64
<p>In the upcoming RDA and RRA application, Creative Energy is directed to:</p> <ol style="list-style-type: none"> 1. Include a discussion on whether the rates for both the core and NEFC should be considered as a separate classes of service under section 60(1)(c) of the UCA. 2. Provide a clearer labelling of the proposed cost allocations. 	Page 65

3. Provide more clarity on the cost causation of the parameters of the Massachusetts formula, including a confirmation of whether the proposed methodology has been reviewed by its auditors.	
However, approval of the proposed fuel cost allocation methodology is denied.	Page 66
The Panel directs Creative Energy to file an updated forecast for direct operating costs, as well as a detailed explanation of the proposed method for determining each type of operating cost, as part of the rate application for the NEFC.	Page 68
The Panel approves the proposed two-part rate design consisting of a 37 percent fixed charge and a 63 percent variable energy recovery charge based on a share of its fixed and variable indicative costs.	Page 68
Considering the arguments put forth by Creative Energy regarding the relationship of the NEFC to the existing utility, and that the NEFC will be physically connected to the existing utility infrastructure, the Panel finds that the NEFC is not a separate utility from the existing utility. In this circumstance, the Panel also finds that the LRTP filing previously directed for the utility includes NEFC.	Page 71
The Panel denies requests made to charge any portion of the proceeding costs to any party other than the applicant.	Page 72
The Panel directs Creative Energy to provide Material Change Reports.	Page 72

DATED at the City of Vancouver, in the Province of British Columbia, this 8th day of December 2015.

Original Signed By

D. M. MORTON
PANEL CHAIR / COMMISSIONER

Original Signed By

C. A. BROWN
COMMISSIONER

Original Signed By

I. F. MACPHAIL
COMMISSIONER

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**BRITISH COLUMBIA
UTILITIES COMMISSION**

**ORDER
NUMBER C-12-15**

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**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 a Low Carbon Neighborhood Energy System
for Northeast False Creek and Chinatown Neighborhoods of Vancouver**

BEFORE: D. M. Morton, Panel Chair/Commissioner
C. A. Brown, Commissioner December 8, 2015
I. F. MacPhail, Commissioner

CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY

WHEREAS:

- A. On April 17, 2015, Creative Energy Vancouver Platforms Inc. (Creative Energy) applied to the British Columbia Utilities Commission (Commission) for an order approving a new Neighbourhood Energy Agreement (NEA) between Creative Energy and the City of Vancouver (CoV) under section 45(7) and granting a Certificate of Public Convenience and Necessity (CPCN) under section 45(9) of the *Utilities Commission Act* (UCA) to construct and operate a new Neighbourhood Energy System (NES) to serve new developments in the Northeast False Creek (NEFC) and Chinatown neighbourhoods of the CoV (Application);
- B. The Application seeks approval for the entire NEFC hot water network, including two new steam to hot water converter stations, new upstream steam infrastructure connecting NEFC to the existing Creative Energy steam plant, and Energy Transfer Stations within all connected buildings. The entire energy needs for the new NES will initially be met from Creative Energy's existing steam plant. The current estimate, including contingency, for the new infrastructure required to serve NEFC is \$11,281,283 in real 2015 dollars. Under current development expectations, the network will be built out by 2024;
- C. In its final argument, Creative Energy clarified the directives sought:
 - i. Approval of the NEA between the CoV and Creative Energy under section 45(7) of the UCA;
 - ii. Granting of a CPCN for NEFC under section 45(9) of the UCA for the full build out of the distribution network in the NEFC subarea outlined within the NEA;
 - iii. Approval of the NEFC & Chinatown Connection and Service Agreement under sections 59-61 of the UCA as filed by Creative Energy on September 8, 2015;

- iv. Approval of the NEFC Extension Test under sections 59-61 of the UCA and consistent with the Thermal Energy System (TES) Guidelines as filed in Section 2.6 of the Application, which will govern extensions to the Chinatown subarea within the NEA. For the purpose of the extension test only with the TES Guidelines, the Commission finds the initial TES capital cost is \$11,281,283 in real 2015 dollars;
- v. Approval of the creation of a revenue deficiency deferral account (RDDA) under sections 59-61 of the UCA, as described in Section 5.14 of the Application and Creative Energy's after-tax weighted average cost of capital (WACC) as the carrying cost for the RDDA;
- vi. Require Creative Energy to file the Long-Term Resource Plan (section 44.1 of the UCA) for NEFC as soon as practicable after completion of further feasibility work on low carbon energy sources and with the filing of an application for a CPCN for Energy Supply Phase 2 as described in Section 2.5 of the Application; and
- vii. The Commission imposition of the following conditions under section 45(9)(ii) of the UCA for rate-making purposes for NES as described in Section 5 of the Application:
 - A deemed capital structure of 57.5 percent debt and 42.5 percent equity for directly assigned capital costs;
 - Long-term debt costs equivalent to Creative Energy's overall projected third party debt costs (currently forecast at 4 percent) for directly assigned capital costs;
 - A return on equity (ROE) of 9.5 percent for directly assigned capital costs, which is equal to the currently approved Creative Energy ROE for core ratepayers and is also equivalent to the current benchmark equity return plus 75 basis points awarded to new stand-alone small-scale Stream B TES with comparable risks;
 - Operating costs as described in the Application, which includes the following:
 - incremental costs directly associated with NEFC NES as described in Section 5.5 of the Application;
 - NES Fuel Recovery Cost Allocation as set forth in Exhibit A2-1; and
 - NES Meter Cost Allocation as set forth in Section 5.4 of the Application consisting of the following four components:
 - Steam Production Costs;
 - Steam Distribution Costs;
 - Corporate overheads including office, building, selling and general expenses, insurance, property and income taxes, using the Massachusetts formula as a basis of allocating Corporate Overheads; and
 - Management Salaries;

- The creation of the Carbon Emission Rider and associated Carbon Reduction Fund, as required in the NEA, which will accumulate interest equal to Creative Energy's weighted average cost of debt;
 - The two part rate design as described in Section 5.13 of the Application, consisting of a fixed charge and a variable energy recovery charge based on the approximate share of fixed and variable costs in the indicative NEFC *pro forma*, which is comparable to the rate design for other new hot water systems in BC; and
 - The direct assignment of the initial capital costs, including project development costs incurred to date of approximately \$935,209 in 2015.
- D. The Application was reviewed through two rounds of Commission and intervener information requests, a Panel information request, intervener evidence and rebuttal evidence submissions, one round of information requests on intervener evidence, an Oral Hearing and written argument;
- E. The Commission has reviewed the Application and has determined that it is in the public interest to grant approval of this CPCN Application and finds that it is not necessary for the public convenience and does not properly conserve the public interest to approve the NEA.

NOW THEREFORE the British Columbia Utilities Commission orders as follows:

1. Pursuant to section 45 of the *Utilities Commission Act*, a Certificate of Public Convenience and Necessity for the Neighbourhood Energy System, to serve new developments in the Northeast False Creek neighborhood of the City of Vancouver, is granted to Creative Energy Vancouver Platforms Inc.
2. The Neighborhood Energy Agreement between Creative Energy Vancouver Platforms Inc. and the City of Vancouver is not approved.
3. Creative Energy Vancouver Platforms Inc. is directed to comply with all the directives of the Commission set out in the decision issued concurrently with this order.

DATED at the City of Vancouver, in the Province of British Columbia, this 8th day of December 2015.

BY ORDER

Original Signed By:

D. M. Morton
Panel Chair/Commissioner

Creative Energy Vancouver Platforms Inc.
Application for a Certificate of Public Convenience and Necessity
for a Low Carbon Neighbourhood Energy System for
Northeast False Creek and Chinatown Neighbourhoods of Vancouver

Regulatory Process

EVIDENCE OF ALTERNATIVES TO A DISTRICT ENERGY SYSTEM (DES)

On-site boilers using natural gas

In regards to the natural gas on-site boiler alternative, Creative Energy Vancouver Platforms Inc. (Creative Energy submits:

[T]hat nothing turns on the evidence from FEI for on-site gas boilers since these do not meet the CoV objectives or requirements. This benchmark was also not considered in other proceedings for new TES. Regardless, Creative [Energy] submits there is a significant range in this benchmark attributable to the variability in actual capital costs, ratio of peak to annual energy in each situation (which is a key driver of differences in effective rates), uncertainty in future natural gas prices and carbon prices, and variability and uncertainty in lifecycle maintenance costs.³²⁹

Renewable Natural Gas (RNG)

FortisBC Energy Inc. (FEI) submits that its levelized rate analysis:

... demonstrates that there are other more cost effective, lower carbon alternatives available than a district energy system served by the Beatty Street plant. Natural gas in-building systems, in addition to producing lower carbon emissions than Energy Supply Phase 1, would be less costly for consumers. Low carbon options like RNG would permit developers to secure significantly reduced carbon emissions and, depending on the blend of RNG, at a lower rate than Creative is anticipating for the high-carbon Energy Supply Phase 1.³³⁰

It argues that:

- 100% RNG could be used by a developer or consumer to virtually eliminate carbon emissions for essentially the same rate as Creative [Energy]’s Energy Supply Phase 1; and
- 100% natural gas with a significant offset purchase is also less costly than Creative [Energy]’s expected rates for Energy Supply Phase 1.³³¹

Commercial Energy Consumers of British Columbia (CEC) submits, “[t]he alternatives for the longer term low carbon solutions have evidence on the record for solutions which would be far more certain, far more flexible and more cost effective in reducing greenhouse gas emissions.” It contends that one such example is steam service using RNG and another example is on-site natural gas boilers using RNG. It argues that the premium for

³²⁹ Creative Energy Reply Argument, p. 28, para. 86.

³³⁰ FEI Final Argument, pp. 28–29.

³³¹ FEI Final Argument, pp. 29–30.

RNG fired steam service is \$22/MWh over gas fired steam service; it can be implemented immediately and is less expensive than the Creative Energy DES. It submits that on-site natural gas boilers using RNG would cost \$106/MWh which is approximately equivalent to the low bookend Creative Energy provided for the fuel switch and that this can be contractor by a developer and turned over to a building owner or strata council.³³²

Creative Energy submits that while on-site boilers using natural gas are a technically viable project alternative, they do not and will not achieve the performance requirements. However, the cost of this alternative is a useful comparison, and serves as a building block to calculate the cost of on-site boilers using RNG, which potentially could achieve the performance requirements if RNG purchase was made mandatory.³³³

Creative Energy argues: "... that a reasonable range for the levelized cost for onsite boilers with 100% natural gas is from \$83 per MWh to \$98 per MWh"³³⁴ and the key differences between FEI's \$60/MWh estimate and these values are: FEI uses per MWh of fuel consumption vs. per MWh of end-use heating service, different carbon and natural gas commodity forecasts, and boiler plant capital, finance and maintenance costs.³³⁵

Creative Energy further argues, "[g]iven that a natural gas-fired on-site boiler is not a credible alternative to the NES in NEFC and given that the only other FEI alternative advanced by FEI is RNG, it follows that the only FEI evidence that needs to be considered is RNG evidence, and only RNG evidence that is relevant to RNG as a potential alternative to the performance objectives of the NEFC NES."³³⁶

In regards to the natural gas on-site boiler using an RNG alternative, Creative Energy submits, "FEI has provided no evidence whatsoever that voluntary use of the RNG program will achieve the performance requirements."

Creative Energy submits that: "Under cross-examination on the RNG program, the FEI Witness Panel confirmed that the current rate of take-up in the residential market is 1% or less," and that the panel offered that "we'd certainly hope that uptake would be greater than 2 percent." Creative Energy also notes that the existing RNG program is voluntary, the "FEI Witness Panel also confirmed that for residential customers participating in the RNG program," the most common blend of RNG is 10 percent and "the customer take-up rate would need to be 100% at a 67% RNG blend in order to be comparable to the NES in NEFC."³³⁷ In Creative Energy's view, it seems that FEI's position is that it "would seem to be that the public interest is better conserved by this 'hope' than by the NEA and the Performance Requirements contained therein."³³⁸

Creative Energy argues, "on-site boilers with 67% RNG should not be considered a reasonable project alternative. They are a theoretical project alternative, if mandatory connection and use provisions (which have been proposed by no party) were used to ensure the performance outcomes were achieved. But the evidence shows that relying on FEI's voluntary RNG program to achieve the performance outcomes will fail."³³⁹

³³² CEC Final Argument, p. 12, para. 37.

³³³ Creative Energy Final Argument, p. 33, para. 123.

³³⁴ Creative Energy Final Argument, p. 33, para. 124.

³³⁵ Creative Energy Final Argument, p. 33, paras. 123–124.

³³⁶ Creative Energy Final Argument, pp. 35–36, para. 139.

³³⁷ Creative Energy Final Argument, p. 37, paras. 141–142.

³³⁸ Creative Energy Reply Argument, p. 29, para. 90.

³³⁹ Creative Energy Final Argument, p. 32, para. 121.

Creative Energy contends that “the Commission should conclude that relying on the RNG program in NEFC does not conserve the public interest when the alternative is a NES in NEFC with the support of mandatory connections and exclusivity of end-uses.” Creative Energy further submits, “...it will continue to consider RNG as a low carbon solution in Energy Supply Phase 2... However, an on-site gas boiler with the existing voluntary RNG program is simply not ready to be seriously considered as an alternative to a NES in NEFC.”³⁴⁰

On-site clean thermal energy systems

FortisBC Alternative Energy Services (FAES) supports the FEI view that Creative Energy’s proposed Project is not the only option to support the CoV’s greenhouse gas (GHG)-reduction objectives. FAES contends that comparable or even superior results can be obtained using existing technologies, without some of the risks, delays and expenses inherent in the Project. It contends that six of its registered low carbon Thermal Energy System (TES) and four low carbon TES that it currently has in development serve a floor area and load comparable to those served by Creative Energy’s proposed Neighbourhood Energy System (NES) and are anticipated to achieve an aggregate carbon intensity below the CoV’s target and employ a low carbon technology immediately upon coming into service, whereas the Creative Energy NES expressly contemplates that no low carbon solution will be employed before 2020. FAES also contends that “[a] multi-project approach would also preserve many of the benefits that would be eliminated were the proposed NES to be approved”, citing as examples, competition, flexibility, innovation, and reduced regulatory costs.³⁴¹

FAES also submits that “[g]iven that the Application does not provide any direct comparisons with on-site solutions as alternatives, the [CoV] analysis is the only evidence for Creative Energy’s claim that a DES is economically preferable to building-scale TES or other alternatives. However, the [CoV] analysis and the metrics used therein do not offer a full picture of the TES costs or the CO2 emissions of the systems.”³⁴²

Creative Energy cites an analysis conducted by the CoV which shows that the capital cost per tonne of avoided GHG emissions is approximately \$8,000 to \$12,000 for building scale systems, and below \$4,000 for DES.³⁴³ FAES submits that this:

... does not support the conclusion that DES generally result in cost efficient GHG reductions, let alone a need to preclude other existing and future alternatives on that basis. First, the figure represents NEFC DES as a low carbon DES; however, this DES will be high carbon at the outset and may never switch to a low-carbon energy source. In addition, the graph suffers from a number of flaws: it omits capital costs required to construct the distribution piping and operating costs such as fuel. Creative [Energy] refused to provide an update of this graph to reflect these important omissions. Also not considered are the rates that customers would pay: the graph makes the erroneous assumption that capital costs are equal to customer rates.³⁴⁴

³⁴⁰ Creative Energy Final Argument, pp. 37, 39.

³⁴¹ FAES Final Argument, pp. 36–37, 40.

³⁴² FAES Final Argument, p. 42.

³⁴³ Exhibit B-1, p. 43.

³⁴⁴ FAES Final Argument, para. 134.

Creative Energy argues that FAES “have conducted no analysis of the cost to provide any of their solutions in NEFC, they admit that some of these solutions may not be applicable or even possible in NEFC, and they are not actually proposing any solution for NEFC.”³⁴⁵

Creative Energy agrees, “FAES Stream A projects do provide benchmarks for other thermal energy systems.” However, the “FAES alternatives do not achieve the performance requirements.” Creative Energy explains the methodology used by FAES for GHG intensities is not appropriate because it includes Telus Gardens, both heating and cooling services’ and does not attribute any electricity use to heating. Creative Energy also argues that “The FAES alternatives are also more expensive than the NES in NEFC, even before accounting for the additional cost of developer CIACs which are often part of the cost of their TES solutions, but are not recovered in FAES’ rates.”³⁴⁶

Creative Energy submits, “any of the technologies which FAES has used in Stream A projects, such as geo-exchange or waste heat recovery, are in no way precluded by the CPCN or the franchise agreement. All of these technologies, as well as other low-carbon technologies, or FEI’s RNG offering can be used by Creative [Energy] for Energy Supply Phase 2.”³⁴⁷

Creative Energy also argues, “[t]he CoV, through its various policy instruments relating to rezoning and development, has required that new developments within NEFC connect to a Stream B NES. The installation of Stream A TES within this area would not conform to the CoV’s mandate and therefore is not acceptable as a potential alternative to Creative Energy’s proposed NES. Even if Stream A TES were an appropriate basis for comparison, the alternatives that FAES has presented that are actually viable for NEFC fall short of CoV GHG intensity targets for NEFC.”³⁴⁸

CEC submits that “[i]f other heating systems such as geo-exchange heating are potential solutions at a building scale and at a neighbourhood scale then it would be in the public interest to have them available and competing. Exclusion of these alternative heating solutions does not conserve the public interest.”³⁴⁹

The electricity option

CEC contends that electricity option is also viable as it is the Creative Energy high bookend option and has a great deal less uncertainty with it. CEC submits this option is more flexible and controllable which can lead to greater conservation and efficiency and when properly financially analyzed the electricity option is approximately in the middle of Creative Energy’s high and low bookends. As a result, CEC submits, “The Commission has ample evidence to conclude that it does not have sufficient support for the Creative [Energy] application to be assessed as being in the public interest because there are potentially better alternatives than the Creative [Energy] proposal.”³⁵⁰

Phase 2 Bookends

³⁴⁵ Creative Energy Final Argument, p. 39, para. 149.

³⁴⁶ Creative Energy Final Argument, pp. 39–40, paras. 151–154.

³⁴⁷ Creative Energy Final Argument, p. 40, para. 157.

³⁴⁸ Creative Energy Final Argument, p. 21, paras. 78–79.

³⁴⁹ CEC Final Argument, p. 28, para. 79.

³⁵⁰ CEC Final Argument, pp. 12–15.

FEI contends “The Commission should find as a fact that the two Energy Supply Phases are inextricably linked” and “Any decision made now regarding the build out and Energy Supply Phase 1 will also have the practical effect of limiting the scope of potential options for Energy Supply Phase 2.”³⁵¹

FEI submits there is a high degree of uncertainty around Energy Supply Phase 2. For example, it argues there is little explanation of the basis for the low bookend, the Creative Energy Fuel Switch, and the feasibility analysis for the Creative Energy Fuel Switch are not due to be completed until the end of this year. FEI submits “...there is no obligation in the NEA on Creative to pursue the Creative Fuel Switch solution even if it proves to be viable.”³⁵²

FEI submits that a similar level of ambiguity exists about the high bookend, the Franchise Area Low Carbon Solution. FEI contends, “Creative [Energy] looks to have based its high benchmark on the experience with SEFC. The reasonableness of doing so remains untested.”³⁵³

FEI contends: “There will be costs associated with Energy Supply Phase 2. Those costs, whatever they might turn out to be, are relevant to the decision currently facing the Commission because they are expected to be incurred and differ between the alternatives of (a) building the NES and Energy Supply Phase 1 and (b) not building the NES and Energy Supply Phase 1.”³⁵⁴

FEI argues that Creative Energy’s decision to split the “low carbon NES” Project into two separate applications and limiting the discussion of expected future costs is detrimental to the Commission’s ability to exercise its public interest jurisdiction. FEI submits that the Commission should not approve the initial build-out of the NES without a better understanding of what it is being asked to commit to.³⁵⁵

Other intervener comments and Creative Energy reply

The Urban Development Institute (UDI) submits that developers (and by extension future customers) within Northeast False Creek (NEFC) and Chinatown would face higher prices in both Phase 1 and Phase 2 than in areas outside the Franchise Area and the premiums in the ranges contemplated by this application are not reasonable, especially given the uncertainty that exists surrounding Phase 2.³⁵⁶

The British Columbia Old Age Pensioners’ Organization *et al.* (BCOAPO) is of the view that the options put forward by FAES and FEI as alternative methods to reduce GHG emissions are not viable. It submits that the benchmarks that are constructed with respect to NEFC on-site costs are of most value, with comparative costs of other TES, DES, etc., systems having value in providing a more general sense as to the order of magnitude of expected costs.³⁵⁷

In its final argument, the CoV submits, “...the NES policies and NES By-law were the culmination of many years of research and public consultation by the CoV. These policies serve the public interest since they help achieve the

³⁵¹ FEI Final Argument, pp. 32, 33.

³⁵² FEI Final Argument, pp. 35–37.

³⁵³ FEI Final Argument, pp. 38–39.

³⁵⁴ FEI Final Argument, p. 40.

³⁵⁵ FEI Final Argument, p. 40.

³⁵⁶ UDI Final Argument, pp. 5, 7.

³⁵⁷ BCOAPO Final Argument, p. 20, para. 86.

CoV and provincial objectives related to the reduction of greenhouse GHG emissions expressed in CoV policy, the BC 2007 Energy Plan, and the *Clean Energy Act*. As the CoV witnesses explained, a NES is a cost-effective way to reduce building-related GHG emissions and an important element of CoV's GHG emission reduction plan."³⁵⁸

FAES submits, "the rate of \$112/MWh would be an appropriate competitive benchmark." FAES' submission does not say what this value of \$112 per MWh should be compared with, but as explained by FAES earlier in this proceeding, its evidence on levelized rates used a different calculation methodology. FAES provides no argument as to why its calculation methodology is preferable. Creative Energy submits that it relies on its own evidence, which applies the same calculation methodology to all benchmarks, including FAES'. In its view:

The evidence is clear. Nevertheless, based on FAES' own evidence, if the Commission were to rely on FAES' preferred calculation methodology then FAES' competitive benchmark of \$112 per MWh should be compared with:

- \$84 per MWh for Creative [Energy]'s Energy Supply Phase 1, and
- \$87 – \$107 per MWh for Creative [Energy]'s Energy Supply Phase 2.

The relative ranking obtained from using FAES' calculation methodology is the same as the relative ranking obtained from using Creative Energy's methodology. FAES has provided no argument as to why its calculation methodology is preferable to that used by the Applicant, and its alternative methodology does not change the fact that FAES' projects are higher cost. The only contribution of FAES' alternative methodology has been to confuse the record.³⁵⁹

Additionally, Creative Energy contends that FAES' final arguments have not acknowledged the impact of developer Contribution In Aid of Constructions (CIACs) on the cost of its projects. Of the six Stream A projects for which FAES provided information, four include capital investment, which will not be recovered through rates and was instead paid for directly by the developer. FAES may not characterize these contributions as "CIACs" but they are undoubtedly a part of the cost of their systems. FAES' selected Stream A projects required a total developer contribution of over \$8.7 million, which is not reflected in FAES' "competitive benchmark" (no matter what methodology is used to calculate that benchmark). Information on the rate impact of these CIACs was not provided by FAES and they were in no way discussed in FAES' final arguments. FAES' rates would be even higher if they reflected the full cost of FAES' systems, which FAES has not acknowledged.

Additionally, FAES has provided no evidence that this group of existing projects represents a possible solution for NEFC, nor has it provided any evidence that developers in the NEFC would actually adopt these projects or anything similar.³⁶⁰

³⁵⁸ CoV Final Argument, p. 2.

³⁵⁹ Creative Energy Reply Argument, p. 30.

³⁶⁰ Creative Energy Reply Argument, pp. 29–30.

Creative Energy Vancouver Platforms Inc.
 Application for a Certificate of Public Convenience and Necessity
 for a Low Carbon Neighbourhood Energy System for
 Northeast False Creek and Chinatown Neighbourhoods of Vancouver

LIST OF ACRONYMS

Application	Certificate of Public Convenience and Necessity for a Low Carbon Neighbourhood Energy System for Northeast False Creek and Chinatown Neighbourhoods of Vancouver
BC Hydro	British Columbia Hydro and Power Authority
BCOAPO	British Columbia Old Age Pensioners' Organization <i>et al.</i>
BCUC, or Commission	British Columbia Utilities Commission
CEC	Commercial Energy Consumers Association of British Columbia
CHDL	Central Heat Distribution Ltd.
CIAC	Contribution In Aid of Construction
Compass Management	Compass Resource Management Ltd.
Corix	Corix Multi-Utility Services Inc.
CoV	City of Vancouver
CPCN	Certificate of Public Convenience and Necessity
Creative Energy	Creative Energy Vancouver Platforms Inc.
Creative Energy Canada	Creative Energy Canada Platforms Corp.
CRR	Carbon Reduction Rider
DCAT	Dawson Creek/Chetwynd Area Transmission
DES	district energy system
DPS	distribution piping system
ETS	energy transfer station
EUI	energy use intensity

FAES	FortisBC Alternative Energy Services Inc.
FEI	FortisBC Energy Inc.
FortisBC	FortisBC Utilities
GCAP	Greenest City Action Plan
GHG	greenhouse gas
IDC	Interest During Construction
IR	Information Request(s)
LTRP	long-term resource plan
MAA	Municipal Access Agreement
NEA	Neighbourhood Energy Agreement
NE Bylaw	Neighbourhood Energy Bylaw
NEFC	Northeast False Creek
NES	Neighbourhood Energy System
Onni	Onni Hastings Holdings Corp. and the Onni Group
PST	provincial sales tax
RDDA	revenue deficiency deferral account
RNG	Renewable Natural Gas
ROE	return on equity
RRA	revenue requirements application
RRA Decision	Creative Energy 2015-2017 Revenue Requirements Application Decision
S2HW	steam to hot water
SEFC	Southeast False Creek
SFU	Simon Fraser University
SRW	Statutory Right of Way
TES	Thermal Energy System
UBC	University of British Columbia

UCA	<i>Utilities Commission Act</i>
UDI	Urban Development Institute
WACC	weighted average cost of capital
WACD	Weighted Average Cost of Debt

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 a Low Carbon Neighbourhood Energy System for Northeast False Creek and Chinatown Neighbourhoods of Vancouver

EXHIBIT LIST

Exhibit No.	Description
<i>COMMISSION DOCUMENTS</i>	
A-1	Letter dated April 30, 2015 – Appointing the Commission Panel for the review of the Creative Energy Vancouver Platforms Inc. Application for a Certificate of Public Convenience and Necessity for a Low Carbon Neighbourhood Energy System for Northeast False Creek and Chinatown Neighbourhoods of Vancouver
A-2	Letter dated May 8, 2015 – Order G-75-15 establishing a Regulatory Timetable
A-3	Letter dated May 25, 2015 – Commission Information Request No. 1
A-3-1	CONFIDENTIAL Letter dated May 25, 2015 – Confidential Commission Information Request No. 1
A-4	Letter dated May 26, 2015 – Commission response to Creative Energy Request to Respond to items regarding the Streamline Review Process (Exhibit B-4)
A-5	Letter dated June 3, 2015 – Order G-95-15 issuing amended Regulatory Timetable
A-6	Letter dated June 25, 2015 – Procedural Conference Matters
A-7	Letter dated July 13, 2015 – Order G-118-15 establishing the remainder of the Regulatory Timetable and scope of the proceeding
A-8	Letter dated July 15, 2015 – Order G-119-15 rescinding portions of Order G-118-15 and issuing amended Regulatory Timetable
A-9	Letter dated July 20, 2015 – Commission request for comments
A-10	Letter dated July 21, 2015 – Commission Information Request No. 2
A-11	Letter dated July 21, 2015 – Panel Information Request No. 1 to the City of Vancouver
A-12	Letter dated July 21, 2015 – Order G-123-15 amending the Regulatory Timetable

Exhibit No.	Description
A-13	Letter dated July 22, 2015 – Reasons for Decision to Order G-123-15
A-14	Letter dated July 28, 2015 – Commission accepting FAES submission on Exhibit A-9 as Exhibit C4-6
A-15	Letter dated August 21, 2015 – Commission Information Request on Intervener Evidence (Exhibit C4-7-1) to FAES
A-16	Letter dated August 21, 2015 – Commission Information Request on Intervener Evidence (Exhibit C7-8) to FEI
A-17	Letter dated August 21, 2015 – Commission Information Request on Dr. Ware’s Intervener Evidence (Exhibit C7-9) to FEI
A-18	Letter dated September 8, 2015 – Oral Hearing Procedural Information
A-19	Letter dated September 9, 2015 – Commission Response to Creative Energy Procedural Matter regarding Oral Hearing (Exhibit B-30)
A-20	Letter dated September 11, 2015 – Commission Response to Oral Hearing Procedural Information

COMMISSION STAFF DOCUMENTS

A2-1	Submitted at Oral Hearing September 15, 2015 – Commission Staff Filing WITNESS AIDE A2-X
A2-2	Submitted at Oral Hearing September 15, 2015 – Commission Staff Filing SECTIONS OF THE NEIGHBOURHOOD ENERGY AGREEMENT PREPARED AS A WITNESS AID

APPLICANT DOCUMENTS

B-1	CREATIVE ENERGY VANCOUVER PLATFORMS INC. (CREATIVE ENERGY) Letter dated April 17, 2015 – Application for a Certificate of Public Convenience and Necessity for a Low Carbon Neighbourhood Energy System for Northeast False Creek and Chinatown Neighbourhoods of Vancouver
B-1-1	CONFIDENTIAL Letter dated April 17, 2015 – Confidential Financial Model
B-1-2	Letter dated September 4, 2015 - Creative Energy submitting updated draft order
B-1-3	Letter dated September 4, 2015 - Creative Energy submitting Errata to the Application
B-2	Letter dated May 6, 2015 – Creative Energy Submitting By-law updates and Schedule 8
B-3	Letter dated May 20, 2015 – Creative Energy Submitting Building Compatibility Design Guide

Exhibit No.	Description
B-4	Letter dated May 25, 2015 – Creative Energy Request to Respond to items regarding the Streamlined Review Process
B-5	Letter dated May 29, 2015 – Creative Energy response to comments on process
B-6	Letter dated June 29, 2015 - Creative Energy response to BCUC IR No. 1
B-6-1	Letter dated July 2, 2015 - Creative Energy re-submitting Appendices 1-7
B-6-2	Letter dated July 7, 2015 - Creative Energy submitting updated tables IR 1.X.2 and UR I.X.3
B-6-3	Letter dated July 17, 2015 – Creative Energy submitting updated response to BCUC IR 13.3
B-7	Confidential Letter dated June 29, 2015 - Creative Energy response to Confidential BCUC IR No. 1
B-8	Letter dated June 29, 2015 - Creative Energy response to BCOAPO IR No. 1
B-9	Letter dated June 29, 2015 - Creative Energy response to CEC IR No. 1
B-10	Letter dated June 29, 2015 - Creative Energy response to FAES IR No. 1
B-11	Letter dated June 29, 2015 - Creative Energy response to FEI IR No. 1
B-12	Letter dated June 29, 2015 - Creative Energy response to Geo-Exchange IR No. 1
B-13	Letter dated June 29, 2015 - Creative Energy response to Onni IR No. 1
B-14	Letter dated June 29, 2015 - Creative Energy response to UDI IR No. 1
B-15	Letter dated July 9, 2015 – Creative Energy proposed revised regulatory process and schedule
B-16	Letter dated July 16, 2015 – Creative Energy submitting supplemental responses to BCUC IR No. 1
B-16-1	Letter dated July 20, 2015 – Creative Energy submitting further supplemental responses to BCUC IR No. 1
B-17	Letter dated July 16, 2015 – Creative Energy submitting supplemental responses to FEI IR No. 1
B-17-1	Letter dated July 20, 2015 – Creative Energy submitting further supplemental responses to FEI IR No. 1
B-18	Letter dated July 16, 2015 – Creative Energy submitting supplemental responses to CEC IR No. 1

Exhibit No.	Description
B-19	Letter dated July 20, 2015 – Creative Energy submitting supplemental responses to FAES IR No. 1
B-20	Letter dated July 20, 2015 – Creative Energy submitting response to FEI extension request
B-21	Letter dated July 20, 2015 – Creative Energy submitting response to Exhibit A-9
B-22	Letter dated August 5, 2015 – Creative Energy submitting responses to BCUC Information Request No. 2
B-22-1	CONFIDENTIAL Letter dated August 5, 2015 – Creative Energy submitting confidential responses to BCUC Information Request No. 2
B-22-2	Letter dated August 6, 2015 – Creative Energy submitting the working Excel Spreadsheet for BCUC IR2-19.2
B-22-3	Letter dated August 31, 2015 – Creative Energy submitting Cover Letter to Confidential IR
B-23	Letter dated August 5, 2015 – Creative Energy submitting responses to FortisBC Energy Information Request No. 2
B-24	Letter dated August 5, 2015 – Creative Energy submitting responses to FAES Information Request No. 2
B-24-1	Letter dated September 4, 2015 - Creative Energy submitting responses to FAES to IR 2.2.1
B-25	Letter dated August 5, 2015 – Creative Energy submitting responses to CEC Information Request No. 2
B-26	Letter dated August 5, 2015 – Creative Energy submitting responses to UDI Information Request No. 2
B-27	Letter dated August 21, 2015 - Creative Energy submitting Information Request No. 1 to Dr. Ware
B-28	Letter dated August 21, 2015 - Creative Energy submitting Information Request No. 1 to FAES
B-28-1	Removed - to B-24-1
B-29	Letter dated August 21, 2015 - Creative Energy submitting Information Request No. 1 to FEI
B-30	Letter dated September 4, 2015 - Creative Energy submitting expert witness testimony
B-31	Letter dated September 8, 2015 - Creative Energy submitting Connection Agreement, Form of Statutory Right of Way and Customer Agreement

Exhibit No.	Description
B-32	Letter dated September 8, 2015 - Creative Energy submitting Direct Testimony of Jim Manson
B-33	Letter dated September 9, 2015 - Creative Energy submitting Rebuttal Evidence of Reshape Infrastructure Strategies
B-34	Letter dated September 9, 2015 - Creative Energy submitting Rebuttal Testimony of Orion Henderson, University of British Columbia
B-35	Letter dated September 11, 2015 - Creative Energy submitting Opening Statement
B-36	Submitted at Oral Hearing September 14, 2015 - Creative Energy DETAILED ZONING MAP
B-37	Submitted at Oral Hearing September 14, 2015 - Creative Energy PROJECT SCHEDULE UPDATE
B-38	Submitted at Oral Hearing September 15, 2015 – Creative Energy WITNESS AID "RE: ON-SITE BOILERS WITH RNG"
B-39	Submitted at Oral Hearing September 15, 2015 – Creative Energy WITNESS AID, "RE: MAINTENANCE COSTS"
B-40	Submitted at Oral Hearing September 15, 2015 – Creative Energy WITNESS AID, "RE: COST PER MEGAWATT HOUR FUEL VERSUS COST PER MEGAWATT HOUR IN USE"
B-41	Submitted at Oral Hearing September 16, 2015 – Creative Energy ELECTRONIC COPY OF FORTISBC ENERGY INC. BIOMETHANE ENERGY RECOVERY CHARGE RATE METHODOLOGY APPLICATION
B-41-1	Submitted at Oral Hearing September 16, 2015 – Creative Energy EXCERPTS FROM FORTISBC ENERGY INC. BIOMETHANE ENERGY RECOVERY CHARGE RATE METHODOLOGY APPLICATION
B-42	Submitted at Oral Hearing September 16, 2015 – Creative Energy IR RESPONSES BY FAES TO THE BCUC IN THE MARINE GATEWAY PROCEEDINGS
B-43	Letter dated September 18, 2015 - Creative Energy submitting UBC Undertakings
B-44	Letter dated September 18, 2015 - Creative Energy submitting Undertakings
B-45	Letter dated October 31, 2015 - Creative Energy submitting First Amending Agreement

Exhibit No.	Description
<i>INTERVENER DOCUMENTS</i>	
C1-1	CITY OF VANCOUVER (VANCOUVER) Letter dated May 5, 2015 – Request for Intervener Status, Online Registration and Letter of Support
C1-2	Letter dated August 5, 2015 – Vancouver submitting responses to Panel Information Request No. 1
C1-3	Email dated August 7, 2015 – Notice of Counsel Appointment from David Bursey, Bennett Jones LLP
C1-4	Letter dated September 9, 2015 - Vancouver submitting Witness Panel
C1-5	Letter dated September 11, 2015 – Vancouver submitting Witness Panel Statements
C1-6	Submitted at Oral Hearing September 16, 2015 – Vancouver Filing "DISTRICT ENERGY OPTIONS DIALOGUE, A BC CLEAN AIR RESEARCH PROJECT FINAL REPORT" DATED MARCH 30, 2012
C1-7	Submitted at Oral Hearing September 16, 2015 – Vancouver Filing "DISTRICT ENERGY STAKEHOLDER WORKSHOP #1" DATED DECEMBER 2, 2011, BREAKOUT GROUP MEETING NOTES
C1-8	Submitted at Oral Hearing September 16, 2015 – Vancouver Filing "DISTRICT ENERGY STAKEHOLDER WORKSHOP 2" MEETING NOTES, DATED MAY 10, 2012
C1-9	Submitted at Oral Hearing September 16, 2015 – Vancouver Filing POWERPOINT PRESENTATION "CITY OF VANCOUVER DISTRICT ENERGY STRATEGY – STAKEHOLDER WORKSHOP NUMBER 1"
C1-10	Submitted at Oral Hearing September 16, 2015 – Vancouver Filing POWERPOINT PRESENTATION "CITY OF VANCOUVER DISTRICT ENERGY STRATEGY STAKEHOLDER WORKSHOP NUMBER 2"
C1-11	Letter dated September 16, 2015 – Vancouver Submitting Undertakings No.1 and No. 2
C2-1	COMMERCIAL ENERGY CONSUMERS ASSOCIATION OF BRITISH COLUMBIA (CEC) Letter dated May 22, 2015 – Request for Intervener Status by Christopher Weafer
C2-2	Letter dated June 1, 2015 – CEC submitting Information Request No. 1 to Creative Energy
C2-3	Submitted at Procedural Conference July 10, 2015 - HANDOUT FROM MR. WEAFER
C2-4	Letter dated July 21, 2015 - CEC Comments regarding Exhibit A-9
C2-5	Letter dated July 21, 2015 - CEC submitting Information Request No. 2 to Creative Energy

Exhibit No.	Description
C2-6	Letter dated September 10, 2015 - CEC submitting Comments on Procedural Matters
C2-7	Submitted at Oral Hearing September 14, 2015 –CEC UBC NDES TABLE 2: EUI SUMMARY
C2-8	Submitted at Oral Hearing September 14, 2015 –CEC RIVER DISTRICT TABLE 2: COMPARISON OF HEATING EUI ASSUMPTIONS (ANNUAL SPACE HEAT + DOMESTIC HOT WATER)
C3-1	BRITISH COLUMBIA PENSIONERS’ AND SENIORS’ ORGANIZATION, ACTIVE SUPPORT AGAINST POVERTY, BC COALITION OF PEOPLE WITH DISABILITIES, COUNSEL OF SENIOR CITIZENS’ ORGANIZATIONS OF BC, AND THE TENANT RESOURCE AND ADVISORY CENTRE (BCOAPO) Letter dated May 22, 2015 – Request for Intervener Status by Tannis Braithwaite and James Wightman
C3-2	Letter dated June 1, 2015 – BCOAPO submitting Information Request no. 1 to Creative Energy
C3-3	Letter dated August 21, 2015 - BCOAPO submitting Information Request No. 1 to FEI
C3-4	Letter dated August 21, 2015 - BCOAPO submitting Information Request No. 1 to Dr. Ware
C3-5	Letter dated August 21, 2015 - BCOAPO submitting Additional Counsel
C3-6	Letter dated September 10, 2015 – BCOAPO Submission on Process
C4-1	FORTISBC ALTERNATIVE ENERGY INC. (FAES) Letter dated May 22, 2015 – Request for Intervener Status by Julie Tran and Comments on the SRP Process
C4-2	Letter dated June 1, 2015 – FAES submitting Information Request no. 1 to Creative Energy
C4-3	Letter dated June 2, 2015 – FAES Notice of Regulatory Email Address Change
C4-4	Letter dated July 9, 2015 - FAES Procedural Submission
C4-5	Letter dated July 21, 2015 - FAES submitting Information Request No. 2 to Creative Energy
C4-6	Letter dated July 21, 2015 - FAES submitting Comments regarding Exhibit A-9
C4-7	Letter dated August 7, 2015 – FAES Submitting Intervener Evidence (replaced by Exhibit C4-7-1)
C4-7-1	Letter dated August 7, 2015 – FAES Submitting Revised Intervener Evidence
C4-8	Letter dated September 4, 2015 – FAES Submitting responses to BCUC Intervener Evidence Information Request No. 1
C4-9	Letter dated September 4, 2015 – FAES Submitting responses to Creative Energy Intervener Evidence Information Request No. 1

Exhibit No.	Description
C4-9-1	CONFIDENTIAL Letter dated September 18, 2015 – FAES Submitting Confidential Response to Creative Energy IR1 Q1 Series
C4-10	Letter dated September 8, 2015 - FAES Submitting Witness Panel and Direct Testimony
C4-11	Letter dated September 10, 2015 – FAES Submission on Process
C4-12	Letter dated September 11, 2015 - FAES submitting Opening Statement
C4-13	Submitted at Oral Hearing September 14, 2015 – FAES BUNDLE OF DOCUMENTS COMMENDING WITH "APPENDIX A: REGISTRATION FORM FOR "STREAM A" THERMAL ENERGY SYSTEMS (TES)
C4-14	Letter dated September 17, 2015 – FAES Response to Undertakings
C5-1	HOLLYBURN PROPERTIES LIMITED (HOLLYBURN) Letter dated May 22, 2015 – Request for Intervener Status by Christopher Weafer and Comments on the SRP Process
C6-1	LANDLORD BC (LANDLORD BC) Letter dated May 22, 2015 – Request for Intervener Status by Christopher Weafer
C7-1	FORTIS BC ENERGY INC. (FEI) Letter dated May 22, 2015 – Request for Intervener Status by Diane Roy and Comments on the SRP Process
C7-2	Letter dated June 1, 2015 – FEI submitting information request no. 1 to Creative Energy
C7-3	Letter dated July 7, 2015 – FEI submitting Additional Issues for Procedural Conference
C7-4	Submitted at Procedural Conference July 10, 2015 - ISSUES LIST PREPARED BY MR. GHIKAS
C7-5	Letter dated July 17, 2015 – FEI Submitting Comments Regarding Creative Energy's Non-Compliance with IR Responses
C7-6	Letter dated July 21, 2015 - FEI Comments regarding Exhibit A-9
C7-7	Letter dated July 21, 2015 - FEI Submitting Information Request No. 2 to Creative Energy
C7-7-1	Letter dated July 23, 2015 - FEI Submitting Supplemental IR2 to Creative Energy
C7-8	Letter dated August 7, 2015 – FEI Submitting Intervener Evidence
C7-9	Letter dated August 7, 2015 – FEI Submitting Dr. Roger Ware's Evidence
C7-10	Letter dated September 4, 2015 – FEI Submitting Dr. Roger Ware's responses to BCUC Intervener Evidence IR No. 1
C7-11	Letter dated September 4, 2015 – FEI Submitting Dr. Roger Ware's responses to BCOAPO Intervener Evidence IR No. 1

Exhibit No.	Description
C7-12	Letter dated September 4, 2015 – FEI Submitting Dr. Roger Ware’s responses to Creative Energy Intervener Evidence IR No. 1
C7-13	Letter dated September 4, 2015 – FEI Submitting responses to BCUC Intervener Evidence IR No. 1
C7-14	Letter dated September 4, 2015 – FEI Submitting responses to BCOAPO Intervener Evidence IR No. 1
C7-15	Letter dated September 4, 2015 – FEI Submitting responses to Creative Energy Intervener Evidence IR No. 1
C7-16	Letter dated September 8, 2015 - FEI Submitting Witness Panel Testimony
C7-17	Letter dated September 10, 2015 - FEI Submitting Comments on Exhibit B-30
C7-18	Letter dated September 11, 2015 - FEI Submitting Reply to Comments on Process
C7-19	Letter dated September 11, 2015 - FEI submitting Opening Statement
C7-20	Submitted at Oral Hearing September 16, 2015 – FEI UNDERTAKING NO. 1
C8-1	URBAN DEVELOPMENT INSTITUTE (UDI) Letter dated May 22, 2015 – Online Registration and Request for Intervener Status by Jeffrey Fisher
C8-2	Letter dated June 1, 2015 – UDI submitting information request no. 1 to Creative Energy
C8-3	Letter dated July 24, 2015 – UDI submitting Information Request No. 2
C8-4	Letter dated September 4, 2015 – UDI requesting Creative Energy to file revised Connection Agreements
C8-5	Letter dated September 10, 2015 - UDI submitting Comments on Procedural Matters
C8-6	Submitted at Oral Hearing September 16, 2015 – UDI LETTER DATED FEBRUARY 11, 2015 WITH ATTACHED UBC-CORIX INFRASTRUCTURE AGREEMENT AND EXCERPTS FROM EXHIBITS
C9-1	CORIX UTILITIES INC. (CORIX) Letter dated May 22, 2015 – Request for Intervener Status by Ian Wigington
C10-1	ONNI HASTINGS HOLDINGS CORP. AND ONNI GROUP (ONNI) Letter dated May 27, 2015 – Request for Late Intervener Status by Chris Weafer
C10-2	Letter dated June 1, 2015 – Onni submitting information request no. 1 to Creative Energy
C11-1	GEOEXCHANGE BC (GEOEXCHANGE) Letter dated May 28, 2015 – Request for Late Intervener Status by David Cookson

Exhibit No.	Description
C11-2	Letter dated June 1, 2015 – GeoExchange submitting information request no. 1 to Creative Energy
C12-1	ENERGY CANVAS (ENERGYCANVAS) Letter dated August 18, 2015 – Request for Late Intervener Status by Stephen Tordoff

INTERESTED PARTY DOCUMENTS

D-1	PACIFIC NORTHERN GAS LTD. (PNG) Letter dated May 22, 2015 – Request for Interested Party Status by J. Kennedy
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