CREATIVENERGY

25 March 2021

Via E-filing

Mr. Patrick Wruck
Commission Secretary
BC Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC V6Z 2N3

Dear Mr. Wruck:

Re: British Columbia Utilities Commission (BCUC, Commission)
Creative Energy Vancouver Platforms Inc. (Creative Energy)
2021 Long-term Resource Plan (LTRP)

Creative Energy writes to submit its response to BCUC Information Request (**IR**) No. 1 in the above noted proceeding.

The response to BCUC IR 7.10 contains commercially sensitive information on indicative rate impacts of the load forecast scenarios in the LTRP. We have filed the response to that IR separately on a confidential basis and for ease of reference we include the responses to the two other related questions in the 7.10 series. We request that this information be kept confidential for the same reasons we have provided in support of our request to maintain the confidentiality of the cost and expenditure information in Appendix A to the LTRP.

For further information, please contact the undersigned.

Sincerely,

Rob Gorter
Director, Regulatory Affairs and Customer Relations

Enclosure.

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CREATIVE ENERGY RESPONSE TO BCUC IR No. 1

Table of Contents **Page no.**

A. INTRODUCTION

1.0 Reference: INTRODUCTION
Exhibit B-1, Application, p. 3
BCUC Resource Planning Guidelines[1]
Long Term Resource Plan objectives

Section 1 of the British Columbia Utilities Commission (BCUC) Resource Planning Guidelines states:

> Identification of the planning context and the objectives of a resource plan
> …
>
> Objectives include, but are not limited to: adequate and reliable service; economic efficiency; preservation of the financial integrity of the utility; equal consideration of DSM and supply resources; minimization of risks; compliance with government regulations and stated policies; and consideration of social and environmental impacts.

Page 3 of Creative Energy Vancouver Platforms Inc.'s (Creative Energy) 2021 Long Term Resource Plan (Application), states:

> Creative Energy continues to pursue initiatives to add customers and extend the system to serve them. A further and interrelated objective of Creative Energy's long term resource planning is to maintain existing customers.

1.1 Please clarify whether the primary objectives of the 2021 Long Term Resource Plan (LTRP) are: (i) to add customers and extend the system to serve them, and (ii) to maintain existing customers.

RESPONSE:

Confirmed.

[1] BCUC Resource Planning Guidelines, https://www.bcuc.com/Documents/Guidelines/RPGuidelines_12-2003.pdf

1.2 Please discuss whether Creative Energy considered other potential objectives, and if so why these were ultimately not included in the 2021 LTRP.

RESPONSE:

The LTRP sets out the planning and policy environment and the expectation and requirements of existing and potential new customers to acquire low carbon energy. It is upon this basis that we have defined our objectives to attract new customers (a portion of the growth in low carbon heating demand) and to retain existing customers (reduce or avoid attrition). Further, within this planning and policy environment, we believe that the imperative and public interest is self-evident for Creative Energy to pursue the development activities into a decarbonization project that are the subject of the expenditures set out in Appendix A of the LTRP in order to support achievement of those objectives.

We emphasize that the 2021 LTRP addresses the period after completion of the Expo and Beatty Redevelopment projects. Those projects, not the actions set out in the LTRP, ensure that Creative Energy has the steam generation resources to provide adequate and reliable service into the future. That is, those projects address the risks Creative Energy faces in relation to steam generation resources, except for the load retention and attraction risks related to expectations and requirements for low carbon energy.

Creative Energy is attuned to the referenced objectives in the Resource Planning Guidelines, but we note that they predominantly reflect 'means' objectives as opposed to 'ends' objectives. They are considerations or reasons for choosing the specific means to attract and retain customers. The actions in the LTRP are the means to achieving those ends and the means are thus subsumed within those ends as per the overarching intent:

- **To provide adequate and reliable service into the future through the actions set out in the LTRP and through the decarbonization project as defined;**
- **To pursue cost-effective and economically efficient solutions within the defined actions and decarbonization project;**
- **To preserve the financial integrity of the utility by building and retaining load;**
- **To minimize risks, which constitutes a subset of all other objectives and actions;**
- **To comply with government regulations and stated policies, which the LTRP fulfils in and of itself but which is also forward looking in respect of supporting low carbon policy objectives; and**
- **To consider social and environmental impacts, which considerations are necessarily a determinant of current policy and the imperative of Creative Energy to pursue the actions as set out in the LTRP.**

B. LOAD FORECAST

2.0 Reference: LOAD FORECAST
Exhibit B-1, Section 1.1, p. 1
Loads served

On page 1 of the Application, Creative Energy states: "this LTRP addresses the planning for future resources to serve both the Core Steam System and NEFC [Northeast False Creek] System."

2.1 Please discuss whether any planning decisions pertaining to the Core Steam System and NEFC System during the LTRP forecast period could have any impact upon planning decisions for other utilities owned by Creative Energy Vancouver Platforms.

RESPONSE:

No. The other utility systems owned by Creative Energy Vancouver Platforms and its affiliates are functionally separate from the Core Steam and NEFC systems.

2.2 Please discuss whether Creative Energy considers its LTRPs could address all non-Stream A utilities owned and operated by Creative Energy Vancouver Platforms.

RESPONSE:

No. The other utility systems owned by Creative Energy Vancouver Platforms and its affiliates, whether Stream A or Stream B under the Commission's TES Guidelines, are functionally separate from the Core Steam and NEFC systems.

2.3 Please discuss if Creative Energy has load forecasts and a forecast of facilities required to serve its Vancouver House Development available for the LTRP forecast period.

RESPONSE:

Respectfully, matters related to the South Downtown Heating TES and Cooling DCS systems, including forecast loads, potential for customer additions, proposed system extensions and options to replace the temporary heating TES boiler plant are addressed in the separate and ongoing Commission proceedings related to those systems.

2.3.1 If so, please provide this analysis.

RESPONSE:

Please refer to the response to BCUC IR 2.3.

2.3.2 If not, please provide an estimate of the time and process that would be required to prepare such analysis.

RESPONSE:

Please refer to the response to BCUC IR 2.3.

3.0 Reference: LOAD FORECAST
Exhibit B-1, Section 3.1.1, p. 15
Boiler capabilities

On page 15 of the Application, Creative Energy states:

> The Redevelopment Project retains Boiler #3 for the time being to manage risks related to the timing of customer additions and losses. Boiler #3 can be removed and replaced with a larger and more efficient boiler if and when needed after the Redevelopment Project is complete. Decommissioning and possible replacement of Boiler #3 and any further increase in overall generation capacity would be subject to review by the Commission.

3.1 Please explain when, or under what circumstances, Creative Energy anticipates requiring a larger or more efficient boiler to replace Boiler 3.

RESPONSE:

The timing of replacement of Boiler #3 depends on the rate of growth of load in the Core steam system, if any, and the implementation or not of the decarbonization project.

Boiler #3 is currently nearing end of life, but with the contemplated addition of low carbon generating capacity, we believe it is most prudent to prolong the operating life of Boiler #3 for several years before making investment decisions around this boiler.

Please refer to the response to RCIG IR Series 1.

For additional context we note the following ongoing work and plans regarding Boiler #3 to continue operating the asset:

- **Rebuild the forced draft fan turbine, new blades, new carbon rings and bearings, rebuild the forced draft fan gearbox**
- **Re-use the Burner management system (BMS) currently installed on Boiler #2, (upgraded and installed 2 years ago, winter 2018/2019);**
- **Repurpose the upgraded controls and existing fieldbus cables and network of Boiler #2; and**
- **Replace the front wall of the furnace.**

3.1.1 Please discuss the expected costs of replacing Boiler 3.

RESPONSE:

The expected costs depend entirely on the size and nature of the boiler that would need to be installed and the timing for such if required. One data point is that the new boilers for the Expo pant cost about US$2.5 million each, plus installation costs. A high-end order of magnitude estimate is around C$5,000,000 for turnkey replacement of Boiler #3, if the new boiler were to be 200,000PPH, matching the size of the boilers at Expo.

4.0 Reference: LOAD FORECAST
Exhibit B-1, Section 3.1.3, p. 17
GHG emissions

On page 17 of the Application, Creative Energy states: "Creative Energy is subject to GHG emissions reporting requirements. …. Creative Energy's total emissions are approximately 100,000 t CO2e per year."

4.1 Please explain how Carbon Tax rates may impact Creative Energy's rates over the next 20 years.

RESPONSE:

Indicative directional changes in Carbon Tax policy suggest that the tax could escalate at $15/tonne/year beginning in 2023 from $65/tonne to $170/tonne by 2030.
https://www.cbc.ca/news/politics/carbon-tax-hike-new-climate-plan-1.5837709.

Carbon taxes are currently about 27 percent of our fuel costs, and fuel costs represent about 60% of our total cost of service for steam and fuel combined. All else equal, an increase in the carbon tax of $15/tonne per year may be equivalent to about an increase in baseline rates of ~5% each year, or a total increase of ~40% by 2030.

4.1.1 Please discuss how Creative Energy anticipates such rate impacts may affect customer load.

RESPONSE:

Creative Energy believes overall that customer attrition will be a function of the sensitivity of some customers to the carbon intensity of CEV steam and that such attrition will thus correlate with the rate impacts of carbon tax increases but not necessarily reflect a causal relationship between price and a demand effect. Although we observe short-term insensitivity of changes in load to price impacts, we may expect to see an acceleration of attrition in the long term from significant persistent year over year carbon tax increases as customers increasingly seek low carbon energy alternatives.

4.1.2 Please explain whether Creative Energy contemplated Carbon Tax rates impacts in the load forecasts.

RESPONSE:

The load forecast scenarios do not correlate to an estimate of the impact of carbon tax rates on customer consumptions for the reasons set out in the response to Directive 6 Item (a) in Exhibit B-3, which relates as follows:

- **The load forecast growth scenarios are indicative of an inventory of upcoming developments projects in downtown Vancouver and potential low carbon heating demand.**
- **The baseline and attrition load forecast scenarios reflect current customer consumption all else equal and an assumed annual indicative attrition rate; and**
- **No price elasticity assumptions are reflected in any of the load forecast scenarios and such are not necessary nor directly applicable based on the means for how the load forecast scenarios were built up.**

5.0 Reference: LOAD FORECAST
Exhibit B-1, Section 3.1.4, pp. 17–18
NEFC load forecast

On page 18 of the Application, Creative Energy states:

> The City [of Vancouver] has extended their connection bylaw to now include the future development in the NEFC neighbourhood, which means that the City will provide service to the future developments in NEFC, rather than Creative Energy.
>
> Creative Energy intends to supply the hot water to serve the City's loads in the NEFC as it develops using the installed capacity and capital expansions as contemplated when the CPCN for the NEFC System was granted. However, the necessary arrangements with the City have not been made yet for Creative Energy to serve that load and are subject to the City's processes. At this point in time therefore, Creative Energy does not have a consolidated forecast of load growth in the NEFC neighbourhood and the timing of the

required incremental capacity investments to support that load growth is uncertain.

5.1 When does Creative Energy anticipate that future loads resulting from the new developments in NEFC will require service?

RESPONSE:

The City of Vancouver's Request for Expressions of Interest (RFEOI) stated that the first new loads would be in late 2023, but given the lack of progress since the RFEOI was closed, that date has likely move to 2024 or later.

5.1.1 Please confirm, or explain otherwise, that the load forecasts in the Application do not include load from the new developments in NEFC.

RESPONSE:

The growth scenarios presented in the Application do include loads in NEFC, commencing in 2025, with additional significant load starting in 2028.

5.1.2 Please explain whether Creative Energy currently has sufficient capacity to serve these City loads in NEFC.

RESPONSE:

Depending on load diversity, in the 100% growth scenario where every single new development in downtown Vancouver connects to Creative Energy, there will possibly be a need to replace Boiler 3 with a larger boiler in order to meet the peak demand requirements.

For further details, please refer to the response to RCIG IR Series 1.

5.2 Please further explain "the City's processes" regarding the serving of the City's loads in NEFC, and the anticipated timing of these processes.

RESPONSE:

The City has informed Creative Energy that they intend to release a Request for Proposals (RFP) in Q2 2021. No further indication has been provided.

5.2.1 Please discuss any additional actions Creative Energy intends to take in this regard.

RESPONSE:

Creative Energy expects to respond to the RFP.

5.3 Please explain whether there is any requirement for hot water supplied to the City's new loads in NEFC to be generated from low carbon sources.

RESPONSE:

The RFEOI did indicate that low carbon energy would be a requirement in order to win the process to become the energy supplier.

6.0 Reference: LOAD FORECAST
Exhibit B-1, Section 3.2, pp. 18–20, 22–23
Existing customers served by steam plant

Creative Energy's Application on pages 18 to 19 lists its current Steam and Hot Water customers. On page 20, Creative Energy states: "Weather and additions or losses of large customers have a greater effect on peak demand than changes within individual buildings."

6.1 Please explain whether Creative Energy has performed any engagement with its existing customers in preparation of its load forecast.

RESPONSE:

As we clarified in response to the Panel directive in Exhibit B-3, the LTRP does not include a forecast of load that Creative Energy must necessarily serve; there are load forecast scenarios. Creative Energy did not engage with customers in the preparation of the load forecast scenarios as the methodological approach did not require nor support such engagement.

The LTRP sets out the nature of the informal discussions we have had with some of our customers and local developers into low carbon energy opportunities. A comprehensive report into the results of our current customer and stakeholder engagement process into the decarbonization project will be included with the CPCN application for the project. We expect that the direct engagement with customers on the imperative and impacts/benefits of a low carbon energy project – in further support of a contemplated CPCN for such a project – will further serve to confirm or corroborate the contemplated long-term impacts on load in the current planning and policy environment.

6.1.1 If yes, please provide a record of these engagements, including a description of the type of customers, the feedback received and how that was incorporated in the load forecasts.

RESPONSE:

Please refer to the response to BCUC IR 6.1.

6.1.2 If not, please explain why not.

RESPONSE:

Please refer to the response to BCUC IR 6.1.

On pages 22 to 23 of the Application, Creative Energy states:

> Overwhelmingly, permanent partial loss of load is due to customers undertaking projects to switch part of their heating energy system from reliance on steam to a lower carbon alternative and/or to add some form of heat recovery to their system. In recent years, nine Creative Energy customers have added some form of heat recovery to their heating system and/or partially switched their system to lower-carbon alternatives. These projects were largely to install heat recovery systems, where heat recovered from cooling systems is used to provide heat or hot water to the building, thus reducing their

steam demand. There was at least one project involving geo-exchange in combination with heat recovery.

6.2 Please further explain the options Creative Energy's current customers have to move away from Creative Energy service to meet their heating, cooling and domestic hot water needs.

RESPONSE:

Broadly, customers can electrify their buildings using heat pumps or resistive equipment, install bioenergy technology, install solar thermal arrays or purchase renewable natural gas, subject to availability. Creative Energy Vancouver Platforms does not provide cooling service to its Core customers.

6.2.1 Please discuss the low carbon alternatives that Creative Energy customers are partially switching to.

RESPONSE:

Generally, customers appear to be installing heat pumps either to facilitate heat recovery from cooling or to extract heat from groundwater (geo-exchange).

6.3 Please discuss any feedback Creative Energy has received from former or existing customers on their reasons for considering switching thermal energy source(s).

RESPONSE:

Creative Energy does not have record of any feedback on reasons for considering switching thermal energy sources, however a number of buildings have added in heat recovery equipment in the last 5-8 years. We are aware of 5 customers/buildings that have done so, one which installed a heat-pump with geo-exchange system, and 4 others which have installed heat recovery chillers.

As reviewed in the response to CEC IR 35.1, the alternate technologies reduced steam demand by between ~10% and 65%, with typical results around 50%.

We further note that it is entirely possible that there are other customers that have installed some form of alternate technology that Creative Energy is not aware of. Customers are not obligated to advise Creative Energy of implementation of such measures.

6.4 Please provide any analysis Creative Energy has undertaken with respect to the costs of alternative options for Creative Energy's customers.

RESPONSE:

Creative Energy has not undertaken a formal analysis with respect to the costs of alternative options of customers. Creative Energy does expect to commission a study of the costs of customer alternatives in preparation of a CPCN application for the low carbon project.

6.5 Please explain how Creative Energy rates compare to the costs of other options for current customers.

RESPONSE:

Further to the response to BCUC IR 6.4, Creative Energy does not have this information. It is entirely unique for each customer, depending on many parameters including the type of building uses, shape and orientation, heating and cooling load profiles, available space for mechanical equipment and available rooftop space. There are no blanket approaches, but as explained in the response to BCUC IR 6.4, Creative Energy intends to commission a study to explore the costs of alternatives.

6.5.1 Please discuss the extent to which changes in the costs of Creative Energy's service and/ or alternative customer options may impact the rate of attrition of existing loads.

RESPONSE:

As reviewed in Exhibit B-3, we note that no price elasticity assumptions are reflected in any of the load forecast scenarios. Price elasticity is not directly applicable based on the means for how the load forecast scenarios were built up. Similarly, elasticity is not directly applicable in the load attrition scenario which is indicative of the choice our existing building customers have to separately procure low carbon energy or improve their energy use efficiency, and not reflective in any manner of a forecast demand effect due to rate changes in our current service offering.

7.0 Reference: LOAD FORECAST
Exhibit B-2, p. 2; Exhibit B-3, pp. 2–7;
BCUC Resource Planning Guidelines, p. 4
Creative Energy, Application for Heating Rates for the Heating Thermal Energy System and Cooling Rates for the District Cooling System at the Vancouver House Development, Exhibit B-9, Panel IR 2.1
Load forecast scenarios

In Exhibit B-3, Creative Energy provides its load forecasts in Figure 5 on page 3 and Figure 2 on page 5. On page 6 of Exhibit B-3, Creative Energy states: "For clarity, the planning horizon of the LTRP begins as at the end of 2024 when all components of the Expo and Beatty Plants Redevelopment Project are expected to be in service. That is the base case in the LTRP from which to plan for future resources."

Page 4 of the BCUC Resource Planning Guidelines states: "For each of the gross demand forecasts, several plausible resource portfolios should be developed, each consisting of a combination of supply and demand resources needed to meet the gross demand forecast. The gross demand forecasts and the resource portfolios should cover the same period, generally 15 to 20 years into the future."

7.1 Please explain why the Creative Energy LTRP has a shorter time horizon than 15 to 20 years.

RESPONSE:

The LTRP planning horizon and the action plan as set out within that planning horizon is established upon forecast scenarios of new heating requirements using a database of upcoming developments planned for construction within a 500ft distance from the existing steam distribution network. The inputs to the database were sourced from public sources, including the City of Vancouver's on-line database of rezoning applications and local development media such as Daily Hive Urbanized. We do

not have access to any development data that extends out 15 to 20 years and to extend the time horizon otherwise would be largely speculative and would not provide any additional information or further basis to support the current action plan.

7.2 Please submit an updated version of Figure 2 and Figure 5 from Exhibit B-3, showing the timeline extended to at least 2035 or 2040. Please explain any key assumptions made.

RESPONSE:

We are unable to provide the requested updates for the reasons discussed in the response to BCUC IR 7.1.

On pages 3 through 7 of Exhibit B-3, Creative Energy describes the following load forecast scenarios:

a) Attrition
b) Baseline core forecast
c) Baseline core + NEFC forecast
d) 50% growth scenario
e) 100% growth scenario

With respect to the Attrition scenario, Creative Energy states load attrition was assumed to be 5000MWh per year of customer steam beginning in 2023. In 2023, that equates to about 1.3% of the annual load.

With respect to the 50% and 100% growth scenarios, Creative Energy submits that using publicly available development information, an inventory of upcoming development projects was created for downtown Vancouver, and estimates made of their potential steam demand and year of energization.

In Exhibit B-2, Creative Energy states it will be applying for a Certificate of Public Convenience and Necessity (CPCN) to develop a decarbonization project to supplement its existing natural gas boilers. On page 2 of Exhibit B-2, Creative Energy describes the City of Vancouver's Request for Proposals (RFP) for low carbon energy.

7.3 Please further explain the methodology behind Creative Energy's load forecast development. Please include a list of all sources of data analysed and outside parties consulted in the development of each scenario.

RESPONSE:

Creative Energy created a weather-normal baseline forecast, based on the average of the last 3 years of steam demand. The baseline was adjusted for the upcoming years, based on known new connections and confirmed disconnections.

Creative Energy reviewed publicly available development information and assembled a database of planned developments which are within reasonable range of the steam network. Based on experience of other similar buildings and the City's LCES policy, estimates of the conventional and low carbon energy needed by each development were made.

Based on the timing of the application and estimates of typical intervals for rezoning and development permit approvals as well as load estimates, an aggregate incremental load forecast scenario was output for each year until 2030. An additional scenario was then generated whereby

50% of the developments connect.

7.4 In the "Attrition" scenario, please explain the basis for the assumed 5000MWh/year decrease in load. Please discuss any specific drivers that may influence the rate of load attrition.

RESPONSE:

The 5,000 MWh/year is indicative; there is no specific basis for the number other than it is in the range of a medium-size customer building.

7.5 Please provide further explanation of the process for developing estimates of potential steam demand based on upcoming development projects.

RESPONSE:

The development information available includes breakdowns of floor area by type of use. Creative Energy applied typical energy use intensities to the respective categories of floor areas, and the matrix output expected thermal demand for each development.

7.5.1 Please outline the time horizon that public information regarding new developments in downtown Vancouver is available.

RESPONSE:

Development information is publicly available for any developments where an application for rezoning or development permit has been submitted. There is no future development information otherwise.

7.5.2 Please discuss the key factors that would impact Creative Energy's ability to capture new customers from these development projects.

RESPONSE:

The key factors are proximity to our Core network and the availability and cost of low carbon energy compared to the costs of other pathways.

7.5.2.1 Please discuss whether there are any potential limitations regarding Creative Energy connecting to certain new developments, such as proximity to the existing distribution system.

RESPONSE:

Proximity is the only common limitation. Proximity is a proxy for excessive cost to the potential customer as measured by an extension test. As the cost of the extension goes up, and the customer has to pay that under an extension test, that potential customer will get their heating from some other source. Otherwise, a connection would only be limited by an unusual case such as lack of availability of a utility corridor in the street.

7.5.3 Please clarify whether the 50% and/or 100% Growth scenarios assume a successful bid in the City of Vancouver's RFP.

RESPONSE:

The development data, which form the basis of the load growth scenarios upon which the percentage is applied, do factor in potential NEFC load. We confirm therefore that a successful bid would be

included in the 50% and 100% scenarios, noting however that the 50% is a simple factor applied to the potential load from all customers and therefore not specific to NEFC.

7.5.3.1 If yes, please discuss the annual load assumed for each year of the forecast.

RESPONSE:

Please refer to the load forecast provided and to the response to BCUC IR 7.5.3

7.5.3.2 If not, please explain why not.

RESPONSE:

Please refer to the response to BCUC IR 7.5.3.

7.6 For each of the scenarios listed above, please explain how Creative Energy intends to meet the load forecast through to 2035 or 2040, including whether additional capital projects would likely be required to meet the load, and what alternative portfolios of input energy resources may be applicable to each scenario.

RESPONSE:

We refer to our response to Directive 6 Item (a) of Order G-40-21, at Exhibit B-3 of this proceeding and also to the responses in this BCUC IR 7.0 series above to emphasize that this question is not applicable. A relevant extract of Exhibit B-3 is provided below for ease of reference.

> The growth scenarios shown on Figure 5 of the LTRP are not forecasts of load that Creative Energy must necessarily serve. The 100% growth scenario is a forecast of space heating and hot water demand growth in what could be considered our existing service area; that is, the forecast of space heating and hot water demand growth is of growth in the geographic area of our existing distribution network plus some distance nearby as described in the LTRP.
>
> The 100% growth scenario as presented in the LTRP therefore represents an upper bound of the load growth Creative Energy could serve if such potential customers choose service from Creative Energy over their alternatives for heating service at their buildings. Creative Energy does not expect that 100% of that growth would choose Creative Energy. It could be plausible that Creative Energy could serve in the range of 50% of that growth if Creative Energy is able to offer an attractive nature and quality of service in terms of environmental attributes and cost.
>
> By way of further clarification of this context, we emphasize that Creative Energy is not a monopoly utility service provider. That is not the paradigm here. We operate in a competitive environment and both existing and potential new building customers have other resource options available to them for heating at their buildings.
>
> Thus, the LTRP does not reflect a Creative Energy plan to add resources to serve inevitable load growth. Our plan is to pursue low carbon resource options to attract new customers and retain existing customers who have chosen and could choose other options for their heating needs.

7.7 Please explain why Creative Energy is unable to quantify the probability of any scenario.

RESPONSE:

Creative Energy cannot reasonably estimate the probability of a scenario materializing, but the following may further inform the perspective.

Baseline – Unlikely

> **We find this scenario unlikely as we have observed attrition in the existing customer load and within the current policy environment we have very limited ability to connect new customers to the network.**

Attrition – Relatively likely if no low carbon installed

> **We find this scenario likely if no low carbon capacity is added to the supply mix. The attrition will result from customers seeking alternatives and a lack of new customers.**

100% Growth Scenario – Unlikely

> **We find this scenario unlikely as, even if low carbon is installed, not all developers will favour Creative Energy's value proposition and may prefer to invest in their own building-scale solution for other reasons.**

50% Growth Scenario – Relatively likely if low carbon installed

> **We find this scenario more likely than either the baseline forecast or the 100% Growth Scenario, as an estimate of the cost of low carbon energy from the decarbonization project appears to be at or below market prices in other systems. Furthermore, many developers continue to value the overall proposition of connection to Creative Energy's network, as the connection allows developers to avoid some capital costs such as boilers or heat pumps, while freeing up mechanical space within their building.**

7.7.1 Please discuss whether Creative Energy has a view on which scenario(s) are the most likely to materialize, and discuss the key assumptions affecting whether the scenario(s) will materialize.

RESPONSE:

With a decarbonization project we will retain existing load and expect to be able to attract a significant portion of growth in heating demand. Please refer to the responses to BCUC IR 7.7 and 7.8.

7.8 Please explain what impact, if any, there would be to Creative Energy's ability to meet customer demand if the decarbonization project did not take place.

RESPONSE:

As we have reviewed in Exhibit B-3, the decarbonization project reflects our intent to acquire a low carbon resource to attract new customers (a portion of the heating growth) and to retain existing customers (reduce or avoid attrition). The LTRP establishes the policy imperative that doing nothing is not an option to achieve this outcome. The decision between doing nothing and a decarbonization project is therefore a decision into the load to be served by Creative Energy.

Thus, if the decarbonization project did not take place Creative Energy would continue to serve only

existing customer demand and overall existing customer demand would be expected to decrease over time due to attrition and not an inability to serve existing demand.

In Exhibit B-9 to the Creative Energy's Application for Heating Rates for the Heating Thermal Energy System and Cooling Rates for the District Cooling System at the Vancouver House Development, which is currently before the BCUC, in response to Panel Information Request (IR) 2.1, Creative Energy stated: "Creative Energy is having discussions with the City of Vancouver and nearby developers about potential plant locations, as well as studying the potential to extend Creative Energy's Core steam system and install steam-to-hot-water conversion. As of yet, no decisions have been made as to the preferred solution."

7.9 Please explain whether any of the load forecast scenarios considered the Core Steam system serving other Creative Energy utilities, such as Vancouver House.

RESPONSE:

The load forecast scenarios do not consider serving other Creative Energy utilities.

On page 3 of Exhibit B-3, Creative Energy states:

> no price elasticity assumptions are reflected in any of the load forecast scenarios and such are not necessary. Price elasticity is not directly applicable based on the means for how the load forecast scenarios were built up, as elaborated below. That is, the nature of the load forecast scenarios is such that there are no demand-side effects of price, cost or rates incorporated into them.

On page 2 of Exhibit B-3, Creative Energy states:

> The 100% growth scenario as presented in the LTRP therefore represents an upper bound of the load growth Creative Energy could serve if such potential customers choose service from Creative Energy over their alternatives for heating service at their buildings. Creative Energy does not expect that 100% of that growth would choose Creative Energy. <u>It could be plausible that Creative Energy could serve in the range of 50% of that growth if Creative Energy is able to offer an attractive nature and quality of service in terms of environmental attributes and cost.</u> [emphasis added]

7.10 Please provide an estimate of Creative Energy's levelized rates for each of the load forecast scenarios, provided as a range if applicable.

RESPONSE:

Confidential response filed under separate cover.

7.10.1 Please summarize the assumptions used to generate the rate forecasts.

RESPONSE:

Confidential response filed under separate cover.

7.10.2 Please discuss any key uncertainties that Creative Energy considers could significantly impact rates in the forecast period.

RESPONSE:

Confidential response filed under separate cover.

7.11 Please discuss the extent to which Creative Energy considers that significant changes in its rates in the LTRP forecast period would affect its ability to:

- Attract new customers; and
- Retain existing customers.

RESPONSE:

The load growth and load attrition scenarios are indicative of the choice our existing building customers have to separately procure low carbon energy or improve their energy use efficiency, and not reflective in any manner of a forecast demand effect due to rate changes in our current service offering or to future rate changes due to the decarbonization project. The LTRP sets out, effectively, a decision into the load to be served by Creative Energy in the future and thus the ability to meet our objectives is strongly correlated in step with the need to serve customer demand for low carbon and the policy imperatives that are driving a low carbon energy future. Consideration of our ability to meet the objectives and serve low carbon energy demand in view of any cost and rate impacts during the forecast period may relate to competition among low carbon energy alternatives, but does not relate in the context of the LTRP as to the choice between a low carbon energy future and the baseline – do nothing – status quo.

7.12 Please explain further why Creative Energy considers that price elasticity assumptions are not necessary for the 50% or 100% Growth scenarios.

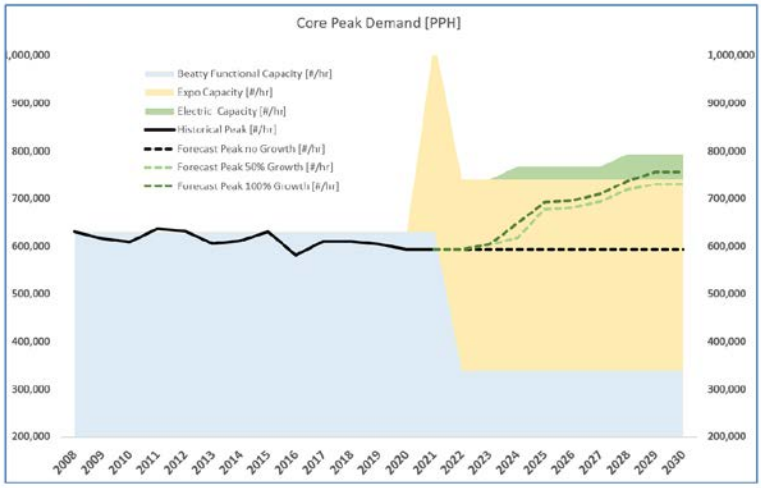
RESPONSE:

Price elasticity of demand concerns the percentage change in quantity demanded in relation to a percentage change in price. The growth scenarios concern potential new customer demand which is forecast on the basis of a forecast of growth in heating load in Vancouver. The growth scenarios are not based on the impact on existing demand from any rate impacts of a low carbon project and therefore price elasticity assumptions are not applicable. The more relevant consideration would be the comparative economics and rates as between the low carbon options available to potential new building customers for space heating and hot water. Please refer to the response to BCUC IR 7.11.

8.0 Reference: LOAD FORECAST
Exhibit B-1, p. 21
Peak demand forecast

In Figure 2 in the Application, Creative Energy provides the following graph showing forecasted peak demand:

Figure 2: System Peak Demand



On page 21, Creative Energy states:

> Without additional capacity investments, Creative Energy expects to be able to meet the peak demand requirements of the system under most growth scenarios for the next ten years, by virtue of the redevelopment project and the additional capacity resulting from the Expo plant.

8.1 Please explain whether Creative Energy considers it would be able to meet peak demand requirements if the planning forecast were extended to 20 years.

RESPONSE:

Yes, CEV considers it will be able to meet the peak demand of the base forecast for 20 years, subject to replacement of Boiler #3 as required. Please refer to the response to BCUC IR 3.1 and to RCIG IR Series 1.

8.2 Please confirm, or explain otherwise, that the incremental peak demand from the 50% and 100% growth scenario cannot be met solely by supply from the proposed electric boiler.

RESPONSE:

Confirmed, incremental peak demand cannot be met solely by supply from the electric boilers. Please also refer to the response to RCIG IR Series 1.

8.2.1 If confirmed, please explain whether the remaining incremental peak demand would be met by Creative Energy's existing natural gas boilers.

RESPONSE:

The peak demand is expected to be met by the existing boilers. Please also refer to the response to

8.3 Please discuss whether the City of Vancouver Low Carbon Energy System Policy requires all energy demand for new buildings, including peak demand, to be met by low carbon resources.

RESPONSE:

The LCES policy sets a carbon intensity limit on a per-floor--area basis (i.e., TCO2/m2/yr), and the modelled energy supply must satisfy this limit on an annual basis. The policy does not speak to peaking requirements in any way.

Generally speaking, in the coming years, a typical building would need about 68% of their thermal energy (heating and hot water) to come from low-carbon sources. This fraction is expected to increase over time as the policy limits tighten.

C. CAPITAL PROJECTS

9.0 Reference: CAPITAL PROJECTS
BCUC CPCN Guidelines[2]
Future Capital Projects

Section 44.1 of the *Utilities Commission Act* (UCA) states:

> "(2)Subject to subsection (2.1), a public utility must file with the commission, in the form and at the times the commission requires, a long-term resource plan including all of the following:
> …..
> (c)an estimate of the demand for energy that the public utility expects to serve after it has taken cost-effective demand-side measures;
>
> (d)a description of the facilities that the public utility intends to construct or extend in order to serve the estimated demand referred to in paragraph (c);"

The BCUC CPCN Guidelines state:

> Where they exist, long-term resource plans filed under section 44.1 of the UCA should support CPCN applications. These long-term resource plans may deal with significant aspects of project justification, particularly the need for the project and the assessment of the overall costs and benefits of the project and alternatives to the project. Under section 44.1(9) of the UCA, in approving a long-term resource plan, the Commission may order that a proposed utility plant or system, or an extension of either, is exempt from the requirements of section 45(1) of the UCA.

9.1 Please provide a description of the capital projects, in addition to the low carbon electrification project, that Creative Energy anticipates pursuing to serve the demand described in each load forecast scenario, including any significant maintenance projects, extensions and upgrades. Please include the project rationale, timing, scope and any available cost information.

[2] 2015 BCUC CPCN Guidelines, https://www.bcuc.com/Documents/Guidelines/2015/DOC_25326_G-20-15_BCUC-2015-CPCN-Guidelines.pdf

RESPONSE:

Other than the decarbonisation project described in Appendix A, the other project that might be required to serve the demand described in the load forecast scenarios in the 2021 LTRP is replacement of Boiler #3. As noted on page 15 of the 2021 LTRP and in the response to BCUC IR 3.1, above, the Redevelopment Project retains Boiler #3 for the time being to manage risks related to the timing of customer additions and losses (that is, the timing of the changes in load reviewed through the load forecast scenarios). Boiler #3 can be removed and replaced if and when needed. The timing of a project to address the ageing Boiler #3 is not known at this time. Decommissioning and possible replacement of Boiler #3 and any further increase in overall generation capacity would be subject to review by the Commission at the time Creative Energy makes such decision.]

9.1.1 Please provide an overview of any capital projects, further to those described in response to the above, that Creative Energy intends to pursue over the next 20 years. Please include any significant maintenance projects, extensions or upgrades. Please include the rationale, scope, timeline, and any available cost information for each project.

RESPONSE:

Creative Energy plans its capital investments on a 5-year basis, updated annually. Ongoing considerations for such planning include the assessment of plant equipment (currently in view of site redevelopment and what constitutes a capital repair versus regular operation and maintenance costs) and equipment life-cycles (and the repair and or refurbishment for life cycle extension to maintain reliability).

Over the contemplated period of 20 years – beyond the typical 5 year capital planning horizon – Creative Energy will continue to review the work necessary to maintain Boiler 3 if and as required (further to the response to BCUC IR 3.1) and we will also review the requirements to ensure ongoing safe and reliable service of Boilers 5 and 6, with potentially new burner management systems and connection to the DeltaV control system (Boiler 5 only).

D. DEMAND SIDE MANAGEMENT

10.0 Reference: DEMAND SIDE MANAGEMENT
Exhibit B-1, pp. 4, 22–23, 42–43
Demand-Side Management

On page 23 of the Application, Creative Energy provides a list of residential and commercial uses of the steam/hot water provided by Creative Energy.

On page 42, Creative Energy states:

> In the overall context of the service Creative Energy provides, the customer base and how customers use the service, the strong focus on energy efficiency in the City of Vancouver already, the relatively low marginal cost of natural gas to produce steam and Creative Energy's rate structure, we consider that there are some but likely not many opportunities for cost-effective DSM.
>
> Creative Energy does not have sufficient information at this time to make formal DSM program offers to its customers. Further work is required to identify the opportunities

> for cost-effective DSM, coordinate with the City of Vancouver's requirements and initiatives for energy efficiency of new and existing buildings, understand the customer response and the potential energy savings, and required expenditures. Creative Energy's plan at this time is therefore to advance such work.

On page 43, Creative Energy states:

> Creative Energy will be reviewing the declining block rate design that has been in place for many years and considering changes that improve the alignment of rate design to cost drivers, and also to encourage energy conservation and efficiency.

On page 43, Creative Energy also states:

> [Creative Energy's] customers operate in different business segments and have somewhat diverse needs and barriers in relation to making changes to reduce steam use. The buildings themselves are diverse also in terms of their age and energy efficiency.

10.1 Please provide an estimate of the timeframe required to undertake the further work on demand-side management (DSM) outlined in the preamble.

RESPONSE:

As noted in section 1.2 of the 2021 LTRP, the LTRP addresses Creative Energy's resource planning for the time period following completion of the Redevelopment Project, which is scheduled to be completed and in service in 2024. Creative Energy plans to investigate cost-effective DSM opportunities with customers during the interim period, however, Creative Energy is a small company and it is important that our staff remain focused on the Redevelopment Project through to its completion.

10.1.1 Please discuss any potential barriers to gathering the sufficient information needed to consider a formal DSM program offer.

RESPONSE:

Apart from the impediments to communication due to the COVID-19 pandemic, the challenge is to identify opportunities for *cost-effective* DSM. For the reasons outlined in the extract from the 2021 LTRP above, there likely are not many opportunities for cost-effective DSM by Creative Energy.

10.2 Please discuss whether Creative Energy has undertaken any analysis to compare the applicability of DSM measures implemented by other utilities in BC (or elsewhere) with Creative Energy's customer end-uses identified in the Application.

RESPONSE:

Section 3.3 of the 2021 LTRP provides information on how customers connected to the Core Steam and NEFC systems use the thermal energy provided. Any DSM measures implemented by Creative Energy should of course be directed to improving the efficiency of those end-uses of energy. Creative Energy did a preliminary review of DSM measures offered by FortisBC Energy (FEI) to identify measures offered by FEI that it might be cost-effective for Creative Energy to offer also, based on the end-uses of energy targeted for example. FEI does not supply thermal energy to customers, but FEI has building customers that use natural gas for fuel in space heating equipment. The outline of DSM initiatives to be explored, as set out in section 7.3 of the 2021 LTRP, was informed by that review.

The largest end-use of energy provided by Creative Energy is building space heating. It is important not to lose sight of the fact that the City of Vancouver (where all of Creative Energy's customers are located) is actively studying its own measures to improve the efficiency of space heating in buildings in Vancouver (as reviewed in the 2021 LTRP). Accordingly, the Action Plan in section 9 of the 2021 LTRP includes an action to investigate opportunities for cost-effective DSM with customers, noting that such initiatives should coordinate with and support those of the City that might be designed to improve the energy efficiency of the very same buildings.

10.3 Based on Creative Energy's current understanding of the end-uses and needs of its customers, please discuss whether Creative Energy considers there are any customer segments where there may be particularly significant barriers to offering DSM programs.

RESPONSE:

Creative Energy does not have sufficient information at this time to comment on whether customers operating in particular business segments have relatively more significant barriers to undertaking DSM investments than those operating in other business segments. The Action Plan item in the 2021 LTRP is to investigate opportunities for cost-effective DSM which includes identification of barriers to undertaking energy efficiency projects.

10.4 Please explain why Creative Energy's rate structure may constrain opportunities for cost-effective DSM.

RESPONSE:

As noted in the reference above, the rate structure has a declining block design – generally, the last # of steam a customer uses is the least expensive to the customer. As a result, the rate design generally does not provide an effective incentive for customers to improve their energy efficiency.

10.5 Please discuss how a potential change in rate design as discussed in the preamble may affect Creative Energy's ability to work towards its 2021 LTRP objectives.

RESPONSE:

A review of the rate design and consideration of changes to it is a 2021 LTRP action item.

On pages 22 to 23, Creative Energy states:

> Overwhelmingly, permanent partial loss of load is due to customers undertaking projects to switch part of their heating energy system from reliance on steam to a lower carbon alternative and/or to add some form of heat recovery to their system. In recent years, nine Creative Energy customers have added some form of heat recovery to their heating system and/or partially switched their system to lower-carbon alternatives. These projects were largely to install heat recovery systems, where heat recovered from cooling systems is used to provide heat or hot water to the building, thus reducing their steam demand. There was at least one project involving geo-exchange in combination with heat recovery.
>
> 1) The customers investing in on-site energy projects were all non-residential buildings. This is to be expected as residential buildings typically have lower cooling demands on a unit-area basis, and very limited cooling in shoulder and winter seasons, meaning that

there is a much lower degree of coincidence between heating and cooling demands.

2) The buildings experienced a range of success. The percent reduction in steam use observed from metered data following commissioning ranged from 90 percent reduction to zero reduction. Most commonly, customers experienced about a 50 percent reduction in annual steam consumption, largely in the summer months.

10.6 Please discuss whether Creative Energy views that offering DSM programs could provide a means of retaining some customers who might otherwise switch part of their heating energy system from reliance on steam to a lower carbon alternative and/or add some form of heat recovery to their system.

RESPONSE:

As noted in the 2021 LTRP, DSM does not change the carbon intensity of Creative Energy's steam. Switching to less carbon-intensive fuel reduces the carbon-intensity of Creative Energy's steam. A customer implementing a lower carbon alternative also reduces the carbon-intensity of the customer's overall energy supply. On the other hand, demand-side measures reduce steam consumption and therefore reduce Creative Energy's natural gas consumption, but do not change the carbon-intensity of Creative Energy's steam.

While DSM may be part of the long-term planning solution it cannot be the entire solution as DSM will not change the carbon-intensity of Creative Energy's steam and therefore will not assist with retaining those customers requiring lower carbon energy.

10.6.1 Please discuss any potential advantages or disadvantages of DSM compared to such customer projects.

RESPONSE:

Please refer to the response to BCUC IR 10.6.

11.0 Reference: DEMAND SIDE MANAGEMENT
Demand Side Measures Regulation B.C. Reg. 117/2017,[3] Section 3
Creative Energy 2017 LTRP, BCUC Order G-147-17
DSM Regulation - Adequacy Requirements

Section 3(1) of the Demand Side Measures Regulation (DSM Regulation) states:

> A public utility's plan portfolio is adequate for the purposes of section 44.1 (8) (c) of the Act only if the plan portfolio includes all of the following:
>
> (a) a demand-side measure intended specifically
>
> (i) to assist residents of low-income households to reduce their energy consumption, or

[3] Demand Side Measures Regulation B.C. Reg. 117/2017, https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/10_326_2008

(ii) to reduce energy consumption in housing owned or operated by

(A)a housing provider that is a local government, a society as defined in section 1 of the Societies Act, other than a member-funded society as defined in section 190 of that Act, or an association as defined in section 1 (1) of the Cooperative Association Act, or

(B) the governing body of a first nation,

if the benefits of the reduction primarily accrue to

(C) the low-income households occupying the housing,

(D) a housing provider referred to in clause (A), or

(E) a governing body referred to in clause (B) if the households in the governing body's housing are primarily low-income households;

(b) if the plan portfolio is submitted on or after June 1, 2009, a demand-side measure intended specifically to improve the energy efficiency of rental accommodations;

(c) an education program for students enrolled in schools in the public utility's service area;

(d) if the plan portfolio is submitted on or after June 1, 2009, an education program for students enrolled in post-secondary institutions in the public utility's service area;

(e) one or more demand-side measures to provide resources as set out in paragraph (e) of the definition of "specified demand-side measure", representing no less than

(i) an average of 1% of the public utility's plan portfolio's expenditures per year over the portfolio's period of expenditures, or

(ii) an average of $2 million per year over the portfolio's period of expenditures;

(f) one or more demand-side measures intended to result in the adoption by local governments and first nations of a step code or more stringent requirements within a step code.

Directive 1 of BCUC Order G-147-17 states in part:

…Creative Energy is directed to file a complete and updated LTRP that satisfies all requirements under section 44.1 of the UCA, including Demand-Side Management requirements…

11.1 Please confirm, or explain otherwise, that the 2021 LTRP does not include a plan to specifically address the requirements outlined in section 3(1) of the DSM Regulation.

RESPONSE:

The 2021 LTRP does not include a plan portfolio of DSM measures.

As noted in section 7.1 of the 2021 LTRP, it is important to note at the outset that Creative Energy has not historically undertaken any DSM programs. The Action Plan item of the 2021 LTRP in relation to DSM is to investigate cost-effective DSM opportunities with our customers. This must start with

developing a deeper understanding of how our customers use steam and their businesses, thereby to identify the opportunities for cost-effectively reducing overall steam consumption. Additionally, such initiatives are best implemented through coordination with the City to ensure Creative Energy's efforts coordinate with and support those of the City that might be designed to improve the energy efficiency of the very same buildings.

11.2 For each of the requirements (a) to (f) outlined in section 3(1) of the DSM Regulation, please discuss whether Creative Energy considers the requirement may be applicable to its service area, based on its existing customer base.

RESPONSE:

We note first that per Section 2(b) of the DSM Regulation, "section 3 does not apply to a public utility that is owned or operated by a local government or has fewer than 10 000 customers". Section 3 does not apply to CEV, which has in the order of 200 customers.

Nevertheless, we recognize that there could be some direct or tangential benefit if measures specified in section 3 of the DSM Regulation apply to the residents and tenants of customer buildings and in regard to the facilities and services offered to such persons/organizations within or nearby to our service area. The specific applicability and cost-effectiveness of any Creative Energy DSM measure that could be regarded as also suiting such requirements would be an outcome of the further review and engagement into DSM as set out in the LTRP.

E. RENEWABLE NATURAL GAS

12.0 Reference: RENEWABLE NATURAL GAS
Exhibit B-1, pp. 45–46
Renewable Natural Gas

On page 45 of the Application, Creative Energy states:

> A potential option to reduce carbon intensity of Creative Energy's steam is to purchase renewable natural gas ("RNG") from FEI to displace conventional natural gas use in Creative Energy's existing steam plant. A portion of the steam produced would be deemed to be low carbon or net zero, and Creative Energy might be able to offer to customers a 'low carbon steam' service option on that basis.
> …
> A major issue with an RNG option is access to a sufficient volume of RNG over a sufficient period of time to support a low carbon steam service option. We understand that FEI's total RNG supply portfolio at the end of 2024 is forecast to be about 5,000,000 GJ per year, and that demand for RNG may already exceed supply.

On page 46, Creative Energy states:

> Creative Energy will continue to evaluate the option of purchasing RNG from FEI to displace natural gas use in Creative Energy's existing steam plant and support a low carbon steam service…

12.1 Please explain when Creative Energy has engaged with FortisBC Energy Inc. (FEI) regarding the feasibility of renewable natural gas (RNG) supply, the volumes of RNG supply discussed and the outcome of that engagement.

RESPONSE:

Creative Energy is undertaking that engagement now, but did not prior to the filing of the LTRP application.

12.1.1 Please discuss when Creative Energy plans further engagement with FEI as part of its LTRP action plan.

RESPONSE:

Confirmed, as per the response to BCUC IR 12.1.

12.2 Please explain the volume of RNG that Creative Energy would require to meet the anticipated demand for low carbon energy for each year of the term of this LTRP.

RESPONSE:

As reviewed in the LTRP, subject to availability, RNG could be used as an interim bridge during the years prior to commissioning a low carbon energy project and on an opportunistic basis to fill in capacity shortages. Pending CPCN approval of the decarbonization project, Creative Energy would not expect to require RNG after the project is put into service. Please refer also to the response to BCUC IR 12.6.1, and by extension to the response to Directive 6 Item (a) in Exhibit B-3.

12.3 Please discuss whether Creative Energy would fall under a low carbon energy systems policy type if it were to use RNG for part of its energy supply.

RESPONSE:

Creative Energy's interpretation of City of Vancouver policy is that RNG can be offered under the LCES pathway as an interim measure only until a durable low carbon solution is commissioned. RNG does not qualify as a primary low carbon source for the purposes of certifying a district energy system as a Low Carbon Energy System. For reference, the snip below was extracted from the Low Carbon Energy Systems Policy available at the following link: http://guidelines.vancouver.ca/L009.pdf

8 LCES Type 4: Existing Utility-Owned District Energy System

This type refers to an existing utility-owned district energy system that is not yet a permanent LCES. As a temporary bridging measure before such a utility builds or connects to a permanent low carbon energy plant and becomes a permanent LCES, the utility must be able to obtain a reliable source of low-carbon energy. Such utility must also have a plan and commitment to build or connect to a permanent low-carbon energy plant in order to provide permanent low-carbon energy to the developments served by it. Type 4 LCES must meet the following requirements:

(a) during the interim period before the utility becomes a permanent LCES, the utility must be able to obtain a reliable source of low carbon energy (which could include, without limitation, renewable natural gas, Aggregation as per section 10 of this Policy, or installation of temporary on-site low carbon heating equipment), and must supply such low-carbon energy to the proposed development for it to meet the City's GHG limits, all in accordance with the *Utilities Commission Act* and any BCUC approvals as necessary;

However, RNG is permitted to be used under the Zero Emissions Building Plan, envelope pathway, but we do not expect many developers would undertake the additional capital cost of meeting the envelope pathway, while still connecting to a district energy system and then purchasing RNG through the district energy provided.

12.4 Please discuss whether Creative Energy views RNG as a supply option primarily for new customers, existing customers or both.

RESPONSE:

Please refer to the response to BCUC IR 12.3

12.4.1 Please discuss the extent to which Creative Energy considers RNG could mitigate the risk of load attrition resulting from customers switching to alternative low carbon resources.

RESPONSE:

Having steam available that has been produced using RNG would, at least partially, mitigate the risk of load attrition, as existing customers are not held to a low carbon mandate. However, we would expect that some customers may have more confidence in the certainty of the low carbon outcome if a permanent low carbon solution were installed.

12.5 Please discuss if Creative Energy has undertaken any cost evaluation to compare the estimated cost of energy ($/GJ) supplied from RNG with the cost of energy for the proposed boiler electrification project.

RESPONSE:

Creative Energy has run a scenario whereby the decarbonization project was not undertaken, and RNG was purchased for existing customers. The result was indicative rates slightly above those of the decarbonization project. Again, please note that RNG demand may already exceed supply and we do not believe there is a scenario where there is sufficient RNG to meet all of CEV's requirements and not on a long-term basis.

12.6 Please confirm, or explain otherwise, that RNG is the only low carbon supply side resource under consideration by Creative Energy in the LTRP, besides the electric boiler project.

RESPONSE:

Confirmed, other technology options have been screened out at this stage. Please note that the electric boiler project will likely include some recovery of waste heat from cooling.

12.6.1 Please explain whether Creative Energy has considered any other alternative resource portfolios to address the 50% or 100% growth scenarios as part of its preparation of the 2021 LTRP.

RESPONSE:

As we have reviewed in the LTRP and as emphasized if not just clarified through the additional information included in Exhibit B-3, the LTRP does not reflect a Creative Energy plan to add resources to serve inevitable load growth. Our plan is to pursue low carbon resource options to attract new customers and retain existing customers who have chosen and could choose other options for their heating needs.

As noted in the response to BCUC Confidential IR 1.3, Creative Energy has evaluated feasible alternatives to the decarbonization project and intends to submit analysis of alternatives considered

as part of a CPCN application. Creative Energy broadly notes that beyond maintaining the status quo, biomass at large and small scale were considered, as well at the use of biomethane.

12.6.1.1 If so, please explain why these were not included in the Application.

RESPONSE:

Please refer to the response to BCUC IR 12.6.1.

F. CONSULTATION

13.0 Reference: CONSULTATION
Exhibit B-3, pp. 7–9
Creative Energy 2017 LTRP, BCUC Decision and Order G-147-17, p. 3;
BCUC Resource Planning Guidelines, Section 8
Stakeholder Engagement

On pages 7 to 9 of Exhibit B-3, Creative Energy describes its customer and stakeholder engagement.

Order G-147-17 accompanying the Decision to Creative Energy's Application for its 2017 LTRP stated on page 3 "the Panel would encourage Creative Energy to undertake public consultation in preparation of the updated LTRP."

Section 8 of the Resource Planning Guidelines states:

> Although utility management is responsible for its resource planning and resource selection process, utilities should normally solicit stakeholder input during the resource planning process… Utilities are encouraged to focus such efforts on areas of the planning process where it will prove most useful and to choose methods that best fit their needs.

13.1 Please provide Creative Energy's view of the areas of the planning process whether stakeholder input is most useful.

RESPONSE:

As the referenced preamble sets out, the guidelines acknowledge that planning processes are utility and context dependent. We have sought stakeholder input into the components that comprise LTRP where applicable as further explained in the response to Directive 6 Item (b) in Exhibit B-3. We note also that much of the LTRP action plan involves consultation, most of which is just beginning, not ending.

13.2 Please explain whether Creative Energy solicited any feedback from current customers in the development of its LTRP. If yes, please provide the feedback received to date. If no, please explain why feedback was not solicited.

RESPONSE:

Please refer to the response to BCUC IR 13.1. The response to Directive 6 Item (b) in Exhibit B-3, reviews the customer and stakeholder engagement planned or undertaken in respect of the component elements of the LTRP, including considerations of context and timing that have necessarily informed the approach to customer and stakeholder engagement.

13.2.1 Please explain whether any current Creative Energy customers have expressed a desire for a low-carbon energy solution provided by Creative Energy. If yes, please explain which customers, the size of their loads, and customers' understanding of the rate impacts of a low-carbon energy solution.

RESPONSE:

Customers has expressed interest in a low-carbon energy solution provided by Creative Energy on an informal basis and we can therefore not provide details of the expected loads at this time. We intend to include more detail in a CPCN application.

13.3 Please explain whether Creative Energy has engaged with developers or building owners of locations in or near Creative Energy's current service area regarding their potential interest in low-carbon energy provided by Creative Energy.

Creative Energy has had informal discussions with developers, but cannot provide load details. In any event, the information would be limited to just a few buildings. Developers are generally attracted to district energy connections due to the space and capital cost savings, which remain with a low carbon service offering, in addition to a simple way for the developers to achieve the City's requirements around low carbon energy.

13.3.1 If yes, please discuss the location, anticipated development year and potential size of loads.

RESPONSE:

Please refer to the response to BCUC IR 13.3.

13.3.2 If no, please explain why such engagement has not been undertaken.

RESPONSE:

Engagement is underway in preparation for a CPCN application.

13.3.3 For the 50% Load Growth and 100% Load Growth scenarios, does Creative Energy have any feedback from developers or building owners to support the load forecast in either of these scenarios? Please explain.

RESPONSE:

We reiterate that we have provided load forecast <u>scenarios</u>, under the methodology and considerations set out in the LTRP, elaborated upon in Exhibit B-3, and as further discussed in the response to notable BCUC IRs such as 6.1, 7.1, 7.6, 7.7, 7.8 and 7.11 for example. CEV cannot reasonably estimate the probability of the load growth scenarios at this time. Creative Energy is undertaking engagement as part of the preparation for the CPCN application, but in any event has not shared our load growth forecast scenarios with developers.

13.4 Please explain whether existing buildings can connect to Creative Energy's current natural gas fired boiler system under current City of Vancouver development rules. If yes, please explain whether Creative Energy expects any load growth from such customers in future, their locations and load sizes.

RESPONSE:

Existing buildings can connect to the system, presuming the connection is technically feasible and economically viable. Creative Energy does not expect any load growth of this nature, and is not aware of any existing buildings that are considering connection.

On page 8 of Exhibit B-3, under the heading "Low Carbon Energy Policy," Creative Energy states: "While energy policy is an external factor to our planning we have engaged with key policy makers to be properly informed of the emergence of current imperatives." Further on the same page, Creative Energy describes its upcoming decarbonization project.

13.5 Please discuss the key policy makers Creative Energy has engaged with on Low Carbon Energy Policy and the imperatives identified.

RESPONSE:

Creative Energy has engaged with staff at the City of Vancouver.

13.6 Please explain, with rationale, whether Creative Energy is currently pursuing any low carbon energy or decarbonization projects other than RNG and the decarbonization project described in Exhibit B-2.

RESPONSE:

Creative Energy is not pursuing any other low carbon projects for the steam system. At this stage we believe the decarbonization project is the best solution for existing and future customers. Other technology options including biomass have been studied extensively over recent years and have now been screened out due to a combination of capital cost, phasing challenges, rate impacts and neighbourhood impacts. Further details will be included as part of the analysis of alternatives in the CPCN application.

G. NEXT STEPS

14.0 Reference: NEXT STEPS
Filing of the Next LTRP

14.1 Please provide Creative Energy's view of the appropriate timeframe or circumstances for Creative Energy to file its next LTRP with the BCUC.

RESPONSE:

The LTRP action plan describes the resource planning activities that Creative Energy intends to pursue over the next four years, which timing integrates with the current priority and imperative to successfully deliver the Redevelopment Project, to seek CPCN approval of and implement a decarbonization project, and to engage and develop any DSM and RNG options/offers. Creative Energy would propose that consideration of the timing of a subsequent LTRP be deferred until such projects and efforts are implemented as such will inform the priority and context for future resource planning activities.