

April 29, 2021

Patrick Wruck  
Commission Secretary  
British Columbia Utilities Commission  
Suite 410, 900 Howe Street  
Vancouver, BC, V6Z 2N3  
[Commission.Secretary@bcuc.com](mailto:Commission.Secretary@bcuc.com)

**Re: Creative Energy Vancouver Platforms Inc. – 2021 Long-term Resource Plan (LTRP) – Project No. 1599175 - Residential Consumer Intervenor Association (via its agent Midgard Consulting Incorporated) Information Request (IR) No. 2 to Creative Energy**

Dear Mr. Wruck,

In accordance with the Regulatory Timetable set by the British Columbia Utilities Commission (BCUC) Order G-11-21A, please find enclosed the Residential Consumer Intervenor Association (RCIA) IR No. 2 to the above noted matter.

If further information is required, please contact the undersigned.

Sincerely,

*Original signed by:*

Fredrik Ambrosson  
Consultant on behalf of the Residential Consumer Intervenor Association

REQUESTOR NAME: **Residential Consumer Intervenor Association (via its agent Midgard Consulting Incorporated)**

INFORMATION REQUEST ROUND NO: **2**

TO: **Creative Energy Vancouver Platforms Inc.**

DATE: **Apr 29, 2021**

PROJECT NO: **1599175**

APPLICATION NAME: **Creative Energy Vancouver Platforms Inc. – 2021 Long-term Resource Plan (LTRP)**

**1.0 Reference: LTRP Section 3.1.4, p. 17: RCIA IR1 2.1 and IR1 2.3**

1.1 RCIA IR1 2.1: Has CEVP investigated the cost-effectiveness of converting the core energy system to a hot water system? If yes, please provide documentation.

CEVP RESPONSE: “A rough order-of-magnitude estimate of the capital costs and consumables savings of a full hot water conversion of the core system was done in February 2013, as shown in the copy of the calculations presented below. These estimates are 8 years old and we would not consider them to be reliable or indicative today

CHDL Core System conversion from steam to HW				
JM 6feb13				
	Unit	unit cost	Est Cost	
Buried Piping	14000	3000	\$ 42,000,000	unit cost reflects downtown issues, TMP's, limited work times, etc.
ETS	215	125000	\$ 26,900,000	unit cost reflects somewhat standardization of design/size
Mech. Rm. - demo for space	215	25000	\$ 5,400,000	allocation only
Manhole removal	67	100,000	\$ 6,700,000	lots of surface vents, etc; City likely would want removed.
Contingency	30%		\$ 24,300,000	
			\$ 105,300,000	
Assumptions:				
	7.4 avg pipe size - inches			
	new S/R lines; leave steam/condensate in place			
	unit costs reflect high volume work for contractors over multiple seasons.			
	no allowance for plant conversion or Steam-HW exchanger at plant to feed HW network.			
Gas savings:	15%			
	1900000			
	\$ 8.00			
	\$ 2,280,000.00			
Water savings:	\$ 500,000.00			
Chemical savings:	\$ 100,000.00			
Maintenance savings:	\$ 50,000.00			
Operator savings:	20%			
	\$ 650,000.00			
	\$ 130,000.00			
TOTAL SAVINGS:	\$ 3,060,000.00			

*We have not done any recent analysis. We do consider steam to hot water conversion for significant system expansions where practical, such as what is in place to serve NEFC.”*

**NOTE: BCUC's IR round 2 16.2 – 16.4 have common themes to the following questions regarding a potential conversion to a hot water system and it could be helpful for Creative Energy to consider them together.**

**RCIA IR2 2.1 (a): Does the 15% gas savings estimate shown in the table include the impact of all boiler, distribution and ETS loss reductions that would be achieved in transitioning to a recirculating hot water system?**

**If yes, what proportion of the total loss reduction is attributable to each system subcomponent?**

**If no, which system subcomponent loss reductions were not considered in the table, and why?**

**RCIA IR2 2.1 (b): Has Creative Energy confirmed with the City of Vancouver that the existing steam manholes would need to be removed if the Core System was transitioned to a hot water system? Did Creative consider alternative methods of rendering the manholes safe other than removal? Please elaborate**

**RCIA IR2 2.1 (c): Confirm that if the manholes must be removed to satisfy City of Vancouver requirements, doing so will consequently eliminate the need to replace or repair the manholes, per existing practice.**

**If confirmed, please calculate the cumulative manhole replacement and repair cost savings over the next 20 years.**

**Have these cost savings been incorporated into the capital cost calculations shown in the table?**

**RCIA IR2 2.1 (d): Given that all components of Creative Energy's steam distribution system, including boilers, distribution piping and ETS, will eventually reach end of life and require replacement, has Creative Energy evaluated a phased replacement of its steam distribution system with hot water distribution system as its equipment reaches end of life, rather than like-for-like replacements?**

**If yes, please provide documentation.**

**If no, why not?**

**RCIA IR2 2.1 (e): Would the efficiency improvements associated with transitioning to a hot water system represent an effective decarbonization of the end-use energy even if the fuel source remained status quo (natural gas)?**

**If yes, please provide an updated GHG Emission Reduction chart similar to LTRP's Appendix A Figure A-2 which compares the relative GHG benefits of Core System conversion to hot water distribution compared with the proposed electric boiler project.**

**RCIA IR2 2.1 (f): Please quantify any other environmental benefits that would result from conversion to a recirculating hot water system, including parameters such as reduced consumption of makeup water and treatment chemicals.**

**RCIA IR2 2.1 (g): Would a hot water central plant be more conducive to electric heating, geo heat pump system or seawater heat pump system implementation than is a steam central plant? Please elaborate.**

- 1.2 RCIA IR1 2.3: Is CEVP effectively constrained to operating the Core system as a steam system in perpetuity due to its existing infrastructure constraints?

CEVP RESPONSE: *“CEV has not concluded that converting to hot water is impossible, but we note that some of our customers use steam (most notably St Paul’s hospital) and that there are complex physical and logistical challenges associated with installing hot water piping throughout the downtown core while maintaining service through the system network.”*

CEV notes elsewhere in evidence [NTD: find references in the application and IR responses] that the old St. Paul’s hospital site is expected to be redeveloped into multiple residential buildings, implying that the steam requirements at the existing building will cease to exist shortly.

**RCIA IR2 2.3 (a): Is Creative Energy able to confirm if St. Paul’s hospital will be demolished or redeveloped?**

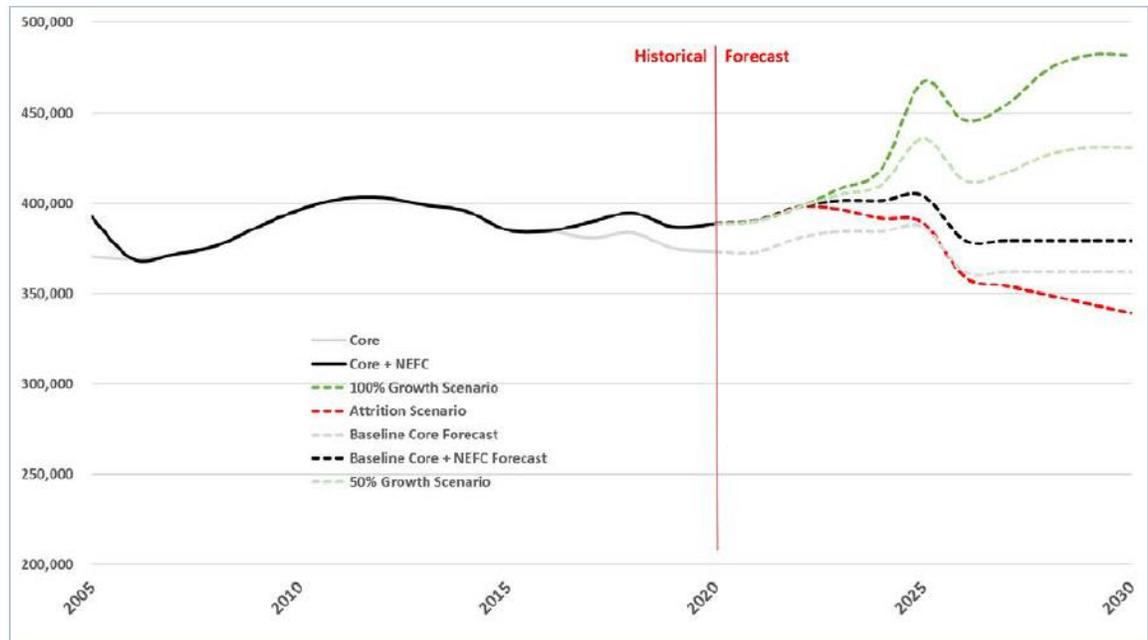
**If confirmed, will that eliminate the most significant direct user of steam in the Core System that could not be practically converted to a hot water ETS? Please elaborate.**

**RCIA IR2 2.3 (b): Please quantify all remaining direct steam usage in the Core System other than ETS installations.**

**2.0 Reference: LTRP Section 6, p. 40: RCIA IR1 3.1**

On page 40 of 2021 LTRP, CEVP provides the following figure:

**Figure 5: Aggregate Load Forecast Scenarios<sup>49</sup>**



RCIA IR1 3.1: Please explain what causes the upward wave in year 2025 in all long-term forecast scenarios shown in Figure 5.

CEVP RESPONSE: “There are a significant number of developments that appear likely to achieve occupancy in 2025 based on the timing of their rezoning applications.”

**RCIA IR2 6.1 (a): Please explain what causes the significant dip in the aggregate load forecast after 2025.**

**RCIA IR2 6.1 (b): Please list and discuss all assumptions driving the flattened or decreasing load levels after 2028 shown in all scenarios.**

**RCIA IR2 6.1 (c): If a linear trend from the actual 2020 values was extended through the 2030 forecast values out to 2040 for each scenario, describe what and when additional resources would be required in each scenario.**

**3.0 Reference: LTRP Section 7.3.1, p. 2 and p. 43: CEC IR1 17.2**

- 3.1 CEC IR1 17.2: Please confirm or otherwise explain that Creative Energy customers do have price sensitivity to their thermal energy costs.

CEVP RESPONSE: *"It is common for our customers to contact us about upcoming rate changes to support their budgeting processes and we thus confirm that customers are aware of their thermal energy costs. However, we do not observe any overall indication that customers are sensitive to changes in Creative Energy's rates as compared to changes in the economy impacting their business."*

**RCIA IR2 on CEC IR1 17.2: Has Creative formally asked its customers about their rate sensitivities, either qualitatively or quantitatively?**

**If yes, please provide documentation.**

**If no, why not, and on what basis is customer sensitivity to energy rate changes actually determined?**

- 3.2 CEC IR1 17.4: Would Creative Energy agree that customer steam consumption cannot be easily reduced in the short term in response to rate increases? Please explain.

CEVP RESPONSE: *"Yes. Please refer to the response to CEC IR 17.2."*

**RCIA IR2 on CEC IR1 17.4 (a): Have customers communicated to Creative Energy the price thresholds or percentage rate increases above which fuel/technology switching will become attractive enough for them to consider leaving the Core System?**

**RCIA IR2 on CEC IR1 17.4 (b): If the price barrier to fuel switching is so high that switching is unlikely, please indicate how Creative Energy determined the % of customer load that will be lost to attrition if it does not implement its low carbon energy project.**

**4.0 Reference: LTRP Section 1.3, p. 3: CEC IR1 18 and 18.2**

On page 3 of 2021 LTRP, CEVP states:

*“The Beatty Plant has provided a reliable supply of steam for more than 50 years. The Redevelopment Project will ensure that Creative Energy is able to continue to reliably serve current demand levels for many years to come, and with improved safety and environmental performance.*

*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.”*

**4.1 RCIA IR2 on CEC IR1 18 (a): If Creative Energy transitions to a hot water system to serve all or part of its existing customer base, confirm that the best time to start making the transition is when the existing Beatty boilers are approaching end of life and imminent retirement. If not confirmed, why not?**

**RCIA IR2 on CEC IR1 18 (b): Given that cost of a boiler replacement would be common to either a steam or water system, please quantify the impact of changes to project timing optimization on the conversion cost estimate provided in the response to RCIA IR1 2.1,**

**4.2 CEC IR1 18.2: Does Creative Energy consider cost management for customers to be an important objective? Please explain why or why not.**

*CEVP RESPONSE: “The LTRP by definition concerns long-term resource planning; it is not an annual budgeting for cost of service. Please refer also to the response to CEC Confidential IR 3.2, which is a near duplicate question but set in a different contextual reference. We copy that response here below for ease of reference:*

*As discussed in the 2021 LTRP, there are differing expectations and priorities among customers (among both current and potential new customers). The regulatory policy regime sets the minimum standards; however, some existing customers and potential new customers are looking for environmental performance that is better than the minimum standards. These customers are not looking for least cost energy, they are looking for energy that helps them to achieve their net zero commitments.”*

**RCIA IR2 on CEC IR1 18.2: Please confirm that most customers with net zero commitments are looking to achieve those commitments in the lowest cost manner, rather than simply "not looking for least cost energy". Please elaborate and provide quantification of the difference, if any, between “lowest cost manner” and “not looking for least cost energy”.**