CREATIVE ENERGY DECARBONIZATION PROJECT

Customer Engagement: Discussion Guide and Feedback Form

Provide your feedback from February 5–March 5, 2021.

CREATIVENERGY

creative.energy/decarbonization
decarbonization@creative.energy

WE WANT TO HEAR FROM YOU

From February 5–March 5, 2021, we're providing information about our proposed Creative Energy Decarbonization Project and seeking your input as an existing Creative Energy customer.

You can learn more and provide feedback by reading this discussion guide and visiting the project website at **creative.energy/decarbonization** to:

- Submit an online feedback form
- Sign-up for a virtual information session *(brief presentation and an opportunity to ask questions or provide comments)*

Tuesday, February 16, 2021
1:00–2:30 p.m.

Thursday, February 18, 2021
10:00–11:30 a.m.

You can also send us an email at **decarbonization@creative.energy** or call 604.692.2073.

How input will be used

The input that you provide during this engagement process will be summarized and considered as we develop the project and as we prepare to submit an application to the British Columbia Utilities Commission for a Certificate of Public Convenience and Necessity for the project.

ABOUT CREATIVE ENERGY

Creative Energy is the owner and operator of one of the largest district energy systems in North America. Creative Energy's plant in downtown Vancouver now provides space heating and water heating for over 200 buildings across more than 45 million square feet of connected real estate.

Creative Energy's steam plant at Georgia and Beatty burns natural gas to produce steam, which is distributed to our customers through a 15km network of buried pipes.

With 50 years of operation in downtown Vancouver and a 99.99% reliability record over the past 50 years, Creative Energy contributes to Vancouver's place as an environmental leader in energy efficiency.

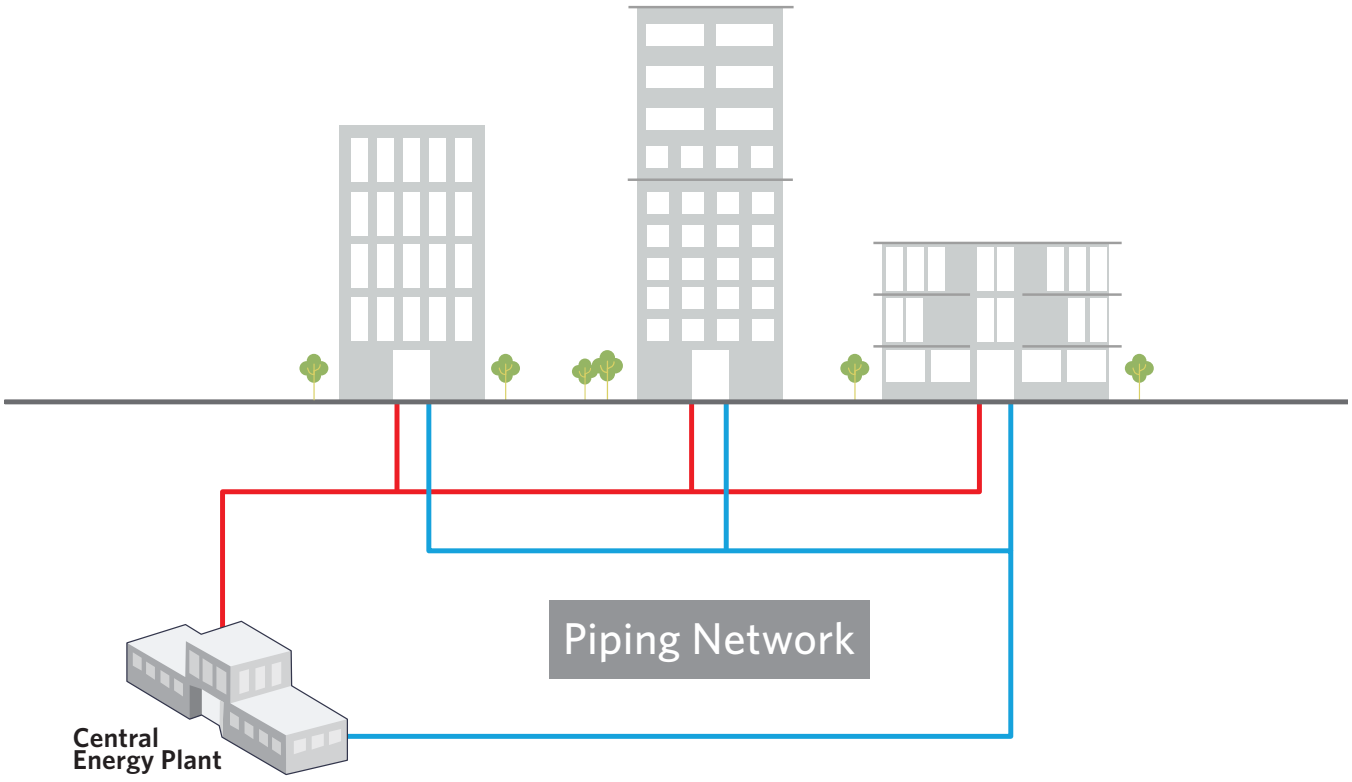
Creative Energy designs, builds, owns, operates, and maintains sustainable neighbourhood scale energy systems that support responsible development, business value, and community growth, shaping great cities.

Inside the Creative Energy steam plant at Georgia and Beatty in downtown Vancouver.

WHAT IS A DISTRICT ENERGY SYSTEM?

District energy systems are a way of sharing energy efficiently across a community. They typically use a central energy plant to produce steam, hot water and chilled water, which is then distributed through a network of pipes to heat exchangers located in each building. The heat exchangers, in turn, provide space heating, space cooling and domestic hot water for customers, and the water in the system is then returned to the central energy plant to be reheated/recooled and recirculated.

District energy systems are generally one of the most reliable and environmentally friendly sources of energy available to urban communities. District energy systems can use a variety of energy sources, including natural gas, electricity, GeoExchange, waste heat recovery, biomass and solar. On a life-cycle basis, district energy systems tend to deliver thermal energy at a lower cost than traditional individual building/residential methods.



WHAT IS THE CREATIVE ENERGY DECARBONIZATION PROJECT?

Responding to local, national and global GHG reduction targets and aspirations, Creative Energy is proposing to add two electrode steam boilers to our existing energy plant at 720 Beatty Street in Vancouver. These electrode steam boilers would supplement our current natural gas boilers.

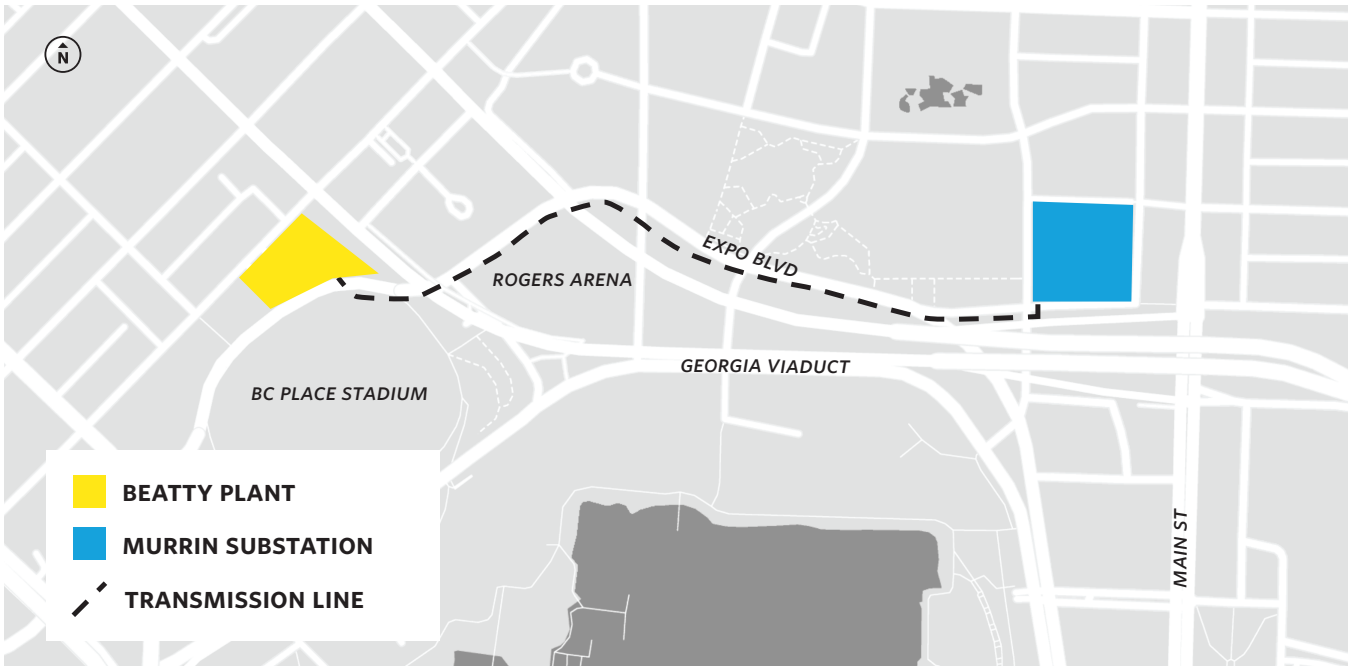
When complete, the project would add 20 megawatts (MW) of capacity to the Creative Energy system. Our current plan is to add 10 MW initially to transition our existing customers to lower carbon energy. As further development occurs in downtown Vancouver and demand for low-carbon energy increases, we can bring the additional 10 MW online, achieving the full benefits of the project.

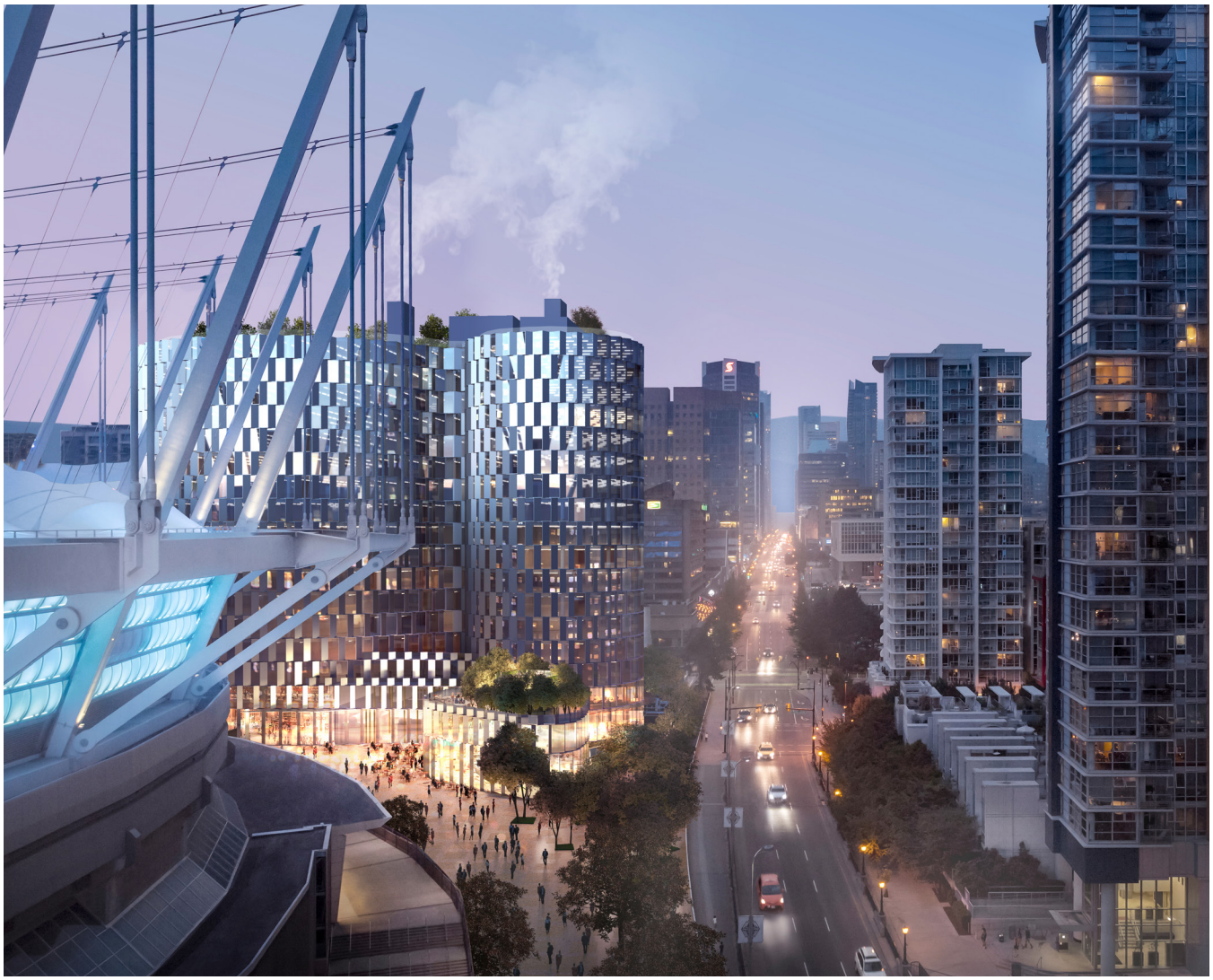
Powered by clean energy through a new underground transmission line connected to BC Hydro's electricity grid, the decarbonization project would avoid emissions from Creative Energy's system by approximately 38,000 tonnes of CO_2 and provide low-carbon energy for 12 million square feet of new development—equivalent to all of the development in downtown Vancouver for the foreseeable future.

In British Columbia, 98% of electricity is produced from clean and renewable sources, such as hydro-electric dams.

To provide electricity to the Creative Energy Decarbonization Project, BC Hydro would construct a 1,200m long underground transmission line from the Murrin substation in Chinatown to the Beatty plant, with 22-megawatt (MW) capacity. Creative Energy's minimum summer steam load is about 20 MW, which means that the electrode boilers could be highly utilized year-round, creating large amounts of low-carbon energy at cost-effective rates.

Subject to regulatory approvals, the project could be in place by early 2024, providing low-carbon energy well into the future.





REDEVELOPMENT OF 720 BEATTY STREET

The future 720 Beatty Street will be one of B.C.'s highest performing workspaces. Designed by Bjarke Ingels Group for a partnership of Westbank Corp. and Allied Reit, the new 600,000 square foot building will provide zero carbon workspace, as well as other innovations aimed towards the rapidly expanding technology and creative sectors in Vancouver.

Construction of the Creative Energy Decarbonization Project would take place alongside the construction of the redevelopment at 720 Beatty Street, meaning that there would be no additional construction impacts (e.g., noise or traffic) anticipated.

The Creative Energy plant would be integrated into the parkade levels of the redevelopment, meaning that during operations, there would be no noticeable impact to residents and businesses within or around the area.

WHY IS THE CREATIVE ENERGY DECARBONIZATION PROJECT SO ESSENTIAL?

The transition to low-carbon energy has become a global priority to tackle climate change. The Creative Energy Decarbonization Project is a response from Creative Energy to help our existing and future customers, the City of Vancouver, residents, businesses and developers, meet their emissions reduction goals and increasingly stringent requirements.

All levels of government are implementing emissions reduction goals and providing policy frameworks to accelerate the shift to low-carbon energy:

- The **Government of Canada** is aiming for net-zero emissions by 2050. To achieve this goal, Canada's latest plan for addressing climate change includes a proposed increase in the federal carbon tax to $170 per tonne by 2030, up from $30 per tonne today.
- The **Government of B.C.** implemented a Climate Action Plan targeting a reduction of 25.4 Mt GHG by 2030 from a 2007 baseline. In 2018, the Province launched CleanBC, which outlines actions to reduce greenhouse gas emissions, including raising environmental standards for new construction and encouraging energy-saving improvements in existing homes and workplaces.
- The **City of Vancouver** has committed to achieving 100% of energy needs from renewable sources before 2050, while maintaining affordability for residents. Supporting neighbourhood energy systems throughout the city is a key strategy to reach these goals. The City of Vancouver's rezoning policy also requires that new buildings implement some form of renewable energy.

PROJECT BENEFITS

Maintaining competitive rates for our customers while offering cleaner energy

The resulting blended low-carbon thermal energy rates would be expected to be the lowest rates for low-carbon thermal energy in Metro Vancouver. We would anticipate an increase in rates of 7–16% as a result of the project. It should be noted that the project would help reduce future rate impacts from increases in the federal carbon tax.

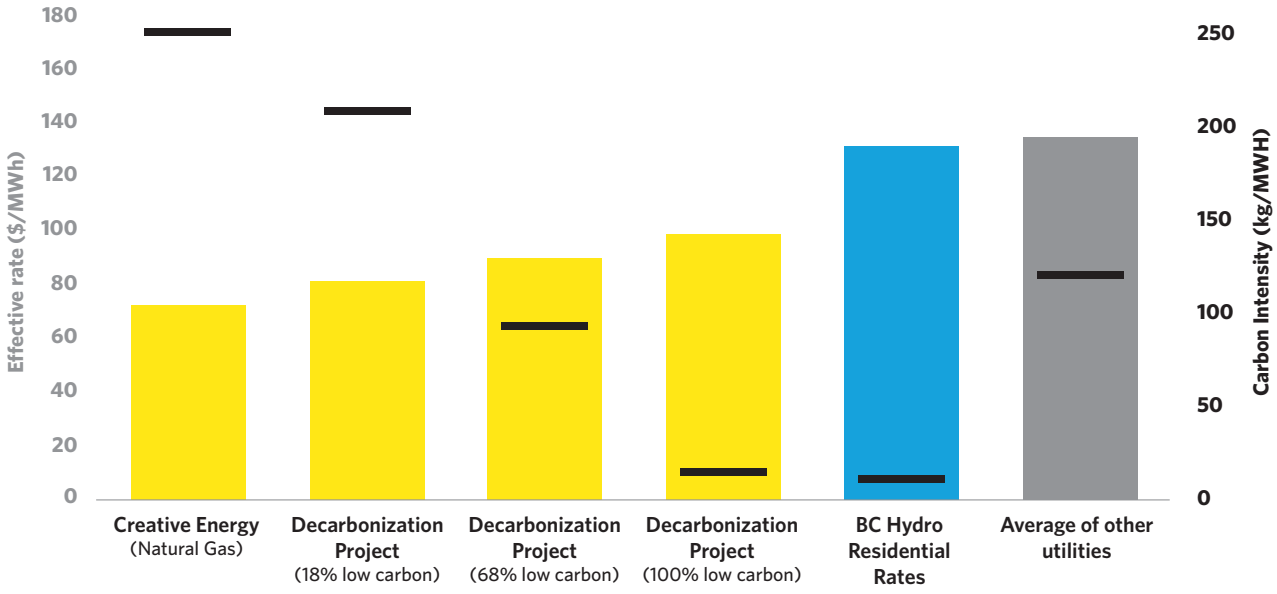
System	Carbon Intensity ($kgCO_2/MWh$)	Estimated 2024 Rate ($/MWh)
CREATIVE ENERGY		
Creative Energy Downtown Vancouver System (natural gas)	251	$72
With Decarbonization Project at 18% Low Carbon	209	$77–$86
With Decarbonization Project at 68% Low Carbon*	94	$85–$94
With Decarbonization Project at 100% Low Carbon	15	$93–$103
OTHER UTILITIES**		
BC Hydro Residential Service (electric baseboards)	11	$131
UBC Neighbourhood District Energy Utility	220	$116
City of Vancouver SEFC Neighbourhood Energy Utility	70	$126
Surrey City Energy	148	$128
Burnaby Mountain District Energy Utility	44	$146

**68% low carbon energy meets current City of Vancouver Low Carbon Energy System policy requirements.*

***Other utilities' rates are estimated based on 2021 benchmark information from the City of Vancouver's '2021 False Creek Neighbourhood Energy Utility ("NEU") Customer Rates – RTS 14023' and escalated to expected rates in 2024.*

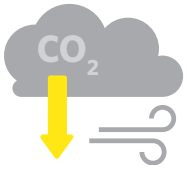
PROJECT BENEFITS

Comparison of Indicative Rates and Carbon Intensity



If you are interested in discussing opportunities to further reduce your carbon footprint, please email Hussain Mantri, Senior Manager, Development at **hussain@creative.energy**.

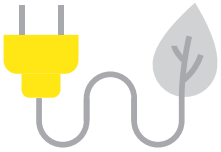
PROJECT BENEFITS



Reducing greenhouse gas emissions and improving air quality

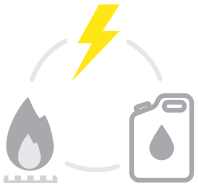
The project would reduce existing emissions by approximately 38,000 tonnes of carbon dioxide equivalent emissions (CO2e) per year and would improve air quality in Metro Vancouver. According to Natural Resources Canada's Greenhouse Gas Equivalencies Calculator, this is the equivalent of removing approximately 12,000 gas powered vehicles off the road each year.

The project would provide new low-carbon energy for approximately 12 million square feet of development, which represents all downtown development for the foreseeable future.



Providing opportunities for our customers to achieve their low-carbon targets

Some of Creative Energy's existing customers are looking to reduce their emissions in response to corporate or shareholder requirements. Increased capacity from this project will allow us to offer low-carbon energy to those customers and potential new customers in developments in downtown Vancouver.



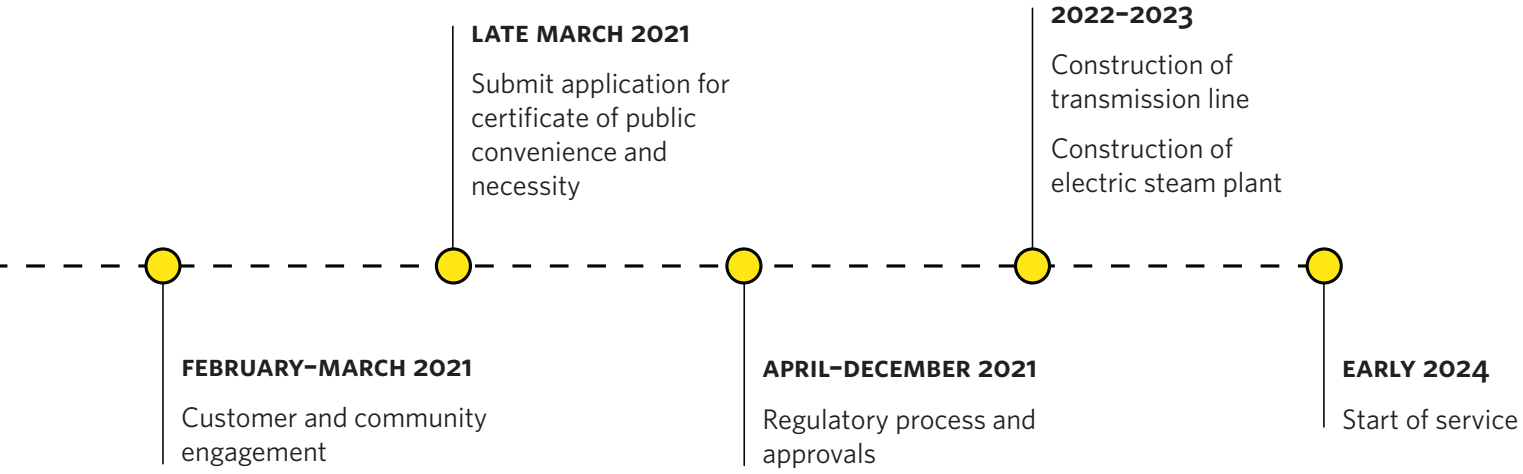
Increased energy resilience for the Creative Energy system

Adding electricity as a clean fuel source provides increased resilience to the Creative Energy system, to backstop against any disruption to the availability of any one fuel source (electricity, natural gas or diesel).

REGULATORY REVIEW PROCESS

Public utilities in British Columbia are regulated by the British Columbia Utilities Commission (BCUC) pursuant to the *Utilities Commission Act*. Public utilities must obtain a Certificate of Public Convenience and Necessity (CPCN) from the BCUC prior to beginning the construction or operation of a public utility plant or system, or an extension of either.

Creative Energy will be submitting an application to the BCUC to obtain a CPCN for the Creative Energy Decarbonization Project. This application will include a description of the project, information about the need for the project and alternatives considered, a summary of engagement and feedback received, and a project cost estimate.



WE WANT TO HEAR FROM YOU!

Please provide your feedback by visiting our website at **creative.energy/decarbonization** and completing a feedback form by Friday, March 5, 2021.

You can also email us with additional feedback and questions at **decarbonization@creative.energy**.

FEEDBACK FORM

1. How interested is your organization in reducing its greenhouse gas emisssions?

VERY INTERESTED	SOMEWHAT INTERESTED	NEUTRAL	NOT VERY INTERESTED	NOT INTERESTED AT ALL
○	○	○	○	○

2. Which category best describes your building?

RESIDENTIAL	OFFICE/ COMMERCIAL	HOTEL	INSTITUTIONAL	RETAIL/OTHER
○	○	○	○	○

3. How supportive are you of the proposed Creative Energy Decarbonization Project?

VERY SUPPORTIVE	SOMEWHAT SUPPORTIVE	NEITHER SUPPORTIVE OR OPPOSED	SOMEWHAT OPPOSED	VERY OPPOSED
○	○	○	○	○

4. Which of the following decarbonization options would you be interested in?

Please refer to table on page 7 of the Discussion Guide for indicative rates and carbon intensity based on these options.

- ☐ **MINIMUM** (APPROXIMATELY 18%)
- ☐ **MODERATE** (APPROXIMATELY 50–70%)
- ☐ **HIGH** (100%)

3. Please provide any additional questions or comments you may have about the proposed Creative Energy Decarbonization Project:

FEEDBACK FORM

Tell us about you (optional)

NAME: _____

ORGANIZATION NAME (IF APPLICABLE): _____

ADDRESS: _____

EMAIL: _____

PHONE: _____

WOULD YOU LIKE TO RECEIVE PROJECT UPDATES?

◯ YES ◯ NO

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