

# CleanBC – Commercial Incentives



# CleanBC Re-brand

- Complete re-brand of existing EfficiencyBC programs
  - CleanBC Custom Incentives
  - CleanBC Custom-Lite Incentives
  - CleanBC Social Housing Incentives
- Two new programs
  1. CleanBC New Construction Incentives
  2. CleanBC Building Innovation Fund
- New website: [www.betterbuildingsbc.ca](http://www.betterbuildingsbc.ca)



# CleanBC Custom Incentives (Retrofits)

- Administered by BC Hydro
- Supports fuel-switching measures resulting in > 1,200 tCO<sub>2</sub>e (lifetime savings)
- Incentives:
  - Energy Study Funding – up to \$20,000
    - Up to 50% of study cost
  - Capital Incentive Funding - up to \$200,000
    - Based on a rate of \$40-\$60/tCO<sub>2</sub>e
    - Up to 50% of the project's incremental cost
- The same offer is administered by FortisBC in their electric territory

# CleanBC Custom-Lite Incentives (Retrofits)

- Administered by BC Hydro
- Supports smaller fuel-switching measures resulting in the reduction of between 500 to 1,200 tCO<sub>2</sub>e (lifetime savings)
- Incentives:
  - Energy Study Funding – up to \$2,000
  - Capital Incentive Funding - up to \$48,000
    - Based on a rate of \$40-\$60/tCO<sub>2</sub>e
    - Up to 50% of the project's incremental cost

# Eligible Measures

Custom Program Measures	End Use
Sewage Heat Recovery Heat Pump	DHW
Heat Recovery Chiller*	HVAC and DHW
Air-to-Water Heat Pump	HVAC and DHW
Air-to-Water Heat Pump Water Heater	DHW
Ground Source Heat Pump	HVAC and DHW
Air-to-Air Rooftop Heat Pump	HVAC
Water-to-Water Heat Pump	HVAC and DHW
Exhaust Air Heat Recovery Heat Pump	HVAC
Electric Boiler**	HVAC and DHW
Electric Water Heater**	DHW
High-efficiency (>75%) HRV***	HVAC
Air Source VRF	HVAC
Water Source VRF	HVAC and DHW

\*-\*\*-\*\*\* See program details online for qualification

# Scenario/Opportunity (Retrofit)

- A modern 11-storey student residence which is home to 570 students. The suites are a combination of 2-bedroom and 4-bedroom. The Tower includes a 24-hour fitness area, storage and laundry facilities.
- Two technical system configurations have been compared:
  1. Base case: Existing gas-fired boilers (not at the end of life)
  2. Alternative solution: PIRANHA system coupled with existing gas-fired hot water tanks
- Summary of estimated annual energy consumption and savings:

Parameter	Unit	Gas boilers	PIRANHA + gas boilers	Savings
Gas demand	GJ/year	2,792	977	1,815
Electricity demand	kWh <sub>el</sub> /year	0	75,611	-75,611

- Summary of annual CO<sub>2</sub> emissions and savings:

Parameter	Unit	Option b)
Existing Boilers	tCO <sub>2</sub>	140
PIRANHA + Existing Boilers	tCO <sub>2</sub>	50
SAVINGS	tCO <sub>2</sub>	90

65% reduction

# Scenario/Opportunity

- Summary of annual energy costs and savings

Parameter	Unit	Gas boilers	PIRANHA + gas boilers	Savings
Gas cost	\$	\$20,159	\$7,056	\$13,103
Electricity cost	\$	\$0	\$4,053	-\$4,053
Total energy cost	\$	\$20,159	\$11,108	\$9,050

- Incremental Cost estimates

Description	Equipment and Installation Cost
<ul style="list-style-type: none"><li>1 No. PIRANHA Model T15</li><li>1 No. Above ground sewage holding tank (2,000-gal volume)</li><li>1 No. Solids handling tank</li><li>Xx No. Pre-heat storage tanks</li><li>Piping to/from Piranha and wastewater tank</li><li>Piping to/from Piranha and mechanical room</li></ul>	\$106,000

- Simple payback is 11.7 years.
- Ongoing annual maintenance (cleaning) cost is not included in the above estimate. It depends of system size (in range of \$500 to \$3,000).
- Installation cost (piping) may vary based on the proximity of mechanical room to waste water sump.

# CleanBC Custom Offer

- Summary of Incentive Calculation
- 90 tCO<sub>2</sub>e/yr savings
- Persistence of 15 years
- Lifetime savings 1350 tCO<sub>2</sub>e
- Incentive rate of \$40/tCO<sub>2</sub>e
- Total Incentive \$40/tCO<sub>2</sub>e X 1350 tCO<sub>2</sub>e = \$54,000 (no rules applied)
- Incremental Costs: \$106,000
  - Rule that incentive cannot be more than 50% of incremental
  - **Incentive rule would cap this at \$53,000**
  - **This incentive reduces simple payback from the original 11.7 years to 5.9 years!**



# CleanBC Custom Incentive Rules

- Incentive is capped at the lesser of 50% of a project's incremental cost, or the incentive required to bring the simple payback (incremental project cost divided by year 1 energy savings) to four years.
- Incentive Rule is **the lesser amount of the following rules:**
  - Rule 1: Maximum incentive is 50% of the incremental capital cost
  - Rule 2: The incentive required to bring the simple payback is less than 4 years after the incentive
  - Rule 3: Max payment for Custom is **\$200K**, Custom-Lite is **\$48K**

# CleanBC Custom Incentive Funding Process

- Customer submits completed Custom or Custom-Lite funded study and/or a BC Hydro approved energy study and completed Custom and Custom-Lite Workbook with supporting engineering documentation to [incentives@bchydro.com](mailto:incentives@bchydro.com) or KAM
- Once the application is reviewed and approved by BC Hydro (subject to budget availability) a Capital Incentive Agreement is sent to the customer for signature
- Consultant has 18 months (for Custom), 12 months (for Custom-Lite) from the date of the signed Incentive Agreement, to complete the project (a one-time 6 month extension may be approved)
- After the project is complete, customer submits project invoices and proof of payment to [incentives@bchydro.com](mailto:incentives@bchydro.com) or their KAM
- A post implementation review is conducted to verify that the measures were installed as proposed
- Once review is completed and approved the incentive payment is issued

# CleanBC Social Housing Incentives

- Administered by BC Housing
- Supports fuel-switching measures in the social housing sector resulting in > 500 tCO<sub>2</sub>e (lifetime savings)
- Fully integrated with FortisBC and BC Hydro's Social Housing Retrofit Support Program
  - One application for all offers
- Incentives:
  - Energy Study Funding – up to \$5,000
  - Implementation Funding – up to \$7,000
  - Capital Incentive Funding - up to \$200,000
    - Based on a rate of \$70/tCO<sub>2</sub>e

# CleanBC New Construction Incentives (Part 3)

- Administered by BC Hydro
- Supports new construction projects that reduce > 400 tCO<sub>2</sub>e (lifetime savings) through electrification measures in the building's heating system
- Incentives:
  - Energy Study Incentive up to \$15,000
  - Capital Incentives up to \$500,000
- Tiered Capital Incentives are based on the amount of GHGs reduced and are relative to the baseline building code of the project
  - \$40/t CO<sub>2</sub>e for B.C. Building Code baseline
  - \$60/t CO<sub>2</sub>e for Step 2 baseline
  - \$70/t CO<sub>2</sub>e for Step 3 or Step 4 baseline

# New Construction Project Baseline

- The baseline is the original concept building design model
  - This model represents a reference design which could be improved by additional electrification optimization modelling
- The project baseline must be agreed upon with BC Hydro before any updated modelling begins, and must comply with all applicable codes and standards
  - Energy modeler and project consultant should communicate with Hydro early in the process to keep re-modelling work at a minimum
- The updated model should result in an increase of electrical energy consumption and significant reduction of fossil fuel consumption as a result of energy efficient electrification measures
  - Program energy study funding available for optimizing original concept model

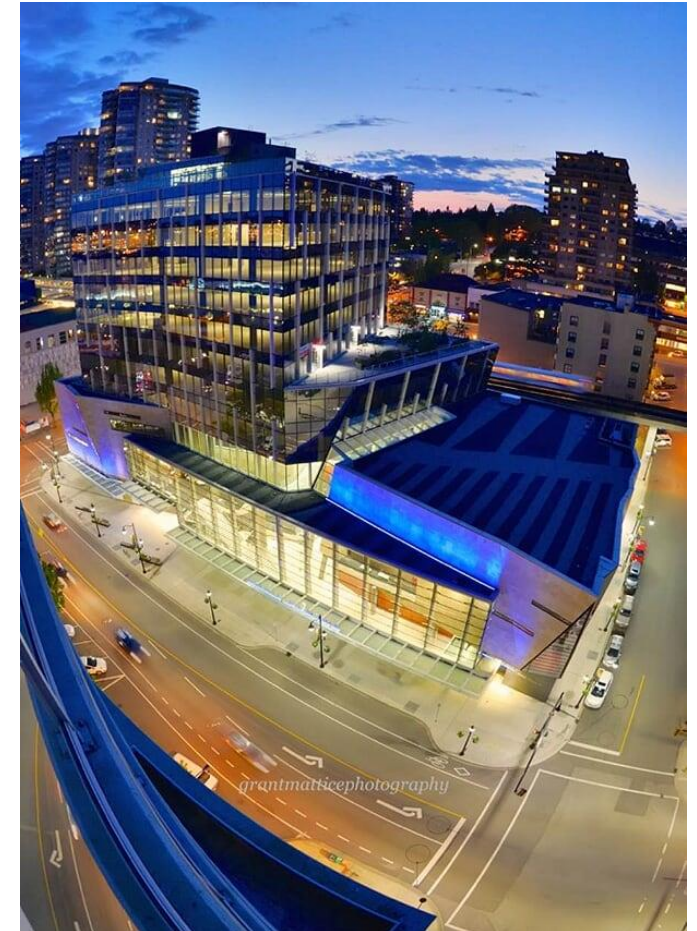
# Opportunities for Electrification

- Buildings with significant year-round cooling needs (hospitals, big shopping malls, data centers, labs. etc)
- Buildings with dedicated 100% outdoor air ventilation systems (rooftop make-up air unit, DOAS units)
- **Buildings with significant service hot water (DHW) demand (hotels, restaurants, public facilities, MURBs, healthcare etc.)**
- Buildings with centralized exhaust ventilation systems
- Buildings with significant waste heat sources (food stores, ice arenas etc.)



# How to Apply

- Read all materials on the Better Buildings website
  - [www.betterbuildingsbc.ca](http://www.betterbuildingsbc.ca)
- Contact your BCH Key Account Manager
  - If you do not have a KAM, contact BC Hydro's Business Help Desk
    - [incentives@bchydro.com](mailto:incentives@bchydro.com),
    - (604)-522-4713 in the Lower Mainland
    - 1-(866)-522-4713 elsewhere in B.C.
- Social Housing Incentive applicants contact your BCNPHA energy manager, Fortis KAM or BC Hydro KAM.



# CleanBC Building Innovation Fund

- \$1.8 million in funding for innovative, low-carbon building solutions
  - **Broad eligibility** - Projects must exceed local standards and codes, be innovative, and advance low-carbon building design, construction practices, or technologies in the market.
- Three streams:
  - Research (up to \$30,000)
  - Commercialization (up to \$250,000)
  - Demonstration (up to \$500,000)
- **Intake closes July 31, 2019.**
- Program Documents available at:
  - <https://www2.gov.bc.ca/gov/content/industry/electricity-alternative-energy/energy-efficiency-conservation/programs/cleanbc-building-innovation-fund>
  - [Building.innovation@gov.bc.ca](mailto:Building.innovation@gov.bc.ca)



Questions?