Eco-Solar Home Tour 2019

Sunday 9 June Noon to 4:30 pm

Rocky Ridge CHP

Tour Day: Sunday June 9th
Address:
Hosts: Homeowner and ATCO
Parking: Street parking available
Energuide Rating:

Summary:

- View the integration of conventional renewable and alternative energy technologies that significantly reduce household emissions and reduce dependence from the electrical grid.

What will people see and learn about at your home?

- The mCHP unit uses natural gas to produce up to 1.5kW of electricity and 12,600 BTU of heat transferred with glycol.
- By capturing the heat from the electricity generation process, the mCHP unit claims 90% efficiency when converting the natural gas fuel to useful energy.
- The combination of solar PV and mCHP technology yields an estimated emissions reduction potential upwards of 50%.

What are the main things people will see at your home?

- 2.75kW solar PV array
- 1.5kW residential natural gas mCHP unit

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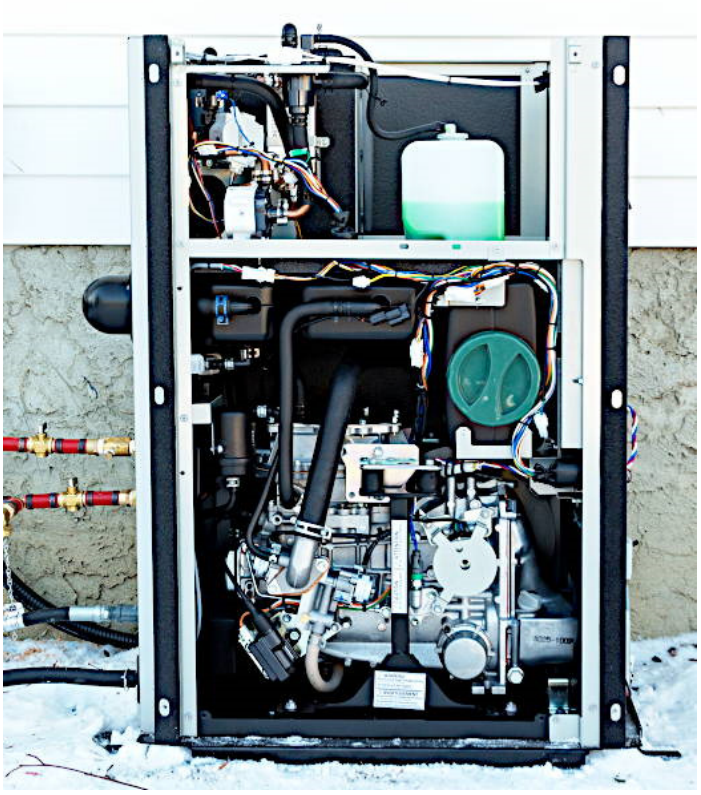
Why is this home on the tour?

To build a stronger understanding of a building's emissions, the examination should be calculated beyond its four walls and incorporate upstream sources and any associated distribution losses. Since a mCHP unit produces electricity through the efficient combustion of natural gas, emissions can be reduced by up to 60% at source as compared to conventional grid power. The distributed generation of electricity from the mCHP unit and solar PV array also reduces the amount of electricity being pulled off the grid. Ultimately, mCHP technology has a place on the pathway to a carbon-free society. Combined with conventional renewable technologies such as solar PV, mCHP reduces the dependence on the electric grid.

Ultimately, mCHP technology has a place on the pathway to a carbon-free society. Combined with conventional renewable technologies such as solar PV, mCHP reduces the dependence on the electric grid. To take it a step further, if carbon-neutral renewable natural gas (natural gas produced through renewable means such as biogas) is used, the mCHP can produce electricity with net-zero emissions at source. The exhaust stream from the mCHP could also be funneled into a greenhouse, which will pave the way to net-negative emissions for electricity production. Combined with solar PV, this could create the means for both new and retrofit builds to achieve net-negative emissions. The Canadian Gas Association has set targets of 5% renewable natural gas by 2025 and 10% renewable natural gas by 2030.



What features save on energy costs?

- Electricity generated by the solar PV array offsets energy that would be purchased from the electric grid.
- The electricity generated by the mCHP unit is cheaper per kWh compared to the cost of grid-connected electricity.
- Heat from the mCHP unit is transferred to a holding water tank that preheats the residence's conventional hot water tank. This reduces the amount of natural gas required to operate the conventional hot water tank.