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Sustainival



Eco-Solar Home Tour 2017

Sunday, June 4, 2017

Noon to 4 pm

Charlesworth CHP Home

Tour Day: Sunday

Address:

Hosts: Homeowners

Parking: on street

Energide Rating:
Standard construction:
estimated 70

Japanese Micro Combined Heat and Power (mCHP) Unit

- Although established in Japan, mCHP units for residential applications are not yet common in the North American market.
- mCHP units use natural gas to produce up to 1.5kW of electricity and 12,700 BTU of heat transferred with glycol.
- By capturing the heat from the electricity production process, the unit claims 90% efficiency when converting the gas to useful energy.
- By producing 1.5 kW of electricity from natural gas, the dependence of the power grid is reduced.
- 50-55% greenhouse gas emissions reduction

Features of the Home

- 90% LED lighting
- Natural gas furnace preheated by mCHP glycol
- Holding water tank heated by mCHP glycol; tied into natural gas hot water tank
- Glycol heat exchanger in attached garage



*mCHP unit
outside home*





Edmonton, Alberta

Eco-Solar Home Tour -2017

Charlesworth CHP Home

Why this house is on the Eco-Solar Home Tour....

This home demonstrates the technology of mCHP which can be a step towards a lower carbon generation of electricity. mCHP units are a good compliment to solar generation as the mCHP unit operates through the night.

Features that Save on Energy:

- Heat from mCHP unit transferred to the holding water tank. This water is used to preheat the conventional hot water tank, which reduces the amount of natural gas required.
- Similarly, heat from the mCHP unit is used to preheat air into the natural gas furnace, which reduces the amount of natural gas required for heating.

Are there any other special features you want to highlight?

- The mCHP unit was able to charge a Chevrolet Volt overnight. This reduces source emissions of electricity production from carbon-intense fuels and associated distribution losses, while adding the convenience of charging at home.



Heating coil from CHP into the furnace



CHP unit heats this holding water tank with extra water storage