

EXPERIMENT:

a grid-tied SOLAR WALL



Above: helping to install the solar wall were, left to right: Wyatt Steward (North Peace Senior Secondary dual credit electrical), Perry McFie (Haab Homes, Fort St. John), Andrew Hegland and Greg Schmidt (Northgate Electric, Beaverlodge), and Ron Moch, (Moch Electric Ltd., Dawson Creek).

Right: experienced PV installer Ron Moch mounted the three Enphase microinverters on the rail directly behind each solar module. They feed AC power directly into the house and “store” excess in the grid.



This small grid-tied “Solar Wall” (3 x 250-watt solar panels and 3 Enphase microinverters) was installed at a rural residence near Dawson Creek, BC in October of 2015 for two reasons:

- A practice installation for a group of PV-trained electricians eager to test their new knowledge (and have a fun time!)
- A test to see how vertically mounted modules perform at a latitude of 56 degrees north.

Solar modules are usually mounted at an angle roughly equal to the latitude, plus or minus about 20 degrees, as a compromise between winter and summer solar angles. Some module racking systems also allow

for either automatic or manual angle adjustment to optimize solar output for different seasons.

For solar power systems in the north there is an argument to be made for simply mounting the modules on a south-facing wall. Vertical panels collect no snow, maximize solar gain from snow reflection (which can be quite significant), and more directly intercept low winter sun angles exactly when power is most needed.

This system will help power a rural residence and feed green power into the grid, but it will also test a few of these ideas for our northern climate. Stay tuned for the results!