

Solar Photovoltaics in the NWT

Jean Marie River Band Office

System Overview:

In the winter of 2005, Jean Marie River community representatives considered the use of solar power to produce electricity. By November 2005, a 1320-watt solar photovoltaic (PV) system was installed on the roof of the Jean Marie River Band Office. The system is connected to the community grid and cost approximately \$20,000 to purchase and install.

The panels were first installed flat on the roof. The low angle of the roof was not ideal for solar electricity production given the community's northern location; so, in 2006 the panels were re-installed at a steeper angle (50° from horizontal) in order to increase power production.



Figure 1 – Solar PV system at the Jean Marie River

Performance Data:

Using Natural Resources Canada's (NRCAN) data, AEA calculated that a system of this size in Jean Marie River should produce 1,460 kWh of electricity per year. Between when the system first began delivering electricity to the Band Office in July 14th, 2006, and August 14th, 2007, 1,387 kWh of electricity were produced. Unfortunately, some production was lost due to snow cover during the winter. This can be fixed in the future by ensuring panels are kept clear of snow.

Performance data July 14 th 2006 to August 14 th 2007		Units
Production	1,387	kWh
Savings	2,260	\$
Cost to install	20,000	\$
Reduction in diesel fuel use	500	litres
Greenhouse Gas reduction	1,400	Kg CO ₂ e

Figure 2 - Performance Data