HOME SOLAR: *more questions answered*

peace energy COOPERATIVE

Left: *Peace Energy Co-op installing another home solar array in the Peace Region.*

HOW DO SOLAR PANELS WORK?

It's a kind of scientific magic.

We have known for over a hundred years that when sunlight strikes certain metallic crystals, electricity is generated. Explaining exactly how this works earned Albert Einstein his one and only Nobel Prize.

Crystals of silicon are particularly good at this magic. Silicon is one of the most abundant elements on Earth (think of quartz/sand). That's a good thing because crystals of silicon are the active ingredient in solar panels.

A very thin layer of silicon crystals are protected on the front by a thick layer of tough tempered glass, on the back by a waterproof plastic coating, and the whole works sealed inside a thin aluminum frame.

When sunlight shines on the panel, the electricity generated by the crystals is picked up by a network of fine silver wires and routed to terminals on the back of the panel. A standard sized panel, about one meter by two meters, generates about 400 watts DC in bright sunlight.

String a few dozen solar panels together and they will generate a few thousand watts to power your appliances, charge your electric car, and heat your home with a heat pump.

String thousands of solar panels together and they will generate millions of watts to power whole cities.

HOW LONG DO THEY LAST?

A very, very long time. Modern solar panels come with 25-year warranties, and worst-case predictions show less than a 20 percent power loss after 50 years. Solar panels in actual use for more than 40 years are still working just fine, as predicted.

HOW MUCH DO THEY COST?

A solar array for your home is a solid investment that keeps giving good returns for decades.

For a small energy-efficient home, your complete cost to go solar could be as low as $10,000. For a large family home or farm it could be three to four times that. It's all money well spent: the solar energy you generate will cost less than the grid power you are now buying, plus you own the solar array as a long-term home asset.

Most of the home solar in the BC and Alberta Peace Region provides a 5 to 8% return on the money invested. Better than any bank, that's for sure.

Plus, the solar array retains its value for a long time – a long term asset that adds to the value of your home while paying for itself with reduced (or eliminated!) electrical bills for decades into the future.

That's why solar is the fastest growing energy source in the world today. Thousands of homes in BC and Alberta are solar powered, and millions around the world. China is a leader in solar, installing some 10,000 solar homes every day!

Today's solar technology makes good sense, both economic and environmental. That's why the world is going solar, and fast. Now, you can too.