Watt's Happening? #162

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CLIMATE SOLUTIONS

Fort St. John climate leader Ernie Freeman charges his electric Nissan Leaf with a rooftop solar array. Electrifying transportation and charging it with renewable energy will go a long way towards halting climate change. As Ernie clearly demonstrates, the technology needed to do this is now available.

Humanity has faced urgent threats in the past, but nothing as all-encompassing as the climate crisis. This one threatens the whole planet and everything and everyone on it, and the changes are coming even faster than scientists have predicted. What to do?

TRUST THE SCIENCE

I still hear a lot of confusion about the difference between "weather" and "climate."

The weather has always been very unpredictable and always will be: one year it's hot and dry, the next wet and cold, and then there's a weird frost in August. That's weather: its what happens from day to day, month to month and year to year where we live, in our area, in our province.

Climate is something entirely different. Climate is the whole-planet picture over thousands or tens of thousands of years. Ice cores, satellites, and thousands of monitoring stations around the world are needed to see the big picture patterns and how they are changing.

Scientists have been studying exactly that for the last 40 years or so, and they don't like what they are seeing. No, they don't like it at all.

The first step in solving any problem is to admit that you have one. In this case, that means

taking the science seriously and realizing there is something important happening that we must deal with.

SEE THE OPPORTUNITY

Shifting to a low-carbon economy is being seen by many as "the biggest business opportunity of the twenty first century," and the countries that shift first will be the winners.

It's hard not to agree when you think about it. All of our energy systems must be converted from high-pollution to very low-pollution; all of our built infrastructure has to be upgraded from very low to high efficiency, and all of our transportation systems must be re-thought and re-built.

There will be innovation, leadership and opportunities at all levels: from households to cities, from companies to national governments. And the technologies, the answers, are all in place waiting to be used.

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GO ROOFTOP SOLAR

The first solar array appeared in 1884 in New York City. Today's solar panels are vastly more efficient, less expensive and durable than those first ones, but the principle remains the same: once set up, solar arrays require no fuel, produce no pollution, have no moving parts and last a very long time, 40 to 50 years plus.

Prices for rooftop solar have plummeted over the last few years as worldwide production has ramped up and solar tech has improved. Solar has now reached "grid parity" meaning the electricity produced cost the same or better than the cheapest grid electricity now available. That's why solar is the fastest growing energy source on the planet.

Rooftop solar puts electricity generation in the hands of homeowners, businesses and communities, not just big utilities. Soon it will make renewable electricity affordable and available to everyone.

CONSIDER HEAT PUMPS

OK, so I've changed to triple-paned windows and upgraded the insulation in my home. Now how do I heat it without burning carbon?

Normal electric heating (known as "resistance heating") is a very inefficient use of electricity. But there is something much better.

Heat pumps don't try to "make" heat with electricity, instead they use electricity to "harvest" heat from the air, water or ground. Sometimes called "refrigerators in reverse" they use only a small amount of electricity to harvest and concentrate that heat and put it into your home.

Compared to resistance heating, with a heat pump you get 3 to 4 times more heat per watt of electricity used. Heat pumps are simple, well established technology with millions installed each year around the world. In BC, there is now a $3000 grant to encourage you to switch to a heat pump. Check it out at CleanBC.gov.bc.ca.

RECYCLE

Although we have a long way to go to reduce waste like single use plastic packaging, recycling and composting organic waste are still good ideas. Manufacturing with recycled aluminum, for instance, uses 95 percent less energy than using virgin materials.

The old adage "Reduce, Reuse, Recycle" still holds true. Reducing individual consumption and waste definitely helps fight climate change, and our own behavior is something we have total control over.

Next time: *more solutions*.