

Watt's Happening?

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Myth Busting: *powering the whole planet*

MYTH: *“We can’t possibly power the whole planet with renewable energy because there’s not enough and it’s unreliable.”*

What the “renewable” part of renewable energy means, of course, is that there is **NO FUEL REQUIRED** to make the energy. It comes instead from never-ending sunlight, wind, falling water, and geothermal heat, constantly re-supplied by natural processes. Neat.

It’s a fact: renewable energy has a tiny environmental impact compared to fuel-based energy. Period. That’s a very good thing because it provides a clear path away from pollution and global climate change.

Hmm, an energy source that needs no fuel, creates no pollution and lasts forever. Sounds like a pretty good idea! But is there enough of it to power our hi-tech, over-populated planet? Is it actually **POSSIBLE**? The answer: “You bet!”

POWER TO SPARE

There is, indeed, enough renewable energy to power all of civilization. Supplies of easily accessible wind and solar dwarf the energy consumed by everybody on the planet many, many times over.

Powering the whole planet with renewable energy is not only possible, it’s happening. The benefits of jobs and a cleaner environment are immediate, but our children and their children’s children will benefit far into the future.



Like, really dwarf. The sun alone pours some 350,000,000 terawatt (trillion watt) hours of solar energy on the planet each year, about four thousand times more than our planetary civilization currently consumes, and about 400 times more than all the energy in the world's remaining oil reserves. That's in each and every year. There is LOTS of renewable energy.

But what would be needed to harvest all the energy needed to run the whole planet? A 2009 study published in Scientific American, "A path to sustainable energy by 2030," by Mark Z. Jacobson and Mark A. Delucchi, proposes a plan to eliminate the need for all fossil fuels worldwide by 2030 (just 15 years!) using a mix of 90,000 solar plants, numerous geothermal, tidal and rooftop photovoltaic installations, and 3.8 million 5-megawatt wind turbines scattered all around the globe.

Wind supplies 51 per cent of world demand in this plan because it is the fastest to scale up and deploy, and is already cost-competitive with most other energy sources, including coal. Solar is now rapidly catching up and will soon be even cheaper than wind power.

JOBS, JOBS, JOBS

Still, that's one heck of a lot of wind turbines to build and solar panels to install, and quickly. Is it possible?

Sure is. Let's remember that the world currently manufactures 73 million cars and light trucks EVERY YEAR, and somewhere in the world a city the size of Seattle is being built EVERY WEEK!

Rapid, massive change is not only possible, it happens all the time, including right now.

The cost? A small fraction of our global military spending. And cheaper to produce than fossil

energy too. After all, there's no expensive fuel (and less war, always expensive), and because renewables are much more distributed across the land, less transmission is required (you can generate all your own power with the sunlight falling on the roof of your home, for instance).

And boy, we're talkin' jobs!

A recent California study at Stanford University calculated that a mix of geothermal, wind, solar and existing hydro could generate 100 percent of California's electricity 24/7. It's true: just about everywhere on the planet some mix of renewables will work year around, night and day. . . forever. Many other jurisdictions, including most European nations, are now implementing plans to be close to 100 percent renewable before mid-century.

What about that old "intermittency" problem? The sun doesn't always shine and the wind doesn't always blow. The good news is that once you get a fair bit of this renewable infrastructure in place, things tend to even out. As well, a revolution in energy storage technology is in full swing. Witness Tesla's lithium-ion "Power Wall" storage system for home use, with much more just around the corner. Storage is no biggy.

Renewable energy seems like magic, but it isn't. It's just simple, reliable, common-sense technology, actually. Can we change our entire energy system in 20 years? Yes we can.

Do we need to? Unless we are big fans of pollution, ill health, unemployment and global climate disruption, then yes we do.

And the really good news is that this renewable revolution is already in full swing. More on that next week!



**Installing solar power modules
in Dawson Creek, BC.**