

Watt's Happening? #132

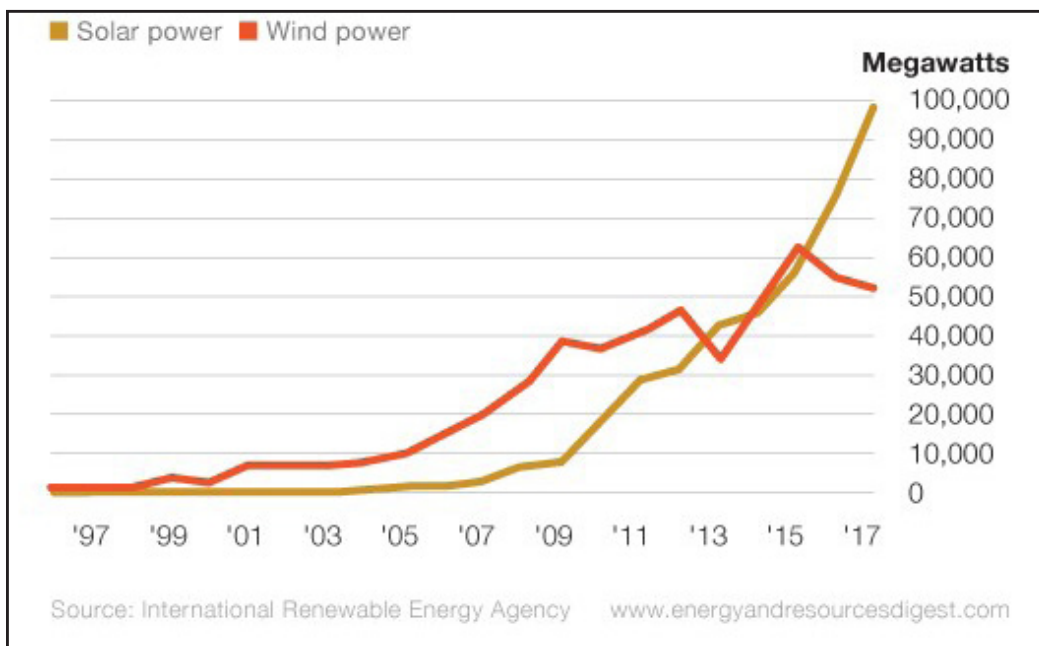
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Seeing the Light



Last year, the yearly growth of installed solar power was nearly double the annual increase in wind power generation. Together their growth, both in infrastructure investment and job creation, has outpaced the growth in all other sources of energy combined.

Shell. BP. Statoil. Total. Even the world's oil and gas giants are investing billions in renewables. Something is changing.

It's partly about what's called "carbon risk." Blue-chip energy companies are being asked by investors to explain how they intend to preserve value through the clean energy transition in the face of the growing risk that some of their infrastructure assets may become stranded. Part of the answer is increasing investment in renewable infrastructure.

BIG STEPS FOR BIG BUSINESS

Shell is allocating a growing portion of its \$30-billion a year capital budget to renewables, hitting US\$2 billion last year. Shell has not only pledged to boost investment in renewables but also cut its carbon emissions in half by 2050.

BP has invested \$20 million in battery startup StoreDot, which is developing an electric vehicle battery that can be charged in five minutes. Likewise, Shell just put \$71 million into a German solar battery maker.

Spanish energy company Repsol SA has stated that it is no longer seeking to grow its oil and gas business as the world moves to clean energy, the first such company to make the move public.

Norwegian oil giant Statoil will now be called Equinor, in a conscious move to remove "oil" from its name.

Indian thermal power company Tata Power is investing \$5 billion in renewables as the company looks to quadruple its clean energy capacity.

Meanwhile, strangely bucking the trend, Calgary-based

pipeline company Enbridge has reduced its renewable portfolio. Enbridge recently sold some of its renewable assets, including a \$1.75 billion agreement with the Canada Pension Investment Board, which has acquired a 49% stake in most of Enbridge's wind and solar assets.

The World Bank, apparently, has seen the light, announcing last year that it will no longer lend developing nations money for oil and gas development. President Jim Yong Kim said the bank would make some limited exceptions for natural gas development for the poorest countries.

CHINA LOVES ELECTRIC

China is already responsible for half the global electric car market. EV sales in China are expected to hit 19% of passenger vehicle sales by 2025, versus 14% in Europe and 11% in the U.S. (Norway currently leads, where 40% of new car sales were EVs last year.)

China loves electric cars, and electric cars need batteries. Lots of them. Last year China produced 130 gigawatt-hours of electric battery capacity, compared to the rest of the world, which made just 42 GWh.

China's biggest battery maker, Contemporary Amperex Technology, has taken a controlling stake in a lithium mine in Quebec in its continuing bid to beat out Tesla and become the world's largest battery producer.

The fact is, the move to electric vehicles is a bright spot in the eye of the mining industry, as projected demand from the likes of Tesla has sent prices for once obscure metals such as cobalt and lithium soaring.

Overall investment in renewables worldwide has hit about \$250 billion per year, says a new study from the UN Environment and Bloomberg New Energy Finance. Interestingly, poor countries are now investing more in clean energy per year than rich ones.

As far as overall capacity goes, solar has thoroughly taken over from wind as the leading source of new energy in the world. The International Renewable Energy Agency reports that last year peaked at almost 100,000 megawatts of new solar installed world wide, while wind declined somewhat to about 50,000 new megawatts.

Worldwide, the solar industry remains the largest employer of all renewable energy technologies, jumping 9% last year to 3.4 million, triple the employment in the wind industry. Overall, renewables now employ 10.3 million people, about 500,000

more than it did in 2017. Most of these jobs are in Asia.

Change happens, with or without us. Oil transformed the world. The clean energy transition will similarly shake up the geopolitics and the business, big business, of energy.

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This 122 kW solar array provides about half of the electricity needed for the Hudson's Hope sewage treatment facilities. Solar array designed, supplied and installed by Peace Energy Co-op / Moch Electric Joint Venture, Dawson Creek.