



Dispatches From The Wild, Weird World Of Humanity And Its Biosphere

October 20 2021

Walrus



The World Wildlife Fund and the [British Antarctic Survey](#) (despite the name, it focuses on both polar regions) have kicked off a five-year project to learn more about the numbers and location of walrus (*Odobenus rosmarus*) across the Arctic. Walrus are long-lived, highly social animals, and are [key in shaping the Arctic marine ecosystem](#), as their tusks act as "rototillers" plowing and churning the seabed as they dig for their mollusk prey. The new "Walrus From Space" project will survey walrus-rich areas on the coasts of Russia,

Walrus populations around the Arctic



Source: NOAA

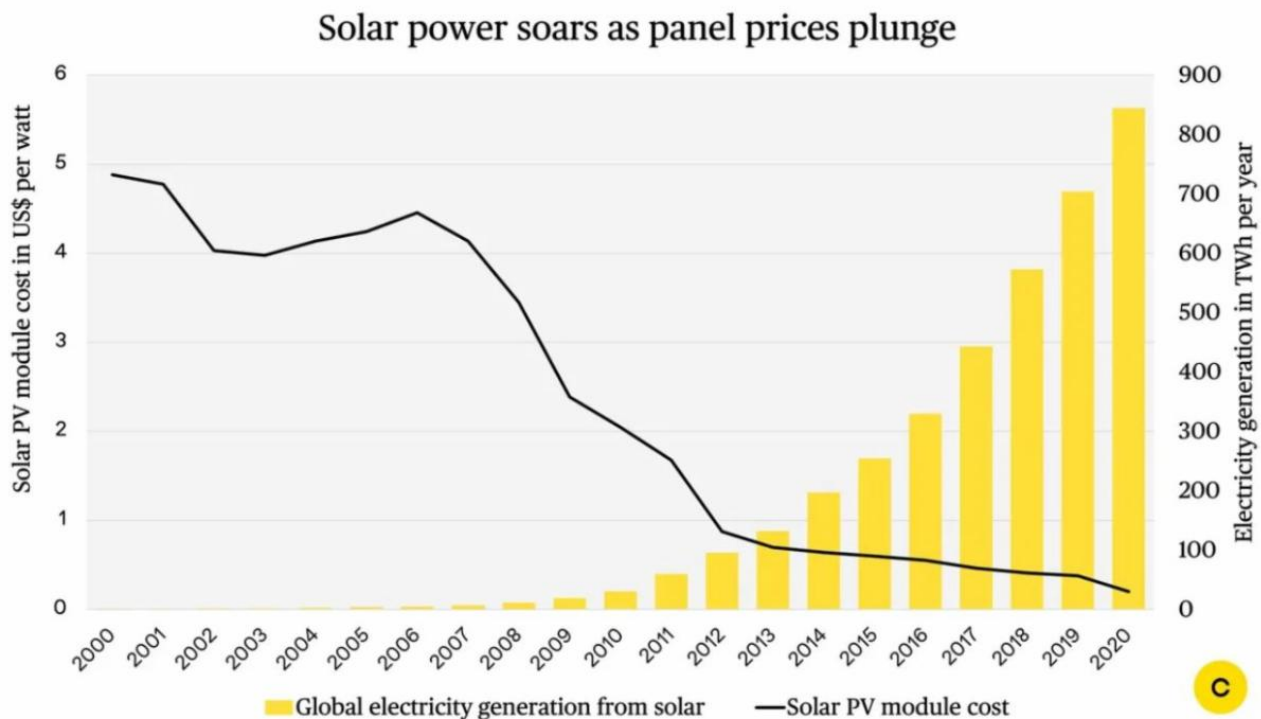


Norway, Greenland, and Canada from orbit, using the services of a new ultra-high-resolution commercial satellite, Maxar's WorldView. That satellite has an incredibly sharp spatial resolution, able to distinguish differences in area as small as 30 centimeters-less than a foot-making it possible for the first time to distinguish between individual walrus huddled up together a beach ([as pictured](#)) with satellite photos. Now, the Walrus From Space project is hoping to recruit 500,000 citizen scientists to be "walrus detectives," using a few spare minutes online to look at one of the latest satellite pictures, check whether there are walrus in it or not, and if there are, place a dot on each one to help count them. This data will be very helpful in learning more about how an Arctic keystone species is responding to climate change, and is a great, free way to make a material contribution to ecological research! To get involved and count some walrus, check out www.wwf.org.uk/learn/walrus-from-space.



Energy

There's so much news about renewable energy coming out so fast that it's impossible to do it justice in a part-time weekly newsletter. Here's a sample of a very few of the highlights, and a link to a great IEA commentary on the current fossil fuel shortage. We also encourage you to check out [Canary Media](#) for regular updates on the renewables revolution, the greatest economic story of the century!



First, new research and analysis is underscoring the single best piece of news from the last few decades: **clean energy is on an "unstoppably good" path to prominence** thanks to [incredibly rapid improvements, and incredibly fast-falling costs](#), in key technologies including solar photovoltaic panels, wind turbines, and battery storage. Furthermore, all of those appear to be on a [technology "learning curve"](#) where more and more research and money into those fields leads to a steady stream of new advances leading to more spectacular results leading to more research. [The chart above](#) shows the real-world effects of a learning curve in the solar panel industry-as the tech gets cheaper, we get continuing

exponential growth! Similar to the last century of advances in computer technologies, from microchips to memory storage, this could last for a *long* time (there are few fundamental limits on how much power you can get from the sun or wind!).

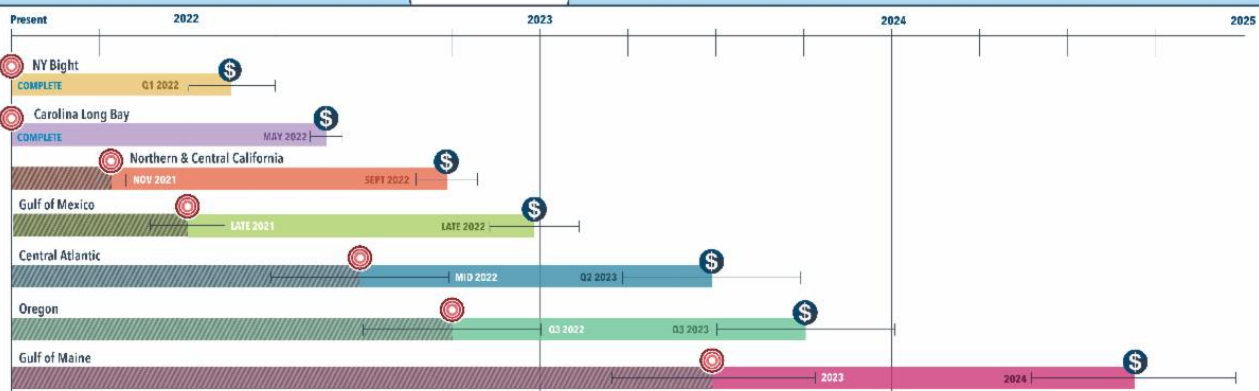
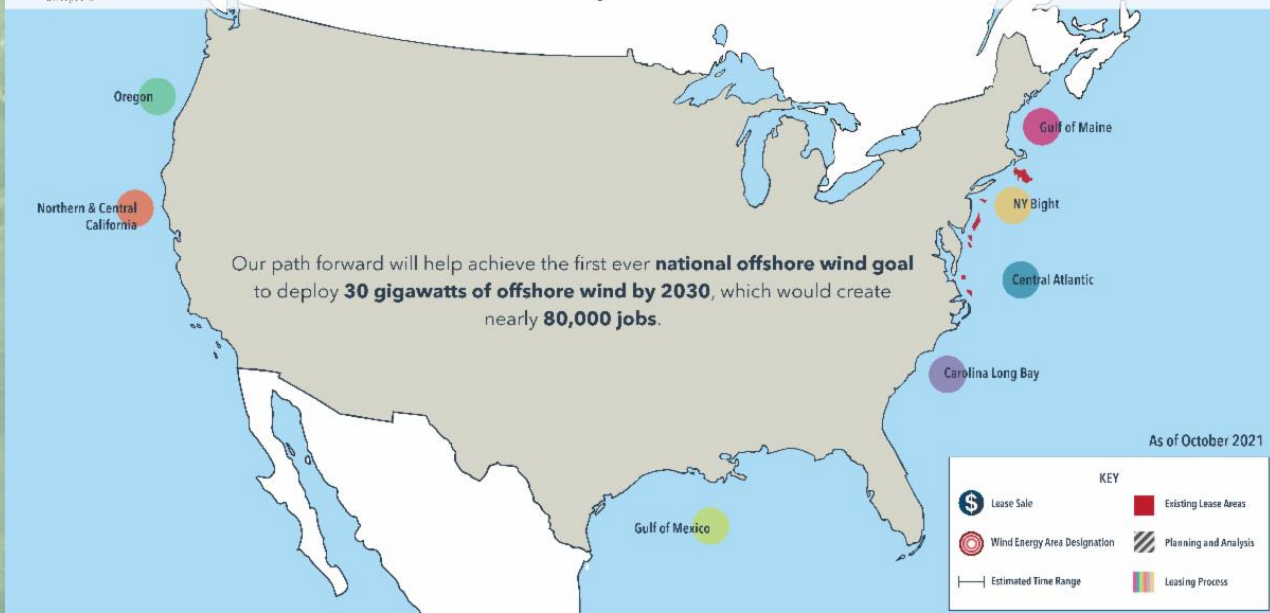
Keep in mind, the fact that the solution is really good and getting better doesn't mean that the problem has gone away. Low carbon sources like nuclear and renewables currently account for [36.7% of world electricity generation, but just 15.7% of total world energy generation](#) (electricity plus non-electricity energy, like gas in cars, fuel oil, making steel and cement, etc). But with exponential growth in a rapidly improving tech sector, clean energy is on an unstoppable rise to power, with the core economics and physics of the issue pushing forward the renewables revolution even without political support. The question now is how fast we can make it happen, and how many negative consequences of climate change we can prevent and ameliorate by doing so!



Energy, Continued

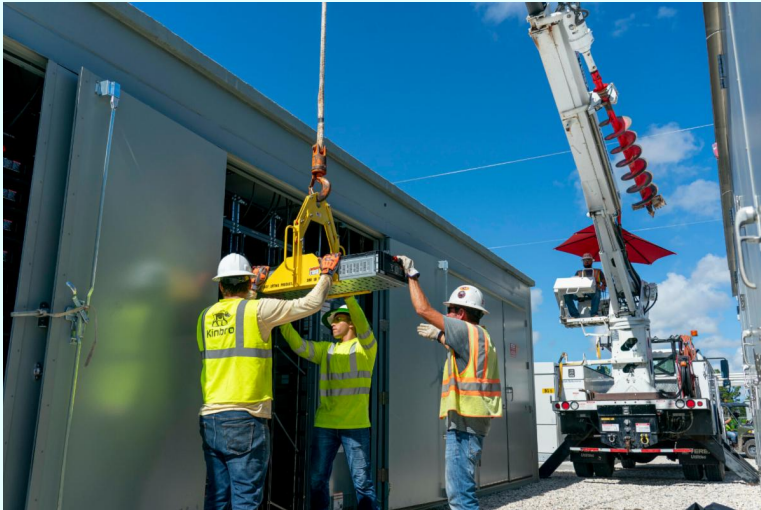


Offshore Wind Leasing Path Forward 2021-2025



And as conservative Democrats try to sabotage climate policies in Congress, President Biden continues to do [as much as he can](#) to push forward renewables with executive action. Interior Secretary Deb Haaland [announced](#) a new groundbreaking plan to hold seven immense new offshore wind electricity lease

sales by 2025, in seven key sites across American oceans ([pictured, above](#))! This doesn't need Congressional approval, and should avoid 78 million tons of CO2 emissions while creating up to 77,000 jobs. Superb news!



Energy storage is an absolutely critical part of the renewables revolution—from grid-scale batteries to pumped hydro, it's a big part of what will keep the lights on when the sun isn't shining and the wind isn't blowing (though low-carbon non-weather-dependent technologies like [geothermal](#) and [nuclear](#) will also be key!). So it's spectacular news

that [energy storage is growing insanely fast](#). Energy research company [Wood Mackenzie](#) issued a [new report](#) summarized as "globally, 12.4 gigawatts of energy storage capacity will come online in 2021, up from 4.9 gigawatts in 2020, which was then a record. Almost all the new storage systems are batteries." To put that into perspective, the world installed one (1) gigawatt of energy storage capacity *total* in 2016, and Wood Mackenzie further estimates we'll be adding 70 gigawatts in new storage capacity yearly by 2030. The energy storage field is [raking in investment money](#), and looks set to grow even further and faster—after all, wind and solar [grew faster than even the most optimistic predictions!](#) (Pictured above: [workers installing battery modules at the all-new Manatee Energy Storage Center in Florida](#), set to be the world's largest—but likely only for a short while!)

Another example of how things are going: Chinese President Xi Jinping announced on October 12th that China has [started construction](#) on new 100-gigawatts' worth of wind and solar power generation projects. (For context, the famed Three Gorges Dam generates only 21 GW, and [the entire United States had 996 gigawatts of electricity supply as of summer 2013](#). That's an *immense* amount of power). Details on this new wave of projects are scarce, but it does line up

Furthermore, an array of different factors, from a series of unexpected one-off fires, maintenance issues, and other accidents, to lingering supply-chain issues due to COVID-19, to [Vladimir Putin attempting to put pressure on the European Union](#), have caused a **global fossil fuel shortage**. Natural gas prices have skyrocketed in Europe, and both India and China are facing coal shortages. This has led to a bunch of short-term negative consequences, from rolling blackouts in Asia to burning more oil and coal where natural gas is pricey. As the [International Energy Agency aptly summarizes](#), the obvious solution here is to invest in and build more clean energy!



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