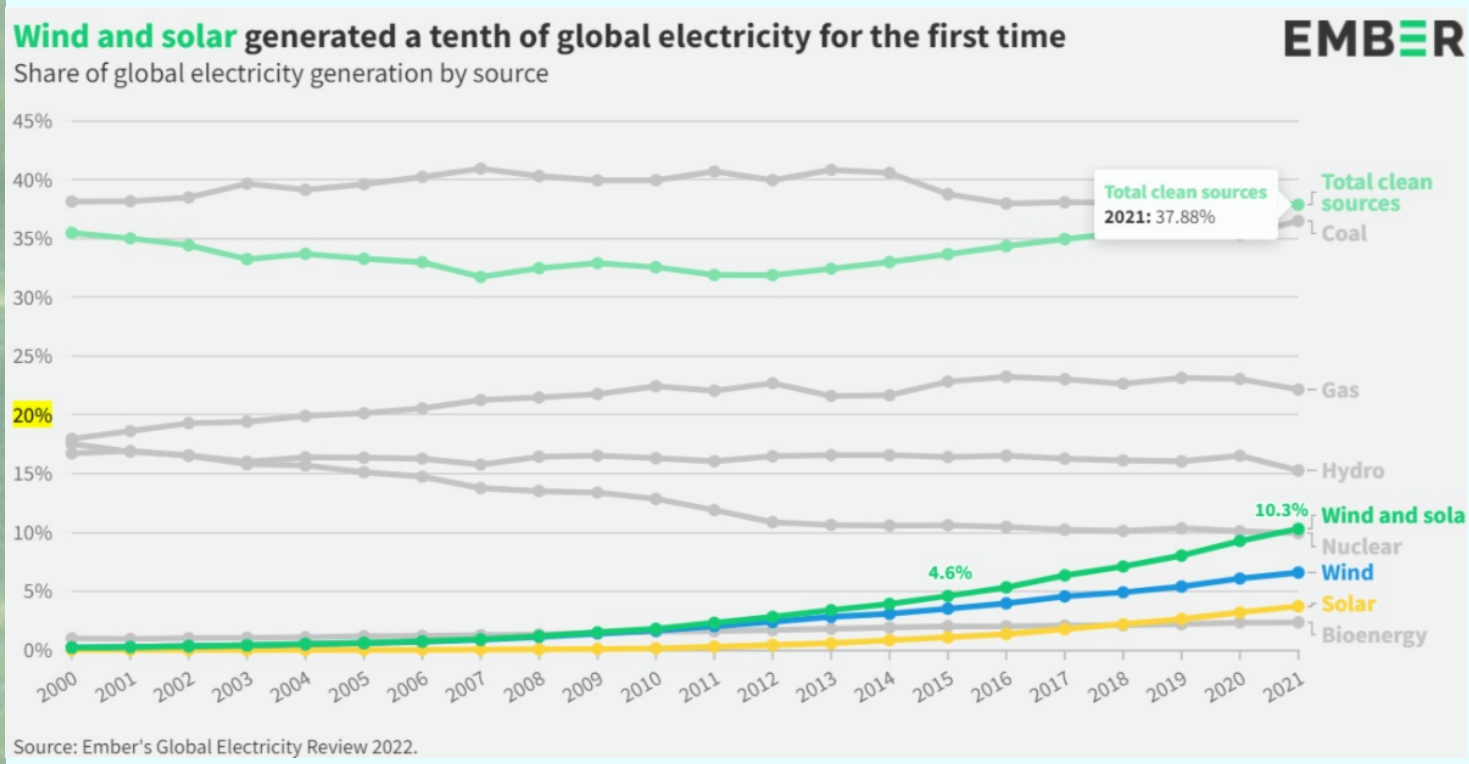
the weekly anthropocene

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

April 6 2022

Renewables Growth: The Big Picture



A new in-depth report from climate and energy think tank Ember chronicled the state of global electricity in 2021, with a focus on the clean energy transition.

In 2021, wind power and solar power together produced 10.3% of human civilization's electricity, up from 4.6% in 2015 and less than 1% as recently as 2007. Adding the contribution of nuclear (10%), bioenergy (2%) and hydroelectric power (15%) (both of which haven't increased or decreased particularly dramatically in recent decades), non-fossil fuels sources produced 38% of global electricity in 2021, compared to fossil fuels' 62% (including 36% from coal and 22% from gas).

Disturbingly, a surge in demand after the COVID-induced economic slump, particularly in China, led to a spike in coal use after years of decline (including record-high coal use in several Asian countries), but the longer-term picture is still excellent for renewables.

Fifty countries, including the US, China, Japan, the UK, and Germany, generated over 10% of their electricity from wind and solar, and three (Denmark, Luxembourg, and Uruguay) got more than 40% from wind and solar.

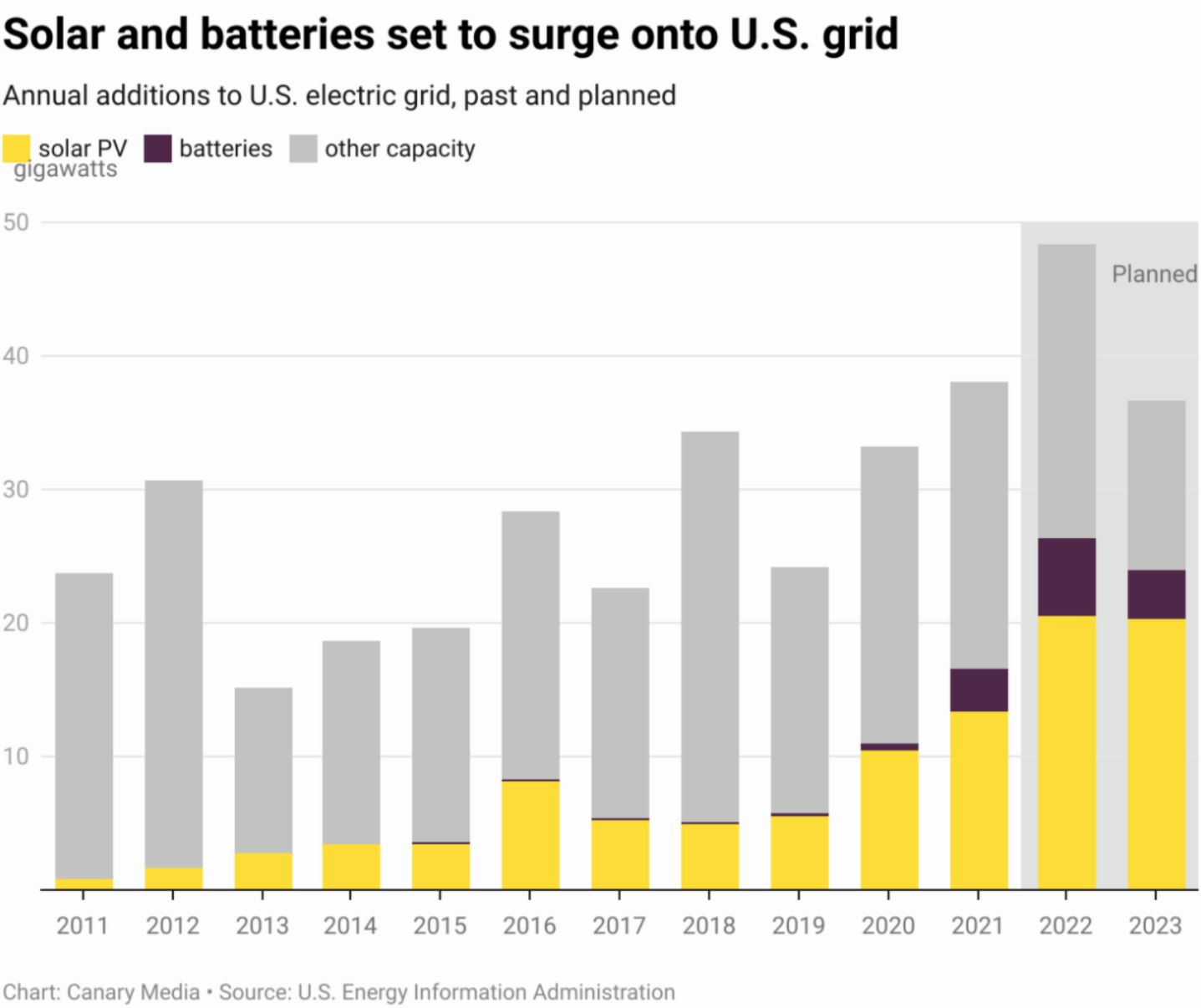
The report also identified the three fastest-moving countries in the clean energy transition in recent years: Netherlands, Australia, and Vietnam. From 2019 to 2021, the share of wind and solar combined in the electricity rose from 14% to 25% in the Netherlands, 13% to 22% in Australia, and 3% to 11% in Vietnam, with accompanying fossil fuel use declines in each case.

(It's worth noting that the progress in Australia-on track to continue and expand!- is almost entirely a result of bottom-up individual, community and state-level action, while the federal Scott Morrison government continues to promote coal power and actively campaign against renewables. This is one of many encouraging signs that the overwhelming economic logic of renewables is resulting in massive build-outs even in conditions of political opposition).

To get solar and wind to 40% of the world's electricity by 2030, which the International Energy Agency considers key for its best-case scenario Net Zero by 2050 pathway, we'd need to sustain a compound annual growth rate of **20%**. That's about the average growth rate for solar and wind through the 2010s, and was exceeded in 2021 by several countries-for example, Vietnam saw an incredible 337% increase in solar deployment in that one year.

So, the energy mission for the decade seems clear; build out wind, solar, and battery infrastructure as fast as possible, avoid counterproductive attacks on complementary non-fossil fuel energy infrastructure like hydro and nuclear (and support the few cases where new nuclear power is being built), and keep the clean energy transition running as hot as possible, with public and private investment, community support for new projects, and continued pressure on institutions to move away from fossil fuels!
This writer is quite excited about the potential here. A world running on renewables will have much less to fear from genocidal petrostate dictators and air pollution deaths (an estimated 3.6 million people die prematurely every year due to air pollution from the burning of fossil fuels). Switching to renewables isn't just about staving off climate disasters: it's a path to building a safer, healthier, fairer, and *better* world.

United States of America



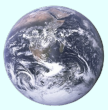
Clean energy is dominating all new planned additions to the US grid. There are currently 85 gigawatts (1 gigawatt=1,000 megawatts) of new capacity planned to be built in 2022 and 2023. Of that, 51 gigawatts will be accounted for by solar power and battery storage projects (often built in pairs, these days), and a further 15 gigawatts by wind energy (which isn't even on the above chart!). Most of the remaining 19 gigawatts will be new fossil gas-let's get that proportion lower and lower!

New Jersey's last two coal plants are scheduled to shut down by May 31, 2022-two years earlier than planned. The utility previously buying power from the plants (together producing 470 megawatts) expects this to save customers $30 million, and the company that owns the plants is now intending to reuse the sites, already equipped with strong connections to the grid, for new battery storage projects.

President Biden announced that he would invoke the **Defense Production Act**, essentially mandating that businesses prioritize production of materials necessary for national security, in order to expand production of key battery components in the United States. To quote (our highlights), "Specifically, the DPA will be authorized to support the production and processing of **minerals and materials used for large**

capacity batteries–such as lithium, nickel, cobalt, graphite, and manganese—and the Department of Defense will implement this authority using strong environmental, labor, community, and tribal consultation standards." The Pentagon will now be authorized to inject capital and provide other assistance to businesses mining these five metals in America. This is excellent news for boosting the clean energy transition (batteries being key for everything from grid storage to EVs) as well as promoting American competitiveness!

The Biden Administration also made available **$3.16 billion** in funds from last year's bipartisan infrastructure bill to boost the federal Weatherization Assistance Program, helping low-income families make their homes more energy-efficient. This should be enough to retrofit **450,000 homes**.



Brazil

The northern muriuqui (*Brachyteles hypoxanthus*), also known as the woolly spider monkey, is the largest primate native to the Americas, growing to over 4 feet long. They're of great interest to scientists due to their relatively peaceful, female-dominated, nonhierarchical, and affectionate society, a great rarity among monkeys and apes but (on our better days) sometimes also attained by humans. Sadly, they're also one of the most critically endangered primates in the world, with an estimated fewer than 1,000 left. Their survival is further threatened by the habitat fragmentation of their home ecosystem in Brazil's Atlantic forest, stranding the remaining muriuquis in 12 too-small forest islands separated each other by seas of farmland. This isolation is

even harder on muriuquis
than it is for the many other primate species in similar situations, as female muriuquis naturally migrate out of their birth group when they reach reproductive age to find non-closely-related mating partners, so you need at least two groups in relatively close proximity to ensure that the species will continue. In recent years, several of the remaining populations dwindled past the point of viability, in one example consisting only of two brothers dubbed Bertolino and Luna.
Now, a group of conservationists and sympathetic local landowners have formed the Muriqui Institute of Biodiversity, and have started an all-out effort to save the species. Their long-term plan, with work already in progress, is to focus on protecting and reconnecting on the 5 most viable forest islands (all in the states of Minas Gerais or Espiritu Santo), and knit together forest corridors on public and private land to enable healthy muriuqui migration between them. And right now, they're collecting and reintegrating the scattered and lonely muriuquis from the remaining populations, and bringing them together to socialize at the "Muriuqui House", a facility built at Comuna do Ibitipoca. There are currently seven individuals there (pictured above: an infant dubbed Elliot, offspring of the once-alone Bertolino), and plans are underway to bring in a too-small isolated group of 15 muriuquis. Once they're all adequately socialized to living in muriuqui groups, they are to be reintroduced into the wild in the well-secured Mata do Luna area, recently enhanced and connected to the Ibitipoca region by a forest restoration campaign. Read the full story here! It's truly inspiring to see how some humans are willing to dedicate their time, effort, and passion to saving a species, ensuring a future for this jewel in the mosaic of life!

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