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Finally, some seriously good news on climate. And some not so good

Nick O'Malley June 11, 2023 — SMH

Even the most optimistic renewable energy champions confess to being shocked by how quickly the world has built and deployed clean energy over the past year. The scope of the achievement is difficult to exaggerate.

China alone, in just the first four months of this year, for example, deployed 71 gigawatts of renewable power capacity. Which is to say, notes the energy analyst Tim Buckley, that in one quarter of one year China built, in solar alone, as much energy capacity as has been created in the entire history of Australia's National Energy Market.



China is increasing solar power capacity at a massive rate.

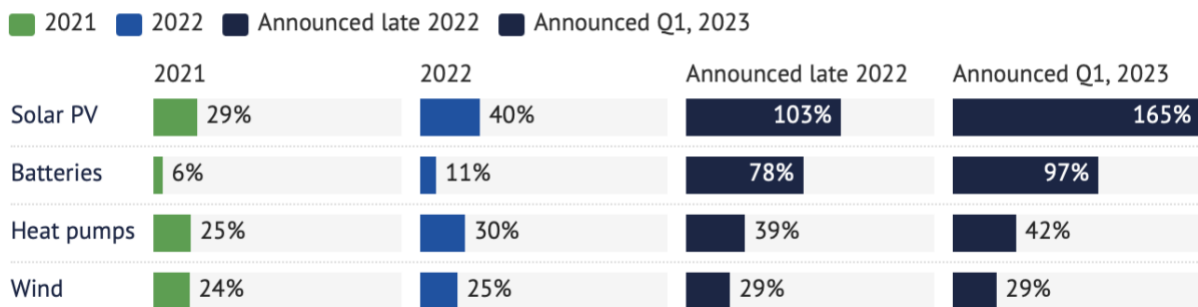
Buckley points to chart published in recent weeks by the [International Energy Agency](#) to try to quantify the extraordinary recent surge in renewables.

It shows that in 2021 the world had installed just 29 per cent of the solar manufacturing capacity that the IEA predicted it would need to have in place by 2030 to put it on a path to net zero. By early last year, that figure had leapt to 40 per cent. By year's end announced developments brought the figure to 103%. By the end of the first quarter of this year, the IEA estimated we had 165% of the solar manufacturing capacity needed to put us on a net zero path by 2030.

The same chart shows a leap in the amount of battery manufacturing capacity needed to store all that new energy has jumped from 6% of what is needed for a net zero path, to 97%.

Buckley believes this to be evidence that 2023 will be a watershed year for a world more used to failing to meet clean energy and climate targets than smashing them out of the park.

Installed and announced manufacturing capacity, relative to 2030 levels needed in IEA net zero scenario



Source: Climate Energy Finance

“This is a chart that absolutely gives me hope,” he says. “I think when we look back on 2023 it will prove to be the transformational year, one where the world built clean energy investment and manufacturing capacity at such a significant scale that we actually will now have the solutions to be deployed, at the scale required to meet the challenge.”

The IEA, which has a long history of conservative estimates of clean energy capacity, has published a string of data lending weight to such an analysis recently.

In its [World Energy Investment Report, published last month](#), the IEA showed that for the first time in history investment in solar this year would outstrip investment in oil.

“Clean energy is moving fast – faster than many people realise. This is clear in the investment trends, where clean technologies are pulling away from fossil fuels,” the IEA’s chief, Fatih Birol, said in a statement. “For every dollar invested in fossil fuels, about 1.7 dollars are now going into clean energy. Five years ago, this ratio was one-to-one.”

“I think when we look back on 2023 it will prove to be the transformational year.”

Energy analyst Tim Buckley

The surge in investment is due to a confluence of technical and geopolitical circumstances.

The leap in fossil fuel prices caused by Russia’s invasion of Ukraine came just as solar technology had fully matured, notes Buckley. Over recent years new solar has been cheaper to deploy than new coal, in large part due to massive expansion in Chinese solar manufacturing capacity not only of solar cells, but of their base ingredient, polysilicon.

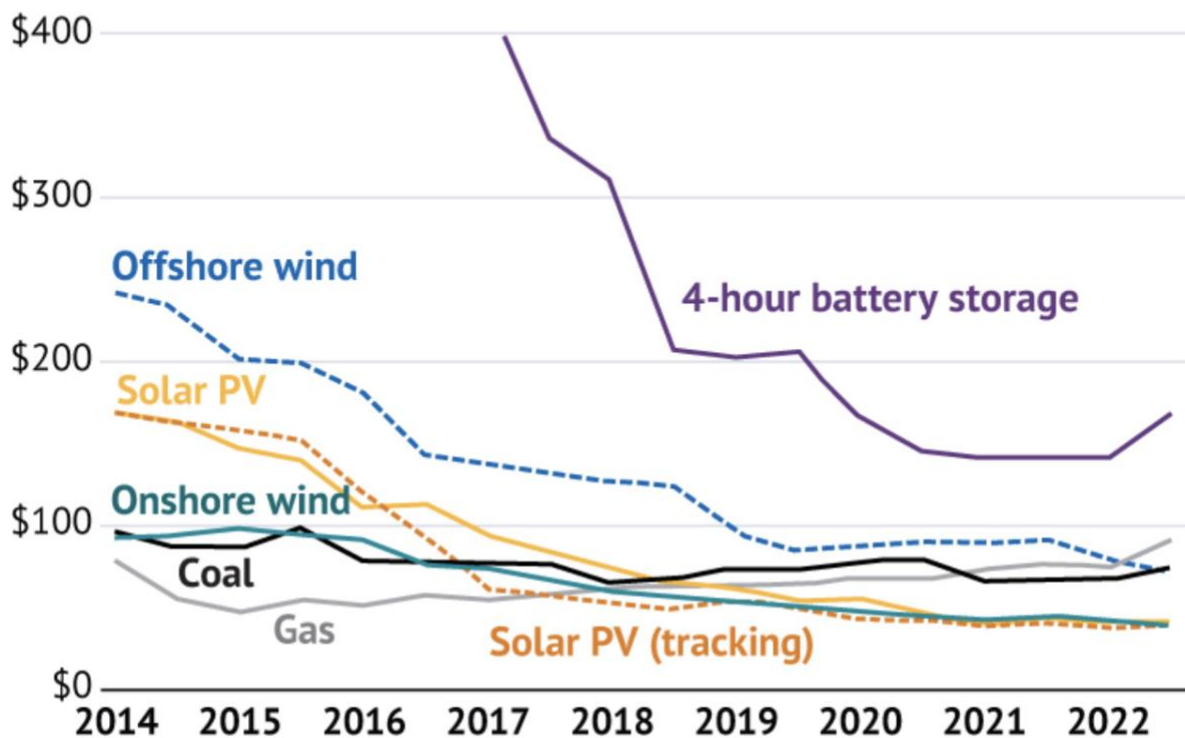
Determined not to be left behind by China, the United States pumped almost US\$750 billion into its own green energy economy via President Joe Biden’s Inflation Reduction Act, while Europe has ramped up spending to keep up with the technology and investment competition and to reduce its dependency on Russian gas. Even India is ramping up production and deployment, though its efforts have been slowed due to protectionist policies.

Buckley sees this as a virtuous arms race that is causing the deployment of capital and technology to accelerate to the point where it may have some impact on the changing climate.

Meanwhile, there are new signs that the uptake of electric vehicles is beginning to have a serious impact on transport emissions.

Solar is now the low-cost source of new electricity generation

LCoE, or levelised cost of energy describes the cost of power produced by solar over a period of time (per megawatt hour in 2021 US dollars)



Source: Climate Energy Finance

According to a new report from Bloomberg New Energy Finance electric vehicle uptake is also growing at an explosive rate. “The share of electric vehicles in sales of new passenger vehicles is set to more than double globally in the next few years — to 30% in 2026. Their penetration in

some markets will be even higher, with EVs reaching 89% of sales in the Nordics, 52% in China and 42% in Europe,” says the BNEF report.

“Our latest near-term EV sales outlook is brighter than what BNEF published last year, mostly due to policy changes in the US, where a major investment push sparked by the Inflation Reduction Act will help more than triple the share of EVs in new sales, to 28 per cent by 2026.”

Already EVs are displacing 1.5 million barrels a day of oil usage, equivalent to about 3% of total road fuel demand, BNEF finds.

But not all the new is good.

As the IEA itself made clear in a [blockbuster 2021 report](#), if the world was to have any hope of holding warming to 1.5 degrees there was no space for new fossil fuel investment from then on. Many nations, including Australia, continue to develop new fossil fuel capacity.

While solar and wind deployment is moving fast enough to meet key milestones, other key green infrastructure, including firming capacity (to store the new green energy) and so-called negative emissions technologies – machines to strip carbon dioxide from the atmosphere – remain slow in development and deployment.

The hydrogen economy, which may be crucial in future clean heavy industry and transport, remains in its infancy.

Birol himself this week welcomed the renewables surge but warned that we also need to see energy efficiency doubled in the coming years. “Of course, we need other technologies as well, but these are the pillars of clean energy transition. We want energy to be affordable, especially in the low-income countries. We want energy to be secure and help us to reach energy targets,” he said addressing the 8th Annual Global Conference on Energy Efficiency.

“Solar energy additions in one year increased by about 40%. Because it is becoming cheaper. Another factor is related to transportation. Only two years ago, one out of 25 cars sold in the world was an electric car. This year, one out of five cars sold in the world is an electric car. The sales of heat pumps are taking over that of traditional heating systems,” he said.

Domestically federal Climate and Energy Minister Chris Bowen and his NSW counterpart Penny Sharpe have warned that the construction of transmission infrastructure for new Australian green power remains worryingly slow. Sharpe told [The Australian Financial Review ESG Summit](#) last week that development of crucial infrastructure could be slowed if developers failed to maintain their social license in the rural and regional communities that would bear the brunt of the deployment of all this new infrastructure.

And all the while, the impact of climate change keeps biting harder.

North America is shrouded in smoke from bushfires in Canada that are similar in their terrifying scale to those of Australia in 2019, and some scientists have already declared that the world was going into a La Nina cycle that some fear could temporarily drive average global temperatures over 1.5 degrees above the pre-industrial period for the first time.

At present, world leaders and climate diplomats are meeting in Bonn to establish targets to be achieved at November United Nations climate talks to be held in the UAE.

Flagging the likelihood of soon crossing the 1.5 degree mark, Simon Stiell, the executive secretary of the UN Framework Convention on Climate Change, warned the world was still moving too slowly. “Climate change is accelerating, and we are lagging behind in our actions to stem it,” he said. “Remember the best available science, which doesn’t arbitrate on who needs to do what or who is responsible for what. The science tells us where we are and highlights the scale of response which is required.”

A paper published by the leading journal Science on Friday confirmed Stiell’s fears.

In it, researchers analysed national climate policies and implementation plans rather than the promises they had made and targets they had set.

They found that when national promises and targets were judged, the world faced disastrous but potentially manageable warming of between 1.5 and 2 degrees by 2100.

Judging by the world’s actual policies we still face catastrophic warming of over 2 degrees.



A molten salt tower solar thermal power station in Jiuquan, China.

<https://www.smh.com.au/environment/climate-change/finally-some-seriously-good-news-on-climate-and-some-not-so-good-20230608-p5df15.html>