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**CalWEA Comment - NYT Article on US Wind Development
Slowdown**

Additional submitted attachment is included below.



California Wind Energy Association

June 10, 2024

California Energy Commission
Docket No. 23-OPT-01
1516 Ninth Street
Sacramento CA 95814

Submitted via e-commenting portal

Re: 6/4/2024 New York Times Article on U.S. Wind Development Slowdown

The California Wind Energy Association (CalWEA) wishes to add the attached *New York Times* article to the Fountain Wind docket. According to the article, unlike solar energy development, U.S. wind energy development is not on track to meet the greenhouse gas (GHG) emissions reduction targets expected from the 2022 Inflation Reduction Act due to various hurdles including “a lengthy permitting process and a growing backlash against new projects in many communities.” These challenges are far more pronounced for wind energy because commercial-grade wind resources are highly location-specific, whereas solar resources are more ubiquitous.

As the article states, if wind power continues to stagnate, it could make the fight against global warming much harder, given the need to expand both solar and wind due to their complementary output profiles. This is particularly true in California, where solar development has greatly outpaced wind development over the last decade.

In February, the CPUC adopted its Proposed System Plan, which includes an additional 25 GW of wind energy by 2035 to meet the state’s GHG emissions reduction target. (Of this, 7 gigawatts (GW) is in-state wind energy capacity, 12.7 GW is out-of-state wind energy capacity, and 4.5 GW of offshore wind energy.) This wind energy is needed to balance 57.5 GW of planned solar capacity. CalWEA calculated, using the CPUC’s RESOLVE model, that, without this wind energy in the portfolio, the total amount of capacity needed would rise by 27 GW on top of the already very challenging 114 GW of clean energy capacity required to meet the state’s goals. Resource diversity brings many additional environmental and reliability benefits as well, as explained in CalWEA’s December 4, 2023, comments in this docket.

These challenges illustrate the importance of the Energy Commission's opt-in siting process: to keep the state (and the country) on track in meeting its GHG reduction goals by approving well-sited projects such as Fountain Wind.

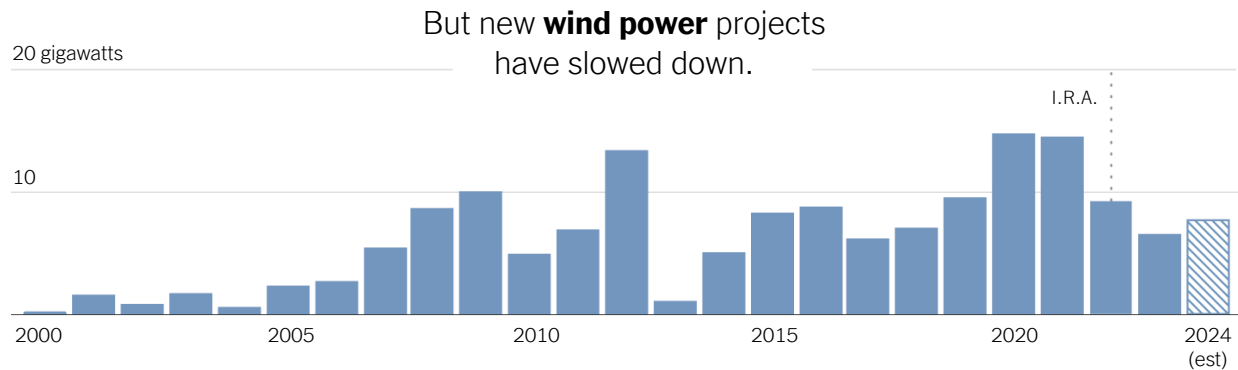
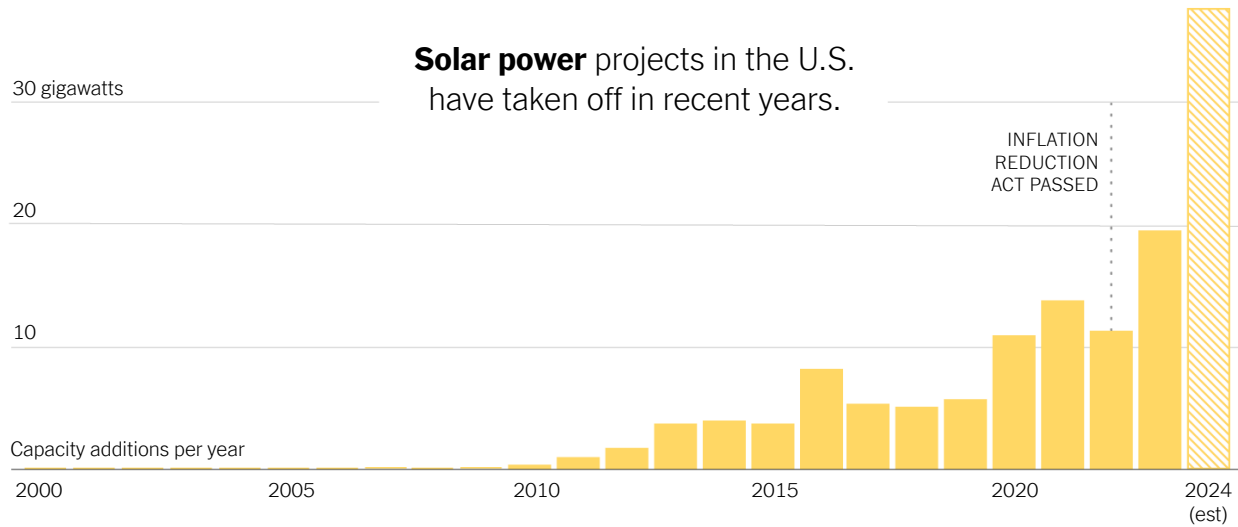
Sincerely,

A handwritten signature in black ink that reads "Nancy Rader". The signature is written in a cursive, flowing style.

Nancy Rader
Executive Director
California Wind Energy Association
Email: nrader@calwea.org

As Solar Power Surges, U.S. Wind Is in Trouble

By Brad Plumer and Nadja Popovich June 4, 2024



Source: U.S. Energy Information Administration • Notes: Annual utility-scale power capacity additions are shown. Estimates for 2024 include projects scheduled to come online this year.

When President Biden signed the 2022 Inflation Reduction Act, it was expected to set off a boom in renewable energy, with hefty tax breaks that would make solar and wind power cheaper than fossil fuels.

So far, however, that dream has only come partly true. Solar panel installations are indeed soaring to record highs in the United States, as are batteries that can store energy for later. But wind power has struggled, both on land and in the ocean.

The country is now adding less wind capacity each year than before the law was passed.

Some factors behind the wind industry’s recent slowdown may be temporary, such as snarled supply chains. But wind power is also more vulnerable than solar power to many of the biggest logistical hurdles that hinder energy projects today: a lack of transmission lines, a lengthy permitting process and a growing backlash against new projects in many communities.

If wind power continues to stagnate, that could make the fight against global warming much harder, experts say. Many plans for quickly shifting the country away from fossil fuels envision a large expansion of both solar and wind, because the two sources generate electricity at different hours and can complement each other. A boom in solar power alone, which runs only in daytime, isn’t enough.

Some of the early predictions that the Inflation Reduction Act would help slash U.S. greenhouse gas emissions roughly 40 percent below 2005 levels by 2030 depended on a rapid acceleration of both solar and wind power this decade. But it is now far less certain that will happen:

Solar is on pace to meet targets. Wind? Not so much.

Average capacity additions per year for 2022-24 compared with post-I.R.A. projections

0 gigawatts 20 40 60

Solar

2022-24 average

Expected average additions per year, 2027-30

Wind

2022-24 average

Expected average additions per year, 2027-30

Source: Clean Investment Monitor • Note: Expected ranges are based on the projected effects of the Inflation Reduction Act from three modeling groups: the Rhodium Group, Energy Innovation and the REPEAT project

“Right now, solar is pretty much in line” with what experts projected, said Trevor Houser, a partner at the Rhodium Group, a research firm that has tried to model the effects of the climate law. “But wind really needs to grow by quite a bit. Going forward, we’re definitely much more concerned about wind.”

Why Wind Power Is Struggling

Wind and solar power are often lumped together, but they have important differences that partly explain why one is slowing and the other is thriving right now.

For one, wind power is much more sensitive to location. Wind turbines in a gusty area can generate eight times as much electricity as turbines in an area with just half the breeze. For solar power, the difference between sunny spots and less sunny spots is considerably smaller. That means developers can’t just build wind farms anywhere.



A lot more wind power is needed to reach U.S. climate goals, experts say, especially if the country wants to do it quickly and cheaply. Eric Gay/Associated Press

In the United States, the best places for wind tend to be in the blustery Midwest and Great Plains. But many areas are now crowded with turbines and existing electric grids are clogged, making it difficult to add more projects. Energy companies want to expand the grid's capacity to transport even more wind power to population centers, but getting permits for transmission lines and building them has become a brutal slog that can take more than a decade.

“Getting wind projects built is getting a lot harder,” said Sandhya Ganapathy, chief executive of EDP Renewables North America, a leading wind and solar developer. “The low-hanging fruit, the easier access places are gone.”

Because they can reach the height of skyscrapers, wind turbines are more noticeable than solar farms and often attract more intense opposition from local communities. In Idaho, the entire State Legislature has opposed a new wind farm that would be visible from a World War II historic site. A few years ago, hundreds of residents were arrested on Oahu, Hawaii, for blocking the construction of a relatively small wind project.

“We have not seen examples of people being willing to risk arrest to stop solar projects,” said Matthew Eisenson, who tracks opposition to renewable energy at the Sabin Center for Climate Change Law at Columbia University.

Across the country, hundreds of local governments have restricted or banned wind or solar projects. If a county blocks a solar array, a developer might be able to move next door. But it's not always as easy to find a new location for wind farms.



Wind turbines are more visible than solar farms and often attract more intense opposition.
Mason Trinca for The New York Times

The wind industry has also been hampered by soaring equipment costs after the pandemic wrecked supply chains and inflation spiked. While those factors initially hurt solar, too, the solar industry has adjusted much faster, with China nearly doubling its manufacturing capacity for panels over the last two years. Wind supply chains, which are dominated by a few manufacturers in China, Europe and the United States, have yet to fully recover.

The cost increases have been devastating for offshore wind projects in the Northeast, where developers have canceled more than half the projects they planned to build this decade.

Wind isn't languishing only in the United States. While a record 117 gigawatts of new wind capacity came online last year globally, virtually all of that growth was in China. In the rest of the world, developers weren't installing wind turbines any faster than they were in 2020.

The Case for Wind Power

Wind power can be incredibly useful for cutting the greenhouse gas emissions that are rapidly heating the planet, experts say.

That may surprise some: After all, the wind doesn't always blow when it's needed, and the average turbine only runs at maximum power about one-third of the time.

But when energy modelers have studied the lowest-cost ways to eliminate U.S. emissions, they have often concluded that it would be invaluable to get about one-third or more of the nation's electricity from wind, up from about 10 percent today, alongside a mix of other technologies like solar, batteries, nuclear power, hydrogen and gas plants that can capture and bury their carbon.

That's because wind turbines provide very cheap electricity, and they often ramp up at night, when solar power is unavailable. (As the energy writer Michael Thomas recently showed, this is readily apparent in Texas, where wind and solar power complement each other.)



New, long-distance transmission lines are crucial for unlocking American wind energy, but permitting and building them has become a brutal slog. Jim Wilson/The New York Times

If wind power can't expand as quickly as many proponents hope, the United States would need to rely much more heavily on other technologies that can supply carbon-free power throughout the day, such as new nuclear reactors or advanced geothermal power. But those technologies are still in earlier stages of development and are currently more expensive than wind.

“Limiting wind is the worst possible thing you could tell me we have to overcome” in trying to cut emissions to zero, said Ben Haley, a co-founder of Evolved Energy Research, an energy modeling firm.

Can Wind Make a Comeback?

It's still possible that wind power could rebound. In fact, some experts argue that the recent slowdown is only a temporary artifact of tax policy.

It can take years to develop a wind farm and most companies had raced to finish projects by the end of 2021, which is when the last big federal tax credit for wind power was set to expire. The following year, Congress approved new subsidies in the Inflation Reduction Act, but it will take time for companies to refill the pipeline of wind projects in response.

“There are signs that wind is starting to turn the corner,” said John Hensley, vice president for markets and policy analysis at the American Clean Power Association, a renewable industry trade group.

Mr. Hensley said that U.S. wind manufacturing was beginning to ramp up thanks to new tax incentives, while costs were starting to come down. Last year, orders for new turbines increased by 130 percent, although many of them won't be delivered until 2025 or later.



The wind industry has been struggling with soaring equipment costs after the pandemic wrecked supply chains and interest rates spiked. Ted Shaffrey/Associated Press

Some states are now trying to make it easier to build renewable energy: Illinois, Michigan and Minnesota have all passed laws making it harder for local governments to restrict wind and solar. The federal government has issued new rules to accelerate the planning of transmission lines.

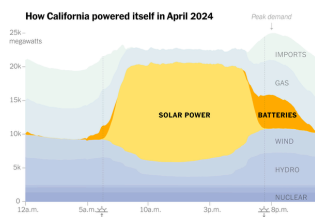
Demand for wind could also rise as a growing number of states, tech companies and hydrogen producers are trying to secure clean electricity around the clock, rather than just a burst of solar power in the daytime.

California is a case in point. While the state leads the nation in drawing electricity from the sun, it still relies heavily on natural gas after dark. Batteries can help shift some of that solar power into the evening, but to meet its climate goals, California is counting on several giant new transmission lines that will import electricity from sprawling wind farms in New Mexico and Wyoming.

Even if the economics improve, wind power still faces political hurdles. Many experts say federal legislation is still needed to ease the process of building high-voltage transmission lines. But that’s unlikely to happen in a sharply divided Congress. And the November election looms, with former President Donald J. Trump, the presumptive Republican nominee, promising to obstruct offshore wind farms if he returns to the White House.

The fate of the wind industry could be a test for whether the country can build large energy projects more generally, said Ryan Jones, a co-founder of Evolved Energy Research. “If we can’t,” he said, “getting to zero emissions is pretty darn challenging.”

More on the Energy Transition:



Giant Batteries Are Transforming the Way the U.S. Uses Electricity

They’re delivering solar power after dark in California and helping to stabilize grids in other states. And the technology is expanding rapidly.

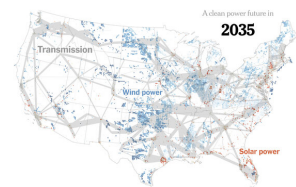
By Brad Plumer and Nadja Popovich
May 7, 2024



New Rules to Overhaul Electric Grids Could Boost Wind and Solar Power

The Federal Energy Regulatory Commission approved the biggest changes in more than a decade to the way U.S. power lines are planned and funded.

By Brad Plumer
May 13, 2024



Why the U.S. Electric Grid Isn’t Ready for the Energy Transition

The current system makes it hard to build the long-distance power lines needed to transport wind and solar nationwide.

By Nadja Popovich and Brad Plumer
June 12, 2023