THE WALL STREET JOURNAL.
WSJ.com

OPINION | May 22, 2013, 7:22 p.m. ET

Going Green? Then Go Nuclear

We're environmentalists, but pretending that solar power is ready for prime time is delusional.

By TED NORDHAUS And MICHAEL SHELLENBERGER

Over the last several decades, the cost of electricity from solar panels has declined dramatically, while the cost of building new nuclear plants has risen steadily. This has reaffirmed the long-standing view of many environmentalists that it will be cheaper and easier to reduce global warming emissions through solar electricity than with new nuclear plants. But while continuing price declines might someday make solar cheaper than nuclear, it's not true today. Yet the mythmaking persists.

Nuclear is "the least economical probably of any" energy source, Natural Resources Defense Council Senior Attorney Robert F. Kennedy Jr. told the San Francisco Commonwealth Club in 2011. Activist Bill McKibben late last year told the Daily Beast that nuclear is "incredibly expensive, it's like burning $20 bills to generate electricity."

Exhibit A for green leaders is a beleaguered new nuclear plant in Finland. It was supposed to cost $4 billion and begin generating electricity in 2009. It is now projected to cost $11 billion, and Finland's electric utility says it won't open until 2016.

The same environmental leaders point to Germany's solar program as a model for effective action on global warming. Mr. McKibben describes Germany as "the only major country that's really pursued renewable power at an appropriate pace" and points out that its state of Bavaria boasts more solar panels than the entire U.S. Germany's solar panels were "enough to provide close to 50 percent of the nation's power," Mr. Kennedy wrote in an op-ed in the New York Times.

All of this has led many to conclude that electricity from Germany's solar power is far cheaper than Finland's new nuclear power will be. The opposite is the case.

The cost of building and operating the Finnish nuclear plant over the next 20 years will be $15 billion. Over that time period, the plant will generate 225 terawatt-hours (twh) of electricity at a cost of 7 cents per kilowatt hour.

Since 2000, Germany has heavily subsidized electricity production from solar panels—offering long-term contracts to producers to purchase electricity at prices substantially above wholesale rates. The resulting solar installations are expected to generate 400 twh electricity over the 20 years that the panels will receive the subsidy, at a total cost to German ratepayers of $130 billion, or 32 cents per kwh.

In short, solar electricity in Germany will cost almost five times more for every kilowatt hour of electricity it provides than Finland's new nuclear plant.

Over its 60-year lifetime—which can be extended by relicensing—the Finnish plant likely will generate more electricity than Germany's solar panels ever will. That's because solar panels only have an expected lifetime of 25 to 30 years and lose about a half a percent of their efficiency every year. Compared over their full lifetimes, the Finnish plant will produce power at a cost of about 4 cents per kwh, while Germany's solar panels will produce electricity at a cost of 16 cents per kwh.

Does that mean we should give up on solar? Of course not. Thanks to several decades of public support, solar panels have gotten better and cheaper. Continuing efforts to develop better panels deserve our support. But the insistence that solar is ready to play a major role in meeting our energy needs today is both delusional and irresponsible.

Messrs. McKibben and Kennedy, for instance, have boasted that on one day in 2012 half of Germany's electricity came from solar. They neglect to mention that it was a cool and sunny day over a weekend, when demand was unusually low. The real story is much more sobering. In 2012, solar generated less than 5% of Germany's electricity despite a decade and over $100 billion spent in subsidies.

Misleading claims about solar's readiness might be excused as the exaggerations of enthusiasts if the claims weren't coming from environmentalists who believe that global warming is a planetary emergency. If they were really serious about the need to move to zero carbon energy, they would see nuclear energy as the obvious answer.

The only nations in the world that have achieved emissions reductions at a pace and scale that begins to approach what will be necessary to mitigate global warming are France and Sweden. Both did so by switching to nuclear energy. France shifted over 80% of its electricity to nuclear in about two decades. Renewable energy, despite decades of public subsidies, can make no such claim.

Warning of the end of the world and delivering the good news about solar and wind plays well with green audiences, but anyone truly concerned about climate change will need to reconsider their opposition to nuclear. It is the best chance we have to make big reductions in carbon emissions quickly.

Messrs. Nordhaus and Shellenberger are co-founders of the Breakthrough Institute in Oakland, Calif.

A version of this article appeared May 23, 2013, on page A15 in the U.S. edition of The Wall Street Journal, with the headline: Going Green? Then Go Nuclear.