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JUST SAY NO to nuclear @ DC

I am co-founder of San Clemente Green, a group of about 5000 concerned citizens who lead the effort to close SONGS in 2013. We stand in strong support for closing Diablo Canyon as scheduled, if not sooner. The risks are undeniable, as are the lies being promoted by the industry about looming energy shortages. They are promoting the same fears we heard about people on ventilators dying, regular blackouts and financial ruin for most businesses, none of which materialized. The fallacy that DCNPP is needed to combat climate change is far from the truth as well. Please see attached for this argument. Please stand strong with the people of California against the profit seeking industry which will pull every power play they can to get their way. We need you now, to help balance the decision making process so heavily tilted in the industry's favor, just as you have done for us in the past.
Thank you,
Gary Headrick

Additional submitted attachment is included below.

Arguments favoring nuclear power as a climate "solution" are fundamentally misframed

By Amory B. Lovins

The view that climate protection requires expanding nuclear power has a basic flaw in its prevailing framing: it rarely if ever relates climate-effectiveness to cost or to speed—even though *stopping climate change requires scaling the fastest and cheapest solutions*. By focusing on carbon but only peripherally mentioning cost and speed, *and by not relating these three variables*, this approach misframes what climate solutions must do.

The climate argument for using nuclear power assumes that since nuclear power generation directly releases no CO_2, it can be an effective climate solution. It can't, because new (or even existing) nuclear generation costs more per kWh than carbon-free competitors—efficient use and renewable power—*and thus displaces less carbon per dollar* (or, by separate analysis, per year): less not by a small margin but *by about an order of magnitude* (factor of roughly ten). As I noted in an unpublished 17 Aug letter to *The New York Times:*

…[The *Times*'s 14 August] editorial twice extols "wind, solar and nuclear power" as if all three had equal climate benefits. They don't. New electricity costs 3–8 (says merchant bank Lazard) or 5–13 (says Bloomberg New Energy Finance) times less from unsubsidized wind and solar than from nuclear power. Renewables thus displace 3–13 times more fossil-fueled generation per dollar than nuclear, and far sooner. Efficiency is even cheaper, beating most existing reactors' operating costs. Competing or comparing all options…saves more carbon.

Thus nuclear power not only isn't a silver bullet, but, by using it, we shoot ourselves in the foot, thereby *shrinking and slowing* climate protection compared with choosing the fastest, cheapest tools. It is essential to look at nuclear power's climate performance compared to its or its competitors' cost and speed. That comparison is at the core of answering the question about whether to include nuclear power in climate mitigation.

Nuclear power not only isn't a silver bullet, but, by using it, we shoot ourselves in the foot, thereby *shrinking and slowing* climate protection. (Photo of Ginna nuclear power plant, US Nuclear Regulatory Commission)

The “pro” discussion is also almost invariably focused entirely on the supply-side. Yet the International Energy Agency notes that, in 2010–2016, three-fourths of the world’s decarbonization came from energy savings. IEA also says renewables in 2010–20 decarbonized the world five times as much as nuclear growth did, but when the “pros” compare nuclear only with renewables, they are leaving out the cheapest half (or more) of the solution space—using energy more efficiently.

For example, the US in 2020 used 60% less energy per dollar of GDP than in 1975, and during that period, cumulative savings were 27 times the cumulative increase in supply from nuclear *plus* renewables. Looking forward, RMI’s *Reinventing Fire* (2011) rigorously showed how to quadruple the efficiency of using US electricity by 2050, at historically reasonable speed, and at an average cost one-tenth the cost of buying electricity today. That study’s findings have nicely tracked the decade of market evolution since, while the efficiency potential has considerably increased.

These views are explained and documented in my March 30, 2021 Energy & Environmental Study Institute 20-minute brief to Congressional members and staff. Its slides and narrative, plus a data-rich Appendix, can be found here. The content is also reflected in an earlier and more popular article in Forbes. The underlying technical analysis—including the timing of renewable substitution after a nuclear shutdown—is on pp 228–256 of the World Nuclear Industry Status Report 2019, consistent with emerging examples from California and New York.

A common myth often repeated is that renewables use far more land than nuclear power. This is corrected in my technical paper — Renewable Energy’s ‘Footprint’ Myth. Solar land-use is actually comparable to, or somewhat less than, nuclear’s *if you properly include the nuclear fuel cycle*, not just the power plant it supports.

Windpower’s land use in turn is 1–2+ orders of magnitude smaller than solar’s. A recent Bloomberg report, though it provides a more nuanced treatment, surprisingly botched this comparison, having been misled by a report from a Koch-funded “think tank” whose dodgy provenance Bloomberg may not have realized and did not mention.

The “pro” discussion is further confused by muddled mentions of batteries and hydrogen—just two of ten proven carbon-free resources for balancing largely or wholly renewable grids. Widely cited studies purporting to show that largely or wholly renewable power supply is impossible or at best very costly generally omit most or all of the other eight options. My recent article, *Twelve energy and* *climate myths*, dispels the common misconceptions implicit in this point of view, and should also help to dispel a common mischaracterization of what happened in Germany and Japan. Two slides from my EESI brief tell that story from the official data:

Germany's nuclear phaseout (purple), agreed two decades ago and set to conclude next year [2022], accompanied major fossil-fuel reductions (red) and increased power exports (teal). These three shifts were offset by electrical savings (aqua) plus renewables (green), while the economy grew and total greenhouse gas emissions fell 53%. In 2020, windpower alone outgenerated coal plus lignite. Germany's power sector met its 2020 climate goal a year early (before the pandemic) with five percentage points to spare.

Japan's utilities replaced lost nuclear output (red) largely with fossil fuels (black) while national policies suppressed renewables (especially windpower) and shielded legacy assets from competition. More than a third of Japan's nuclear capacity has closed, and most of the rest remains in limbo as utilities' credibility and financial strength ebb. Yet in nine years after the Fukushima disaster, renewables (green) plus savings (blue) displaced 150% of Japan's lost nuclear output if adjusted for GDP growth, 108% if not adjusted. Thus Japan's old nuclear market vanished before more reactors could restart—if restart had a business case. In the first three-fourths of the current Fiscal Year, nuclear and fossil fuels fell even faster as renewables grew to 23% of Japan's generation—the official target for ten years later [22–24% in FY2030]

If the question of whether or not there is a nuclear "option" for stopping climate change continues to be debated (as it was in Spencer Bokat-Lindell's August 26, 2021 column in the *New York Times*), then it must frame this correct and important question in a way that actually addresses it, by comparing both demand- and supply-side options in cost, speed, and hence climate-effectiveness.

And if this debate includes the question of using new sizes or types of reactors to answer the climate challenge, it won't have a happy answer. This is both for the basic economic reasons summarized in slide 18 of my EESI brief, and because such reactors can't scale significantly until at least the late 2030s, and by then the US power sector should already have been fully decarbonized.

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