



Testimony before the House Committee on Natural Resources  
Subcommittee on Indian and Insular Affairs

Energizing the Territories: Promoting Affordable and Reliable Energy Sources for the U.S. Insular  
Areas

Thursday April 11, 2024

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My name is Kenny Stein, I am the Vice President for Policy for the Institute for Energy Research, a free-market organization that conducts research and analysis on the function, operation, and regulation of energy markets.

The goal of energy policy in a modern society should be ensuring affordable, reliable and abundant energy supplies. Especially in a wealthy society like the United States, these three eminently achievable goals should be the entire focus of policy making as they provide the firm foundation on which a comfortable modern life depends. Ideological preferences, such as picking certain energy sources for support and subsidy, should have no place in an energy policy focused on human flourishing.

When it comes to U.S. insular areas, which are already economically disadvantaged compared to the mainland, it is even more crucial that energy policy should be driven by what works best for the populations of these islands, not the ideological preferences of administration officials. Insular areas should not be used for experimental energy policy just because they are subject to more federal control and coercion than states. In these communities energy is already often expensive and unreliable, due both to remoteness as well as existing poor policy choices. The federal government should not be exacerbating these existing deficiencies with ideological meddling such as aggressively pushing expensive and unreliable electricity sources. If a rich state like California votes to raise costs and wreck its electricity grid with regulations and mandates, that's at least their choice. Washington, DC imposing these destructive policies on less than rich island communities, knowing the negative consequences, is frankly immoral.

The simple fact is that, especially when it comes to island territories, wind and solar fail all three energy policy tests: they are expensive, unreliable and only intermittently abundant.

Firstly, neither wind nor solar are a particularly cheap way to produce energy. Claims of the cheapness of these sources usually rely on the inappropriate use of Levelized Cost of Electricity (LCOE) measures or noting that once constructed there are no input costs for fuel. But while

wind and solar certainly are cheap when the wind happens to be blowing or the sun is shining, there are grid level costs of wind and solar that are not included in most LCOE calculations. Wind and solar require more transmission spending than concentrated generation sources as well as needing expensive backup capacity. Batteries alone are not sufficient for backup as capacity beyond a few hours becomes prohibitively expensive. Therefore gas, diesel, coal, or hydro backup generation is also needed. A wind and solar grid thus effectively requires building the same capacity at least three times. That is before considering that wind and solar alone typically have to overbuild capacity because of their intermittency and that wind and solar facilities don't last nearly as long as other generation options. For islands specifically, there is an additional non-monetary cost in land use demands. As islands, land is by its nature limited, grid scale wind and solar simply require too much land to be practical for a small island. Put simply, a wind and solar grid is a recipe for spiraling costs.

Second, wind and solar are by their nature intermittent and thus unreliable: the wind does not always blow and even in sunny places the sun does not shine at night. As mentioned above, some of this intermittency can be expensively accounted for by battery backup, but to fully address intermittency, as a wealthy developed society must provide as a bare baseline, full gas, coal, diesel, or hydro backup capacity must be maintained. If you must build and maintain full conventional capacity anyway, why spend the extra money and consume the extra land required to build up wind and solar generation. Here again, islands face unique challenges in dealing with wind and solar intermittency. The way that California, often touted as a leader in renewable electricity generation, gets away with leaning heavily on wind and solar is that the state imports electricity from its neighbors at night or when the wind is not blowing. Indeed, imports through cross-continental grids are integral to every model that attempts to show that wind and solar can be relied upon to power a modern society. That's not an option for a remote island. Hurricanes and typhoons are another unique issue that makes wind and solar suboptimal for U.S. insular territories: solar arrays are fragile and exposed to these storms, wind turbines cannot operate in high winds and are subject to damage. At the time that electrical reliability is most crucial for a remote island, during a natural disaster, is when wind and solar are subject not just to being knock offline by a downed power line, but being rendered fully inoperable.

Third, wind and solar fail the standard of abundance, by which I mean readily available at whatever amount is needed. Wind and solar, as intermittent sources, are not always available, and as previously mentioned battery storage becomes prohibitively expensive beyond a few hours of backup. Now to be fair on this count, other generation sources can be lacking as well since physical resources must be imported from long distances to power conventional plants. But physical resources are easily stockpiled for emergencies, in a way that wind and solar electrons cannot be.

When considering the best energy supply options for U.S. territories, on the basis of affordability, reliability and abundance wind and solar are substantially deficient. Solar generation has at least some role to play, given that generation peaks during the hottest part of the day when consumption for air conditioning is highest, but it is not practical or desirable to

have a grid that is reliant primarily on solar. A mix of energy sources, with the large majority provided by stable supply, should be the near term goal and long-term, LNG is probably the best solution. It is only in recent years that global LNG supplies have reached the levels that spot markets have developed. This increased supply, combined with U.S. territories' geographic location near to large LNG suppliers like Trinidad and Australia, makes LNG a real option for U.S. territories in a way that is has not historical been. Finally, there are also actions Congress or the administration could take to ease the shipping costs that contribute to high energy prices in the territories.

U.S. insular territories face unique challenges in supplying the energy needed to support modern life. While wind and solar may superficially look like a way around those challenges, beyond a possible small percentage contribution, both are insufficient for supporting an entire grid, especially for a remote island. Pushing these suboptimal resources will be an expensive and unnecessary detour on the way to actual long term solutions.