



COMMITTEE FOR A CONSTRUCTIVE  
TOMORROW

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Comments concerning BOEM's Draft Wind Energy Areas  
Commercial Leasing for Wind Development on Oregon's Outer Continental Shelf  
(OCS)

*From Craig Rucker, President  
CFACT*

On behalf of the Committee For A Constructive Tomorrow, I am writing to state our opposition to BOEM's proposal to create two "Wind Energy Areas" (WEA) off the coast of Oregon. The Draft WEA would cover approximately 219,568 acres offshore southern Oregon with their closest points ranging from approximately 18 – 32 miles off the coast. From our perspective, BOEM's recommendation is premature given the current state of the proposed wind energy involved and could lead to devastating economic and environmental consequences if it is implemented.

BOEM should not create administrative "Wind Energy Areas" because the technology being deployed, namely floating wind power, has yet to be proven economically viable. The first floating wind turbine was fielded in 2007. After 17 years, the only facility in operation is the experimental 88 MW Hywind Tampen facility in the North Sea, which is still far from commercial scale. This experimental facility has only been operational for a few months, so it remains unknown if the site will prove to be cost efficient until it reaches a commercial timescale of several decades.

The principal reason that there are no commercially viable, floating wind facilities that exist in the world today is because the cost to build, operate and maintain them is simply too exorbitant. Each turbine requires a massive "float" to support the turbine tower. Each tower float must be moored to the bottom in all directions so that it does not blow over. Compared to fixed bottom turbines - which stand on a simple monopile- the money, effort, and time spent to build and maintain them is huge.

Moreover, BOEM has already issued five leases off California for floating wind development. Given the unproven nature of this new technology, which may well fail, it would be prudent for the agency to wait and witness what transpires in California before tying up yet more hundreds of thousands of acres off Oregon. This is made an even wiser course of action because even if floating wind succeeds technologically, it may not be economically successful. Only time can tell if a California floating wind project will be able to secure a Power Purchase Agreement from an onshore utility. If the price is too high, that simply will not happen.

The California leases span over 370,000 acres. The announced production capacity target is 4,600 MW. Technologically speaking, it is unlikely the wind energy industry can leap from 88 MW of experimental power to quickly constructing facilities that crank out electricity at levels 50 times greater. This is not how engineering typically works. One scales up from a prototype like Hywind Tampen in careful measured steps, stopping if it does not work.

In its request for comments the Bureau of Ocean Energy Management (BOEM) says "*The Planning Area described in the Plan included the OCS (outer Continental Shelf) seaward of Oregon's territorial sea at 3 nautical miles where energy production from offshore wind was thought to be viable based on the current state of floating offshore wind energy technology.*"

BOEM's belief that the current state of floating wind is viable is mistaken. BOEM conducted spatial modeling and analysis, but apparently did no cost analysis. MIT's Technology Review carries an article addressing floating wind titled "*California's coming offshore wind boom faces big engineering hurdles*". The authors estimate that costs of deploying floating wind will be more than double that of fixed offshore wind – which is already excessively exorbitant.

The U.S. Energy Department has a research program specifically designed to attempt to bring down the cost of floating wind facilities. It is tellingly named "*The Floating Offshore Wind Shot*" -- and a long shot it is indeed. It is our contention that these huge tower floats are not likely to come down dramatically. In fact, they are more likely to go up. This has certainly been the case with fixed offshore wind, which has just jumped by 50% in recent years. There is no reason to believe the potential cost of floating wind is less likely to take a similar jump.

There are also dozens of patented designs for floating wind systems, but still no commercial scale facility has been built. This fact alone should give BOEM pause as it exposes the chaotic immaturity of the technology. Clearly BOEM should proceed with engineering caution. Each California leasehold developer will first produce a Construction and Operations Plan (COP). This COP will then be refined in a Facility Design Report (FDR) and Fabrication and Installation Report (FIR). These need to be carefully reviewed for cost and technical feasibility.

Fabrication and installation are especially problematic as well. Most floating wind designs call for construction at sea, which is very difficult. In fact, they call for specialized ships that do not yet exist. To make matters worse, the designs for specialized construction ships will often be different for different tower float designs. Some floating tower designs use steel, while others

concrete. Unlike fixed bottom wind, where specialized ships like monopile drivers actually exist, the crafts needed to fabricate floating wind are still on the draft board. The technology is nascent at best.

Finally, on the installation side there is also the problem of burying and maintaining huge power export power lines in very deep water (Note: The Hywind prototype does not have a long export cable to land. It just serves two nearby oil platforms). Then there are the multiple and incredibly long anchor chains that must be firmly attached to the deep-sea floor, lest the tower float topples over. The installations and maintenance of these chains will also require highly specialized boats that are very different from the fixed wind vessels found today.

Until these crucial engineering and financing issues are successfully resolved BOEM should issue no new Wind Energy Area designations. This is certainly true for Oregon as well as other locations. No new leases should be considered until the decisive issue of feasibility is settled in the California leases. It is probable that floating wind will turn out to be both a technically and economically unviable source of electricity generation. Until it showcases its reliability in a commercial setting, BOEM should not tie up any more ocean resources in its name.