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comments on OSW seascape planning and impacts to fishermen

Additional submitted attachment is included below.

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Mr. David Hochschild

Chair

California Energy Commission

April 20, 2024

Sent via the CEC public comment portal

RE: Comments on the CEC's OSW Strategic Plan responding to AB525

Dear Chair Hochschild and Commissioners,

Who we are

The Alliance of Communities for Sustainable Fisheries (ACSF) and its members have had eight years of direct experience in planning efforts for OSW in California. We are a 23-year-old 501(c) 3 not-for-profit organization, founded for the purposes of educating the public on fisheries issues, connecting fishing men and women ("fishermen") with their communities, and to represent fishing interests in state and federal processes. The ACSF is a regional organization, comprised of commercial fishing leaders representing Monterey, Moss Landing, Santa Cruz, Morro Bay, Pillar Point, Port San Luis, and Santa Barbara, on our Board of Directors. Port communities, several recreational fishing organizations, and the California Wetfish Producers Association, also have representatives on our Board. Thus, the ACSF represents a large cross-section of fishing and community interests for the Central Coast of California.

The ACSF's overarching impression of the OSW Strategic Plan ("Plan")

One cannot read this Plan but to realize how many uncertainties, data gaps, and research needs are acknowledged, as well as many "may be possible" and "should" type statements. These unknowns include some of the greatest questions surrounding the feasibility of OSW development, the scope of environmental risk, yet-to-be-developed engineering, maintenance costs, consumer rates, safety-at-sea risk for many types of mariners, losses to our nation's food security, and apparently, skepticism from the state's Tribes for OSW's effects on indigenous cultural and environmental values.

A standard response to these uncertainties and justification to nevertheless move forward quickly is that risk is justified by the reality of harm from climate change. This assertion skips by a valid, necessary pair of questions:

"Is it possible that in expending the great wealth of our state and nation, this experimental, massive, industrial development of the ocean, will cause more harm than good?"

And, related:

"Are there alternatives to OSW that can provided for and support the electrification of the state?"

The ACSF is not qualified to answer these questions, but we do assert they must be answered; it should not be just assumed that OSW will effectively combat climate change.

The large number of unknowns about nearly all aspects of OSW development leads us to a strong recommendation to the state:

Slow down. The people of California needs the CEC to have more information. The first five leases in Morro Bay and Humboldt WEAs should be viewed as demonstration projects. Robust independent monitoring of the performance of these first wind farms for at least three years is required. No new leases should be granted CZMA consistency determinations or certifications until monitoring information can be included in future project designs, and adaptive management can actually occur.

Seascape Planning

The ACSF supports the recommendations of the Pacific Fishery Management Council (Council):

" **The Council recommends** the CEC enlist the services of NCCOS to run its spatial suitability model covering all federal waters offshore California to inform areas potentially suitable for OSW development. NMFS and appropriate state agencies should be engaged as collaborators early in the process, to develop commercial and recreational fisheries datasets, showing both effort and revenues generated, for inclusion into the NCCOS model. For clarity, this should include catch and effort within the waters offshore California that is landed outside of California.

The Council also recommends the CEC, in its Final Plan, formally describe a methodology for identifying suitable sea space when more appropriate to meet the State's 2045 planning goals. Given BOEM's current timelines, Call Areas could be identified in 2035 and still allow the state to reach those 2045 goals early. This would also allow development and operation of the current leases for a few years to address uncertainties and fill data gaps that would inform responsible development of OSW that minimizes impacts on marine biodiversity and habitat, currents and upwelling, fishing, cultural resources, navigation, aesthetics and visual appeal, and military operations while being protective of coastal and marine ecosystems. It would allow for the collection of better information on current uses (recreational fishing data in particular) and more discrete information on commercial fishing activities and operational constraints."

Impacts and mitigation

ACSF comments are on the environmental and fisheries sections of this chapter.

Marine Biological Resources

The Plan does a fairly good job of characterizing offshore and near shore habitat impacts. The strategy identified to address impacts states: "...conducting additional research to guide project design in a manner that avoids or mitigates for impacts to sensitive habitats, requiring habitat buffers to protect sensitive habitat areas, and requiring mooring and cable designs that minimize impacts on the seafloor."

First, it is not obvious what mitigation could occur to compensate for loss of habitat. We recommend dropping the concept of mitigation, unless the Plan can provide specific, achievable mitigation concepts.

Second, the strategy of *avoidance* needs to be strengthened and enforced in project design by primarily the Coastal Commission. The Plan should include a recommendation that construction designs must not be given CZMA consistency certification if OSW structures do not AVOID sensitive habitats (e.g. HAPC's).

The Plan only briefly discusses mooring cable/chain layout designs. Typically, offshore moorings need at least a ratio of two to five times the water depth from floater to mooring anchor. Some portion of that cable run will move, scraping the bottom, harming habitat, and causing sediment plumes. Understanding this will be important if sensitive habitats are to be avoided. Even if the habitat is not deemed as sensitive, there will be a lot of scraping of the seafloor, with damage. The Plan should discuss this likely outcome.

The Plan does discuss the "tension-leg" mooring system. In our experience as professional mariners, we doubt this will hold the turbines and floaters on station.

The Plan does not address the potential for a catastrophic failure of one or more mooring systems. This could occur due to inadequate mooring gear, an accidental ship strike, or from a terrorist attack on a mooring field. The Plan should discuss what resources will be needed should one or more turbines break free, and the environmental and economic consequences.

The potential for the "wake effect" to diminish upwelling is discussed. The Plan states that upwelling may decrease downwind from turbines, but increase on the upwind side. This is a false equivalency: wind energy cannot be extracted to push electrons without having a net reduction in wind speed over water. The ACSF agrees that project design will affect the degree of loss of upwelling, with fewer, more widely-spaced turbines creating the least effect. This is also a dynamic where a cumulative analysis of all turbines in WEAs, as well as contemplating the state's 2045 buildout, is needed. The potential for a reduction of upwelling is so concerning that the only solution is

AVOIDANCE; it is also yet another reason to move slowly with OSW and to view the first five leases as a demonstration project. The Plan must be stronger on this point.

The Plan correctly identifies numerous concerns about the effects of EMF on numerous marine animals. The Plan should be clearer about the fact that subsea electrical cables will not be buried and will have the potential to emit EMF. Also, though there is discussion in the Plan for burying cables to shore, the Plan is silent about the numerous problems (and expense) OSW developers have had in Europe with the cables becoming unburied.

The Plan acknowledges that there may be injury or mortality to birds and bats from the spinning turbine blades. The Plan does not mention that the floaters will soon have marine growth and become Fish Aggregating Devices (FADs). This in turn will attract more birds to the turbine killing zone.

The section on the effects of sound on marine species as a habitat concern is insufficient. Sound from site survey work has the potential to damage krill, larvae, and zooplankton and disrupt fish and marine mammal behavior, including feeding. Anecdotal information from fishermen in the Morro Bay area indicates fish being "off the bite" for an extended time even with low energy acoustic equipment. There are also concerns about survey contractors possibly exceeding permit limitations. The Plan should include a provision for independent monitoring of sound during survey work, as well as before/during/after monitoring of fish and marine mammal behavior, changes in catch rates, and impacts to the basis of the food chain.

The Plan is silent about how prospective actions will be subject to the strategies developed in the CCC's "7c Working Group", and SB286. Specifically, it appears that these strategies must be identified and adopted by the CCC *before* survey work may begin. The Plan must clarify and reconcile the actions it contemplates with SB286.

Also not discussed are the offshore substations. Each WEA may need 4-8. There is an opportunity, depending on design and decisions about converting AC to DC, for these stations to use once thru cooling that will entrap and entrain sea life larvae, as well as producing very large volumes of heated and possibly chemically-treated, water, continuously. Thermal pollution will create its own set of negative impacts on marine species. Substations (and possibly sub-surface cabling) will be subject to entanglement by the large pieces of kelp-wrack that are common, creating even more opportunities for fishing gear losses. The Plan needs to include this discussion.

Regarding the section that identifies "Recommendations to Address Marine Impacts", the ACSF comment is that an adaptive management strategy is at best an illusion unless sufficient monitoring is performed, and data analyzed, BEFORE any new leases are awarded beyond the first five in California. Once turbines are deployed, there will be little opportunity for adaptive management.

<u>Impacts on Fisheries and potential mitigation strategies</u>

The ACSF finds the section of Appendix B, prepared by Aspen Environmental Group, to be incomplete and inadequate. It only lists five potential impacts to offshore fisheries; a more complete, accurate list would indicate many more distinct, direct, and indirect impacts.

The ACSF has previously submitted to the CEC a list of 48 impacts and uncertainties; We request that the list be included in the Plan appendix.

Further, many of Aspen's mitigation concepts are vague or impractical to the point of being meaningless. For example: Aspen opines that, should whales change migration routes in response to OSW structures, crab fishermen can switch to ropeless gear...a mitigation that is technically complex, expensive, and unproven. It is really not a mitigation at all. They don't address real dangers from offshore wind development on mammals- noise pollution and increased ship traffic. Others, like (paraphrasing) "design OSW turbine layout to avoid conflicts with fishing gear" are not likely to be achievable: commercial fishing gear will get entangled in cables and mooring lines and also it will be unsafe to navigate due to the dysfunction of radar leaving captains blind in periods of low visibility. You only need to see what has happened in Europe. There is a 90-95% decline in fishing in areas inside and around wind farms*.

The Plan does discuss the fishing-industry template for impact mitigation (Fishing Community Benefit Agreement template, or FCBA). This template will likely receive serious consideration during the 7c WG deliberations. The CEC plan should discuss in more detail the goal of the FCBA, to retain/enhance fisheries resilience to counter opportunity losses, with cascading impacts, from OSW development. The ACSF asserts that this approach is a true mitigation for impacts that can't otherwise be avoided, minimized, or mitigated in other ways.

Two entities, the California Fishermen's Resiliency Association, and the Morro Bay Lease Area Mutual Benefit Corporation, have already been formed to negotiate with OSW developers and administer funding. The Plan should acknowledge these entities.

Port and Harbor OSW Development

There will be three main OSW activities at selected Ports:

1. Staging entails the assembly of the component parts into a functional wind turbine that will then be towed to an offshore site. To meet the 2045 planning goal of 25 GW, the Port Plan estimates that up to four staging and integration sites will be needed in California.

2. Manufacturing and fabrication entail the manufacturing of the individual components of a wind turbine. 30-100 acres of land need to be available or created, ideally in proximity to a staging area.

3. Operations and maintenance entail the maintenance and repair activities on wind turbines. The Port Plan estimates that 14 to 24 service operation vessels would be needed statewide to perform operations and maintenance.

ACSF comments and recommendations to improve the Plan are of two types: Environmental/habitat issues, and impacts to fisheries navigation, safety, and operations.

Navigation, safety, and operations issues in ports that may impact fisheries from staging and assembly site development and activities

Commercial fishing operations may be impacted by the displacement of infrastructure as waterfront space is re-purposed to support OSW. California's Coastal Act will require that such infrastructure be replaced and/or enhanced. Recommendation: The port development and readiness framework should clearly state that new/relocated fishing infrastructure be provided, before demolition occurs.

Competition for use of the main navigation channel between the need to exit the harbor towing multiple OSW turbines and commercial and recreational fishing activities during good-weather periods could create conflict and even safety issues, for narrow channels such as exist in Humboldt Bay. The turbines and floaters are estimated to be 425 feet wide, and the main Humboldt channel is approximately 400 feet wide in places. Even with extensive dredging, navigation conflicts may occur. This is not likely to be an issue for OSW development in the ports of Long Beach and Los Angeles. Recommendations: Good communication must exist to let all mariners know when the channel will be obstructed; obstruction time should be minimized; and, that deference be given to the safety and fishing needs of the commercial fleet.

There also should be some cost/benefit, feasibility, and safety analysis regarding the issue of having to do maintenance and repairs on the offshore wind turbines and Service Operation Vessels from ports several hundred miles away.

Environmental Impacts that may affect marine species from port development for OSW staging.

In the context of developing California ports and harbors for the arrival of a new industry, the CEC report contemplates the need for harbor expansions, and/or new wharves, docks, and upland facilities.

For staging and assembly ports, the report projects the need for four new or improved ports, though it only identifies three locations: Long Beach, Los Angeles, and Humboldt. For these types of ports, there are at least three development activities that could affect marine species, or the habitats that sustain them: dredging/channel-deepening, acoustic impacts from pile driving, and shading.

The report provides little detail about environmental concerns associated with dredging to widen or deepen channels. Several issues may affect fisheries. First, dredging may

suspend toxic, harmful materials into the water column. In the case of new development in Humboldt Bay, there is a history of pulp mill activity, with the potential for dioxin and PCBs to exist in the currently settled harbor bottom. Dredging may resuspend this material The report is silent about where the spoils will be redeposited. Small scale in-bay fisheries for bait production may be curtailed due to pollution and turbidity issues. The health of Humboldt Bay and Morro Bay's extensive eelgrass beds may be compromised. Eelgrass beds are both Essential Fish Habitat and Habitat Areas of Particular Concern. For Long Beach, dredged material will be deposited upland to build new land of OSW activity. Recommendation: The report should recognize the importance of EFH/HAPC areas, particularly for eelgrass, and avoid harm or propose achievable mitigation.

With wider and deeper channels will come increased sea water velocity, affect hydrological processes, and increased turbidity and erosion, not limited to the project site but throughout Humboldt Bay. This is not likely to be an issue in LA/LB, with their much larger industrial port complexes. The increased velocity may well create outcomes deleterious to eelgrass. Recommendation: The report should make clear that such channel widening and deepening may be harmful to eelgrass and the various life stages of numerous marine species.

Major acoustic impacts on all forms of marine animals will occur from driving many hundreds of large piles needed to support new dock structures. Recommendation: The report should recognize that there will be significant acoustic impacts on marine animals with little opportunity for avoidance or minimization.

Increased shading is another potential impact only briefly mentioned in the CEC 525 report. The report contemplates that multiple floaters with or without turbines may be stored in the water for weeks to months until conditions are suitable for offshore delivery. The report obliquely recognizes that "additional overwater infrastructure and dredging may displace and destroy important nearshore habitats, such as eelgrass. Eelgrass responds poorly to shading from over-water structures and would likely die back if shaded by port facilities". Recommendation: The report should recommend developing a strategy which avoids large areas of shading over eelgrass.

The report also includes an environmental evaluation and a comparative site ranking for the previously identified staging and integration, manufacturing and fabrication, and operations and maintenance port sites. Within each port site type, the report evaluates and ranks each potential site location using a standard set of environmental factors. The environmental ranking process was not a formal environmental impact analysis in compliance with applicable regulatory requirements or standards (such as CEQA). Recommendation: The report should expand its list of factors used for environmental determinations to provide a more complete understanding of the hydrological, erosion, acoustic, shading, and turbidity impacts from OSW port/harbor development, including how they may affect fisheries.

Impacts to fisheries from port development for OSW operations and maintenance needs

The report suggests that at least 10 small port sites to support offshore wind operations and maintenance in the state will be needed, for service and crew vessels in the 40–300-foot range.

Although not likely to be as intensive in development, the impacts to small ports could be significant, as most California harbors are fully developed, with existing competition for space, and little to no adjacent upland vacant areas. Fishermen are concerned about being crowded out of their needed infrastructure, and will be reliant on the California Coastal Act (as referenced above) to protect them from this loss.

Another potential impact to fisheries may be the loss of transient berthing capacity should this accommodation be repurposed for OSW development. With many fisheries being coast-wide, the state's small craft harbors typically take in coastal-traveling fishing boats for days to weeks, sometimes landing product. Any loss of "harbor of refuge" status will be a loss to fishermen, as well as a potential safety issue during bad weather. Recommendation: The report should include a no-net-loss of transient berthing capacity policy recommendation for OSW development.

As experience mariners know, California harbors can see extended periods of very high surf conditions, with shallow, dangerous entrance bar crossing. The Plan should discuss what the OSW developer's alternatives are should most harbors be closed for weeks due to dangerous conditions.

There is also the issue of industrialization of small harbor tourist towns that rely heavily on tourism to drive their economy. The strong relationship between fishing/working waterfronts and tourism is well-documented. Many in the community, including fishermen, are concerned it will impact their property values, view shed, and economy as a whole.

Impacts to fisheries from OSW manufacturing

Manufacturing of OSW components will be limited to upland areas, so there should be no direct impact to fisheries, though there may be community impacts, such as on housing and transportation, that could have indirect effects on fishermen's lives.

Other

As a practical matter, the CEC report should recognize that questions exist, particularly in reference to the Humboldt Heavy Lift project, that the need for OSW deployment is likely to be years in advance of such a project being completed for use.

The ACSF sees the Humboldt Heavy Lift Project as being overwhelmingly bad for the health and functioning of Humboldt Bay, and for fisheries. Given the many other risks and uncertainties that surround deep water, floating, OSW development, the question is, is it worth messing up Humboldt Bay?

Transmission Planning

The ACSF is concerned about the location of transmission cables and the potential impacts of electro-magnetic fields (EMF) on marine life. We recommend prioritizing additional research on the potential for EMF to negatively impact west coast fishery resources and marine life. As a general rule, transmission cables and routes should be as short as possible to mitigate against potential impacts of EMF.

The Plan identifies several transmission alternatives that include lengthy transmission routes. For example, Alternative 25.8a[1] would utilize several HVDC lines to run power from OSW developments off Mendocino and Humboldt south to Moss Landing. This should not be considered unless there is a high degree of certainty this can be done without affecting sensitive habitats, with no impacts to marine life, and those who depend on those. Further, such a route would cross multiple submarine canyons, National Marine Sanctuaries, Marine Protected Areas, EFH, and ESHA and existing (and future) telecommunication cables—all of which pose environmental and permitting impacts and challenges. (See page 4 for additional comments on substations.)

The Plan contemplates HVDC substations which "converts the transformed HVAC power to HVDC before the power is exported." The AC to DC conversion process generates heat and, as such, necessitates the use of cooling water to remove excess heat. The ACSF is concerned about potential impacts of multiple offshore converter stations discharging water that, during certain times, can be more than 40 degrees warmer than the ambient sea temperature. Intake valves that collect sea water to be used in the cooling process risk entrainment of marine life. This is particularly concerning in deeper waters off the California coast where many important fish stocks spend their larval stages. Diablo Power Plant's once thru cooling system is required to pay a mitigation fee of $100/lb. of fish to the State Water Board for entrainment and entrapment. Would the OSW developers be held to the same stipulation? The Plan should analyze the potential impacts to the marine environment and California Current Ecosystem assuming up to 20 offshore converter stations placed off the U.S. West Coast.

Thank you for considering comments from the Alliance of Communities for Sustainable Fisheries.

Alan Alward

Co-Chair

CC

ACSF Board of Directors
