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Offshore Renewable Energy

Additional submitted attachment is included below.

From: Bachman, Stephen@Parks
To: Energy - Docket Optical System
Cc: Bachman, Stephen@Parks; Ortega, Marcos@Parks; Marshall, Brent@Parks; James, Sean@Parks; Allen, Matthew@Parks
Subject: docket number, 17-MISC-01, and Offshore Renewable Energy
Date: Tuesday, September 22, 2020 3:39:43 PM
Attachments: image001.png

September 22, 2020

TO: California Energy Commission (CEC)

RE: California Offshore Renewable Energy. Notice of Availability of Outreach on Additional Considerations for Offshore Wind Energy off the Central Coast of California.
Docket Number: 17-MISC-01

To Whom It May Concern,

Thank you for the opportunity to comment on the California Offshore Renewable Energy; Notice of Availability of Outreach on Additional Considerations for Offshore Wind Energy off the Central Coast of California. California State Parks owns and operates significant coastal park units throughout the entire California coastline for the people of California and beyond to enjoy. The proposal to open offshore areas to promote offshore energy development is not without some initial interest as described below:

Location and Visual Impacts:

- The visual renditions from the shore at Limekiln State Park and Pfeiffer Big Sur clearly indicate that the platforms will be visible during clear and overcast days; and will be a significant change to unobstructed open ocean vistas at night with FAA beacons affixed to the top of each windmill, which will light up the offshore horizon line with these lights. The unobstructed open ocean views will be significantly impacted. The windmills should consider a design that lowers their overall heights so FAA beacons are not seen from shore or be located further offshore to avoid these visual impacts
- If seen from the shore there should be mitigation, established, to fund marine conservation and research efforts along the California coastline within the areas where they are seen to better assess, long term, their effects to the natural environment. Park visitors will no longer see unobstructed open ocean views – how will this impact be mitigated when considering the impact to the park visitor experience? http://visualimpact.anl.gov/offshorevitd/
- It is unclear as to why the offshore lease areas to be considered are off of the Big Sur coast where the human population is relatively small compared to major population centers such as Los Angeles and the Bay Area? Would there be added economies of scale if offshore power arrays were located where the major population bases are located i.e. by making more direct transmission connections to where the power is needed most. While the south Big Sur coast may have more

consistent winds than southern offshore areas has there been recent thorough analysis/research dedicated towards looking at areas with consistent winds nearest to these major population centers?

Mammals and Shorebirds:

- Are the proposed lease areas placed outside any known core whale migratory routes (gray, humpbacks, blues, et al.)? Has research been conducted that assesses the potential impact associated with the network of floating platform securing cables and other subsurface appurtenances combined with subsurface transmission cables and how these facilities may be in conflict, or present obstacles, to migrating whales and marine mammals? How will operational, construction, and maintenance vessel traffic avoid marine mammal strikes?
- Underwater platforms will attract a host of species possibly creating an artificial biome or "reef effect" and attract a multitude of species. If platforms see a rise in artificial reef like biomes it may become more attractive for marine mammals and sea/shorebirds. If the "reef effect" attracts additional marine mammals to the platform areas measures should be implemented that look at technologies that can reduce shorebird/seabird and marine mammal conflicts.
- Can windmills be retrofitted with ABAR bird strike camera/radar systems? Will windmills have the most up to date technologies that have the ability to trim the blades if birds are present? If pelagic bird migratory routes /feeding areas are occupied by these grids of floating windmills, there could be realized and potential conflict with marine mammal and seabird migratory routes. Consideration should be given to design elements that would mitigate these types of biological impacts. Platforms should be located safe distances away from any known migratory bird routes. If offshore bird feeding areas are known where are they in proximity to each proposed lease area? If no data exists there should be studies to better understand these biological dynamics.
- Recommend that research be conducted in an effort to determine if seabird strikes and marine mammal entanglement(or strikes) are potential issues within the offshore development areas. If it is unknown, there should be more understanding of the offshore population dynamics of species using these potential lease areas and how to mitigate development related impacts to these species. If pre-lease biological studies conclude that marine mammal and seabirds will be impacted mitigation should be dedicated to research to collect data that can assist and inform current and future offshore development projects.
- Mooring lines and water depth and turbine size determine the amount the platform will drift. Drifting can be up to 600 feet in a circular pattern with underlying mooring cables also moving throughout the water column. What is the potential to impact migrating marine mammals given this amount of drift in the water column? How will existing offshore currents influence platform drift? Will these studies been done for proposed lease areas?
- For floating subsurface power cabling and conductance – what is the estimated loss of power (leakage conductance) to the surrounding water column during maximum power output? What impacts does this pose to marine life that resides in or traverses through the subsurface conductance array/electromagnetic fields of subsurface cabling etc.?
- What data currently exists for the long term effects associated with the continual operational noise of offshore wind turbines? What is the anticipated operational and construction underwater noise of offshore wind turbines? Operation and construction (even maintenance) can result in induced underwater noise. What are the anticipated long term impacts of underwater noise and can it be potentially harmful to marine mammals and fishes? What are the anticipated induced

underwater noise ratings for the vibration of the wind turbine's gear box and generator? What percentage of this noise will be guided downwards and radiated as sound from the tower and platform? How will noise generated and radiated down onto the water column potentially interfere with the hearing thresholds of marina mammals? And how may this affect marine mammal behavior for migrating and resident individuals? What is the anticipated intensity and duration of vessel traffic to the site? Will seismic surveys of the sea floor be needed? If so, what potential impacts do seismic surveys have on marine life? Noise during construction, Cable laying, during ship and barge operations should be assessed? What are the long-duration noise projections for the mechanical vibrations when turbine blades are spinning over the lifetime of the facility? If low frequency noise is generate and radiated downward when the blades are spinning how might this interfere with marine mammal behavior and migration? What is the anticipated cumulative biological effects of having multiple windmills in a lease area? How might sound radiated through the water column change fishery behavior or prey availability?

- What is the typical maintenance schedule for offshore windfarm arrays? Will they be maintained via helicopter crews or sea fairing vessels? or both? What are those trip frequencies like? How many land based operational facilities will need to be built and where will they be located? How will maintenance acoustics potentially impact marine life?

If the offshore areas are developed consideration should be given to establishing mitigation to permanently (during the term of active leases) support an endowment for marine mammal and seabird research and conservation efforts. Mitigation/endowment funds could be dedicated towards MBNMS conservation efforts, research, and towards monitoring of the offshore energy appurtenances long term.

Seabed:

- This is relatively new technology with limited data available to understand the range of potential impacts associated with it. Anchor systems and seabed impacts may be significant depending on the locations of the lease areas and a thorough understanding of the seabed geology/biology should be fully analyzed. It is unclear to what extent such pre-development seabed studies will take place.
- Floating platforms are secured in place using what type of system? Will tension leg platform systems be used? Spar buoys? Semisubmersible designs? High tension Cables? What will the anchor systems look like? How many mooring lines will each platform have?

Maintenance:

- What is the typical maintenance schedule for offshore windfarm arrays? Will they be maintained via helicopter crews or sea fairing vessels? or both? What are those trip frequencies like? How many land based operational facilities will need to be built and where will they be located? How will maintenance acoustics potentially impact marine life?

Oversight:

- Consideration should be given to establishing a new independent oversight Board to oversee this new energy production element consisting of top marine regulatory and research groups such as NOAA, USFWS, top marine research groups from Scripps, UC, MBARI, CSU et al. They should develop an operation plan, monitoring protocols etc. An oversight consortium should be established that has regulatory members.

Contingency Planning:

- What studies have been done focusing on California offshore storm swell dynamics with floating platforms? What type of vertical and horizontal pull forces can these structures take without compromising their structural above and below surface integrity? Will the lease areas be required to install the newer 30MW windmills? What data exists for these systems during extreme weather conditions? Have these newer windmills (floating platforms) been tested in open waters?
- How close to shipping lanes are the potential lease areas? how will advanced technology be used to prevent a tanker, or any vessel, from striking these platforms? What contingency plans will be required to avoid being stricken by vessels, to avoid floating platform related spills? Navigational safety should be a topic of discussion. Will the offshore windmills be incorporated into systems such as the Vessel Traffic Service (VTS) along with the USCG and International Marina Organization (IMO) institute Traffic Separation Schemes (TSS's) systems to separate vessel and control crossing through the windmill development areas? TSS shipping lanes along the California coast are between four and 20 nautical miles offshore and are separated by an approximate one nautical mile separation zone. The offshore array should be well integrated into these vessel systems to avoid vessel strikes etc.

MBNMS:

- The discussion area appears to be within the MBNMS. Did the establishment of the MBNMS not preclude commercial and or industrial development projects? Please clarify why the MBNMS is included in the offshore lease area.

Thank you for the opportunity to comment on the California Offshore Renewable Energy. Notice of Availability of Outreach on Additional Considerations for Offshore Wind Energy off the Central Coast of California. Docket Number: 17-MISC-01.

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State Parks Mission Statement
The mission of California State Parks is to provide for the health, inspiration, and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor

recreation.