October 16, 2023

Clean Energy Coordination
Department of Ecology
PO Box 47600
Olympia, Washington 98504-7600

Via Email: cleanenergy@ecy.wa.gov

In RE: Clean Energy PEIS Scoping Comments

Thank you for this opportunity to comment on 2023 Clean Energy Programmatic Environmental Impact Statements. This is an important opportunity to maintain and improve important fish, wildlife and habitat resources, while addressing the adverse effects of global warming including sea level rise and wildfires.

FOGH is a broad-based 100% volunteer tax-exempt 501(c)(3) citizens group made up of crabbers, fishers, oyster growers and caring citizens. The mission of FOGH is to foster and promote the economic, biological, and social uniqueness of Washington's estuaries and ocean coastal environments. The goal of FOGH is to protect the natural environment, human health and safety in Grays Harbor and vicinity through science, advocacy, law, activism and empowerment.

We incorporate by reference comments made by Washington Dungeness Crab Fishermen's Association, Columbia River Crab Fishermen's Association, Washington Audubon Society .

We have heard that any offshore wind arrays would require a floating foundation if placed off the coast of Washington State. Apparently, there are three types of floating foundations, classed as spar buoys, semi-submersibles, or tensioned-leg platforms (TLPs). Please discuss the spatial requirements of each alternative and their potential impacts to migratory animals, fish, and birds. The platforms appear to be about 100 meters by 100 meters (328 feet square) and the mooring cable radius appears to be 200 meters each turbine (656 feet). How much ocean area would be placed off-limits to recreational and other commercial uses? How much distance must be allowed between each unit?

Anchoring foundation structures are at risk of seabed erosion and "scour hole" formation due to natural hydrodynamic and sedimentary processes and can be greatly influenced by ocean conditions such as waves, currents and storms. What mitigation would be proposed to provide protection to the foundations. What would be the cumulative effects on the seabed? What would be the impact to entanglement of each of the different anchoring schemes. What would be the impact of these solutions if they became in part or in whole derelict?

A cursory search of typical solutions include:

- Concrete mattresses – several meters wide and long, cast of articulated concrete blocks which are linked by a polypropylene rope lattice which are placed on and/or around structures to stabilize the seabed and inhibit erosion.

Post Office Box 1512 Westport, Washington 98595-1512 Phone/Fax (360) 648-2254
http:fogh.org rd@fogh.org 501(c)(3) tax-deductible

- Rock – either layers of graded stones paced on and/or around the structures to inhibit erosion or rock filled mesh fiber bags which adopt the shape of the seabed/structure as they lowered on to it; or

- Artificial fronds – mats typically several meters wide and long, composed of continuous lines of overlapping buoyant polypropylene fronds that creates a drag barrier which prevents sediment transportation. The frond lines are secured to a polyester webbing mesh base that is secured to the seabed by a weighted perimeter or anchors pre-attached to the mesh base.

Each turbine will require inter-array cables to carry the electrical current to an on-shore substation. These cables will need to be buried where possible and protected with a hard-protective layer (such as concrete mattresses or rock) where burial is not possible. Usual seabed disturbance of burial is about 2 meters (6-1/2 feet), but the impact of the width of seabed affected by the installation per cable is 10 meters (32.8 feet). What would be the cumulative effect of seabed disturbance for cable installation, and what would be the electro-magnetic and other impacts of each cable and their cumulative effect on bottom-dwelling or bottom-foraging species?

The construction phase of an offshore wind farm will require various support vessels including jack-up or floating Heavy Lift Vessels (HLV), cable lay vessels, pre-lay survey vessels, remote operated underwater vehicles (ROV), rock installation vessel, service and commissioning support vessels, and guard vessels. What is the green house gas contribution of the construction period?

Scoping of a wind installation off the coast of Washington State should include at least the following, for a single project and then cumulative of multiple projects both local and transboundary current influence:

- Water depth, bathymetric data for array area and export cable corridor, and distance to shore;
- Wind speed and metocean conditions;
- Tidal elevations and wave development;
- Environmental designations, including, but not limited to, Sanctuaries, Important Bird Areas, Usual and Accustomed Areas, Coast Guard Fairways;
- Subsea noise – ambient baseline, construction, operation, maintenance, decommissioning;
- Airborne noise – on all receptors, onshore and offshore;
- Offshore Air quality;
- Offshore Water quality – oils, lubricants used and spill potential/effect;
- Ornithology – Baseline and overview;
- Marine archaeology;
- Offshore habitats, suspended sediments;
- Marine ecology, including epifauna and infauna;
- Marine mammal including cetaceans, otters and seals;
- Shipping and navigation;
- Fishing effort – commercial and recreational – impact of displacement and/or relocation in a limited existing area;
- Treaty rights and issues of sovereignty;
- Offshore socio-economics and tourism;
- Potential spawning area and water column overlay;
- Aviation and telecommunications issues, including civil and miliary;
- Emergency services;
- Seascape, landscape, visual resources, and cultural heritage impacts;
- Existing infrastructure, other users, cables and pipelines;
- High voltage impacts to seabed vegetation, habitat, benthic, subtidal and intertidal ecology, fish and shellfish ecology and creatures – resident and passing through;
- Current, temperature and upwelling impacts for initial array and cumulative if others develop wind farms in adjacent areas.

FOGH
CLEAN WATER HEALTHY ESTUARY
FRIENDS OF GRAYS HARBOR
Post Office Box 1512 Westport, Washington 98595-1512 Phone/Fax (360) 648-2254
http:fogh.org rd@fogh.org 501(c)(3) tax-deductible

What is the impact to the Columbia River Littoral Cell and/or the transboundary impacts to the California Current from the extraction/alteration of energy in subject area and beyond?

Offshore wind arrays would create an interruption to waves as the transfer their energy from the deep offshore water to shallower coast areas. What effect would this have on the surf break along the shorelines adjacent to this array?

The ocean and its seabed is part of a dynamic landscape and existing geomorphic landscape that can be influenced and altered by sea level rise, erosion and possible earthquakes. What affect would sea level rise or a 6.5 magnitude earthquake (expected within the next 10 years) have on an existing array, its anchoring, and its probability to become derelict with possible washing ashore of parts or the entire unit?

If a project becomes damaged or no longer economically feasible, what plans are in place for the decommissioning of the project and the return to previous ecological basis?

Washington's Coastal Zone Management Program (WCZMP) includes enforceable policies that are found in four state laws and their implementing regulations (Washington Administrative Code (WAC)), and in the Marine Spatial Plan for Washington's Pacific Coast (MSP). ORMA (Ocean Resources Management Act) outlines specific procedures and requirements that must be followed before a new ocean use can be approved. What would be the impact to existing renewable ocean resources if one project is allowed, what would be the programmatic cumulative effects of multiple projects?

Thank you in advance for your consideration of these comments.

R.D.

Arthur (R.D.) Grunbaum
President

Post Office Box 1512 Westport, Washington 98595-1512 Phone/Fax (360) 648-2254
http:fogh.org rd@fogh.org 501(c)(3) tax-deductible