



PROPOSED OFFSHORE WIND FARM



THE ISSUE

The proposed Hong Kong Offshore Wind Farm (HKOWF) in Southeastern Waters of the HKSAR will be capable of producing a maximum output of approximately 200MW of electricity. The annual production would be approximately 1% of HK's total electricity needs. The turbines (up to 31 are allowed) will be arranged in a grid, and each will be affixed to the seabed by a foundation consisting of a jacket structure with suction caissons. The turbines will be linked by collection cables to an offshore transformer platform from which electricity shall be transmitted to shore via two 132kV cables. Turbine diameter will be 230 m. A research mast will also be installed to collect data on the offshore environment. At its closest point, the project would be approximately 9 km and 5km east of the Clearwater Bay peninsula and the main Ninepin Islands respectively. The Project will be constructed over approximately 2 years and will be serviced using local port facilities over its anticipated life-span 20-25 years.

WWF applauds efforts to develop and utilize renewable energy. We recognize that wind farms proposed for sites offshore in Hong Kong waters are part of this effort. Putting in place wind farms that minimize impacts on natural habitats, ecosystems, and species helps arrive at an acceptable balance between development and nature.

CLP Holdings, one of Hong Kong's two power utilities, plan to include an offshore wind farm proposal in the next Scheme of Control Agreement in 2024. The proposed wind farm site is located about 9km east of Clear Water Bay in an area used by vulnerable finless porpoises (*Neophocaena phocaenoides*). The proposed wind farm may be in the flight line of bridled terns (*Sterna anaethetus*), black-naped terns (*S. sumatrana*), and roseate terns (*S. dougallii*) to and from their breeding colonies on islands in southeastern waters. Migratory birds transiting along the coast may also be at risk of collision with turning rotors, though more information is needed to rigorously evaluate this risk.

CLP's proposal was approved by the Environmental Protection Department and given an environmental permit based on the ecological data provided in 2009 and a review against the approved EIA Report was conducted to support the Variation of Environmental Permit (VEP) application, and the application was submitted to the EPD in March 2021. WWF believes the submitted dataset is not sufficiently comprehensive or up to date to reflect the current usage of the area by marine mammals and birds, especially since the type of wind turbine used in the updated proposal is much larger in blade span and height than that in the original proposal. These changes can result in stronger vibrations and louder operating noise with higher pressures and frequencies.

OUR VIEW

Climate change and biodiversity collapse are the two greatest threats facing both humans and nature today. These crises are intertwined and must be addressed jointly. In parallel, solutions put forward to address one of these crises must not contribute to making the other worse.

HKSAR government has set a goal to achieve carbon neutrality by 2050, however, there is no publicly available roadmap. WWF strongly commends this commitment to renewable energy and believes wind power is key for Hong Kong to diversify its energy portfolio to reach this ambitious goal. Alongside energy efficiency, offshore renewable energy can constitute a valuable part of any energy transition towards a resilient and fully decarbonized economy and is indispensable in achieving a 'climate neutral' Hong Kong. Hong Kong now needs to provide the enabling conditions for substantially increasing renewable energy capacity by 2030. The development of Hong Kong's offshore renewable energy will generate employment opportunities, contributing to the sustainable blue economy and supporting economic recovery following the Covid-19 pandemic.

At the same time, these efforts should be balanced by any negative impacts to Hong Kong's environment, biodiversity, and human-wellbeing. Development of offshore renewables further adds to the already considerable other economic activities in Hong Kong's waters, mounting additional pressure on the marine ecosystems. Thus, offshore renewable energy projects must be considered within the broader context of our ocean's degrading health, and consider the cumulative pressures from diverse threats, including overexploitation of resources, pollution, acidification, and habitat destruction. Beyond implications for biodiversity, this trend is problematic from a climate perspective, as the ocean plays a vital role in regulating our planet's climate.

Offshore renewable infrastructure is still infrastructure. It needs to be subject to best-practice planning and design and requires rigorous evaluation using both environmental impacts assessments (EIA) and strategic environmental assessments (SEA). When developing offshore renewable projects, it is therefore crucial to adopt an ecosystem-based approach, apply well-considered marine zonation, and support ocean resilience by staying within ecosystem boundaries.

WWF recommends the government carefully and diligently assesses impacts on biodiversity and ecosystem value and services before implementing any development projects through the mitigation hierarchy approach to avoid, mitigate, or offset negative impacts to the natural environment. In practice, a comprehensive and independent EIA can help the project proponent to identify and assess the potential environmental impacts with mitigation measures proposed. For example, the baseline ecological profile and the ecological impact assessment of the project will support corresponding mitigation choices. For long-term planning, Hong Kong government should include SEA and Marine Spatial Planning in the planning process to understand the cumulative and even synergistic effects and appropriately address them at the earliest stage of decision making alongside economic and social considerations.

Offshore renewable energy development will only achieve its objective of supporting Hong Kong's transition towards truly sustainable societies if it offers solutions for the climate crisis that are fully compatible with marine biodiversity recovery, ocean resilience and a just energy transition.

OUR ASK TO THE GOVERNEMENT

1. The increased deployment of offshore renewable energy needed to meet the Hong Kong's climate and energy targets must not be done at the expense of environmental protection and should not compromise existing biodiversity targets.
2. Regional cooperation, between Hong Kong and Greater Bay Area, should be fostered through joint planning and acting on regulatory barriers and by creating regional marine spatial usage maps/plans that are accessible to all stakeholders and regularly revised via a robust common monitoring framework.
3. The development of offshore renewable energy should be integrated with other relevant policies, such as the Biodiversity Strategy and Action Plan (BSAP). It should be aligned with a coherent and accelerated action plan for marine conservation and restoration. Offshore renewable energy projects site locations should be based on ecosystem-based and forward-looking Maritime Spatial Planning and effective Strategic Environmental Assessments.
4. Renewable energy developments should not be placed within ecologically valuable areas for sensitive species and habitats.
5. Ecosystem-based Maritime Spatial Planning (MSP) and Strategic Environmental Assessments (SEA) should be conducted to ensure that offshore windfarms are not deployed in areas of high ecological importance, or area with habitats, species, or ecological processes that are likely to be particularly sensitive to these impacts, whether during construction or operation.
6. The government should amend EcoIA checklist 21.13 and EIAO Guidance note no. 11/2010 to mandate acoustic propagation modelling of underwater noise arising from proposed works that potentially generate severe noise and threaten marine wildlife.

OUR ASK TO CLP

1. Transparent and inclusive participatory processes and stakeholder involvement with good representativeness will be crucial in preventing and resolving conflicts with other sea space users and uses. Offshore renewable energy projects should be developed in full respect of the partnership principle of good governance.
2. Before construction, CLP should redo the environmental assessment to ensure comprehensive and current assessment. For example, bird surveys need to be updated, and to consider flight lines and nocturnal avian activity. The layout, design and operation of the proposed wind farm should avoid affecting avifauna flight lines and causing unacceptable levels of mortality and injury to seabirds and migratory birds.
3. Assessment of underwater noise impacts should also be repeated to include modelling the propagation of operating noise over distance, particularly the sound pressure level and frequency of noise generated; maximum noise detection distance from an operational marine turbine by finless porpoises and other marine wildlife should be estimated, to ensure underwater sound levels are acceptable during the operational phase.
4. During operational phase, CLP should visually and acoustically monitor porpoise occurrence and potential changes in habitat use around the proposed offshore windfarm to ensure operational impact is within acceptable limits.
5. Design of the wind farm infrastructure should adopt a nature-inclusive approach, including considering optimizing scour protection in order to strengthen ecological function and the adoption of new rotor and turbine technologies that reduce environmental noise and mortality of birds.
6. Recommend the government to initiate formalised marine spatial planning for Hong Kong waters, with integration of the offshore wind farm plans; consider suggesting the designation of marine protected area at the ecologically sensitive area near the wind farm site; recommend an ecosystem-based management model for the site