Submission No 43

INQUIRY INTO IMPACT OF RENEWABLE ENERGY ZONES (REZ) ON RURAL AND REGIONAL COMMUNITIES AND INDUSTRIES IN NEW SOUTH WALES

Organisation: Responsible Future (Illawarra Chapter) Inc

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Responsible Future
Illawarra Chapter

SUBMISSION TO:
NSW PARLIAMENT –
PORTFOLIO COMMITTEE NO. 4 – REGIONAL NSW

Inquiry into the impact of Renewable Energy Zones (REZ) on rural and regional communities and industries in New South Wales

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Submission to "Inquiry into the impact of Renewable Energy Zones (REZ) on rural and regional communities and industries in New South Wales."

About Us

Responsible Future Illawarra (RFI) is an independent grassroots community organisation, supported by over 16,000 individuals and stakeholders across tourism, conservation as well as commercial and recreational fishing sectors. We are not funded by fossil fuel companies or special interest groups and our focus is on promoting a transparent, balanced and informed debate regarding Australia's energy future. Our Association's Objects are "To prioritise and safeguard environmental, economic and community interests arising through renewable energy policy and infrastructure in the Illawarra."

Our focus is on promoting an informed, balanced and transparent debate about Australia's energy future. We strongly believe the transition away from fossil fuels must involve energy solutions which are cost-effective, reliable and sustainable for future generations. They must not destroy the environment to save the environment.

Our Concerns

We are deeply concerned about the limitations and risks associated with certain renewable technologies such as Floating Offshore Wind (FOW) technology, which has been proposed for the Illawarra-Sydney region. These projects come with significant environmental, technical and financial challenges, as well as the risk of high taxpayer costs.

Special Note:

The feedback and recommendations in this submission are made with the understanding that the NSW Government is committed to assisting the Commonwealth Government in achieving national renewable energy targets as outlined in the Climate Change Act 2022. We also recognize that both the NSW and Commonwealth Governments are guided by the Bilateral Agreement under the Environment Protection and Biodiversity Conservation Act 1990. However, the NSW Government has a responsibility to protect the rights of NSW constituents from experimental projects as proposed by the Commonwealth Government, such as floating offshore wind projects, which may be economically unfeasible or unrealistic. This concern is particularly relevant given that the energy generated by these projects relies on the development of large-scale, dynamic onshore cabling systems and transmission lines—technologies that are unprecedented, untested and therefore experimental. Without these necessary infrastructure elements, the energy produced cannot be effectively distributed.

Our Recommendation

NSW Government ban offshore wind projects in the same way it banned offshore drilling and mining.

Terms of Reference

Our submission will address the following terms of reference for the Portfolio Committee No. 4 - Regional NSW inquiry into, and report on, the impact of Renewable Energy Zones (REZ) on rural and regional communities and industries in New South Wales:

(a) current and projected socioeconomic, cultural, agricultural and environmental impacts of projects within renewable energy zones in New South Wales including the cumulative impacts

(b) current and projected considerations needed with regards to fire risk, management and containment and potential implications on insurance for land holders and/or project proponents in and around Renewable Energy Zones

(c) the historical, current and projected future financial costs associated with construction and maintenance of large scale projects within Renewable Energy Zones

(d) proposed compensation to regional New South Wales residents impacted by Renewable Energy Zone transmission lines:

(e) adequacy, and management of voluntary planning agreements and payments made to the LGAs impacted by Renewable Energy Zones

(g) projected impact on visitation to regional areas with renewable energy zones resulting from changes to land use

(h) suitable alternatives to traditional renewable energy sources such as large-scale wind and solar

(i) adequacy of community consultation and engagement in the development of Renewable Energy Zones, and associated projects

(j) how decommissioning bonds are currently managed and should be managed as part of large scale renewable projects

(l) any other related matters.

Our Response

(a) current and projected socioeconomic, cultural, agricultural and environmental impacts of projects within renewable energy zones in New South Wales including the cumulative impacts

Nowhere in the world has a Floating Offshore Wind (FOW) project of this scale been built. The 193 turbines off the Illawarra-Sydney coastline will be floating, not driven into the sea bed. There are only a total of 25 floating turbines in operation anywhere in the world, and some have already been repaired after 3 years. They are also smaller than those proposed off the Illawarra, and they are not in a protected whale migration zone, commonly called *"The Whale Superhighway"*.

The 280m high Illawarra-Sydney turbines are in depths of 135m to 800m. They will each have massive, long chains attached to 3 massive anchors on the sea bed, and huge electrical cables dangling down (refer images on next page), running to **floating substations the size of floating oil rigs** (refer picture below)**.** The chains and cables will form a barrier to whales, and other debris. They will also drag along the sea bed in storms, causing destruction and turbidity that may reach Illawarra's beaches.

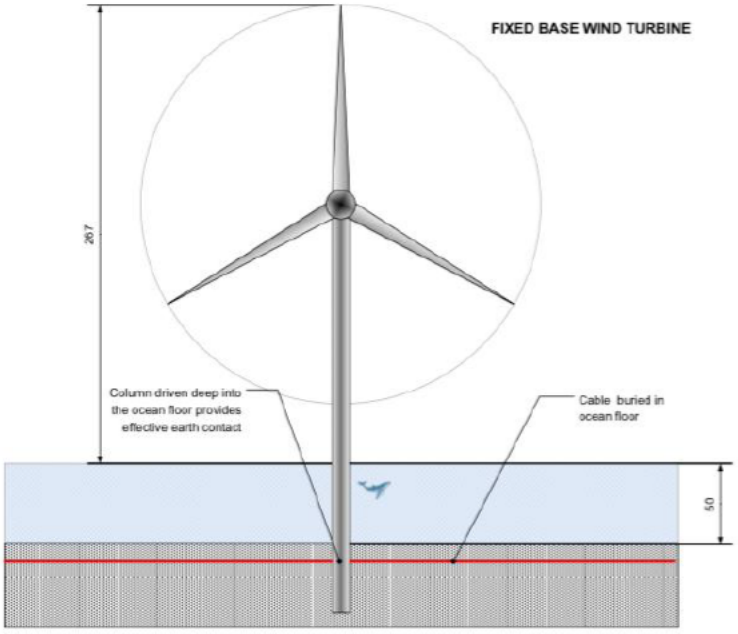
One of the fixed offshore substations used at the Hornsea One project. Image courtesy of Orsted. All rights reserved.

500 MW Offshore Substation - Illawarra will have 6 of these

The tips of the blades will be moving at over 200km/hr, hitting sea birds and generating noise from the turbines that will confuse marine life. Sound travels much further in water than in air, and will be very loud to marine life such as whales, which can detect the sounds of other whales many kilometres away. There is also the impact of electromagnetic radiation from the high voltage cables carrying tens of thousands of volts.

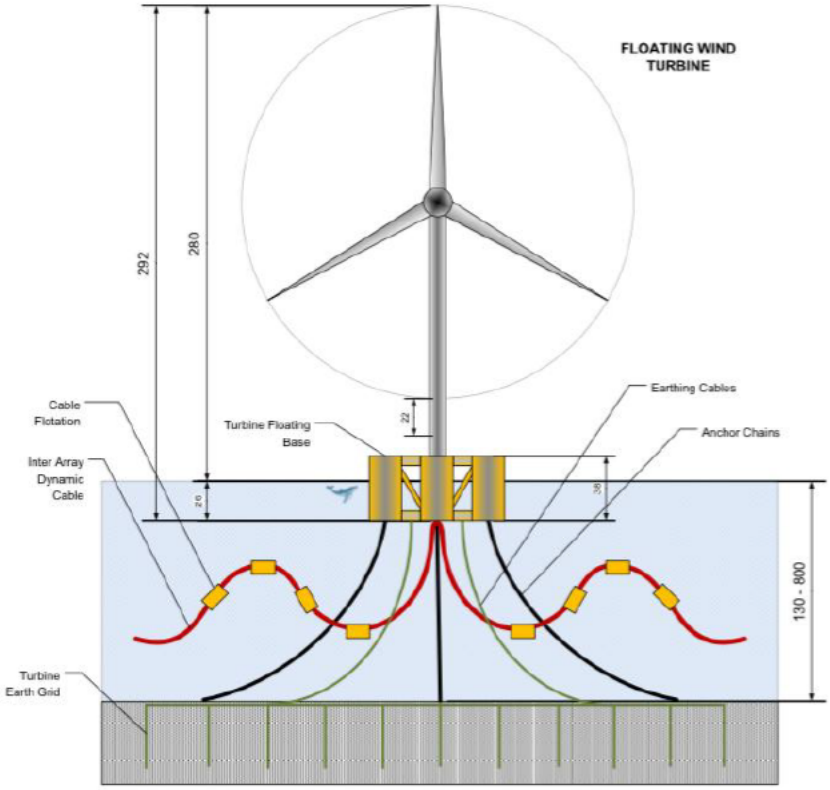
We contend there is a high likelihood of significant negative impacts on the pristine marine ecosystem, as well as the shoreline and coastal waters under the authority of the NSW Government, due to the substantial disruption caused by these projects.

The diagrams show the environmental difference between **fixed** and **floating** wind.



The diagram above is for a fixed base turbine.

The **fixed** base can lead to collision but does not present the element of entrapment for cetaceans. It also provides a mode of earthing for the turbine electrical supply.



FOW means a maze of tethers and power cables under water

Supporting our concerns is the BlueFloat application submitted (and later withdrawn) to the EPBC public portal. BlueFloat's submission identified multiple potential environmental impacts, during just one phase of their proposed Illawarra Floating Offshore Wind (FOW) development. They also outlined the areas that could be affected by activities such as vegetation clearing, groundworks and excavation for underground cabling, and dredging or trenching the seabed for subsea cable installation. These activities fall directly under the jurisdiction of the NSW Government.

The areas potentially negatively impacted include:

- subtropical rainforest in Killalea Regional Park,
- estuarine and swamp forests along Minnamurra River and its tributaries,
- remnants of heathland and rainforests to the west of the Princes Highway,
- tributaries of Lake Illawarra,
- endangering six threatened ecological communities,
- digging large trenches under Lake Illawarra.

The information above does not account for additional issues that could also negatively impact the shoreline, such as vessel strikes on marine fauna during transit, oil or waste spills from survey or other vessels. These impacts include, but are not limited to: poor water quality; seabed disturbance from activities like shallow sediment sampling or anchoring; entanglement of marine fauna in equipment cabling or anchorage; and the long-term deployment of equipment that could foul or contaminate the marine environment (especially if coated with antifouling substances). These concerns were also highlighted in the BlueFloat submission.

The Department of Climate Change, Energy, the Environment and Water (2022) identify 13 key areas with potential negative impacts on the ocean and/or marine/bird life should a FOW project go ahead in the Illawarra-Sydney region. These risks are considered to be "significant". Additionally, BlueFloat identified 36 threatened marine species, including sea birds that could be significantly impacted by offshore wind projects. Furthermore, the Australian Whale Sanctuary extends to at least 200 nautical miles and it is an offence to "kill, injure or interfere with a cetacean" within this Sanctuary. This is exactly where these projects are proposed to be placed.

We also know that the Global Offshore Wind Alliance is fixated on and has agreed to "a rapid ramp-up of offshore wind". Their focus is on industry and transportation. There is nothing about a benefit to the constituents of the countries involved. They do state they will "preserve marine biodiversity" using a "responsible and sustainable use of the ocean". Offshore wind technology, particularly floating offshore wind is not however, proven technology. It is experimental. We have decimated the Amazon forests in our attempts to get balsa wood for the wind blades. We risk huge amounts of debris from disintegrating blades falling into our oceans. These blades do not break down, they also hold a significant amount of Bisphenol A, a carcinogen. How have we come to this that we are willing to destroy our environment, to save our environment?

The Floating Offshore Wind (FOW) project off the Illawarra-Sydney coastline will require over 1,000 square kilometres of ocean, which is a whale sanctuary and our whale superhighway, to produce less than 1 GW of power, intermittently.

That means the environmental impact and commercial impact of FOW is massive - think of whale migration and other cetaceans, bird migration, commercial fishing industry, tourism industry, fish and crustacean habitat, water turbidity, collisions at sea with overlapping shipping lanes, changes to sea currents and air currents, and the massive task of decommissioning.

To highlight our concerns about whales, we refer you to information provided by Professor Apostolos Gerasoulis, professor emeritus at Rutgers. Professor Gerasoulis categorically states "Absolutely, 100 percent, offshore wind kills whales"(Climate Dispatch, 2024 https://climatechangedispatch.com/professor-makes-stunning-discovery-absolutely-100-percent-offshore-wind-kills-whales/).The professor has identified patterns associated with offshore wind survey vessels which indicate that as surveys for offshore wind projects increase, so too and significantly, do whale deaths.

We do not give the NSW Government permission, or social licence, to potentially ruin the environment in this manner.

(b) current and projected considerations needed with regards to fire risk, management and containment and potential implications on insurance for land holders and/or project proponents in and around Renewable Energy Zones

Offshore wind projects are notorious for breaking down, blades breaking off and/or catching fire. The recent Nantucket incident, which resulted in multiple beaches being closed due to substantial debris washing ashore is indicative of the risk from these projects. The NSW Government is responsible for the shoreline. The NSW Government will be responsible for ensuring anything untoward is cleaned up to a satisfactory standard. The NSW Government is responsible for the citizens of NSW.

Is the NSW Government confident the risks associated with these experimental projects can be contained to a satisfactory level?

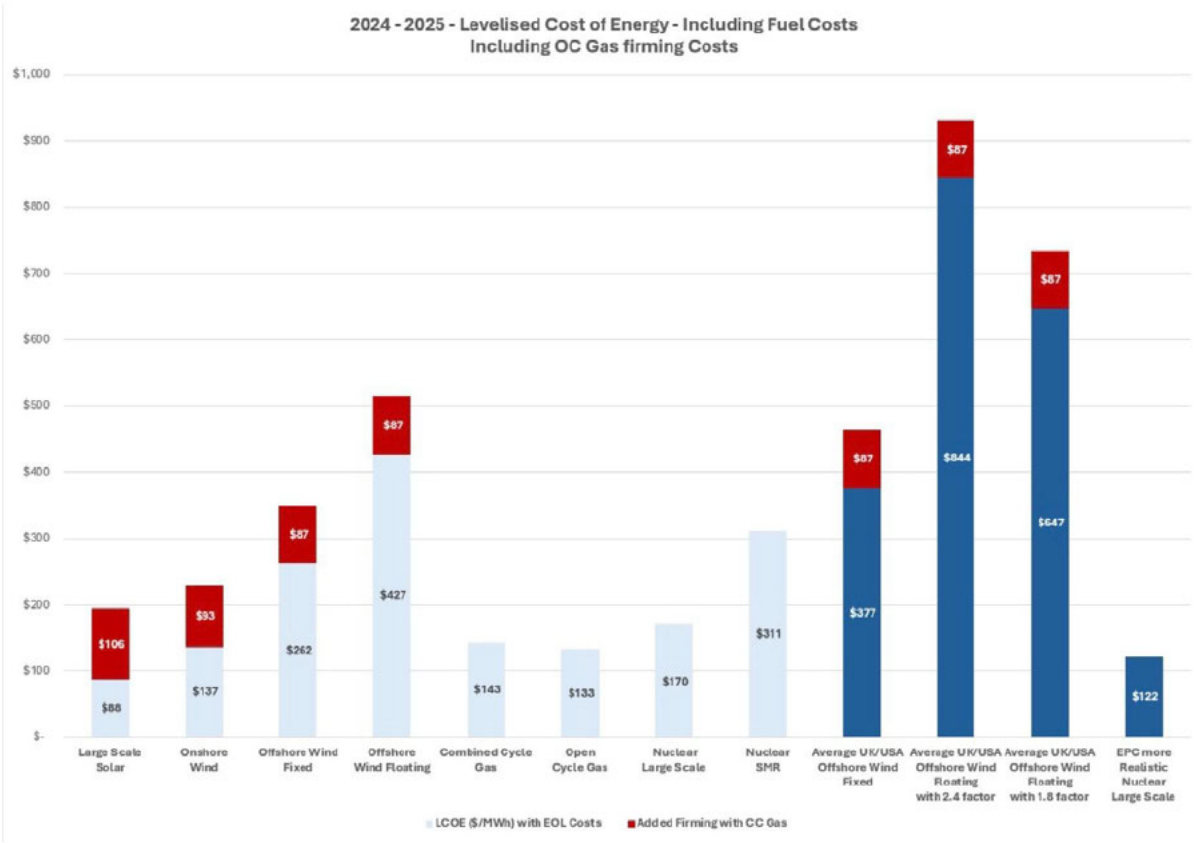
(c) the historical, current and projected future financial costs associated with construction and maintenance of large scale projects within Renewable Energy Zones

Large scale, floating offshore wind projects are experimental. They have never been built to the scale proposed for the Illawarra-Sydney and Hunter regions. Therefore the true cost of the development is impossible to determine, particularly as most large scale developments are built outside agreed upon time frames, as well as significantly over budget.

RFI assembled a team of engineers who specialise in energy systems, construction and feasibility studies. The team conducted over 1,000 hours of research, analysing global case studies, cost models and energy production data. This included comparisons between Floating Offshore Wind(FOW), Fixed Offshore Wind, Onshore Wind, Large-Scale Nuclear, Small Modular Nuclear Reactors, Gas and Black Coal energy generation. Refer to image on next page for the estimated costs of floating offshore wind production.

Additionally, we have concerns regarding the harbour at Port Kembla, which is under the jurisdiction of the NSW Ports, and therefore the NSW Government. We are of the opinion there would need to be an upgrade of these facilities because:

- FOW will need to build a large, dedicated port facility at Port Kembla to receive, assemble and maintain the FOW;
- The port will require dredging to float the turbines, with ongoing maintenance dredging of the port probably required;
- Port Kembla is one of the preferred locations for a nuclear submarine facility on the East Coast. An FOW assembly and maintenance area in the port will not be complimentary for reasons of port space and security.



Light Blue: CSIRO GenCost data with EOL added
CSIRO multiplier from fixed to floating offshore wind: was 1.4 in 2023, raised to 1.8 in 2024

Dark Blue: RFI data from actual offshore wind farms in UK/USA with EOL added
RFI multiplier from UK data: 2.4

(d) proposed compensation to regional New South Wales residents impacted by Renewable Energy Zone transmission lines:

(i) adequacy of compensation currently being offered for hosting transmission lines

(ii) adequacy of the shared benefits being offered to neighbours of large scale renewable projects

(iii) financial impact of compensation on the state's economy

(iv) tax implications resulting from compensation received by impacted residents

The NSW Government does not acknowledge the impact of the proposed offshore wind projects on the shoreline and land associated with the cabling and transmission lines required to source the generated offshore energy. Therefore, any residents impacted by these substantial infrastructures, would not be compensated. They are an unseen population according to the NSW Government.

(e) adequacy, and management of voluntary planning agreements and payments made to the LGAs impacted by Renewable Energy Zones

Totally inadequate. Refer to part (d).

(g) projected impact on visitation to regional areas with renewable energy zones resulting from changes to land use

Changes to ocean use, by the proposed floating offshore wind projects in the Illawarra-Sydney and Hunter regions, will have a detrimental impact on tourism, the fishing industry and all associated businesses. These regions have spent years working to overcome the negative reputation tied to their history of coal mining and heavy industrial steel production.

(h) suitable alternatives to traditional renewable energy sources such as large-scale wind and solar

Responsible Future (Illawarra Chapter) Inc is of the opinion that nuclear energy should be considered as part of the mix for baseload power. Floating or fixed offshore wind projects should be removed as an alternative energy source along the entire Australian coastline.

The NSW Government should follow the example set by the South Australian Government.

(i) adequacy of community consultation and engagement in the development of Renewable Energy Zones, and associated projects

The proposed floating offshore wind projects are being pushed forward at a rapid rate, with limited information and consultation as well as questionable economics provided by government bodies. Additionally, the offshore wind projects were not included in the NSW Draft Energy Framework which limited the opportunity for NSW residents to be consulted and to provide feedback. The NSW Department of Planning, Housing and infrastructure, Overview of the Renewable Energy Planning Framework (2024), does not mention the transmission lines and cabling required for the proposed offshore wind projects. This is despite the significant infrastructure required and the potential risks to the health and safety of local residents as well as the environment.

There has been inadequate consultation with the communities potentially impacted.

(j) how decommissioning bonds are currently managed and should be managed as part of large scale renewable projects

These huge floating offshore wind structures are unlikely to last past 20years because of the salt water and rough conditions. Floating substations, of any size, let alone ones the size of oil rigs, have never been built before. How they perform in an open sea wave situation is unknown. The size of the high voltage dynamic cables needed to take the power to shore have never been manufactured before.

The community has been told on multiple occasions by government representatives, that developer contracts will include decommissioning requirements. What will be the decommissioning process and who will bear the cost if the developer goes into liquidation and/or pulls out/sells to another developer prior to the decommissioning?

An example of what can go wrong is the wave generator, installed off Port Kembla, which broke off its moorings and was left floundering in the ocean, only to wash onto rocks in rough seas. The NSW Government should be aware of the implications of this type of scenario given they took the developer to court over failure to remove the decommissioned wave generator. It took over 6 years for rectification to occur, the company went into receivership and the NSW

Government had to tender for the removal with taxpayers bearing the cost of removal (WGE Group, 2015; Illawarra Mercury, 2014).

(l) any other related matters.

- Cables, transmission lines and other associated structures such as wire linkages and step up substation implications.

Please refer to the information previously provided on pages 4 and 5 of this document regarding cables, transmission lines and substations.

The NSW Government has the responsibility for the marine domain which comprises tidal rivers/estuaries, the shoreline, submerged lands, offshore islands and coastal waters between Queensland and Victorian borders out to three nautical miles(nm) from the shore. When areas for proposed Floating Offshore Wind (FOW) projects are located more than 3nm offshore they fall within the Commonwealth controlled Renewable Energy Zones (REZs). There are currently two offshore REZs proposed in NSW, namely Hunter and the Illawarra(Sydney).

Whilst the FOW projects located in these REZs are Commonwealth responsibility some aspects of these projects technically fall within NSW authority. These proposed industrial scale FOW energy production areas require infrastructure to be located within the NSW marine domain, as well as onshore, in order to bring the generated power to the grid. Without cables, transmission lines and other associated infrastructure, the power generated by FOW cannot be converted into energy for households and/or industry.

The Illawarra constituency has not given the NSW Government permission, or the social licence, to absolve their responsibilities associated with any FOW energy production to the Commonwealth Government.

For enquiries please contact: