



SUBMISSION IN RESPONSE
TO
ORIEL WIND FARM EIS

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1. Summary

Oriel Wind Farm Ltd. has applied to the Minister for the Marine for a Foreshore Lease to build a major wind farm in Dundalk Bay. The project will consist of 55 turbines of 4.5MW to upwards of 6MW situated as close as 5km to shore at nearest point.

Renewable energy sources could make an important contribution to Ireland's energy mix, contributing to security of supply and helping to cut CO₂ emissions. In principle, Coastal Concern Alliance supports the development of marine renewables (wind, wave and tidal) and feels that it is in Ireland's interest to tap into the resources our oceans present. However we believe that in developing our oceans we must take care to ensure that our environment and natural heritage are protected.

In the case of Oriel, the size and scale of this project render it totally unsuitable for the sensitive near shore site proposed. No other country in the world has permitted turbines of this size so close to shore and the potential environmental impacts of the project cannot be adequately predicted. It will undoubtedly have widespread impacts on Ireland's coastal scenery, a valuable and finite resource much valued by residents and tourists alike.

A major cause for concern is the democratic deficit inherent in the permitting process for offshore development in Irish waters. The inadequate and outdated Foreshore Act, 1933 must be reformed urgently in light of the major developments now proposed for our waters. All political parties and environmental NGOs agree on this score and the Government and Department of the Marine have begun the reform process.

Because of this democratic deficit and the other serious environmental, economic and social considerations outlined in this submission, we urge Mr Noel Dempsey, Minister for Transport & the Marine to reject the Oriel Wind Farm proposal.

2. Introduction

Coastal Concern Alliance (CCA) understands the need for the harvesting of renewable energy in light of the urgent need to respond to climate change.

We believe that offshore renewables (wind, wave and tidal) have much to offer this country. However, we also believe that there is a democratic deficit in regard to the issuing of foreshore leases for offshore development, currently governed by The Foreshore Act, 1933.

CCA was formed to campaign for the urgent reform of this legislation governing construction at sea, in order to bring the sea-based planning system into line with the land-based system by:

- reforming The Foreshore Act, 1933
- introducing a right of appeal in relation to foreshore leases
- providing for an extended role for local authorities in relation to the coastal zone
- introducing a system of integrated coastal zone management (ICZM)

3. Democratic deficit

Summary

Prior to the recent general election, we wrote to all TDs to establish the views of the political parties on this important issue. The key responses to that campaign are as follows: (Appendix 1)

- All political parties agreed that The Foreshore Act 1933 governing construction at sea is outdated, undemocratic and in need of urgent reform.
- The Minister for the Marine, Mr Noel Dempsey, stated that such reform is currently under active consideration in the Department of the Marine.
- Key spokespersons for Fine Gael, Labour and the Green Party stated that no further foreshore leases for major construction should be awarded under the current system.
- Various respondents advocated the holding of a local public inquiry before any further foreshore leases were awarded. The Minister may hold such an inquiry under the Foreshore Act, 1933(2.3).

The Oriel wind farm, a major industrial development in Dundalk Bay, is being considered under a system which The Government and all major political parties agree to be inadequate without the statutory involvement of local authorities and with no public right of appeal.

Recommendation

No foreshore leases for major construction, including the Oriel wind farm, should be awarded until the Foreshore Act, 1933 has been revised and adequate procedures for public participation introduced.

4. Public Access to Consultation Documents

Summary

At the outset we wish to object to the difficulty in accessing information on this project. The mandatory requirement for public access has been poorly complied with. The visual impact of wind farms on land and at sea is a highly contentious issue, of particular importance to the public. The difficulty in accessing visual representations of this major proposal seriously undermines the validity of the public consultation process on this project which is of interest nationally and in Northern Ireland.

Comment

We especially note:

- The exorbitant price of the photomontages at €1600 excl VAT - not available on the web.
- No photomontage is included in the Summary EIS, the key document prepared for public consumption.
- The difficulty of accessing the full text of the EIS on the web due to the large size of the file. (Many local authorities faced with a similar problem break their development plans online into smaller more easily accessed documents).
- The fact that, on the web, the full EIS is locked and cannot be printed, making it exceedingly difficult for groups to consider.

5. Pre-selection of Sites: Strategic Environmental Assessment

Summary

A Strategic Environmental Assessment (SEA) or some form of official pre-selection of sites is recognised as being a pre-requisite for proper and sustainable planning of offshore wind development. Unlike most other EU countries involved in such development, Ireland has not carried out an SEA or any form of pre-selection exercise. Instead, developers, such as Oriel, have been allowed to stake their claim to sites in Irish public waters on a “first come first served basis” on the basis of the site’s potential profitability. They then seek to justify their claims with an EIS. Clearly, this system is not in the national interest.

Comment

Concerted action for Offshore wind energy Development (COD), an organisation financed by the European Commission, aims to progress offshore wind energy development in the EU by sharing and incorporating good practice in (1) legislation and consents procedures, (2) environmental impact assessment and mitigation and (3) grid integration.

“Legal and Administrative Issues”, a report produced by COD in 2005, compares the consent regimes in eight EU countries (Germany, Belgium, Netherlands, Sweden, Denmark, UK, Ireland and Poland)¹.

Key findings of the report are as follows:

- **UK, Denmark, Sweden and Germany** all operate some system of pre-selecting preferred areas, including carrying out of SEA.

- **Germany, Belgium and The Netherlands** have effectively banned offshore wind farm development in the 12 nautical mile (25km) territorial limit, because of landscape and ecological concerns. Development is restricted to areas further offshore in the Exclusive Economic Zone (EEZ) where these countries are introducing marine spatial planning to control offshore wind farms with mega 5MW-6MW turbines (similar to those proposed for Oriel).
- **The UK** in Round 1 of its offshore development, limited projects to 30 turbines in order to lessen visual and environmental impacts. In Round 2, the Department of Trade & Industry identified three potential strategic regions in its policy document, '**Future Offshore**'. These areas are the Thames Estuary, the Greater Wash, and the North West. Developments here will be larger with greater numbers of turbines at greater distances from shore. An exclusion zone of 8km from shore operates, extending to 13km in sensitive areas.
- In addition to pre-selecting potential development areas, **Denmark and Sweden**, in common with other countries, have designated areas where no development is allowed. These include areas of special conservation / landscape interest, National Parks, areas designated under EC Birds Directive and Ramsar Convention, shallow water reefs / banks of high protection priority, important fishing and shipping zones, military areas, etc..

The COD Report comments:

“Ireland has not carried out an SEA nor has it pre-selected or appointed preferential areas for offshore wind energy development. In principle, and subject to detailed analysis to ensure there will be no unacceptable impacts, wind farms can be established anywhere with the exception of a limited number of prohibited area.”

These prohibited areas in Ireland are military firing ranges, flight paths to and from airports, and zones of heavy marine traffic. In addition offshore wind farms will *“generally not be allowed within 5km of the shore”*. In other words there are virtually no restrictions.

The COD Report states:

“The SEA EC-Directive (2001/42/EC) obliges Members States to perform an SEA for the approval of plans or programmes such as offshore wind energy development.

Member states should *“perform an SEA in order to identify and assess (cumulative) environmental conflicts and their solutions and to give better insight in the topics that need detailed consideration in project related EIA. Authorities could consider doing this on a trans-national or international level.*

An SEA gives both authorities and the applicants the opportunity to assess cumulative environmental consequences and benefits of a programme of offshore wind and to identify at an early stage possible mitigatory action. Furthermore performing an SEA gives a better identification of what topics need to be addressed in detail in the applicant's EIS.”

When one considers that, in addition to the absence of an SEA, Ireland has

- No system of ICZM
- No Marine Spatial Planning
- No statutory involvement of Local Authorities

It is clear that the awarding of a foreshore lease for this major industrial development in a scenic and ecologically sensitive near-shore area would be **contrary to every internationally agreed principle of marine planning**.

Recommendation

An SEA of Ireland's coastline should be undertaken as a matter of urgency and before any further sites are offered for offshore development. A Foreshore Lease should not be awarded for the Oriel wind farm until the SEA is completed.

6. Offshore Wind Power in the EU

Summary

Analysts agree that the future for offshore wind farms lies in large installations far from sensitive coasts. Ireland's permitting regime, the most lax in the EU, is allowing vast offshore wind farms which would not be allowed close to shore in any other EU maritime country, to be quietly approved without proper public scrutiny of the environmental, heritage and socio-economic consequences.

Comment

Offshore wind farms are a relatively new technology and the implications of these vast installations at sea have not been adequately assessed. At the end of 2006, some 700MW of offshore wind power had been installed worldwide, 60% in Denmark and 30% in the UK.

In Denmark, the government owns and builds demonstration offshore wind farms to support its domestic wind farm industry, a major export earner and source of employment with over 20,000 people employed. The Danish public are resisting the installation of any more wind power on land and so the government has no option but to turn to the sea to maintain its pre-eminent position in the wind power market. The UK accounts for 30% of installed offshore wind power, largely commercial operations.

Apart from these two countries, other members of the EU are wary of embracing this relatively untested and expensive technology in their inshore waters. Widespread and well documented concerns are being expressed about the impact of these huge industrial installations on coastal character, ecology, amenity, economy and scenery. No offshore wind farms have been approved in France, Spain, Norway, Finland, Italy, or Northern Ireland. Germany, The Netherlands and Belgium have effectively banned offshore wind farms in their 12 nautical mile (22km) territorial limit because of ecological and landscape concerns and are planning to develop large wind farms with mega 5MW/6MW turbines in the North Sea about 30km from land.

In Ireland at the end of 2006, at a time when just **700MW** of offshore wind power had been installed worldwide, **1,620MW** of offshore wind power had been approved off the scenic coast of Wicklow. This involved two of the biggest wind farms then approved worldwide:

- The 1100MW Codling Bank Project (200 x 5MW turbines) 12km off Bray Head approved by Minister Noel Dempsey in 2005.
- The 520MW Arklow Bank Project (120 x 3.6MW turbines) 10km off Arklow approved by Minister Frank Fahey in 2002.

The Oriel application states that just **25MW** of offshore wind power is installed in Ireland. It does not mention that **1,620MW** of offshore wind power has already been approved. If the 330MW Oriel Wind Farm is awarded a foreshore lease by the Minister, then Ireland will have a total of 1,950MW of offshore wind power approved off its scenic east coast. This is clearly disproportionate in a national grid of around 6000MW.

The only way this amount of wind power can be accommodated is by interconnection with the UK allowing us to export surplus capacity to the UK and beyond. The idea of “exporting green electricity from a green island” sounds fine in theory. However what this means in practice is that Ireland’s scenic east coast will be turned into a giant offshore wind farm producing wind energy much of which will be exported to the EU where many countries are refusing to permit similar installations.

It is worth studying the experience of Denmark in this regard. Much of the wind energy produced is exported along the Nordic inter-connector. The substantial production of wind power in Denmark has not led to a significant reduction in CO₂ emissions. Denmark’s CO₂ emissions are almost as high as Ireland’s.

An Irish developer is proposing the development of a **Supergrid** consisting of a series of interconnected offshore wind farms throughout the seas of Europe. Diagrams of the proposed Supergrid show wind turbines arrayed off many Northern EU coasts. What is not clear from these diagrams is that in Ireland, the mega 5MW turbines are proposed within 5km of our scenic coast while in the North Sea /Baltic Sea the turbines will be at least 22 km, and possibly a lot further, from land.

Recommendation

The Oriel Wind Farm in its size, scale and proximity to shore is out of line with best practice internationally. A comparison of the permitting regimes in other EU maritime countries should be carried out as part of the review process for this development. In particular, the natural heritage safeguards introduced by other countries should be noted.

Ireland has some of the most scenic coastlines in the EU. These coastlines are a finite and increasingly scarce resource much valued by the public. If it is the Government’s intention to permit huge offshore wind farms close to our coastlines, with much of the output exported to the EU, then this policy should be clearly and publicly articulated.

7. Visual impact

Summary

The proposal is located in an area of outstanding natural beauty. The proposed array of turbines, 4.5MW to potentially upwards of 6MW, max height 170m (approx 480 feet) as close as 5km to shore, will have a major impact on views and prospects over a wide area.

Comment

- **Co. Louth** in its Development Plan has designated an Area of Outstanding Natural Beauty (AONB) in close proximity to the proposed development, as well as designating the coast as Coastline of Special Scenic Quality. In addition, it has designated many Protected Views and Prospects as well as Scenic Routes, which would be significantly impacted by the development.
- **Co. Down** in the *Banbridge/Newry and Mourne Area Plan 2015* has designated much of the area north of the farm as sites of national and international importance (RAMSAR, SAC, and SPA sites). The designated AONB, which covers most of the Mourne Mountains is in close proximity to the chosen wind farm site.
- **Co. Meath** will also be affected, especially in cable landing points and onshore cable routes.
- From **Co. Dublin** the mountains of Mourne can be seen on a clear day. The flat landscape south of the development down as far as Dublin means that it will be visible from a great distance.

The criteria used in assessing the visual impact in the EIS are questionable. The plain fact is that the turbine array will industrialise the view from portions of landscape adjudged by all authorities north and south of the border as of the highest possible scenic quality, and radically alter the wild prospects out to sea. The key points noted by the EIS are that:

- *The proposed wind farm would be extensively visible from the entire coastline from Annalong in County Down to south of Laytown in County Meath as there is no screening provided.*
- *The turbines would be visible from high ground in the Cooley and Mourne mountains to the north.*
- *The general flatness of the terrain to the west and southwest of the windfarm in counties Louth and Meath results in broad scale theoretical visibility in this direction.*

The unprecedented closeness of the wind farm to the shore is insensitive and unacceptable in the face of the landscape quality of the area. **No country in the world has permitted turbines of this size so close to shore** (5km at closest point). In many countries (e.g. The Netherlands, Germany) offshore wind farms are banned within 22km of the coast.

We note that, were a lease to be granted under the current legislation, it would allow for larger and more turbines to be substituted over the time period of the lease at the Minister's discretion with no further public consultation, (a clause to this effect is included in the Arklow Bank lease). Indeed the precise specification of the initial

turbines would be determined only at time of construction, based on what was available at that time.

We deplore the democratic deficit which does not allow the local authorities in Down, Louth, Meath or further afield, to have any statutory involvement in the consideration of the Oriel project. The Oriel proposal runs totally contrary to the intent of Development Plans in all affected areas and will result in unprecedented loss of visual amenity in Dundalk Bay, the Mourne and the Cooley Peninsula. As acknowledged in the EIS, it will alter the character of the entire seascape, effectively industrialising Dundalk Bay. It will hugely affect areas which local planning authorities have designated as AONBs and many views and prospects listed for protection in the County Development Plan.

Recommendation

We judge the impact of this industrial array of machines in close proximity to a scenic shoreline to **be absolutely visually unacceptable**. We urge the full rejection of the proposal on visual grounds alone.

8. Photomontage

The standard “best practice” method of preparing photomontages of wind farms does not accurately portray the “in the field reality” of these installations. In particular, the use of composite panoramic displays and a prescribed viewing distance have been criticised by professional landscape architects as serving to mislead the general public and obscure the true visual impact of wind farm developments.

Comment

A recent paper, April 2007, “**The Visual Issue – An Investigation into the Techniques and Methodology used in Windfarm Computer Visualisations**“, by Alan MacDonald RIBA, criticises the techniques described as “best practice” (www.thevisualissue.com).

He finds that wind farm developers’ photomontages as interpreted by the public actually reduced the real visual impact by up to a factor of three, with certain applications exceeding this.

He comments:

“Images are taken with a 50mm standard lens. Then the full A3 image is shrunk down to form a much smaller image in the centre of the page. This reduced central image should now be viewed from a fixed distance only (usually around 25cms). When this image is viewed at this fixed distance, in order to create an impression of periphery vision which the developers insist is necessary for landscape assessment, they add several additional photographs on either side to extend the image into a wide panoramic view.”

“This technique of long narrow panoramas with short uncomfortable viewing distances serves to confuse and mislead the public who do not understand the concept of correct viewing distance and tend to view the images at a convenient or comfortable distance.”

He recommends “Single frame images printed at full A3 or A4 size should be included in the free Non Technical Summary. Such single frame images taken at the

appropriate focal length do not require a defined viewing distance They are just simply viewed at a comfortable reading distance”

The photomontages presented in the Oriel proposal give a misleading impression of the precise scale and likely impact of turbines in the landscape. The developers are adhering to the “best practice” guidelines laid down by the Department. The inadequacy of these guidelines is clear when one compares the visuals prepared for the Arklow Bank Wind farm with the actual view of the turbines now in place. From any selected viewpoint, the pre-construction visuals underestimate by a factor of at least three what one actually sees at that viewpoint.

Recommendation

The Arklow Bank Wind Farm demonstrates the flaws in Ireland’s current “best practice” guidelines for production of photomontages of offshore wind farms. These guidelines are clearly inadequate to assess the visual impact of the Oriel Wind Farm. To accurately assess the visual impact of this massive project, assessors should travel to Arklow on a clear day and view the actual visual impact of seven 3.5MW turbines 10 km from shore. They will then be able to more accurately assess the visual impact of 55 x 6mw turbines, 5 km off the Cooley peninsula.

9. Heritage

Summary

This development will have a major impact on the natural heritage of the area described in the recently published Louth Heritage Plan. The National Trust for Northern Ireland has expressed reservations about this development in its pre-EIS observations. Dundalk Bay is a nationally important scenic area and an international resource for wildlife of all kinds.

Comment

Dundalk Bay and its coastline is a particularly rich area of natural heritage with areas of great scenic beauty and a rich and varied ecology. The Cooley Peninsula is an especially important part of our cultural heritage with echoes of The Táin and Irish mythology.

Ireland has signed up to the **European Landscape Convention, 2002**. This convention lays down principles for legal protection of landscape. Seascapes are included as a component.

We draw attention to **The Declaration on the Impact of Wind Power on the Countryside (2004) from the Council of Europa Nostra**, the prestigious pan-European Federation for Heritage. (Appendix 2).

*“The Council also considered that many countries have so far tended to focus too heavily on wind-power, whether on or off shore. They have provided heavy incentives for its development, relaxed planning legislation, and failed to make a balanced assessment of its merits and demerits, with the consequence that vast areas of beautiful landscape throughout Europe are now dominated by groups of ever larger wind-turbines - every one of which constitutes a small power station - and are thus being effectively industrialised, with consequent serious damage to the **natural heritage**.”*

“The Council held that, in many European countries, a situation is being created in which social, economic, tourism, historical, cultural, wildlife and landscape impacts are being insufficiently addressed in the decision making process relating to wind-power.”

The Heritage Council’s recent **Policy Paper on Conserving Ireland’s Maritime Heritage** (*The Heritage Council, 2006; 2.3.1 Offshore Policy Considerations*) stresses the importance of conserving our maritime heritage by adopting measures such as carrying out an SEA, prohibiting the construction of offshore wind farms in designated areas or habitats etc..

Recommendation

The assessment of the impact of the Oriel wind farm on the natural heritage is inadequate. Expert opinion should be sought to provide an independent assessment. The Heritage Council’s recommendations should be noted.

10. Tourism

Summary

The impact of the Oriel Wind Farm on tourism is inadequately assessed. Fáilte Ireland, Ireland’s tourist board has recently expressed grave reservations about the impact on tourism of the two massive wind farms already permitted off the Wicklow Coast and has called for the urgent introduction of ICZM. The Northern Ireland Tourist Board has also expressed reservations about the Oriel project in their pre-EIS submission. The opinions of these two major tourist marketing boards should be given appropriate weight.

Comment

Wind farms on land have a major impact on areas of unspoiled natural beauty. Unacceptable landscape impact is the most frequent reason why, on land, wind farm applications are turned down either by local authorities or on appeal to Bord Pleanála.

At a stakeholder conference on the EU Maritime Green paper, (6 March 2007) Mr Paul Keeley, Marketing Manager, Fáilte Irelandⁱⁱ, stated that the physical beauty of the coast was a major factor attracting visitors to Irish coastal areas. He expressed concern about the impact on tourism of the two massive wind farms already permitted off Wicklow. He called for the introduction of ICZM and stricter planning controls on offshore wind farm development.

All surveys on tourism in Ireland show that a principle attraction for visitors is the unspoiled beauty of the Irish landscape. The quality of the landscape is vital to the tourist product in Louth. This quality would be severely diminished by the building of a massive wind farm in Dundalk Bay.

The Oriel EIS states that there will be no significant long term effects on tourism or recreational activities in the area. No hard facts are given in support of this claim. We contend that the size and scale of the proposed Oriel development and its proximity to shore will have a major impact on the unspoiled vistas across Dundalk Bay and from the Mourne mountains, major parts of the area’s tourist product and visitor attraction.

While initially the wind farm may have some novelty factor, this will lessen as more offshore wind farms are built. While one might travel once to view an offshore wind farm, it certainly would not merit repeat visits. Louth has a major tourist advantage in the beauty of the scenery around Dundalk Bay. No matter how often they visit, the beauty of the area entices people to return.

Recommendation

Appropriate weight should be given to the reservations expressed by Fáilte Ireland and The Northern Ireland Tourist Board about the possible impact of such development on tourism and recreational activities. Even a small drop in tourism could have an important multiplier effect on the region, North and South. With regard to something as central to the economy as the tourist industry, the precautionary principle should apply.

11. Impact on fish and marine life

Summary

We note from the EIS, that this location is possibly the richest resource around our coast for many species. It is a key spawning and nursery area for many important fish and shell fish. As no offshore wind farms consisting of 5/6MW turbines have yet been constructed, it is impossible to predict the effects of the proposed project on marine life.

Comment

Some species are already suffering from reduced stocks, where the urgent need for conservation is already widely recognised. The cod and herring stocks, already in major decline, are a key concern.

An additional cause for concern is the Dublin Bay Prawn (*nephrops norvegicus*), currently the highest economic value by landing in the Irish Sea, They move little in their habitat and are sensitive to any disturbance. We do not accept the assurances of the developer in regard to this species. The proposed development may have heavy effects on the most valuable fishery in the Irish Sea.

We draw attention to the report published by Collaborative Offshore Wind Research into the Environment “**The Potential Impact of Electromagnetic Fields Generated by Offshore Wind Farm Cables**”ⁱⁱⁱⁱ (COWRIE, 2005). The study aimed to explore whether the interaction between the fish and the artificial fields will have any consequences for the fish.

“The study found that there are fish species present at development sites which may respond to anthropogenic sources of electro magnetic field (EMF). Although the information available on magneto-sensitive species is limited, it does suggest that potential interactions with a number of UK coastal organisms could occur from the cellular through to the behavioural level. The report concludes that “greater understanding of the environmental impact of EMF emissions is urgently required owing to the lack of current knowledge and scale of the planned wind programmes”.

A further COWRIE report “**Effects of Offshore Windfarm Noise on Marine Mammals and Fish, 2006**” is also relevant to the Oriel proposal. (Appendix 3)

The Executive Summary states:

*“.. the noise created during **pile-driving operations** involves sound pressure levels that are high enough to impair the hearing system of **marine mammals** near the source and disrupt their behaviour at considerable distance from the construction site” “previous investigations also indicated that the construction phase will have considerable effects on **fish species** common in northern European waters.”*

*For **harbour porpoises and seals** the zone of audibility for pile driving will most certainly extend well beyond 80km, perhaps hundreds of kilometres from the source.. Behaviour responses are possible over many kilometres, perhaps up to ranges of 20km.*

***Cod and herring** will be able to perceive piling noises at large distances perhaps up to 80km from the sound source. Behavioural effects are possible due to piling noise. Physical effects like internal or external injuries or deafness up to cases of mortality are possible in close vicinity to pile driving.*

The report states that **operational noises** of wind turbines will be detectable up to a distance of app 4km for **cod and herring** and probably 1km for **dab and salmon**. Behavioural and psychological stress effects are possible due to operational wind farm noise.

Operational noise of larger turbines can not be assessed reliably yet. (The report analyses noise of much smaller turbines in the 1.5MW range). “It is very likely that larger turbines are noisier resulting in much larger zones of noise influence.”

Recommendation

Wind farms composed of the mega-turbines proposed by Oriel do not yet exist. Based on the latest reports from COWRIE, we suggest that the effect of noise during pile driving and operation on marine life has been inadequately assessed in the Oriel EIS. We also suggest that the potential impact of electromagnetic fields has not been adequately assessed. We urge the highest level of independent vigilance in the Minister’s assessment of the Oriel Wind Farm’s impact on marine life.

12. Impact on birds

Summary

We believe that the impact on bird life has not been adequately assessed due to limitations in count and other deficiencies, and is therefore underestimated.

The EIS quotes extensively from the recent Horns Rev Study. However, at the conference presenting their findings, the researchers pointed out that their study applies only to the Horns Rev wind farm (an array of 2MW turbines ,14 – 20kms from shore) which was carefully selected before the wind farm was permitted. Its findings are not directly applicable to the Dundalk Bay area and an array of 6MW machines.

Comment

We submit that the bird count data on which the conclusions have been based is inadequate. The count does not include data collected at night, during the winter and in storm conditions. Therefore, an assessment of the impact of the proposed wind farm at night, during the winter and in storm conditions cannot be made.

We note that the turbine array will impact the flight paths of seabirds, water birds, and especially migrants. The array being sited across flight paths up and down the Irish Sea is contrary to the recommendations within the section of the EIS dealing with impact on bird life. The ability of the birds to compensate for the increased energy demand to fly around the farm and to adapt to the disruption caused is not known and could be major.

The site area adjoins Dundalk Bay, designated as a Special Area of Conservation (SAC) for the richness of its bird life.

We note with concern the predicted 'medium' risk to the waders, wildfowl and passerine population during the cable laying phase of the project particularly to the rare diver population. We are particularly concerned about the 'medium' risk to tern, Manx shearwater and diver population during the operation of the farm.

Recommendation

We request that the Minister note the limitations of the data collected at the Dundalk Bay site. He should seek the highest level of independent expertise in the assessment of the impact on birds.

13. Electricity Generated

Summary

The developers seriously overestimate the amount of electricity which the Oriel Wind Farm would generate and thus overestimate the potential savings in CO₂ emissions. The latest figures from the Department of UK Energy Statistics (DUKES) show that in 2005 offshore wind farms in the UK generated 27.2% of their capacity, just slightly more than the 26.5% generated by onshore wind farms^{iv}. Oriel cost projections are based on a load factor of 36% and so are misleading. This figure is highly unlikely to be achieved.

Recommendation

The estimates of the amount of electricity generated by the Oriel project (and the amount of CO₂ emissions saved) should be revised in line with the figures for the amount of electricity actually generated from offshore wind farms in the UK, where wind conditions are similar.

14. Cost of Project

Summary

The Oriel Wind Farm developers have underestimated the cost of developing the project. (Total construction costs are estimated at €375-623 million, based on fifty five 4.5MW turbines). Their figures are out of date and out of line with the average cost of offshore development worldwide per MW installed. The full costs of the project need to be re-assessed.

Comment

“Costs for offshore wind power projects over the period 2007 – 2011 are forecast to be 42% higher than ones installed in the previous five-year period”, according to research from leading energy analysts Douglas-Westwood.

Speaking at the **“Pushing Offshore Wind in the European Regions”** conference in Germany (15 June 2007), John Westwood, MD of Douglas- Westwood, said that he expects further cost increases in the next decade citing a number of reasons. *“At present the offshore wind industry lacks the necessary economies of scale and there is insufficient competition in many parts of the supply chain. Installation vessels are a particular case in point with only one major installation vessel operator currently in the market. Bottlenecks will occur and costs will undoubtedly increase. Turbine costs are expected to rise with few major suppliers active in the sector and reliability concerns rising.”* (News Release, Douglas-Westwood **“Cost Increases Challenge Offshore Wind Power Plans”** 15/06/07. (Appendix 4)

The major under-representation of the potential costs of the Oriel Wind Farm proposal leads to the conclusion that if awarded a valuable foreshore lease in Irish waters, the developer will need additional government support to complete the project (ref.Arklow Bank Project).

Recommendation

A revised, independent assessment of the cost of the project should be carried out including the cost of infrastructure, grid connection and back-up secure generation. The final figure should be weighed up against the cost of other potential national strategies to reduce CO₂ emissions and provide security of supply.

Significant landscape impact should be viewed as a heavy external cost in this project. Louth’s unspoilt coastal landscape is a valuable and finite national resource. Other possible environmental costs, such as habitat loss, should also be considered and evaluated.

15. CONCLUSION

We object to the granting of a foreshore lease for the proposed Oriel wind farm in Dundalk Bay

UNTIL

- the outdated Foreshore Act, 1933 has been revised and updated, as agreed by all political parties and the Government
- adequate procedures for public participation have been put in place
- the importance of our seascapes is recognised and statutory responsibility for their protection is introduced
- there is genuine, affordable, easy access to information and public consultation documentation
- photomontages are provided which accurately represent what one would see on site
- systems of ICZM and Marine Spatial Planning are put in place
- an SEA for the Irish coastline is completed
- there is statutory involvement of Local Authorities and a public right of appeal

BECAUSE

- no other country in the world has permitted 6MW turbines 5km from shore
- the development will have a significant visual impact on a scenic landscape of national importance
- it will significantly effect views and prospects listed for protection in the County Development Plan
- potential impact on tourism has not been researched
- the site is of significant importance for protected wildbird species and EIS conclusions on birds are based on limited data
- EIS conclusions on marine life ignore the most recent scientific data on the impact of noise and electromagnetic fields
- the EIS misrepresents the amount of energy which will be produced and hence the potential reduction in CO₂ emissions
- cost of construction is seriously underestimated
- this cost underestimation undermines the validity of the total project
- granting of this lease would be totally out of line with best practice across Europe for the protection of sensitive coastal zones
- awarding of a foreshore lease for this major industrial development in a scenic and ecologically sensitive near-shore area would be contrary to every internationally agreed principle of marine planning.

ⁱ Concerted Action for Offshore Wind Energy Deployment (COD): Legal and Administrative Issues. European Communities, 2005.

ⁱⁱ Public Stakeholders Conference on Maritime Green Paper: Conference Presentation Topic 2; Marine Leisure & Tourism. Mr Paul Keeley, Fáilte Ireland. Available to download: www.maritimegreenpaper.ie

ⁱⁱⁱ The potential impact of electromagnetic fields generated by offshore windfarm cables. COWRIE, 2005.

^{iv} Digest of United Kingdom Energy Statistics 2006, Chapter 7: Renewables, Table 7.4.

APPENDIX 1

COASTAL CONCERN ALLIANCE

Pre-election Campaign Feedback

May 2007

Further to our campaign to bring legislation for construction at sea into line with the land based planning system by:

- reforming The Foreshore Act, 1933
- introducing a right of appeal in relation to foreshore leases
- providing for an extended role for local authorities in relation to the coastal zone
- introducing a system of integrated coastal zone management (ICZM)

Coastal Concern Alliance wrote to all TDs and Party Spokespersons before the recent General Election asking for their position on these four key objectives.

There has been strong support for these objectives with very positive feedback from many key politicians.

This document summarises the key responses.

1. **FIANNA FAIL**

The **Government's Action Programme for the Millennium (1999)** contained a commitment to legislate comprehensively for the integrated management of the coastal zone, comprising the marine area and adjoining lands. According to the Department of the Marine website, "*the new legislation targeted for introduction in the Houses of Oireachtas in the latter half of 2001, was intended to replace the Foreshore Acts and make provision for appeals in relation to Foreshore Leases and for an extended role for local authorities in relation to the coastal zone*".

This commitment formed the basis of our approaches to Fianna Fail.

Mr John Browne,
Minister of State, Department of Communications, Marine & Natural Resources
Meeting 21st April 2007

Mr Browne was aware of the situation in relation to the need for reform of the foreshore legislation. He was supportive of two key objectives (1) Reform of the Foreshore Act and (2) Introduction of ICZM.

Mr Noel Dempsey TD,
Minister for Communications Marine and Natural Resources

Minister Dempsey outlined (8/5/2007) proposed Government strategy as follows:

- "*The Department's Statement of Strategy 2005-2007 indicates that procedures will be developed for enhanced coordination and cooperation between public bodies on the management of the coastal zone.*"
- "*A stocktaking of laws, institutions and agencies/bodies that impact on coastal areas*" has been completed, in line with EU recommendation on ICZM 2002, and will be published shortly. "*This stock take will allow work to commence on the regulatory framework to support an integrated approach to coastal zone management.*"

- *“A consolidation and streamlining of the Foreshore Acts is also proposed. This will modernise these regulatory processes and procedures and provide a modern and effective legal framework for the management of the State’s foreshore estate in the future.”*
- *“A major strategic review of the legislative framework, structures and procedures in place to manage the State owned foreshore” has been commissioned by the Department.*

2. FINE GAEL

**Mr John Perry TD,
Spokesperson on the Marine**

Email, 18th May 2007

“I would like to say that Fine Gael, if in Government, will:

Amend the Foreshore Act to bring planning at sea in line with the land based system. I am particularly concerned about the lack of a right of appeal in relation to these cases. I sat on Sligo County Council for a number of years and I believe there needs to be an extended role for local authorities in relation to the coastal zone. If the local authorities have a greater say in relation to Foreshore Leases then the people of that area will have a greater say, via their public representatives.

I agree in principle with the need for a system of Integrated Coastal Zone Management and also with the idea of holding local public inquiries before any major construction at sea is allowed. I do believe that these issues need to be examined in greater detail, but as I said I do agree in principle.

I hope this clarifies Fine Gael’s position for you and your group members. I would like to take this opportunity to congratulate the Coastal Concern Alliance for bringing this important issue into the public domain.”

3. LABOUR PARTY

**Mr Tommy Broughan TD,
Spokesperson on the Marine**

email, April 12th 2007

“I have repeatedly asked Minister Dempsey and the government to bring forward coastal zone management legislation. If in government, Labour intends to urgently introduce such legislation.”

**Mr Eamon Gilmore TD,
Spokesperson on the Environment**

Phone call to CCA from Deputy Gilmore; 17th May 2007

Deputy Gilmore stated that The Labour Party policy on the Marine, drawn up under the last coalition government, expressed commitment to reforming the Foreshore Act, 1933, introducing a right of appeal, providing for an extended role for Local Authorities and introducing a system of Integrated Coastal Zone Management (ICZM). He stated that Labour in Government would reactivate these policies. He also agreed that no further Foreshore Leases for major construction should be awarded under the current system.

4. GREEN PARTY

**Mr Ciaran Cuffe TD
Spokesperson on Environment and Local Government**

Letter 18th May 2007

Ciaran Cuffe expressed complete support for our four primary objectives. In addition he agreed that no Foreshore Leases for major construction at sea (> 1 hectare) should be awarded without the holding of a local public enquiry, as provided for under The Foreshore Act, 1933 (2.8).

He forwarded to us a copy of the Dublin Bay Bill 2007, a Green Party Bill to make provision for the management, enhancement, proper planning and protection of Dublin Bay.

Mr John Gormley TD
Green Party Chairman

Letter 18th May 2007

Mr Gormley expressed complete support for our four objectives.

In addition he stated "*The Green Party agree that no further foreshore leases for major construction be granted in Irish waters until the Foreshore Act, 1933 has been revised and adequate procedures for public participation introduced*". "*We are supportive of the development of offshore wind, wave and tidal power and hope that a more discerning system will help provide a framework for such development.*"

5. PEOPLE BEFORE PROFIT PARTY

Mr Richard Boyd Barrett

Meeting 17th May 2007

Mr Boyd Barrett expressed complete support for our four key objectives. In addition he agreed that no Foreshore Leases for major construction at sea (> 1 hectare) should be awarded without the holding of a local public enquiry, as provided for under The Foreshore Act, 1933 (2.8).

He commented "*In the Save Our Seafront (Dublin Bay) manifesto we currently call for full public participation and transparency in any area where the land meets the sea. I will propose to the committee that we extend that call to include development at sea / below sea level.*"

He added "*It is outrageous that in an island country, the current regulatory system gives no statutory protection to our seascapes.*"

ENDS

APPENDIX 2

EUROPA NOSTRA DECLARATION ON THE IMPACT OF WIND POWER ON THE COUNTRYSIDE



1. The Council of Europa Nostra, pan-European Federation for Heritage, meeting at The Hague 2004 on 30 September 2004, debated the environmental and heritage implications of the rapidly increasing use of wind-power for electricity generation, and reached the following conclusions.

General considerations:

2. The Council recalled Europa Nostra's statutory commitment to the protection and enhancement of the heritage in all its aspects (immovable and movable, built and natural) in the wider context of the cultural landscape.

3. The Council fully recognised, and shared, the serious international concerns which exist about climate change, as reflected notably in the Kyoto Protocol, as well as the need for all countries to have energy policies which take these into account. It intends to consider progressively the impact on the landscape of all forms of renewable energy.

4. The Council held that energy policies must be comprehensive, addressing both demand and supply problems, and in the latter category considering all forms of energy supply and must in particular focus on a reduction in the emission of greenhouse gases, notably CO₂.

5. The Council considered that many national energy policies do not sufficiently address the demand side, save energy, and promote energy efficiency.

6. The Council believed that greater efforts should be made to promote all forms of renewable energy.

Considerations specific to wind power:

7. Whilst the Council fully supported the drive for renewables, including wind-power, it considered that wind-turbines must be sited in appropriate places.

8. The Council also considered that many countries have so far tended to focus too heavily on wind-power, whether on or off shore. They have provided heavy incentives for its development, relaxed planning legislation, and failed to make a balanced assessment of its merits and demerits, with the consequence that vast areas of beautiful landscape throughout Europe are now dominated by groups of ever larger wind-turbines - every one of which constitutes a small power station - and are thus being effectively industrialised, with consequent serious damage to the natural heritage.

9. The Council held that, in many European countries, a situation is being created in which social, economic, tourism, historical, cultural, wildlife and landscape impacts are being insufficiently addressed in the decision making process relating to wind-power.

10. Against this background the Council took the view that, in relation to on-shore wind-turbines, or groups of wind-turbines, the decision making process of public authorities should include wide consultation; should be based on an understanding of the significance of local landscape character and values; and should for any project always take into account the following considerations:

a) The impact on the local Community

b) The results of a careful and objective analysis of the claims made by the developer, with regard to the saving of greenhouse gases.

c) The degree of visual intrusion, relating this to the character and quality of the surroundings, bearing in mind that modern wind-turbines are eye-catching because they are very large (over 100 metres high and growing), usually prominently placed.

d) The supplementary damage to the landscape, sensitive habitats, water courses, and other aspects of

the environment, caused by the construction process, including the provision of access roads, additions to electricity networks, pylons, and buildings necessary for electricity generation and transmission.

e) The degree to which restoration of the site to its original condition at the end of the working life of the wind-turbines can be guaranteed.

f) The impact on, and proximity to, sites designated internationally, nationally, regionally or locally as protected areas.

g) The impact, on communities in the vicinity of wind-turbines, of noise and infra-sound nuisance, light interception, and/or reduction of property values.

h) An assessment of the need for back-up capacity when the wind-turbines are inactive (i.e. for much of the time), which will usually be gas, thus affecting the claimed benefits of the project in terms of greenhouse gas production and real production costs.

i) The need to treat "repowering" (i.e. replacing existing wind turbines with larger ones) on the same basis as the original project.

11. As regards off-shore wind-turbines, or groups of wind-turbines, some but not all of the above considerations apply. Furthermore, as a general rule, the further out to sea a wind-turbine can be placed, the less it is likely to give rise to objections.



APPENDIX 3

Effects of offshore wind farm noise on marine mammals and fish:

Executive summary

Since the beginning of the planning and installation of offshore wind farms, the possible impacts on marine mammals and fish have been discussed intensively within the public and the scientific community. Especially the noise created during pile-driving operations involves sound pressure levels that are high enough to impair the hearing system of marine mammals near the source and disrupt their behaviour at considerable distance from the construction site. Previous investigations also indicated that the construction phase will have considerable effects on fish species common in northern European waters. The goal of this study was to provide a further assessment on the effects of offshore wind farm related noise on selected marine mammal and fish species.

Measurements of pile-driving noise were obtained as peak sound pressure levels and sound exposure levels in 1/3 octave bands from a jacket-pile construction in the German Bight. Operational noise was measured in peak sound pressure levels and equivalent sound pressure levels in 1/3 octave bands in 110 m distance from a 1.5 MW turbine in Sweden. Based on these measurements, sound levels at various distances from the source were calculated and zones of noise influences were assessed based on published data.

The broad band peak sound pressure level during pile-driving was 189 dB_{o,p} re 1 IJPa (SEL = 166 dB re 1 IJPa².s) at 400 m distance, resulting in a peak broad band source level of 228 dB_{o,p} re 1 IJPa at 1 m (SEL = 206 dB re 1 IJPa².s at 1 m). The 1/3 octave sound pressure level was highest at 315 Hz (peak = 218 dB_{o,p} re 1 IJPa at 1 m) with considerable pressures above 2 kHz. Values for the impact assessment were extrapolated for larger pile-diameters after recent measurements performed in the same area. During operation, the 1/3 octave sound pressure levels ranged between < 90 and 142 dB_{Leq} re 1 iJPa at 1m with most energy at 50, 160 and 200 Hz, at wind-speeds of 12 m/s

For **harbour porpoises** and **harbour seals**, the zone of audibility for pile-driving will most certainly extend well beyond 80 km, perhaps hundreds of kilometres from the source. Behavioural responses are possible over many kilometres, perhaps up to ranges of 20 km. Masking might occur in harbour seals at least up to 80 km and hearing loss might be a concern - on the basis of a regulatory approach - at 1.8 km in porpoises and 400 m in seals. Further, severe injuries in the immediate vicinity of ramming activities can not be ruled out. Operational noise of smaller turbines of 1.5 MW should have only minor influence as the detection radii for both species are rather small. However, since operational noise of larger turbines can not be assessed reliably yet, these results are rather preliminary. It is very likely that larger turbines are noisier resulting in much larger zones of noise influence.

Cod and **herring** will be able to perceive piling noise at large distances, perhaps up to 80 km from the sound source. **Dab** and **salmon** might detect pile-driving pulses also at considerable distances from the source. However, since both species are predominantly sensitive for particle motion and not pressure, the detection radius can not be defined yet. Behavioural effects are possible due to piling noise. The spatial extension of the zone of responsiveness can not be calculated, as the available threshold levels vary greatly. The zone of potential masking might in some cases coincides with the zone of audibility. Also physical effects, like internal or external injuries or deafness (TTS/PTS) up to cases of mortality, are possible in the close vicinity to piling. Operational noise of wind turbines will be detectable up to a distance of app. 4 km for **cod** and **herring**, and probably up to 1 km for **dab** and **salmon**. Within this zone, also masking of intraspecific communication is possible. Behavioural and/or physiological (stress) effects are possible due to operational wind farm noise. However, they should be restricted to very close ranges.

Mitigation measures should include both the source and the receiver. Promising measures include a combination of acoustic isolation of the ramming pile, ramp-up procedures and acoustic deterrent devices.

APPENDIX 4

NEWS RELEASE

Bremerhaven, Germany, 15 June 2007

Cost Increases Challenge Offshore Wind Power Plans

Costs for offshore windpower projects over the period 2007-2011 are forecast to be 42% higher than ones installed in the previous five-year period according to research from energy analysts Douglas-Westwood.

Speaking at the Pushing Offshore Wind in the European Regions conference in Bremerhaven, Germany today, John Westwood managing of Douglas-Westwood said that he expects further cost increases in the next decade citing a number of reasons. "At present the offshore wind industry lacks the necessary economies of scale and there is insufficient competition in many parts of the supply chain. Installation vessels are a particular case in point with only one major installation vessel operator currently in the market. Bottlenecks will occur and costs will undoubtedly increase. Turbine costs are also expected to rise with few major suppliers active in the sector and reliability concerns rising."

One issue stifling supply chain development has been the lack of the continuous stream of projects needed to justify the necessary capital investments.

"The UK which has announced two rounds of projects so far will soon become the world's largest market but must quickly move ahead to announce a third round or risk this potentially important new industry stalling around 2015.

"Germany, which will be the next major market to develop, has potential for excellent domestic supply chain content due to its highly developed onshore windpower industry. It is well advanced with imminent 5 MW turbine production and forward-thinking foundation manufacturing.

"Denmark was the offshore pioneer and its next major wave of projects offer the potential for the country to regain its past position as market leader midway through the next decade.

"Two recent developments give rise to optimism and a boost in activity. The UK's Energy Review stated the intention to increase the ROC (Renewable Obligation Certificate) allocation for offshore windpower from 1 to 1.5 ROCs, and in Germany, there is a new grid

connection agreement whereby grid operators will pay for the connection of offshore windfarms. The effect of both will be to lower overall project costs and encourage investment.

However, turbine reliability remains an issue. "I believe that the root cause of so many technical difficulties in the sector has been the approach of taking relatively unadapted onshore systems into the marine environment where the costs of site access is much higher due to more restricted weather windows."

Moving to commercial issues, the analysts expect an increase in mergers and acquisition amongst supply chain companies as the sector matures. "We also expect to see the eventual emergence of specialised major offshore windpower EPC (engineering, procurement and construction) contractors and their management skills will enable further cost reductions."

END

Douglas-Westwood Limited carries out commercial due diligence work for the financial community and business research, market analysis and strategy work for the international energy industry. Douglas-Westwood has clients in 37 countries and to date over 470 projects have been completed. Clients range from the energy majors and contractors to equipment manufacturers, financial institutions and departments of government in several countries. Douglas-Westwood have completed two studies for the POWER project, one analysing supply chain capability in the East of England region and a second transnational one drawing together work of consultants throughout the POWER regions.

The POWER project unites North Sea regions with an interest in supporting and realising the economic and technological potentials of offshore wind energy. The project assesses environmental and planning as well as acceptance issues of offshore wind farms, supports the development of a reliable supply chain for the sector, and elaborates skills development measures. 37 organisations take part, with representatives from Germany, the UK, Denmark, the Netherlands and Belgium. Transnational co-operation between these regions is creating a North Sea competence network for offshore wind energy.

Further information

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