Queiros J (Joao)

From: [redacted]
Sent: 24 November 2013 12:27
To: Seagreen Phase One Representations
Subject: seagreen offshore wind energy application Project Alpha and Project Bravo
Attachments: seagreen offshore, alpha and bravo.doc

The Scottish Government
Marine Scotland Licensing Operations team
Marine Laboratory
375 Victoria Road
Aberdeen AB11 9DB

Dear Sir/Madam,

Seagreen Wind Energy Limited,
Application to construct and operate two offshore wind farms (Project Alpha and Project Bravo) and associated offshore Transmission Assets in the Firth of Forth. The maximum installed capcity of the proposed offshore wind farm developments would be 1,050 megawatts, comprising of up to 150 wind turbine generators (75 at each offshore wind farm developments), with a maximum height of to blade tip of circa 210 metres from lowest astronomical tide. Further information in the form of an addendum including the Seagreen Phase 1 Offshore Project--Habitats Regulations Appraisal--information to inform Appropriate Assessment, as well as an erratum to the Seagreen Phase 1 Offshore Project Environmental Statement.

I have had the opportunity to look at the many books containing this Application, in the Dundee Central Library, and wish to offer **my objection** to the Application. I attach my objection letter.

With thanks,
Yours sincerely,

[redacted]

[redacted]

23 November 2013

The Scottish Government
Marine Scotland
375 Victoria Road
Aberdeen AB11 9DB

Dear Sir/Madam,

Seagreen Wind Energy Limited
Application for the construction and operation of two offshore Wind Farms (Project Alpha and Project Bravo) and associated offshore transmission Assets in the Firth of Forth. The maximum installed capacity of the proposed offshore wind farm developments would be 1,050 Megawatts, comprising of up to 150 wind turbine generators (75 at each offshore wind farm development), with a maximum height to blade tip of circa 210 metres from lowest astronomical tide.
Further information in the form of an Addendum including the Seagreen Phase 1 Offshore Project--Habitats regulations Appraisal--information to Inform Appropriate Assessment, as well as an erratum to the Seagreen Phase 1 Offshore project Environmental Statement.

Thank you for giving us the opportunity to comment on this Application.
I have looked at the many books which comprise the application, held in the Dundee Central Library.
I wish to **object** to this application for the following reasons:

Unacceptable Environmental Destruction during both the construction phase, and the operating phase.

During the construction phase there will be massive disturbance and destruction to the sea bed, and the noise and vibrations of the construction process will significantly disturb all the fish and sea mammals which regularly use this area both for feeding and swimming to other feeding grounds. The proposed wind farm is so massive that the adverse effects will be highly significant, and this will adversely affect the whole of the food chain for many years to come.

During the operating phase of the wind farms, the vibrations and noise created by the turbine shafts when the blades are rotating, will continue to adversely affect fish and sea mammals, who will predictably try to avoid the area, and lose their feeding grounds. It is well known that noise and vibrations travel greater distances under water than through the air. This is all completely unacceptable.
A number of developing marine businesses on the east coast will lose out, as ecotourism fails, as the dolphins and seals will no doubt become ever more elusive.

In addition, the fishing industry will be adversely affected as the fish will predictably avoid the area. The whole finely balanced marine ecosystem will undoubtedly be adversely affected with long term disastrous effects.

Birds:
During the operating phase, all sea birds will be at great risk of death by collision with the blades, as well as migrating birds which fly to the East Coast of Scotland from Scandinavia and the North in the winter, and from both Scandinavia and wider afield during the summer.
In particular, those birds which dive for the remaining fish will be at risk of death from collision with the blades. These include gannets, guillemots and puffins, all of which fly great distances to seek out fish, and are especially sensitive to any perceived turbulence and disturbance in the sea water, mimicking the natural effect of fish shoals. There will be plenty of turbulence around the 175 turbine array, whether there will be as plentiful fish stocks there or not.

In addition, those migrant birds which fly in summer over the North Sea to the east coast of Scotland, come mainly to feed on the abundance of insects here in Scotland. They help to take care of our annual insect population (including the numerous midges and mosquitoes). It is well known that insects are actively attracted to rotating turbine blades, and will therefore lure those migrant birds to the turbines where they will perish by collision with the blades.
International research results from Sweden and the USA have clearly shown that when turbine blades rotate, heat is understandably produced in the nacelles at the top of the turbines. The heat differential produced by the 175 nacelles in this proposed application, and the surrounding atmosphere, will be very significant.
In the natural turbine-free situation, numerous insects are observed drifting, floating and flying in the air above the sea in such a manner that the term aerial plankton is used to describe this insect behaviour. When a heat source is generated, the insects understandably flow and fly directly to that heat source, and will gather in vast numbers around the turbine nacelles. This phenomenon has been observed all over the world where research observations have taken place.
It is easy therefore, to understand why insect eating migrant birds (and bats) will naturally follow the insects towards the turbine blades and be at great risk of death from collision with the rotating blades.

Bats:
Bats are known to be at particular risk of death from wind turbines.
Bats are a legally protected species in Europe, the UK and Scotland, and it is a criminal offence to kill or injure a bat. This proposed offshore wind farm lies well within the limits of Scottish territorial waters, and therefore Scots Law will cover the whole area of this application. The reason that bats are offered this legal protection is that the population of bats is in serious decline, particularly in the European Union. This is serious because they perform a vital role in the ecological balance of nature. Each bat will eat approximately 3,000 insects each night (including midges and mosquitoes), and they help to take care and control of our insect populations.

During the last few years, Research studies from Sweden have shown that where there are offshore wind farms, which actively attract free floating insects en masse, the onshore resident bats have been observed congregating at the coast until the wind

speed is comfortable for them (lower wind speeds), and then fly out to the offshore wind farms to feed, before the survivors return to land at the end of the night. It is known that bats will fly many miles over the sea to feed like this, and some bats will fly hundreds of miles in migration for feeding. (Prof Ingemar Ahlen of Uppsala University).
Although some bats feeding around wind turbines are killed by collision with the blades, most of the bat deaths are caused by barotrauma, which produces instantaneous massive internal haemorrhaging, mainly in their lungs. (Similar to the bends in deep sea divers). This is due to the fact that as turbine blades rotate, they create an atmospheric vacuum around the blades, and as the small bats approach the insects clustered around and on the blades, they are swept up into this atmospheric vacuum, and barotrauma occurs. (This has been studied by Dr. Erin Baerwald and Colleagues in Calgary, Canada, and widely accepted and confirmed by the scientific community).
Therefore, this application for 2 offshore windfarms, will pose a highly significant risk for the Scottish bat population, and is totally unacceptable, as well as being illegal.

One of the results of this application if approved, will be a continuing surge over the years in the insect population within Scotland, including midges and mosquitoes.
As the adverse effects of these windfarms on the population of insects, insect eating birds and bats are due to the actual functioning and engineering of the turbines themselves, there will be no possible mitigation measures which can be taken.

While carefully searching through the numerous documents comprising this application, I could find no reference to the risk to bats which these wind farms would present. Should I have somehow missed this section within the application, then I apologise.
One problem for the applicant could be the understandable fact that in the absence of any turbines, during the Environmental Assessment, there might not have been many bats detected flying through that area at night, as they would be feeding elsewhere. To detect the presence of bats would have required constant night sailing anyway with infra red technology.
In order to assess the risk to bats from this application, it would be necessary to understand the effect of offshore turbines on insect and bat behaviour, and how the flight patterns of bats alter in the presence of offshore wind turbines.

In the absence of assessing the risk to onshore and offshore bats, then this application could be considered incompetent.

Alternative ways of generating electricity:
I understand that in making planning decisions about electricity generation schemes, particularly where significant harm to our environment may be caused, it is important to consider whether there may be alternative methods available which could prove to be less harmful. I understand also that Scotland already produces enough electricity for our own needs, and that this application would be to contribute to the possibility of exporting electricity elsewhere.
There are already many other methods of renewable electricity generation, in place, and being developed, which are less harmful to the environment, (eg. solar, hydro,

wave and tidal), instead of the already known extensive damage created by wind turbines.

It is also important to recognise that Scotland`s economic integrity depends upon our continuing environmental good health.

It is for all of the above reasons that I **object** to this application.

Should however, this application be unfortunately approved, then I suggest it would be vital for the Applicant to be ordered to arrange for a continuous monitoring of wildlife deaths in relation to the construction and operating of these wind farms, for all birds, all bats and all undersea mammals and fish. The monitoring should be done by an **Independent Ecological Body**, answerable directly to the population of Scotland. This should take place over many years, and will involve constant sailing around the whole area, both by day and by night, as all the corpses will drop into the sea and be washed away. All the results should be peer reviewed and published in the appropriate scientific Journals. This of course should be undertaken at the Applicant`s own expense.
In relation to the illegality of killing bats, I suggest that if a certain number of bats were to be detected to have died through collision with the blades, or by barotrauma, (eg.6 bat deaths), then both wind farms should be dismantled forthwith.

Thank you for considering my objections.

Yours sincerely,
[redacted]