

Energy Consents and Deployment Unit  
Scottish Government  
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150 Broomielaw  
Glasgow  
G2 8LN

21 September 2011



Dear Sir/Madam,

**PROPOSAL: Hunterston Multi-Fuel Power Station**

**APPLICANT: Ayrshire Power Limited**

**LOCAL AUTHORITY: North Ayrshire Council**

**COMMENTS ON: Addendum to the Ayrshire Power Station Section 36 Application.**

I write with reference to the Addendum to the Ayrshire Power Station Section 36 Application above, which contains additional environmental information previously missing from the original Environmental Statement. The Scottish Wildlife Trust's response to the planning application takes account of the Addendum's revised environmental data in conjunction with that which was provided in the original ES.

On 19 August 2010 the Scottish Wildlife Trust lodged an objection to the submission of a planning application from Ayrshire Power Limited for consent to build and operate a power station under Section 36 of Electricity Act 1989.

The main reasons for our objection were:

- 1. The significant damage to the Portencross Coast Site of Special Scientific Interest (SSSI) caused by the construction and operation of the development.** - *The development would destroy nationally important dwarf eelgrass beds and the best intertidal mudflats for feeding wildfowl and waders along the Ayrshire coast. The potential damage to wildlife had been underestimated in the Environmental Statement (ES) and would not be adequately compensated by the mitigation proposed.*
- 2. The increase in Scotland's greenhouse gas emissions during the operation of the (mainly) coal-fired power station** - *This would contribute to global warming, be harmful to the wildlife and people of Scotland and does not accord with the greenhouse gas reduction targets of the Climate Change (Scotland) Act 2009.*
- 3. The indirect negative impacts to biodiversity likely to result from:**
  - an increase in water temperature (caused by thermal discharge) within the Portencross Coast SSSI
  - global warming
  - increase in atmospheric pollution impacting on the raised/blanket bog habitats of two Special Areas of Conservation (SAC) - Dykeneuk Moss and Bankhead Moss

The Scottish Wildlife Trust believes the additional environmental information provided in the Addendum does not adequately deal with our main concerns listed above regarding the significant impacts on wildlife. As an example, the degree of thermal discharge (causing damage to the ecological receptors of the Portencross Coast SSSI) is even greater than we feared and its effects on, and damage to, the Portencross Coast SSSI has not been compensated for in the Addendum.

## Protecting Scotland's wildlife for the future

For the reasons given above, the Scottish Wildlife Trust maintains its **Objection** to the proposed Ayrshire Power Station Section 36 Application.

The following sections detail our specific concerns and should be read in conjunction with our original objection.

### 1. Damage to the Portencross Coast SSSI caused by the construction and operation of the development

#### **Portencross Coast SSSI**

Portencross Coast SSSI (hereafter referred to as Portencross SSSI or the SSSI), which is c. 478 ha<sup>1</sup>, is located on the Ayrshire Coast, close to Fairlie, and contains nationally important dwarf eelgrass (hereafter referred to as eelgrass) beds (*Zostera noltii*). The site was notified in 1971 and the citation describes the site as having: *A great variety of seashore habitats with interesting plants, the best mud flats for wildfowl and waders in the Clyde. Fine exposures of upper Old Red Sandstone ranging from cannon-ball conglomerate to sandstones, with striking outcrops of igneous intrusions and rucked sediments: also fine worn-out platform, caves and cliffs.*

#### **Summary of the Scottish Wildlife Trust's original concerns**

In our original report we estimated that there would be c. 28 ha direct habitat loss of the Portencross SSSI in the Southannan Sands part of the designated site (close to Gull's Walk) and the indirect loss to thermal discharge would result in c. 213 ha of the SSSI being affected (both in Hunterston Sands and Southannan sands) which equates to c. 45% of the Portencross SSSI being lost to construction and operation of the proposed development.

We noted that a paltry 4 ha of habitat would be created at Hunterston Sands by way of compensation.

#### **Addendum clarification?**

Section 5.2.6 - Extracts from the results of modelling of thermal discharge

This section of the addendum states, *inter alia*:

*The extent of the temperature rise in relation to ambient is greatest over Southannan Sands and Hunterston Sands*

and

*The majority of the surface water over Southannan Sands will be increased by 5°C for over 40% of the time with a smaller area being increased for 70%.*

and

*At the surface the water is heated above 10 °C above a mbient for up to 10% of the time over a localised area of Southannan Sands. This is similar for the bed layer.*

and

*The modelling output clearly demonstrates that over Southannan Sands (and this part of the Portencross SSSI) the temperature rise will be significant and persistent.*

and

*It is predicted that temperature sensitive components of the fauna on Southannan Sands would be affected by the temperature rise. Specifically the lugworm, *Arenicola marina* requires water of less than 10 °C in which to spawn. The results of the modelling suggest that such conditions are unlikely to exist over a large*

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<sup>1</sup> The size of the SSSI has been reduced since the original designation due to development.

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*part of Southannan Sands. Hence it is predicted that this species may be significantly adversely affected over a large area of Southannan Sands.*

From the modelling of thermal discharge we can conclude that a large part of the Portencross SSSI in the Southannan Sands area (> 100 ha) will be significantly affected by the operation of the power station beyond the development footprint. Species such as lugworm are likely to be wiped out completely, whilst intertidal algal species are likely to be at their upper tolerance limit. Neither of these impacts has been considered in the context of wading birds and other waterbirds that are reliant on inter-tidal species and this type of habitat for feeding and roosting.

With regard to the effect on Hunterston Sands - we note that it is stated that the ambient temperature rise will be up to 5 °C - although this will be for relatively short periods only, and in general the temperature rise will be mainly in the region of 2 °C above ambient. Although it is stated that Hunterston Sands will not be affected to a significant degree, we believe the delicate operation of transplanting and establishing eelgrass from Southannan Sands will be adversely affected by temperature changes.

Regarding the habitat loss mitigation, it is stated that:

*There is a commitment to attempting transplant of *Zostera noltii* plants from Southannan Sands to an area returned to intertidal habitat on Hunterston Sands from the existing dry dock area. Detailed plans have not been produced but in outline the following approach will be adopted.*

We are slightly alarmed at the wording- *attempting to transplant*- and the fact that detailed plans have not been produced as to how the transplanting will be conducted. Indeed as a 'literature search' is the first line of the approach, we believe that the expertise to deal with the operation may be lacking at this stage. We also do not have confidence that the transplants will be successful, since the eelgrass not only has adapted to a new thermal regime but the species also has to establish in a new area returned to intertidal habitat which is unlikely to replicate the same conditions from which the eelgrass was lifted.

Furthermore, our main concern regarding the allocation of 'like for like' compensatory habitat restoration (to offset the destruction of a substantial part of the SSSI) has not been addressed in the Addendum and 4 ha of habitat restoration work- which may or may not succeed- will not compensate for the destruction of > 162 ha of the SSSI (Southannan Sands) during the construction and operation of the multi-fuel power station. Our calculation does not include the temperature increase in the Hunterston Sands area which will affect the species that are adapted to the present conditions.

***Therefore our original estimate of c. 213 ha of the SSSI being affected (both in Hunterston Sands and Southannan Sands) which equates to c. 45% of the Portencross SSSI being affected does not appear wide of the mark, particularly if the Fairlie Shellfish Water area is included (which forms part of the SSSI and is identified as an area where there will be a significant impact in terms of predicted temperature rises from thermal discharge).***

We also note that the Addendum made no attempt whatsoever to address our additional concerns listed in our original objection regarding the environmental impact of the construction and operation of the development on the ecological receptors of the Portencross Coast SSSI, namely:

- We believe the value of the Portencross SSSI to breeding, wintering and passage migrants has been underestimated
- There has been no attempt to examine bird movements within the SSSI, rather the surveys 'compartmentalised' each habitat
- The value of the site for passage migrants is unknown because the surveys were not undertaken
- The baseline data may have under recorded both bird numbers and bird species present
- The impact of the loss of 28 ha of habitat at Southannan Sands to breeding, wintering and passage birds has not been assessed
- The implications of the habitat loss has not been assessed at a broader scale
- The effects of the change to the intertidal communities and its indirect impact to feeding birds has not been assessed (e.g. lugworm may no longer be present)

## 2. The increase in Scotland's greenhouse gas emissions during the operation of the (mainly) coal-fired power station

### **Summary of the Scottish Wildlife Trust's original concerns**

The Scottish Wildlife Trust believe that if the (mainly) coal-fired power station is consented there is **no guarantee** that carbon capture, transport and storage technology will have been developed to prevent this power station from being a substantial emitter of CO<sub>2</sub>. Operation of the coal-fired power station without carbon capture, transport and storage will be damaging to both the wildlife and people of Scotland.

### **Addendum clarification?**

Section 8.5 states, *inter alia*,

*It is important to note that the proposed APL development is for the construction of an all new high efficiency power station equipped with a demonstration scale CCS capability*

and

*As a result APL has the opportunity to 'future proof' the design of the power station and demonstration CCS plant so as to facilitate later retrofit of CCS to the whole power station in the most cost effective way.*

From what has been stated in Chapter 8 of the Addendum and Chapter 1 of the original Environmental Statement, we can only conclude that once the power station is operational, at best in the near future (because there is no guarantee that carbon capture technology will be in place from the outset), it will only capture 25% of CO<sub>2</sub> emitted.

***Therefore our original concern regarding the mainly coal- fired power station contributing to global warming and hence causing damage to the wildlife and harm to the people of Scotland, still holds true.***

Granting planning consent would conflict with the greenhouse gas emission reduction targets set in the Climate Change (Scotland) Act 2009.

## 3. The indirect negative impacts to biodiversity likely to result from:

- **an increase in water temperature (caused by thermal discharge) within the Portencross SSSI**
- **global warming**
- **increase in atmospheric pollution impacting on the raised/blanket bog habitats of two Special Areas of Conservation (SAC) - Dykeneuk Moss and Bankhead Moss**

As we have dealt with the first two issues in the preceding sections and in our original report, this section concentrates on the effects of the operation of the mainly coal-fired power station on the raised/blanket bog habitats of two Special Areas of Conservation (SAC) - Dykeneuk Moss and Bankhead Moss. We will also comment on what has been stated regarding the effects on the Renfrewshire Heights Special Protection Area (SPA).

### **Summary of the Scottish Wildlife Trust's original concerns**

We believe the assessment of the impacts on the sensitive SACs (e.g. Dykeneuk Moss and Bankhead Moss) has not been set out clearly in the ES. We would suggest that because of the international importance and sensitivity of Dykeneuk Moss and Bankhead Moss, more clarity regarding the potential impacts from atmospheric pollutants is needed in the ES.

### **Addendum clarification?**

Chapter 3 presents the results of the dispersion model using a current UK industry standard atmospheric dispersion model ADMS Version 4.2 to determine the predicted levels of nitrogen dioxide, sulphur dioxide and ammonia deposition at sensitive habitat sites. Four emissions scenarios were presented in Table 3.1.

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Scenarios 3 and 4 assume carbon capture and storage- **we believe these are possible 'future scenarios' that do not present realistic results of the operation of the power station at day 1.**

The conclusions of the modelling state:

*There are three sites that are designated as SACs or SPAs at a European level within 15 km of the site and a further SAC located 16.3 km away. The levels of acidic and nitrogen-containing compounds at all these designated habitat sites were forecast, and assessed against standards, guidelines and critical load values. It was found that levels of these substances due to emissions from the proposed facility were below critical loads, but the combined level taking into account background levels could be above the minimum critical load values due to the elevated background concentrations and deposition rates.*

Table 2-5 FRAME baseline results for various Designated Habitat Sites (four scenarios)

It is stated, *inter alia*:

*The FRAME output indicates that the baseline for all of the sites is currently in exceedance of the critical load for all of the deposition components (i.e. before the emissions from Hunterston are included).*

and

*And finally, in relation to sulphur-related acidity, the baseline value for all of the sites is around three times the critical load. This clearly demonstrates that current levels of deposition at all of the sites are at least approximately equivalent to, or more usually, significantly higher than the critical load.*

With relation to the input data for the sulphur (S) acid calculation for Dykeneuk Moss, Bankhead Moss SAC and Renfrewshire Heights SPA, we would question the validity of the figures used in Tables 2-5. Having compared the data given in the Addendum for each location regarding S acid deposition to that obtained from the Air Pollution Information System (APIS), we believe that the figures used for the existing levels of S acid deposition are incorrect; in some cases there is an order of magnitude difference in what is presented by APIS and what is presented in the Tables. This means that the critical loads for S are not being currently exceeded as stated in the Addendum and that the percentage difference in critical load factoring in the emissions from the power station are higher than what is given in the report (see Tables 6-9).

***We believe the model of acid deposition presented in the Addendum requires further scrutiny as the input values (particularly for S acid) appear to be incorrect. The model in its present state cannot be used to inform the Appropriate Assessment. Therefore the conclusions presented in Section 7 of Chapter 4 of the Addendum (presented immediately below) are not valid.***

- *When considered in isolation, the emissions from Hunterston Power Station will have no effect on the designated sites because they are below the critical load values at each site.*
- *The baseline deposition values for nitrogen and acid deposition at the three SAC sites (Bankhead, Cockinhead and Dykeneuk) are already between 150% and 300% of the critical load values.*
- *The raised bog habitat is likely to undergo very little or no impact because of the modest increase in deposition associated with Hunterston Power Station in relation to the current baseline.*

***Notwithstanding the above, the statement immediately below cannot possibly justify an increase in nitrogen deposition at Renfrewshire Heights SPA:***

*Any increase in graminoid-dominated habitat at Renfrewshire Heights SPA will improve the feeding resource for meadow pipits and the shelter and foraging habitat required by voles and other small rodents with a concomitant increase in the viability of the hen harrier population.*

## Conclusions

***After analysing the further environmental information provided in the Addendum (which did not address all of our concerns listed in our original objection), the Scottish Wildlife Trust maintains its Objection to the planning application from Ayrshire Power Limited for consent to build and operate a power station under Section 36 of Electricity Act 1989.***

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### **We believe:**

- ***The proposed multi-fuel power station will result in significant and permanent damage to the Portencross Coast Site of Special Scientific Interest. The paucity of new habitat created, as part of mitigation, will not compensate for that lost and the development will have a significant and damaging effect on nationally important eelgrass beds and wildfowl and waders that are reliant on this stretch of the Ayrshire coastline throughout the year.***
- ***The operation of the (mainly) coal-fired power station will increase Scotland's greenhouse gas emissions and as such, will be harmful to the wildlife and people of Scotland.***
- ***There may be indirect harmful effects, caused by acid deposition, on European protected sites, such as Renfrewshire Heights SPA and Dykeneuk Moss SAC. The data used in the model of acid deposition appears incorrect and cannot be used to inform the Appropriate Assessment.***
- ***Granting consent to the planning application would be contrary to the Nature Conservation (Scotland) Act 2004, the Conservation (Natural Habitats, etc.) Regulations 1994 and the Climate Change (Scotland) Act 2009.***

The Scottish Wildlife Trust would like to be kept informed of the progress of this planning application.

Yours faithfully,



**Dr Maggie Keegan**  
**National Planning Co-ordinator**