Shetland HVDC Connection

Consultation Report

Scottish Hydro Electric Transmission Limited

Proposed
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This Report was produced for Scottish Hydro Electric Transmission Limited by Entec, the commissioned environmental consultants for the project, and provides an overview of the consultation undertaken for the proposed Shetland HVDC Connection.

The purpose of this report is to present the findings and assessments carried out following the consultation exercise. This Report will be made available to the public.

CONTENTS

1 THE CONSULTATION PROCESS

1.1 Introduction

1.1.1 In March 2008 Scottish Hydro Electric Transmission Limited (SHETL) consulted on its proposal to install a new high voltage offshore electricity transmission link between the Shetland Islands and mainland Scotland to accommodate power from proposed windfarm developments on Shetland that have applied for connection to the grid. This Report is intended to provide a summary of the consultation process, and an update on the current status, to all those who have expressed an interest in the project.

1.1.2 The purpose of the consultation was to seek the views of the various statutory consultees, other relevant interested parties and the general public on the proposed project. This information is intended to assist in the development of the proposed route. The consultation is part of a voluntary consultation process being undertaken by SHETL in advance of any application for the proposed development and follows current best practice. It builds on a preliminary consultation exercise held in autumn 2007.

1.1.3 A Consultation Document[1] was published by SHETL in March 2008 describing the background to the project, the scope of the proposal and the various options being considered. This document was issued to a range of statutory consultees and other stakeholders as listed in **Appendix A**. The Consultation Document was also made available at the following website *www.scottish-southern.co.uk*.

1.1.4 In addition to the preparation and circulation of the Consultation Document, a series of public consultation exhibitions was undertaken as follows:

- Tuesday 25 March 2008, Fisheries College, Scalloway.
- Wednesday 26 March 2008, Buckie High School.
- Thursday 27 March, 2008 Keith Community Centre.
- Tuesday 8 April 2008, Whiteness and Weisdale Hall (this was re-scheduled from 24th March 2008).

1.1.5 The public consultation exhibitions were widely advertised in the local media (The Shetland Times, Shetland News, Banffshire Journal, Banffshire Herald, Banffshire Advertiser and the Northern Scot), combined with over 60 posters displayed in local community facilities and shops.

1.1.6 The original Weisdale exhibition was cancelled due to adverse weather conditions that had prevented the project team from travelling to Shetland and this was communicated via Shetland Islands Broadcasting Corporation (SIBC) and Radio Shetland. SHETL's Shetland Depot Manager was also interviewed on Radio Shetland to explain the situation. The re-scheduled Weisdale exhibition was advertised in the Shetland Times and Shetland News.

1.1.7 As a result of rescheduling the Weisdale exhibition the consultation period for Shetland residents was extended by two weeks.

1.1.8 The four public consultation exhibitions were all attended by the SHETL Project Manager, SHETL Wayleave Officer and the Project Manager of Entec UK Ltd (the environmental consultancy assisting SHETL in identifying and assessing the options for the HVDC connection). Comments sheets were made available at the exhibitions and attendees were encouraged to complete and return these or to respond directly to SHETL by writing to Dr Keith MacLean, Head of Sustainable Development. Responses to the consultation were

[1] Proposed Shetland HVDC Connection – Consultation Document, SHETL, March 2008

invited to be made until 25th April for the Scottish mainland community and until 9th May 2008 for the Shetland community, although representations made beyond these dates have been considered in this Report on Consultations.

1.1.9 In addition to the postal address, an email address, *shetland.project@scottish–southern.co.uk* was created and publicised.

1.1.10 A statutory consultation will follow as part of the consent application process.

1.2 Identification of a Proposed Route

1.2.1 There is currently no grid connection between Shetland and the Scottish mainland. SHETL has therefore explored available potential connection options in order to identify in the first instance a draft route and then, following this consultation and further environmental studies, to select a proposed route for which applications for consents will be made.

1.2.2 The draft route for the Shetland HVDC Connection is as follows:

- a converter station located on Shetland in the Upper Kergord Valley with an underground HVDC cable connection to a landing area in Weisdale Voe;
- an HVDC subsea (marine) cable connection from Weisdale Voe to Portgordon, on the Scottish mainland;
- an underground HVDC cable connection from Portgordon to a converter station located adjacent to Blackhillock substation and an AC grid connection to the existing grid network at Blachillock.

1.2.3 Whereas the Consultation Document showed the identified Shetland landing point on the eastern side of Weisdale Voe, the project team had concluded shortly after the Consultation Document was issued that the landing point required to be accessible to deeper water that could accommodate a significantly larger cable laying vessel than first considered. This effectively ruled out the landing point identified on the eastern side of the voe. Alternative landing points on the western side of the voe, in the Cott area, were assessed to be suitable for the larger cable laying vessels considered. This alternative proposal was discussed at each of the public meetings held on Shetland.

1.2.4 The analysis of responses to the consultation on the draft route for the Shetland HVDC connection forms one part of the process by which SHETL will identify its proposed route. In deriving the proposed route option to take forward, SHETL will also carry out further environmental surveys, marine surveys and technical appraisals and take account of environmental, economic, operational and technical factors, in addition to the consultation responses received.

1.2.5 The Report on Consultations highlights the key issues raised during the consultation process and explains how SHETL intends to address these in terms of the scoping of the environmental and technical studies. The implications of the consultation exercise for the scoping process and proposed marine surveys are summarised in **Section 3**.

2 ANALYSIS OF CONSULTATION RESPONSES

2.1 Responses from Key Stakeholders

2.1.2 The proposed Shetland HVDC connection will need to obtain a number of statutory consents in order to be delivered. These statutory consents are detailed in Table 1.1 of the Consultation Document and summarised in Appendix B of this report. As such, those organisations that have an important role in the consenting process – either in determination or consultation - are considered to be the key stakeholder organisations for the project. A summary of the responses received from these stakeholder organisations is set out below.

2.1.3 In terms of Scotland-wide organisations, responses were received from a number of government agencies, including Fisheries Research Service (FRS), Historic Scotland (HS), Scottish Environment Protection Agency (SEPA) and Scottish Natural Heritage (SNH). No responses were received from any of the Scottish Government's departments.

2.1.4 **Fisheries Research Services (FRS)** provided general comments to assist in finalising a route for the sub-sea cable and clarified the legislative position in relation to the sub-sea works proposed. FRS confirmed that the laying of sub-sea cables is specifically exempt from the Food and Environment Protection Act (FEPA) 1985. As a result, FRS has no statutory locus with respect to the deposit of cables, either unprotected or installed with a water jet or plough. However, a FEPA Part II licence would be required for the deposit of material to protect the cabling, such as concrete or quarried rock or for the dredging of seabed material. Also, consent under Section 34 of the Coast Protection Act 1949 will be required for the laying of the proposed cable. As the detail of the route is developed a further review of the potential impact of the proposed sub-sea works on spawning sites, nursery sites, fish and shellfish farms and shellfish growing waters will also need to be undertaken.

2.1.5 **Royal Navy - Fleet Command** had no objections to the proposed development and requested to be kept up-to-date with the progress of the proposed development.

2.1.6 **Maritime Coastguard Agency (MCA)** foresaw no problems with the development, but sought some minor clarification in relation to the appraisal of Shetland route corridor options.

2.1.7 **Northern Lighthouse Board** had no objections, but noted that any marking or lighting of apparatus may have to comply with the Coast Protection Act 1949: Section 34 consent process.

2.1.8 **Historic Scotland (HS)** confirmed that the environmental baseline information provided in the Consultation Document corresponded with their records. HS confirmed that they were satisfied with the chosen option and advised that contact was made with the Councils' Archaeology service for comments on unscheduled archaeology. HS made reference to their previous advice to the project on the assessment of archaeology and the development of mitigation, and to the JNAPC Code of Practice for Seabed Development.

2.1.9 The **Scottish Environment Protection Agency (SEPA)** noted the complexities of the licensing regimes in place for a project of this nature and confirmed its key interest as being the prevention of pollution on projects of this scale. SEPA's response detailed a variety of mitigation measures which can be utilised to avoid pollution, for example, in relation to sediment and mineral oils or concrete production. SEPA provided further general advice with regards to Flood Risk, Air Quality, Waste, Borrow Pits and Waterbody Engineering.

2.1.10 Discussions between the project team and Shetland-based SEPA officers in March 2008 indicated that the draft underground HVDC cable route shown in the Consultation Document

as generally following a route to the east of the Weisdale Burn between Kergord and the identified landing points on the east side of Weisdale Voe would cross the Burn and other smaller watercourses at several points. SEPA advised that this would not be consistent with the objectives of the Controlled Activities Regulations (known as the CAR regulations) which sought to protect watercourses from development. However, a route to the west of Weisdale Burn would minimise potential crossings of watercourses and would better serve the new landing point sites identified in the Cott area on the western side of Weisdale Voe.

2.1.11 While the underground HVDC cables would be subject to control under the CAR regulations, SEPA noted that proposals for sub-sea developments such as the sub-sea sections of the proposed HVDC cable are not regulated by SEPA under CAR, but instead by the Fisheries Research Services under the Food and Environment Protection Act 1985.

2.1.12 **Scottish Natural Heritage (SNH)** acknowledged that the development is suggested as a National Development within the National Planning Framework – Discussion Draft published by the Scottish Government. SNH therefore recommended that the development is subject to review and assessment of strategic options supported by the process of Strategic Environmental Assessment (SEA). This was addressed by the Scottish Government's Strategic Environmental Assessment – Supplementary Assessment of Candidate National Developments in September 2008. SNH also noted that the proposal to route the proposed HVDC cable underground requires neither planning permission nor permission under Section 37 of the Electricity Act 1989. While SNH had concerns with regards to the apparent lack of regulatory control or a statutory Environmental Impact Assessment (EIA), they welcomed the commitment from SHETL to include the underground sections of the proposed transmission line within an overall environmental assessment process.

2.1.13 SNH confirmed that the environmental baseline was generally comprehensive and the appraisal of options was thorough, but asked that further assessment of some route options be undertaken prior to selecting a proposed route. SNH noted that the potential environmental sensitivity of the Weisdale Voe and the Spey Bay SSSI at Portgordon West might preclude the routeing of the subsea cable and recommended that further assessment and comparative appraisal of alternative landing point locations at Dury Voe (Shetland) and Portgordon East and Sandend Bay (Moray) be carried out prior to the selection of the proposed landing points. SHETL subsequently agreed to consider further an alternative landing point at Sandsound Voe, a short distance to the west of Weisdale Voe[2], and Portgordon East[3].

2.1.14 **The Crown Estate** provided within their response a plan identifying the location of the proposed cable in the context of existing marine infrastructure and aspects, such as protected wrecks. The Crown Estate confirmed that, as a result of the comprehensive nature of information submitted, coupled with the level of detail and accuracy, they were confident that SHETL is aware of the issues at hand.

2.1.15 The **Health & Safety Executive (HSE)** had no comments to make on the proposals other than to highlight that they would expect full consultation with operators of pipelines in the

[2] Information on seabed conditions on the east coast of Shetland indicated that rock was the prevalent substrate and therefore burial of the subsea cable might not be practicable. Compared to a Laxo landing point, the Sandsound landing point offers a shorter subsea route and potentially reduced environmental constraints.

[3] The alternative landing point at Sandend Bay was not taken forward due to the substantially increased length of underground HVDC cable required compared to the Portgordon route

vicinity of the planned route so that suitable agreement can be reached regarding any possible encroachments on existing infrastructure.

2.1.16 The **Royal Society for the Protection of Birds (RSPB)** acknowledged that the proposed development is required to facilitate renewable energy developments of any appreciable size in Shetland and provided a number of general comments in relation to their preference for construction operations taking place outwith bird breeding seasons.

2.1.17 RSPB considered that SHETL's identified site for the converter station on Shetland, in general terms, is the most suitable, however a request was made that further consideration be given to utilising Dury Voe as a site for landfall due to the fact that it has less marine natural heritage interest than Weisdale Voe. RSPB had no objection in principle to the identified option of making the mainland landfall at Portgordon with the connection to the mainland grid network at Blackhillock.

2.1.18 RSPB supported the use of underground cabling rather than overhead transmission lines and commented that the route for the underground cabling should be carefully chosen.

2.1.19 **Royal Yachting Association** had no objections.

2.1.20 No responses were received from either **Shetland Islands Council** or **The Moray Council**. Meetings held with planning officers from both councils during May 2008 confirmed that responses to the consultation would not be forthcoming as these were considered to potentially compromise their position in respect of any future planning applications for the scheme that they may be required to determine. Both councils would, however, respond to the separate Informal Scoping process being undertaken by SHETL with the statutory consultees.

2.1.21 **Shetland Amenity Trust (SAT)** confirmed that they are happy with the level of consultation which had been carried out on the project to date, but expressed disappointment in the level of work presented on the topic of Cultural Heritage/Historic Environment in the Consultation Document given their knowledge that a detailed archaeological survey had already been undertaken by the project team[4].

2.1.22 SAT confirmed that their preferred route option would be a corridor from Laxo (landing point) to Kergord (converter station). The route option through Nesting would be the most unsuitable. SAT confirmed that future environmental assessment should provide archaeology information of the area based on desk-based assessment and walkover surveys, and should provide appropriate mitigation strategies to minimise impact on any archaeology encountered.

2.1.23 **Seafood Shetland** identified the three active shellfish sites in the Weisdale Voe area and raised concerns in relation to the impact of the proposed development on their current members operations and the impact of the proposed development on the environmental and economic wellbeing of the environment in the area[5].

2.1.24 **Shetland Aquaculture** summarised the marine issues to be addressed as being any direct impact on the fish stock in the area during cable laying operation through sediment disturbance, and the potential for restriction of activities once the cable is laid such that any

[4] In order to keep the Consultation Document to a manageable size, the level of detail reported for each environmental topic area had to be kept to a summary overview. Significantly more comprehensive data had been collated for each environmental topic area including for archaeology and Cultural Heritage and the Historic Environment, and the summary overviews in the Consultation Document were drawn from this more comprehensive body of knowledge.

[5] The draft sub-sea HVDC cable route set out in the Consultation Document had taken account of the location of these shellfish sites, which would be avoided

exclusion zone might deny fish farms the ability to vary or expand their activities. While the issues relating to fish farming would be similar in most areas, it was noted that Weisdale Voe is a much more intensively used production area for farmed fish than other parts of Shetland. Potential impacts on water quality and their effect on the Kergord Hatchery were also raised.

2.1.25 The **Shetland Fishermen's Association** sought a meeting with SHETL to discuss the routeing of the subsea cable so that surveys and cable laying does not impinge on fishing operations, and recommended local liaison to keep disruption to a minimum. The Association recommended that the subsea cable should be buried to ensure vessels cannot snag the cable and that no debris is exposed during cable laying which could be a snagging hazard to the fishing fleets

2.1.26 These consultees, identified in Section 2.1, are classed as 'Other Key Consultees/ Stakeholders' in Diagram 1 and in Tables 1 and 2.

2.1.27 As discussed in Section 1.4 of the Consultation Document, there is no over-arching consenting process or single responsible organisation that covers an entire project such as the proposed HVDC scheme. Similarly, under the present consenting arrangements the requirement for EIA of the scheme must be assessed according to the particular remit of the various organisations. That is, the need for EIA of the terrestrial aspects would be considered by each of the two planning authorities (Shetland Islands Council and The Moray Council) as affected in their areas, and the marine aspects by the Fisheries Research Service. There are no significant environmental impacts and the proposed underground HVDC cables would be Permitted Development, requiring neither planning permission nor EIA. However, an Appropriate Assessment under Regulation 48(1) of the Habitats Regulations may be required if there was any potential for adverse effects on any Natura 2000 site. The consents required are summarised in Appendix B.

2.2 Responses from the General Public

2.2.1 A total of 86 members of the general public responded to the consultation. Please refer to Table 1 below for an overall breakdown of responses.

2.2.2 As far as more specific converter station location and cable routeing issues were concerned, three (3%) expressed support for siting the converter station at Kergord, 56 (65%) expressed no opinion on the location of the converter station, and 27 (31%) of the members of the public who responded to the consultation expressing opposition to this location. Those objecting to the Kergord site did not offer alternative locations. The proposed route of the cable corridors was supported by 19 (22%) of general public respondents; 49 (57%) expressed no opinion and 15 (17%) of respondents opposed the route. An alternative cable corridor on the east coast of Shetland was suggested by 3 members of the general public (4%) who responded to the consultation, however, information received regarding seabed conditions on the east of Shetland indicated that burial of the subsea cable is unlikely to be practicable due to the prevalence of rocky substrate.

2.2.3 With regard to the landing points for the cable, 79 respondents (92%) expressed no opinion, with 4 of the general public objecting to the proposed landing points (5%). Alternative landing points were suggested by 2 members of the general public (2%). The marine route of the cable was supported by 1 member of the general public (1%) with 82 (95%) of the general public expressing no opinion on the sub-sea route of the cable and 2 members of the general public (2%) objecting to the sub-sea route.

2.2.4 In terms of responses on the more detailed environmental aspects of the project, 33 members of the general public (38%) raised concerns regarding the potential landscape and visual impacts arising from the project. Potential impacts arising on cultural aspects of the environment were a concern to only 1 member of the general public (1%) who responded to the consultation, with 14 members of the general public (16%) having a concern about the potential impacts on ecological receptors, and 29 members of the general public (33%) concerned about impacts on watercourses and hydrological receptors.

2.2.5 Potential socio-economic impacts were of concern to 29 members of the general public (34%), with potential transport impacts of concern to 23 members of the general public (27%). Potential marine fisheries impacts were raised by six members of the general public (7%), with other aspects of the marine environment raised by three members of the general public (4%). Issues which were outwith the scope of any of the environmental areas outlined above were raised by 45 members of the general public (52%) who responded to the consultation.

2.3 Summary Analysis of Consultation Responses

2.3.1 Consultation responses were received in the form of e-mails, letters and exhibition comments sheets. A formal approach to processing these consultation responses was taken whereby each response was logged and categorised into respondent types (Organisations, Community Councils, Landowners, General Public, Other Key Consultees and Stakeholders, Politicians) to enable the broad range of views expressed and issues identified to be captured.

2.3.2 Consultation responses that were received by post or email after the exhibitions were sent acknowledgement letters by SHETL, with more detailed responses provided where specific questions had been raised.

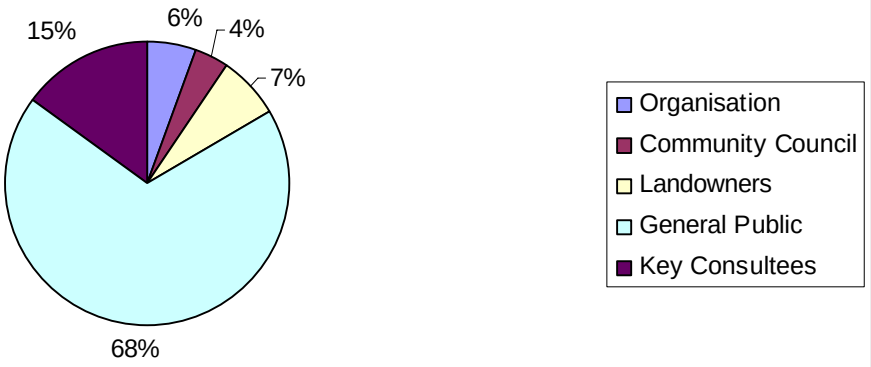
2.3.3 All consultation responses were copied to the project's environmental consultants to allow a more detailed analysis and objective appraisal to be conducted. This involved each response being reviewed to identify the issues raised, which were then listed under a range of key topics to facilitate analysis.

2.3.4 The number of people attending the four public consultation exhibitions was estimated[6] to be as follows:

Tuesday 25 March 2008, Fisheries College, Scalloway - 61.
Wednesday 26 March 2008, Buckie High School - 25.
Thursday 27 March 2008, Keith Community Centre - 28.
Tuesday 8 April 2008, Whiteness and Weisdale Hall – 73.

2.3.5 Responses were received from a total of 126 respondents by 30th June 2008 with the majority of respondents, 86 (68%)), being members of the public as shown in **Diagram 1**. The second largest respondent category was "Other Key Consultees/Stakeholders" totalling 19 (15%), with the remaining respondent categories collectively totalling 21 (17% when rounded up).

Diagram 1 Type of Respondent



2.3.6 The majority of respondents (76 (60%)) were based on Shetland with the remainder (50 (40%)) based on the Scottish mainland. Mainland-based organisations that have a

[6] The number of visitors was counted every 15 minutes. The average of each adjacent pair of 15 minute counts was taken and these averages summed to give the total number of visitors.

national remit (such as Scottish Natural Heritage and Historic Scotland) comprised 13 (26%) of the total mainland-based respondents.

Table 1 - Analysis of Respondents			
Source	**Category**		
Correspondent Type	Object to HVDC Scheme	Support HVDC Scheme	Neither directly support nor directly object to HVDC Scheme
Organisations	2	1	4
Community Councils	0	0	5
Landowners	3	0	6
General Public	27	6	53
Other Key Consultees and Stakeholders	1	1	17
Totals	**33 (26%)**	**8 (6%)**	**85 (68%)**

2.3.7 **Table 1** shows the overall views expressed according to each category of respondent. The data are presented for information only as the consultation did not specifically seek such an overall view. The data therefore reflect those views voluntarily and directly expressed by respondents, as well as those that were interpreted by SHETL as indicative of indirect support or objection to the scheme. Those that could not be interpreted either way were identified as being "Neither Directly Object/Support the HVDC Scheme". Of the 85 respondents interpreted to fall into this latter category, many raised points of a technical nature that highlighted potential constraints to the project. The approach to interpreting these was that it was equally valid that such constraints could reflect a potential objection on those technical grounds or that, apart from those technical grounds, the overall view on the HVDC scheme was potentially supportive. The key conclusion derived from the data set out in Table 1 is that the data did not provide any definitive conclusions for the development of the HVDC scheme. Importantly, the data did not indicate to SHETL an overwhelming objection to the HVDC scheme that should require the company to review the overall approach presented at Public Consultation.

2.3.8 Comments received after 30th June 2008 have not been included in this analysis but will be considered as the project develops. Requests for additional information have not been included in the statistics.

2.4 Summary of Key Comments and SHETL Responses

2.4.1 **Table 3** identifies the key comments raised in consultation responses relating to the various core elements of the HVDC project. These comments are listed geographically by main project elements, starting from the converter station at Upper Kergord and working south to the converter station location at Blackhillock on the Scottish mainland.

2.4.2 Issues raised by some consultees regarding the principle of the HVDC scheme have not been addressed in Table 3. This is because SHETL has an obligation under the terms of the Electricity Act 1989 to provide an appropriate grid connection where this is formally requested

and comments regarding the proposed windfarm developments on Shetland are outwith the scope of this consultation.

2.4.3 In overall conclusion, the significant environmental or technical issues raised during the consultation have been, or are being, assessed by SHETL. However, in response to SNH's request to give further consideration to alternative landing points in the event that the proposed landing points were subsequently found to be unviable, SHETL agreed to give further consideration to landing points at Sandsound Voe on Shetland and Portgordon East on the Scottish Mainland.

2.4.4 The Next Steps for the Shetland HVDC proposed connection are discussed in **Section 3**.

Table 3 Key Consultation Issues (organised by HVDC Project Elements)

General	
Response Received	**SHETL Comment**
Consultation - Negative Feedback Consultation Document could have been more plainly written with facts and assurances	SHETL has consulted early with local communities in order to help the community contribute to the consultation in an informed way. As such, some of the more detailed questions asked can only be addressed as the project develops
The Buckie meeting was badly promoted	SHETL placed advertisements in the Northern Scot, Banffshire Advertiser, Banffshire Herald and Banffshire Journal as well as posters in 16 shops and public buildings in Buckie and Portgordon and as such, we believe that the event was more than adequately publicised.
Depth of feeling of the local communities has not been fully recognised	One of the purposes of the public exhibition was to gain feedback from the community
SHETL representative unable to speak at Moray Firth Partnership Conference	Noted
Ethical constraints have been missed out	Noted
Consultation – Positive Feedback Exhibition was very good and it gave people the chance to ask questions	Noted
Capacity Does HVDC have the capacity to allow a firm grid connection for a five turbine 4.2MW windfarm on Yell? Scheme should leave room for future generation	All potential developments should apply for a connection as soon as possible so that their requirements can be incorporated in the final design
Finance Would like to see details of the cost of the HVDC connection and how much will be paid to use it in the future. Is this fixed or will Viking be at the mercy of SHETL	Detailed design is still ongoing so final costs are not yet certain given the single circuit solution that SHETL is proposing. The scheme will operate under the 'Use of System' agreements between SHETL and National Grid and between National Grid and Viking

Response Received	**SHETL Comment**
Shetland Grid Connection 75% of local load will go to Lerwick requiring pylons (wood or steel with design capacity of 50MW Not dealt with in consultation Ability of Shetland grid network to ensure a secure source of green energy for local consumption What are SHETL's plans for the existing 33kV substation at Voe	This will form part of a separate exercise when SHEPD, the local network operator, applies for a connection and does not form part of this consultation.
SHETL should reveal what losses of power there are likely to be between Shetland Converter Station and connection to the UK grid	The design of the HVDC converters and cable is ongoing during the tender process. Manufacturers are designing a scheme that maximises the economic balance between operating voltage, maximum current and circuit losses. It isn't possible to provide exact figures at this stage, but losses are expected to be around 6%
Concern that the cable will be used in the future to export electricity from a nuclear power station	SHETL cannot comment on this. The purpose of this consultation exercise is for a wind generation connection.
Does the project exacerbate the situation where the Beauly to Keith power line is needed to accommodate further windfarms in the Moray area?	This project forms part of SHETL's integrated review of the main interconnected transmission system
There should be improvements to supply stability as a result of connection to the National Grid	Noted
Once the project is finalised there should be another set of exhibitions	Noted, further exhibitions will be held during 2009
What price for Shetland's environment and cultural heritage	Noted
No Industrial Estate should be established in Weisdale	SHETL is seeking to minimise the environmental impact of the HVDC scheme through careful environmental and engineering design and consultation
Sustainable energy is about decentralisation, not large schemes like this	Noted, however SHETL has a legal obligation under the Electricity Act (1989) to develop a grid connection for the Viking scheme
Cable engineering queries (number, voltage, current, diameter and resistance)	As yet these answers cannot be defined. SHETL will be carrying out design and installation tender exercises with the leading HVDC experts world wide to ensure the most cost effective and environmentally acceptable solutions are developed.
Single circuit 550MW would cost £250 million	The project is currently undergoing a competitive tender process

Converter Station and the proposed site at Upper Kergord	
Response Received	**SHETL Comment**
Screening Potential for screening is reason for proposed site selection	Kergord offers the opportunity to provide extensive natural landform screening for the Converter Station as well as having the advantage of being geographically close to the centre of the proposed Viking wind farm and well located for a number of potentially suitable landing points. Tree planting at the Kergord site is seen as an opportunity for habitat creation with Kergord / Weisdale being the only part of Shetland able to support woodland. The proposals do not rely on tree planting to provide acceptable screening of the converter station.
Existing shelterbelt is collapsing and will not adequately screen Converter Station	The existing shelterbelt at Upper Kergord, which is suffering from wind throw, would only play a minor role in screening the converter station from views from the B9075
Time taken to grow trees for screening	SHETL recognises the slow rate of growth of trees in the Weisdale/Kergord valley. Tree planting is seen as an opportunity for habitat creation rather than screening
Should blend with surroundings as far as possible	This is recognised as a key design objective for the converter station
Size of Site Large in rural terms	Initial assessment suggests that, apart from hilltops such as Mid Kame and Scalla Field, the converter station will be well screened.
Access / Road Widening Roads will not be improved but rebuilt B9075 is not suitable for large vehicles New roads will have to be built Disruption of busy shortcut from West to North Shetland Weisdale side of the valley would be too disruptive to houses along the valley	Road assessments have been carried out and there may be scope to utilise one of the access roads proposed by Viking rather than upgrade the existing Upper Kergord road thereby reducing environmental impact. Other modifications to the roads network will be required to bring the various plant and machinery from the chosen harbour facility. Again, opportunities to utilise roads upgraded by Viking will reduce environmental impact
Noise Aural impacts of the Converter Station will be large	Operational noise impacts from the Converter Station will be minor and controlled by the plant design and building envelope

Response Received	**SHETL Comment**
Location of Site Other sites near Voe should be considered If no other land fall / converter site options are to be included in any future EIA then SHETL will not be complying with EIA Regs.	Alternative sites were considered as part of the route selection process and the most suitable potential sites are discussed in the Consultation Document. The site at Upper Kergord performed best in these assessments. SNH comment that the Kergord site is the most acceptable with regard to landscape and visual impacts
Peatland Disturbance Destruction of peat during building, will release CO_2 into the atmosphere	Peat survey work undertaken for the Viking project suggests that the Upper Kergord location is not affected by deep peat. However, extensive peat is likely to be required to be excavated given the scale of the Converter Station and a Site Waste Management Plan with respect to peat will be developed to ensure environmental impacts (including carbon footprint) are minimised.
Health risks From Converter Station building	The converter will be designed to comply with noise and electromagnetic compatibility requirements
Proximity to properties	The converter station site at Kergord is remote from residential properties
Ecology Least favoured for ecological reasons	SNH has noted their agreement that the converter locations in the Kergord valley and Blackhillock are appropriate. RSPB commented that Kergord Converter Station is in general terms the most suitable and they noted their concerns for other converter station sites. Both SNH and RSPB support SHETL's assessment that Kergord has relatively low ecological sensitivity.
Utilisation of heat produced from Converter Station Heat produced will be lost - possibility of use in district heating	The amount of heat produced by the converters will not be known until the design process is complete. SHETL recognised the potential to make positive use of any heat produced by the converter station and appointed a heat recovery consultant to assess potential opportunities, however none of these were commercially viable. SHETL would be interested to hear from other potential users of any heat . The location of the converter station is, however, more strategic to the potential cable landing points and underground corridors as well as the location of the Viking wind farm. Kergord offers an effective central location for these related factors, as well as offering a high level of natural screening for what will be a large building in the Shetland context.
Objection to site with no reasons given	Noted

Response Received	**SHETL Comment**
Alternative sites suggested Site should be up past Upper Kergord away from houses	Alternative Converter Station locations across the central mainland, including the Voe area, have already been considered and rejected as they do not have the same level of environmental advantage that the Upper Kergord location offers, particularly with respect to natural screening and a strategic central location to the Viking wind farm The converter station site at Kergord is remote from residential properties The location provides substantial natural screening, particularly from residential properties in Weisdale
Site at Setter Objection to using Setter for anything other than a lay down yard Visible from the road for those travelling in both directions What was the reason for the Converter Station moving to Setter?	The potential to locate the Converter Station at Setter was raised by a local landowner. The site was investigated and assessed using the original appraisal criteria and was considered to have a poorer environmental performance compared to Upper Kergord, particularly with regard to landscape and visual impact – the Setter site being very prominent in views throughout Weisdale
Support of site at Upper Kergord Preference for Upper Kergord site expressed due to: - further away from settlements than other sites examined - lesser noise impact than other sites examined - less disruption during construction that other sites examined - surrounding hillocks reducing the visual impact	Accepted. Upper Kergord is substantially better location than Setter being more remote from housing and having better natural screening. Operational noise impacts will be minor and controlled by the plant design and building enclosure. SNH deemed the proposed location appropriate
Photomontage – would have been helpful	At this stage in the project, many of the key engineering details are still being considered at a strategic level and photomontages at this stage could potentially be misleading.
AC links from Viking Substations Should be shown	These AC links are part of the windfarm development and have not yet been designed in detail by Viking. As such, they are outwith the scope of this consultation

Response Received	**SHETL Comment**
Questions Asked Where is the soil that will have to be removed going? Removal of soil, management of drainage, source of concrete and hardcore and location of quarries	At this stage in the project, many of the key engineering details are still being considered at a strategic level
How is drainage to be managed?	Due to its location at the top of the water catchment for the Weisdale Burn and the scale of the converter station, it will be essential to ensure the converter station and cable design and construction techniques will incorporate mitigation to manage impacts to water quality in the burn.
Where is the concrete and hardcore to come from?	SHETL will make use of the borrow pits and concrete batching plants proposed by Viking.
Where is the quarry/ quarries and how many tonnes of stone are needed for the construction of the road up the valley to the converter station	Viking will develop the access track.
What compensation will be available for landowners, tenants and fishermen	This will be negotiated with the affected parties
Watercourses Converter station, cable track and jointing bays will have effect on Weisdale Burn due to silt run-off from disturbed ground, affecting wild fish population, local hatchery and water quality in the voe	Due to its location at the top of the water catchment for the Weisdale Burn and the scale of the converter station, it will be essential to ensure the converter station and cable design and construction techniques will incorporate mitigation to manage impacts to water quality in the burn.

Proposed Shetland Underground Cable Route	
Response Received	**SHETL Comment**
Landscape and Visual Cable track will leave permanent and unsightly scar running the length of Weisdale	SHETL is confident that the cable routes can be successfully reinstated so that they will not leave permanent or unsightly scarring along the length of Weisdale Valley.
Ecology Cable laying will have detrimental impact on flora and fauna	The impacts of the cable installation will be localised with careful routeing to avoid features of nature conservation interest and successful re-instatement is expected such that disruption to flora and fauna should be minimal
Tourism Effect on flora and fauna will prevent visitors enjoyment	See above comment regarding flora and fauna. Impacts on tourism will be assessed during the EIA process.
Water Courses Potential effect on Weisdale Burn due to silt run-off from disturbed ground affecting wild fish population, local hatchery and water quality in the Voe	Due to its location at the top of the water catchment for the Weisdale Burn and the scale of the converter station, it will be essential to ensure the converter station and cable design and construction techniques will incorporate mitigation to mitigate impacts to water quality in the burn.
Disruption to Housing Development and Proximity to Properties Cott/ Weisdale area should be avoided as it is a very desirable area with ever growing housing Proposed route passes close to houses at Gardie Cable route should avoid not go through areas of housing What will be the disruption to housing developments?	Potential housing sites identified in the adopted Local Plan have been avoided The Converter Station site at Upper Kergord is remote from residential properties SHETL's draft cable route corridor has been revised and is proposed to pass to the west of the Weisdale Burn. This will allow a more direct routeing with reduced impact on the Weisdale Burn and will take the cable further away from the houses at Gardie.
Current land use Incorrect that cable route is "almost entirely within semi-improved agricultural land with little peat encountered" as up to 2km of route from B9075 to upper Kergord is unimproved peat moorland	SHETL's draft cable route corridor has now been revised and is proposed to pass to the west of the Weisdale Burn

Response Received	**SHETL Comment**
Reason for S5 is weak as the reduction in amount of peat disturbed on S5 compared to S2 is minute.	Alternative sites were considered as part of the route selection process and the most suitable potential sites are discussed in the Consultation Document. The S5 route was part of the best performing option following in an 'in combination' assessment of converter locations, overland routes, landing points and subsea approaches.
Questions Asked If peat is to be replaced by cement based sand, where is the peat to go?	Relative to the overall route length, this route has the lowest proportion of peat encountered. Final construction methods for the cable installation have not been confirmed. In the event of peat being removed, this would be subject to a Site Waste management Plan with respect to peat and will need to be developed to ensure environmental impacts (including carbon footprint) are minimised
Has the route been altered to pass westward of Stenswall Farm and on to the community of Cott and then to the sea?	The draft route will pass westward of Stenswall Farm and on to community of Cott and then to the sea
If three DC circuits are required that would mean a 25m width of cable tracks – how is this to be achieved and mitigated	It is now unlikely that three circuits will be required, the maximum being two, requiring separation of approximately 5m. While this might affect an overall corridor up to 20m wide, for access and spoil handling, this would not all be excavated as each circuit trench would be less that 1m in width and there would be no requirement for a permanent vehicular access route along the cable route. SHETL's design is based on two circuits to satisfy its license requirements; however, the preferred solution is one circuit (which has to be agreed by Ofgem) will affect a lesser width. See Appendix B
How far will cable be from properties?	A key objective will be to keep cables as far away from housing as practicable. There is no minimum standard distance for high voltage DC cables in proximity to residential properties.
What fill will be used underneath the cables?	Where possible, excavated material will be processed on site and used for reinstatement. In some areas, sand may be required to provide bedding for the cables as shown in Appendix B
Will there be restrictions to use of land above and adjacent to cable once laid?	Within the servitude agreed with the landowner, there will be restrictions on building and deep rooted planting
Will Compulsory Purchase be used in the event of a refusal from landowners?	SHETL's preference is to negotiate and agree routes with landowners. Compulsory Purchase Orders however may be required to be used in certain cases
How many cable joint bays are needed? How many cables fit in each?	The number and location of joint bays will be determined to minimise environmental impact. It is expected that cable lengths of up to 700m will be used and lengths can be sized to order so that joint bays can be located away from environmentally sensitive receptors and convenient for access. Joint bays are expected to be up to 10m long x 5m wide and 1.2m deep to accommodate two circuits. Joint bays are temporary and will be reinstated on completion of jointing. On completion, joint bays will be reinstated with no surface structures.

Response Received	**SHETL Comment**
Will blasting be needed to lay the cables?	Until a detailed survey is carried out, it is not known how much rock will be encountered. Depending on the quantities of rock, there are several methods that could be employed including shallow burial with additional protection, blasting and rock-breaker.
What will be visible between the beach and converter station once the cable is laid?	Once the cable is installed, there will be no above ground structures between the landing point and converter station other than a warning sign to aid navigation at the landing point, and small cable markers at strategic locations along the route (field boundaries, watercourse crossings etc) as is normal with cross country high voltage cables. Reinstatement of the cable route is expected to be successful along the entire cable route, and there will be no requirement for regular operational access to the cable.
Support for Shetland underground cable route Route of the cable is acceptable	 Noted
Other Issues **Further assessment required** Issues concerning proposed route for connector in the Kergord Valley	 More detailed environmental and engineering studies of the proposed cable route and converter station site were undertaken during 2008 and the proposed route was selected to cause the minimum environmental impact.
Consultation Document does not identify the corridor adequately particularly in relation to housing	Cable route corridors of 500m width were mapped in the Consultation Document. Following assessment of environmental factors and consultation feedback more detailed corridor routeing and mapping was carried out attached in Appendix D. One of the routeing objectives was to ensure that residential properties were avoided.
Joint Bays Jointing bays and cable laying will have sediment impacts on the burn of Kergord and Weisdale Voe Size of jointing bays Number of jointing bays	 The number and location of joint bays will be determined to minimise environmental impact. It is expected that cable lengths of up to 700m will be available at the time of construction, and lengths can be sized to order so that joint bays can be located away from environmentally sensitive receptors and convenient for access. Joint bays are expected to be up to 10m long x 5m wide and 1.2m deep to accommodate two circuits. To allow cable jointing to take place in a controlled and protected environment, a concrete floor may be installed and a temporary tent erected, or alternatively a mobile shed may be placed over the cables. Joint bays are temporary and will be re-instated on completion of jointing. On completion, joint bays will be reinstated with no surface structures.
Watercourses Cable track and jointing bays will have effect on Weisdale Burn due to silt run-off from disturbed ground, affecting wild fish population, local hatchery and water quality in the voe	 Due to its location at the top of the water catchment for the Weisdale Burn , it will be essential to ensure cable design and construction techniques will incorporate mitigation to mitigate impacts to water quality in the burn.

Proposed Landing Point – Weisdale Voe	
Response Received	**SHETL Comment**
Cultural Heritage	
Landing Point at "Sound" (Cott) is a historical site and next to a graveyard where historically burials have occurred outside the graveyard walls	Noted. SHETL are working with Shetland Amenity Trust to minimise any impact from this.
Landscape and Visual	
Block at Landing Point will be 5m x 10m	On completion, the only visible sign of the cables at the landing point will be a warning sign for navigation. The jointing between the subsea and land cables will be in land at a suitable location. Joint bays are expected to be up to 10m long x 5m wide and 1.2m deep to accommodate two circuits. To allow cable jointing to take place in a controlled and protected environment, a concrete floor may be installed and a temporary tent erected, or alternatively a mobile shed may be placed over the cables. Joint bays are temporary and will be reinstated on completion of jointing. On completion joint bays will be reinstated with no surface structures except for markers.
Size of jointing bays if more than one circuit is used	As circuits are separated by 5m it is likely that two circuits would use the same joint bay.
Watercourses	
There will be sediment impacts on the Burn of Kergord and Weisdale Voe	Careful cable routeing and mitigation will be developed to minimise impacts on local burns. The proposed mitigation will be agreed with SEPA
West Weisdale Voe Landing Point avoids the impact of crossing the Weisdale Burn	Noted. This is an advantage over the cable route running from a landing point on the east side of Weisdale Voe, which would impact on the Weisdale Burn at several places along the route
Questions Asked	
Which side of the Voe is the Landing Point	Following consultation and consideration of the technical requirements of the potential cable-lay vessel to be used on this project, SHETL considered that the draft landing point on the east side of Weisdale Voe, as shown in the Consultation Document, would not be suitable. As a result, alternative landing points providing deeper water access were sought and two potentially suitable new landing points were identified at Cott on the west side of the Weisdale Voe. The northerly option near Sound is the preferred option

Response Received	SHETL Comment
Alternatives Landing point at Lerwick to promote district heating opportunities Landing point at Scalloway to promote district heating opportunities Landing point at Laxo	Landing points, underground cable routes and converter station locations have been selected to minimise environmental impacts overall and, in particular, from the connections to the Viking windfarm. Assessments have been carried out into potential uses for the heat generated by the converter station, the main factors being:- • The maximum output temperature of the converter cooling circuits is too low for direct use in the Lerwick District Heating scheme, but too high for current heat exchanger technology to boost that temperature to a suitable level • The proposed converter location at Upper Kergord minimises the electrical infrastructure required to connect to the windfarm. The additional infrastructure that would be required to relocate the converter station is not economically viable and carries its own environmental risks. • The cost of installing pipework to transfer warm water from the proposed converter station at Upper Kergord to existing or future District Heating schemes is not economically viable and also carries its own environmental effects. • SHETL's preferred option is a single converter station (this is still to be agreed by Ofgem). As such this is not a 'firm' supply of heat for any stand alone District Heating Scheme, These options have been discussed and agreed with Shetland Heat and Power; however SHETL would be glad to investigate any other innovative uses.
Proposed Marine Cable Route	
Weisdale Inshore Route Cables will cause large impacts on all aspects of the marine environment, especially within the narrow confines of Weisdale Voe. There should be no cable laid in a busy voe which is also used for both commercial and recreational purposes. The head of Weisdale Voe is too shallow to allow cable laying.	SHETL is confident that the environmental impact of the subsea cable, particularly in Weisdale Voe, can be minimised through careful routeing and installation. The proposed landing point is on the west side of Weisdale Voe near Sound which should allow sufficient water depth for the cable lay vessel that is expected to be required.
This area is dredged for scallops by local fishermen.	Noted. SHETL will discuss installation techniques with affected parties.
Employ 20 in the finfish sites close to the cable and another 81 jobs at Scalloway factory concern that damage to fish in the area could affect jobs and profitability	Cable installation techniques such as ploughing and jetting will be designed to minimise the risk of sediment disturbance to finfish and shellfish farming activities. Installation methods will be discussed with the affected parties and SHETL is confident that the environmental impact of the subsea cable, particularly in Weisdale Voe, can be minimised through careful routeing and installation
Concerns that anchorage in Weisdale Voe may be affected..	Neither the Marine and Coastguard Agency (MCA) nor the Royal Yachting Association who monitor anchorages have concerns regarding these proposals.

Response Received	**SHETL Comment**
Offshore Route Sea route requires proper dialogue with the fishermen concerned (via Shetland Fishermen's Association) as to route, time of year to lessen impact As the project involves crossing through some fishing grounds with a cable laying ship do you intend to have a Fishing Liaison Skipper involved on board this ship for communication purposes with the fishing fleet. Routeing of subsea cable is of great concern to Shetland's shellfish and whitefish members as this will undoubtedly impinge on fishing operations during marine survey and cable laying periods. Much more intensively used production area for farmed fish than other parts of Shetland Once the cable is laid it must be buried to ensure vessels cannot snag the cable, and a survey should confirm no exposed debris from the laying operation that could be a snagging hazard to fishing fleets	Noted. SHETL has already initiated discussions with the various fishermen's organisations on Shetland and in the Moray Firth. Both careful routeing and the timing of the works can reduce the impact on fishing activity
Concern over any direct impact on fish stock in the area during cable laying operations through sediment disturbance	Noted. Sediment disturbance during cable laying operations is recognised by SHETL. Cable installation techniques such as ploughing and jetting will be designed to minimise the risk of sediment disturbance to finfish and shellfish farming activities.
Concern over the potential for restriction of activities should the cable have an exclusion corridor surrounding it. This will further deny farms the ability to vary or expand their activities	Noted. SHETL will aim to ensure that the cable will be buried to prevent the snagging of fishing gear and that careful routeing should not lead to any requirement for exclusion zones
Will the cable create a magnetic field? The effect on fish stocks is unknown	HVDC circuits produce a static emf field similar to the earth's natural magnetic fields. As the positive and negative cores are laid in a close bundle the emf effects cancel each other out, or at worst there are only very minor, localised impacts from bipolar HVDC circuits
Will subsea cables be laid on the seabed or covered up?	Where the sea bed conditions allow (e.g. sand or silt) the subsea cable will be buried using ploughing or jetting techniques. In areas where the seabed is rocky and the cable cannot be buried, a risk assessment will be carried out to identify potential risks to the cables e.g. fishing, currents etc. Depending upon the results of this risk assessment the cable may be laid on the seabed or techniques including rock armour and concrete mattressing would be employed to provide protection.

Response Received	**SHETL Comment**
Moray Inshore Route **Moray Marine Fisheries** Creel fishermen use the area all year round Exclusion zones suggested in areas of fishing and notification of start date required	The Scottish Fishermen's Federation and local creel fishermen were kept advised of survey operations and a similar exercise will be carried out during cable installation
Proposed Landing Point - Portgordon	
Portgordon West Preference for Landing Point at Portgordon West Avoids recently installed Portgordon- Buckie town sewer	This issue was one of the factors that contributed to SHETL's preference for Portgordon West as the preferred Landing Point
Portgordon East Proximity to three properties Disruption to seal colony	Portgordon West is the proposed landing point
Proposed Mainland Underground Cable Route	
Overhead Line General amenity of the existing open landscape would be destroyed along the "overhead" cable route	SHETL's approach involves an underground cable
Erecting overhead lines between Portgordon and Keith would cross flight paths of geese and swans creating a collision risk	
Effect on Property Value of overhead line to Keith	
Cable should be undergrounded from Portgordon to Keith	
Ecology Whiteash Hill Wood and Corskell Moss is well known / proven crossover path for Capercaillie and this should not be crossed	SHETL's approach involves an underground cable, so Capercaillie will not be affected
Hillockhead Woods has badgers	Badger assessments have been carried out and full surveys will be carried out as part of SHETL's normal pre-construction activities

Response Received	SHETL Comment
Core Paths Route at this section should be checked against Council's core paths	The proposed route has a minimal impact on Core Paths, only crossing the Speyside Way at Portgordon. Suitable diversions will be put in place for the short time that there may be an impact on access.
Peat Potential issues with peat at rail crossing to west of Keith	The exact requirements of the rail crossing will be agreed with Network Rail once an installation contractor has been appointed
Public Roads / Keith Bypass / Moray Council's Route Action Study of the B9016 Bypass needs to be avoided if resurrected Route Action Study identifies sections where re-alignment should be considered Public Roads under the control of Moray Council Cable should follow route of the road	The proposed route avoids the potential route of the Keith bypass and B9016 re-alignments. Where environmentally suitable the proposed route follows existing linear features.
Alternative Routes Burn of Tynet and old railway line to Keith	This option was considered but has more environmental constraints than the proposed route. These include Tynet Burn SSSI and regenerated habitat along the railway line.
Impact on Fishing River fishers at River Spey and Burn of Tynet	Pollution control measures will be agreed with SEPA, the Spey and Deveron Fisheries Boards
Impact of other projects Beatrice AC Connection has substation at the landfall and cables/ pylons to Keith Two types of mainland connection proposed at the Portgordon West Landing Point site – the Shetland/Orkney HVDC and the Beatrice 132/275kV and landfall substation AC links	The Beatrice development does not form part of this consultation. The consultation is for the Shetland HVDC Connection only.

Response Received	SHETL Comment
Proximity to Properties Cable should not pass close to houses at Slackend Should avoid crossing at the A990 until much closer to the A98 thus crossing farmland past the back of the Maltings and across Core Burn before housing by the A98 thus saving any disturbance to outlying houses at Slackend.	The cable will run along the A990 road to the west of Slackend
Prematurity Can't comment on a cable route when it is not know to SHETL	SHETL has consulted early with local communities in order to help the community contribute to the consultation in an informed way. As such, some of the more detailed questions asked can only be addressed as the project develops
Alternative Converter Station Locations	
Objection to converter station at Portgordon - • No natural screening • Detrimental to landscape • Operational noise and high frequency emissions would create a serious health hazard • Additional cost of strengthening bridges should be taken into account • Additional cost of upgrading roads must be taken into account Converter Station and associated overhead line to Keith would seriously affect property values along the route	Potential Converter stations at Portgordon were assessed and rejected in favour of the location at Blackhillock. Overhead lattice steel tower lines were also rejected in favour of underground cables, with significantly reduced landscape and visual impact.
Effect on Property Value	Potential converter stations at Portgordon were assessed and rejected in favour of the location at Blackhillock.
Statutory & Key Consultees	
SNH Welcomes the intention to underground the terrestrial sections of the proposed transmission line, but highlights the lack of regulatory control for underground high voltage cables that have the potential to have significant environmental impact. SNH welcomes SHETL's intention to comply with the EIA process for the underground sections of the proposed transmission line	Timing of the cable laying works will be one of the range of mitigation measures that are being considered. The additional information provided by SNH will be incorporated into the environmental baseline for the project

Response Received	**SHETL Comment**
The landfall locations in Weisdale Voe and Portgordon West are both sensitive and subject to significant environmental constraints. Recommendation that further assessment and comparative appraisal of alternative landfall locations at Dury Voe, Portgordon East and Sandend Bay are carried out before final selection of potential landfalls.	Noted – SHETL continued to assess alternative landing points at Sandsound and Portgordon East. However, Sandend Bay offers no overall environmental benefit over the two Portgordon options, with significantly longer underground cable distance and physical constraints within the bay and SHETL does not propose to consider the Sandend Bay Landing Point further. In the event that the alternative landing point at Sandsound proves unsuitable, SHETL will re-assess the potential of Dury Voe
Portgordon East Landing Point should not be discarded at this stage until details on engineering are known with regard to directional drilling	SHETL continued to assess the alternative landing point at Portgordon East, however a coastal geomorphology study has shown that Portgordon West is a preferable landing point.
Further investigations into the potential impacts of electric fields on bony fish, elasmobranches. Seals and cetaceans would need to be carried out.	There are only very minor, localised impacts from bipolar HVDC circuits
Recommend that the Shetland HVDC proposal, as a "national development" in the National Planning Framework Discussion Draft, is subject to review and assessment of strategic options supported by SEA	This was addressed by the Scottish Government's Strategic Environmental Assessment – Supplementary Assessment of Candidate National Developments in September 2008
The appraisal of options appears to have been thorough, although SNH considers that some further assessment of options should be carried out prior to final selection of a preferred route	Noted, additional consultation with SNH has been carried out and additional work has been undertaken e.g. coastal geomorphology assessment at Portgordon for the Spey Bay SSSI and a benthic biological survey.
Agrees with the consultation document assessment that the landfall at Sanford Bay, Peterhead would have a number of environmental benefits but was rejected on the grounds of greater technical risk and cost compared with the Moray Coast options	Noted
The environmental baseline presented in the consultation document appears to be generally comprehensive, while further information sources and protected species information are provided in the Annex	Noted
SEPA Pollution prevention and mitigation measures, with an assessment of residual impact need to be addressed systematically throughout the ES. Production of Work Method Statements (as they relate to site construction, site operation and maintenance and site restoration) will be essential. Specific issues highlighted include water management risks due to conservation and water quality issues, how the marine cable will be laid, sediments and mineral oils, concrete production, means of access and facilities for workers.	Noted. SHETL will give detailed consideration to each of these issues as and when they become relevant to the project.
How will cable repairs be carried out and restoration take place	Faulted sections will normally be located by electrical and electronic testing. Once located, joint bays will be excavated, the faulty section replaced and the joint bays reinstated. Consideration will be given to the specific environmental issues at any fault location
Detailed construction methods, including timing, for all elements and stages should be set out in the ES	Noted.
Need to consider the impacts on Designated Waters in relation to Shellfish, Shoreline, Bathing and Recreational Waters	Noted.

Response Received	**SHETL Comment**
Schemes should be designed to avoid impacts upon the water environment, with particular emphasis on water course crossing methods and erosion and flooding risks. A systematic table should be used in the ES	Noted. Detailed survey work was carried out in 2008 to examine the potential impacts on the surface water environment. A pro-forma for recording the prevailing environmental baseline and potential impacts has been developed with SEPA and this approach will be deployed on the HVDC project.
Assessment of land and sea bed contamination, air quality, site waste management plans and licences, use of recycled materials, management of carbon release from peat disturbance, and need for borrow pits should be considered in the EIA process.	Noted.
Expects opportunities to improve ecological interests of schemes development areas, such as habitat restoration and management plans	Noted. SHETL are undertaking ongoing discussions with SEPA
Unable to confirm the environmental acceptability of any Route Option without more detailed information on pollution avoidance, avoidance of disturbance of water bodies (in the context of the Water Framework Directive), Sustainability (in relation to waste production and use of primary materials)	Noted.
A more detailed explanation needed of the pollution risk differences between overhead options and underground options	Suitable overhead line corridors could not be identified during the route selection process as decribed in the Consultation Document.. SHETL's approach therefore is an underground cable ,
The complexity of the licensing regimes serves to illustrate the importance of EIA process in providing information that will assist in the consideration of the impacts of the proposals as a whole. SEPA advises that all elements of the project should be assessed through EIA and be the subject of a single ES	The complexity of the regimes is such that an Environmental Statement is required for the Shetland converter station. All other aspects do not require an ES, however SHETL will produce a voluntary Environmental Appraisal for those sections
RSPB An HVDC link is clearly necessary for the development of renewable energy schemes of any appreciable size in Shetland	Noted
Imperative that full consideration be given to selecting a route and infrastructure that minimises environmental damage	Noted
Concur with general principle of minimising route length wherever possible	Noted
Supports landing Point at Portgordon with Converter Station at Blackhillock	Noted
Potential for bird collision, especially wintering geese should be avoided by underground cables rather than overhead transmission lines	Noted
Timing of works should be given consideration to minimise disturbance to birds (e.g. Cable laying through areas with nesting waders).	Timing of the cable laying works will be one of the range of mitigation measures that are being considered
Exclusion criteria for assessing potential converter station locations should include "high biodiversity interest"	Noted
Notes the proposed use of wooden poles in the valley of Kergord to link the Converter Station to part of the windfarm and the existing electricity network and advises burial of all cables in this area to remove risk of bird collisions and be less visually damaging	Noted, although this is outwith the scope of this Consultation Exercise

Response Received	**SHETL Comment**
Moray route will avoid designated sites and undesignated sites of high importance	Noted
Corridor M1b (Portgordon East) preferred to M1a (Portgordon West) to avoid landing in the Spey Bay SSSI	Impacts on the SSSI will be mitigated by directional drilling
Fisheries Research Services The FRS Marine Lab is the controlling authority for the Food and Environmental Protection Act. Laying of cables, including i by jetting or ploughing, is exempt from FEPA, the deposit of material to protect the cable is subject to FEPA consent	Noted
National Lighthouse Board Navigational requirements will be advised when final scheme presented through Costal Protection Act 1949: Section 34 consents process	Noted
Health and Safety Executive Expect full consultation with pipeline operators to reach agreement on possible encroachment on existing infrastructure and on necessary crossing points and protective structures	Noted

3. NEXT STEPS

3.1 SHETL's Indicative Proposed Route

3.1.1 Taking account of the feedback from the consultation process, as summarised in this Consultation Report, SHETL is proposing the following route from Shetland to the Scottish mainland:

- Shetland Converter Station: Upper Kergord
- Shetland Underground Cable Route: To the west of B9075
- Shetland Landing Point: Cott, on the west side of Weisdale Voe
- Subsea Route: As shown in Consultation Document
- Moray Landing Point: Portgordon West
- Moray Underground Cable: Generally following A990 /B9016 corridor
- Moray Converter Station: Blackhillock Sub-Station

Maps of the Indicative Proposed Route are contained in Appendix C

3.1.2 However, in light of the comments received from SNH, SHETL continued to consider alternative landing points at Sandsound Voe (Shetland) and Portgordon East (Moray) to assess their suitability in the event that environmental constraints or impact on fishing activity are too great at the proposed Weisdale Voe and Portgordon West landing points. SHETL therefore expanded the scope of its marine surveys, which commenced on 6th June 2008, to cover the following landing points and inshore approaches:

- Weisdale Voe (Cott);
- Sandsound Voe;
- Portgordon West;
- Portgordon East.

3.1.3 SHETL can confirm that its proposed landing points remain as Weisdale Voe (Cott) and Portgordon West.

3.2 Scope of Environmental Studies

3.2.1 SHETL's proposals for the extent of the environmental studies that took place during 2008 were amended to take account of the consultation responses. The key revisions were:

- The underground cable route in Moray will seek to avoid the alignment of the proposed Keith Bypass and any Core Path promoted by the Moray Council
- Environmental studies, including marine surveys, were undertaken for the alternative landing points and their respective underground corridors.

3.2.2 SHETL prepared an Informal Scoping Report (Shetland HVDC Connection – Informal Scoping Document, SHETL, May 2008) that was circulated to key stakeholder organisations. The purpose of the Informal Scoping Document was to help these bodies provide their views on the scope of the Environmental Appraisal and the nature of the environmental studies required to support this proposal.

3.2.3 There is no single consenting regime for the entire project. During the Consultation process FRS and SIC's Coastal Manager confirmed that the marine elements of the project did not require a formal Environmental Statement (ES) under the EIA Regulations.

3.2.4 SHETL requested a Screening Opinion from Shetland Islands Council (SIC) and The Moray Council (TMC) in December 2008 to establish the EIA requirements for the converter

stations. SIC confirmed that an ES was required due to the characteristics and location of the proposed development. TMC advised that formal EA was not required.

3.2.5 SHETL undertook to complete an informal Environmental Appraisal for all areas not covered by formal ES

3.2.6 A summary of the resulting consenting regimes is shown in Appendix D

3.3 Timetable for Confirmation of Indicative Proposed Route

3.3.1 Based on the project programme which has been revised to take account of the key actions arising from the consultation responses, SHETL expects to be able to conclude its assessment of the route options during summer 2009. Subject to this assessment, SHETL will confirm its Proposed Route Corridor to take forward to detailed engineering and environmental design.

3.3.2 SHETL intends to confirm the Proposed Route as part of the environmental assessment process, prior to any consent applications in 2009.

APPENDIX A

CONSULTEES TO THE CONSULTATION DOCUMENT

Statutory and Key Consultees

Fisheries Research Services
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The Crown Estate
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Lerwick North
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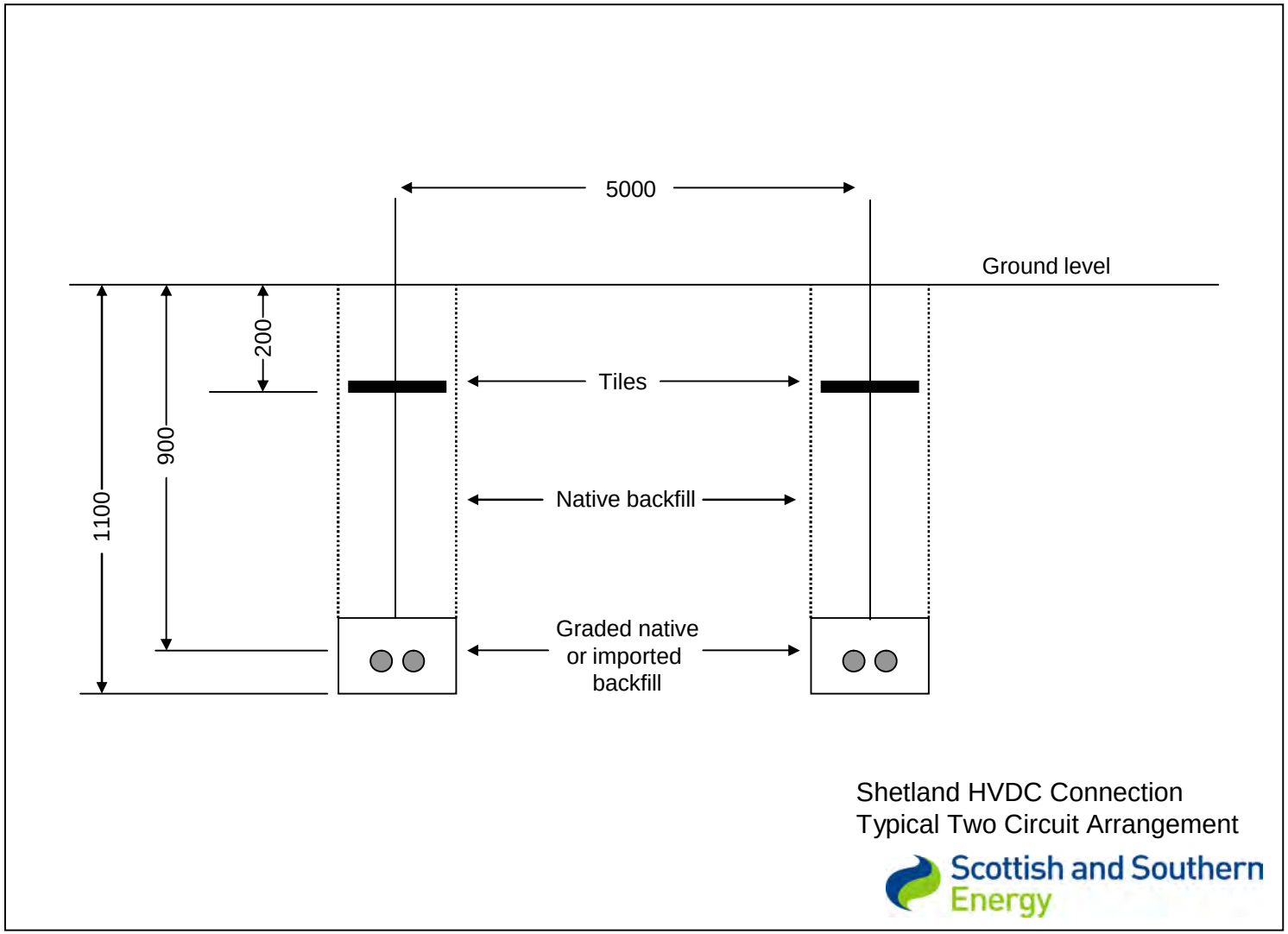
APPENDIX B

TYPICAL TWO CIRCUIT ARRANGEMENT


5000
Ground level
200
900
1100
Tiles
Native backfill
Graded native
or imported
backfill
Shetland HVDC Connection
Typical Two Circuit Arrangement
Scottish and Southern
Energy

APPENDIX C

THE INDICATIVE PROPOSED ROUTE

APPENDIX D

SUMMARY OF CONSENTS REQUIRED

Shetland HVDC Link Consents Summary

The table below summarises the consents required for the individual elements of the Shetland HVDC Connection

		Kergord Converter Station	Shetland Cable	Shetland inshore & Landing Point	Subsea Cable	Mainland inshore & Landing Point	Mainland Cable	Blackhillock Converter Station
Authority								
SIC	Planning	Planning Permission	Permitted Development	Works Licence				
	Ecology	Environmental Statement	Appropriate Assessment as required					
TMC	Planning					Permitted Development	Permitted Development	Planning Permission
	Ecology					Appropriate Assessment as required		
SNH						SSSI consent		
SEPA			CAR as required				CAR as required	
JNCC (SNH)					AA as required			
Scottish Government				Coastal Protection Act Appropriate Assessment as required				
Crown Estate					Licence			
FRS					FEPA for any external protection			

APPENDIX E

INDEPENDENT ASSURANCE REPORT

Independent Assurance Report to Scottish Hydro Electric Transmission Ltd

Scottish Hydro Electric Transmission Ltd ('SHETL') engaged Environmental Resources Management Ltd (ERM) to provide independent assurance on its Consultation Process of the Shetland HVDC Connection, as presented in the Report.

Our brief

We were asked to provide independent assurance on the 'Proposed HVDC Link from the Shetland Islands to Mainland Scotland - Report on Consultations' (*the Report*). Specifically, whether SHETL has appropriately reported the following information in *the Report*:

1. **Its approach to designing, planning and delivering the consultation;**
2. **Its approach to collating, analysing and reporting the key consultation issues; and**
3. **The key issues raised by consultees during the consultation process; and**
4. **Statistics related to SHETL's analysis of consultees' responses.**

Our approach

Standards and criteria used

We delivered our work in accordance with ERM's assurance methodology which is based on the international assurance and audit standards ISAE 3000 and ISO 19011.

SHETL has developed its approach and methodology for undertaking stakeholder consultation and analysing and reporting stakeholder views. These are described where appropriate within the Report and were used as assurance criteria.

We planned and performed our work to obtain all the information and explanations that we believe were necessary to provide a basis for our assurance conclusions as to whether the reported information set out in 'Our Brief' was appropriately reported.

If we had been asked to conclude on whether this information is materially accurate, we would have needed to conduct more work at the source data level and to gather further evidence to support our assurance opinion.

Our work

A multi-disciplinary team of stakeholder consultation, environmental, corporate responsibility and assurance specialists performed the engagement.

Our assurance activities included:

- Face-to-face interviews with SHETL management and relevant external consultants commissioned with responsibility for the design and implementation of the consultation process. This was followed up with a review of relevant documentation;
- Reviewed and tested on a sample basis relevant information and checked the integrity of the data analysis and presentation methods for the information published in the Report;
- Reported our assurance findings to management as they arose to provide them with the opportunity to correct them prior to finalisation of our work; and
- Reviewed *the Report* to ensure consistency with our findings.

Respective responsibilities and ERM's independence

SHETL is responsible for preparing *the Report* and for the information in it. ERM's responsibility is to express our assurance conclusions on the agreed brief.

During 2008, ERM has not worked with SHETL on other consulting engagements and we have confirmed our independence to SHETL for delivering our assurance.

Our assurance conclusions

Based on our work undertaken as described above, we conclude that in all material respects, the above selected information relating to stakeholder consultation is appropriately reported within *the Report*.

Our key recommendations

Based on our work set out above, and without affecting our conclusions, here are our key recommendations for improvement.

Recommendations for improvement:

- Learn from the challenges encountered during this project regarding the timely response to consultees and issue of the Report in the public domain;
- Further integrate the consultation processes for schemes and projects which are closely linked; and
- Consider including stakeholder 'responsiveness' within the scope of external assurance.

Environmental Resources Management Limited (ERM)

London, UK,

10 July 2009]

ERM is the world's leading provider of environmental, health and safety, risk and social consulting services. We deliver innovative solutions for business and government clients, assisting them in managing their environmental and related risks. We have 145 offices in 41 countries and employ over 3,500 staff.