



SHETLAND ENERGY HUB PROJECT (SEHP)

Response to Ofgem's Consultation on the Proposed Final Needs Case and Delivery Model for the Shetland Transmission Project

Introduction

Our Project

The SEHP, which is a partnership between Shetland Island Council (SIC) and the Oil & Gas Technology Centre (OGTC), is looking at utilising abundant local wind and tidal energy sources, coupled with gas and hydrogen, to generate energy on a local, regional and national scale, and reduce carbon emissions. The ultimate aim of the project is to ensure Shetland is self-sufficient in clean energy, has the capability of exporting renewable electricity into the national grid and offshore, and, enable the oil and gas sector located in and around Shetland to transition to net zero carbon emissions. The project is a transformational shift for Shetland and the surrounding oil and gas province, which will benefit the local community and the wider supply chain. It will secure employment and provide energy security of significance at a regional and national scale and make a massive contribution to the national carbon reduction targets.

Project Vision and Objectives

The SEHP is of strategic importance to the UK in providing clean energy for industry and communities and helping meet net zero targets set by the Scottish and UK governments. This project is at an industrial scale but also links to the requirements of local communities including the Shetland Community Energy Networks project.



The project vision statement ***“Providing clean sustainable energy for our future”*** sets a strong linkage to the requirements of numerous stakeholders and the statement ***“Giving domestic and industry access to clean energy whilst reducing emissions, maximising the value of the oil and gas sector during energy transition, and, creating sustainable local and regional employment”*** clearly sets out the project purpose.

National Energy Hubs

The SEHP is being developed as part of the UK network of Energy Hubs launched in 2018 by the Oil and Gas Authority. The Energy Hub idea presents significant opportunity for energy transition based on the utilisation of renewable electricity generation, alternative fuels coupled with Carbon Capture Utilisation and Storage (CCUS) to provide clean energy for industrial complexes and domestic use. The development of these energy hubs will be critical if the UK is to maximise the level of sovereign energy generation whilst moving towards Net Zero.

Project Objectives

The Shetland Energy Hub project objectives by 2045 are to: -

- Reduce carbon emissions in the UK energy sector by 8m tons a year.
- Supply 32TWh of low carbon hydrogen to UK consumers every year. This is 12% of the UK's expected total requirement of 270TWh (Committee on Climate Change) and represents revenues of £1.5Bn/y at a hydrogen price of £2/kg.
- Provide low carbon electrical power to both the UK grid and all operational oil & gas assets in the West and East Shetland Basins.
- Reduce cost of current and future technology development.
- Test & pilot renewable energy and CCUS technologies & deploy at scale if successful.
- Transform SVT & SGP to provide alternative future industrial services.



- Generating £5 bn of revenue for region.
- Contribute significantly to the UK Exchequer.
- Stimulate employment for 1,750 people locally.
- Sustain activity and growth in Shetland's community through the provision of clean energy and elimination of fuel poverty, maintaining a pristine environment, and providing investment opportunities and sustainable employment.

[Link with Shetland Transmission Project](#)

The provision of an interconnector from Shetland to the UK power distribution grid and the subsequent development of green energy in Shetland is a critical first step for the SEHP. Should the interconnector be subjected to further delay or a decision is taken not to proceed this would result in serious delays and is likely to cause SEHP to fail. The objectives described above would not be achieved causing significant economic, social and environmental damage at local, regional and national levels.

Final Needs Case assessment – Inputs and Assumptions

Question 1: What are your views on the generation scenarios developed and updated by SHE-T? We are particularly interested in views on the likelihood of wind generation on the Shetland Isles developing to the levels predicted by SHE-T's scenarios and any further changes or updates since SHE-T's October 2018 Final Needs Case submission that you think should also be considered.

In the course of developing the SEHP we have spoken widely with businesses that have plans to develop wind-generated power in Shetland. We have calculated that the provision of wind-generated power will match the 600 MW transmission scenario and the emerging offshore market for clean energy. Our Business Case is based on this evidence.



Question 2: What are your views on the demand sensitivity explored by SHE-T?

SHE-T's demand scenarios are accurate from an oil and gas industry perspective. The 200 MW demand for offshore energy is based on existing and forecasted use of energy in the oil and gas fields close to Shetland. These figures tie in with the information supplied to the SEHP from offshore operators.

Question 3: What are your views on the link options considered by SHE-T? We are also interested in views on the options proposed by SHE-T to mitigate against the risks of a second link being needed.

With the development of the offshore market for clean energy, the 600 MW option provides the best fit. That option has been thoroughly researched and can be developed to a timetable that will enable the SEHP to proceed as planned. The 450 MW option does not provide enough capacity to carry the wind-generated energy that is in the development pipeline in Shetland. The 800 MW option is not required due to the offshore demand for 200 MW. Our own Project investigations suggest that a second interconnector to the UK grid is not required and particularly so if future energy storage projects proceed in Shetland as we envisage.

Question 4: What are your views on the technical design and costs of the proposed Shetland link?

The SEHP is not responding on this question. These are areas where the SEHP does not have sufficient knowledge to make comment.

Final Needs Case assessment – CBA and Methodology

Question 5: What are your views on the CBA put forward by the ESO?

It looks very clear to the SEHP that the 600MW scenario is by far the stronger of the three options under consideration. A great deal of diligent work has been carried out on the interconnector project and there appears to be a risk that delaying the project may have an adverse impact on costs. We would emphasise again the need to avoid any further delay if the SEHP objectives are going to be met as planned.



Question 6: What are your views on other approaches we have taken to assess the costs and benefits to GB consumers?

The interconnector will have a massive beneficial impact on the reduction of Co2 emissions from the oil and gas industry in and around Shetland. We have calculated that carbon emissions can be reduced by 8 million tons a year by 2050 if the oil and gas industry can have access to clean onshore sourced energy. This access will enable 25% of the UK's remaining oil and gas reserves to be produced at net-zero emissions while the whole UK energy industry transitions to a clean and green future. In addition the oil and gas industry in and around Shetland will provide a consistent customer base for onshore green energy for a period of at least 25 years.

4. Our minded-to view on the revised Final Needs Case, including proposed conditions for approval

Question 7: What are your views on our minded-to position to conditionally approve the revised Final Needs Case?
Specifically:

- i) **Do you agree with our proposal to approve a 600MW link subject to Ofgem being satisfied, by the end of 2020, that Viking Energy Wind Farm is likely to go ahead?** Yes, this is a reasonable proposal given that the Viking Energy project is at an advanced stage in its own decision making framework.
- ii) **Do you have any views on the type of evidence we should expect to see that would confirm that Viking Energy Wind Farm is likely to go ahead?** We have nothing to add to the evidence that Ofgem is seeking from the Viking Energy project.
- iii) **Do you agree with the factors we have considered to reach our minded-to position?** Yes, all the due diligence undertaken demonstrates that the 600MW option is by far the best for Shetland and for the future of the UK energy sector.
- iv) **Are there any other factors that you consider we should take into account when assessing this proposal?** Any further delay in progressing the interconnector will have serious implications for future energy provision at local, regional and national levels.



Delivery Mode

Question 8: Do you agree with the findings of our analysis? The SEHP agrees with Ofgem's minded-to position for approving SHE-T's proposed 600MW link, on a conditional basis.

Question 9: Are there any additional factors that we should consider as part of our analysis and/or decision on whether to apply the CPM for the Shetland transmission project?

The decision to advance the Shetland transmission project would be a first step towards achieving the objectives of the SEHP as set out in our introduction and repeated below:

- Reduce carbon emissions in the UK energy sector by 8m tons a year.
- Supply 32TWh of low carbon hydrogen to UK consumers every year. This is 12% of the UK's expected total requirement of 270TWh (Committee on Climate Change) and represents revenues of £1.5Bn/y at a hydrogen price of £2/kg.
- Provide low carbon electrical power to both the UK grid and all operational oil & gas assets in the West and East Shetland Basins.
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Shetland Energy Hub