

Attachment 4 – Shetland history of policy decisions

Purpose

This annex provides details of the history of the project to ensure long term security of supply on Shetland, including the Ofgem policy decisions that have been made over the last 13 years and the relevant licence requirements that were implemented, which have all led ultimately to our proposal to implement the current recommended service provider solution.

Background

In the lead up to DPCR5, SHEPD notified Ofgem that it expected to need to replace Lerwick Power Station (LPS) in 2013-15 due to its age and condition meaning that it was coming to the end of its operational life and also due to environmental compliance concerns that replacement would not be viable.¹ In the DPCR5 Final Determination², Ofgem confirmed that it would require SHEPD to present an integrated plan to manage supply and demand on Shetland to the Authority by 31 January 2013. It noted that SHEPD must identify a solution that would offer best value for money for consumers, guarantee a secure energy supply and be environmentally sound. Ofgem placed a licence obligation (Charge Restriction Condition 18A) on SHEPD to this effect. This licence condition was transferred to Charge Restriction Condition 2Q in RIIO-ED1.

This obligation led to a number of submissions on various options for Shetland being developed and proposed to Ofgem, as summarised in the table below, with more detail provided in the sections below.

| SHEPD proposal | Date | Cost (prices at the time of submission) | Ofgem approval |
|--|---------|---|----------------|
| Northern Isles New Energy Solution (NINES) trial to reduce capacity of replacement LPS | 2011 | £15m | Yes |
| Replacement dual fuel 90MW power station | 2013 | £967m | No |
| Shetland New Energy Solution (SNES) Distribution link with back up generation | 2017 | £394m | No |
| Whole system solution – Transmission HVDC link contribution | 2018/19 | £251m | Yes |
| RIIO ED2 business plan – power purchase costs | 2022 | £56m | Yes |

¹ Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control). The directive is implemented in Scotland through [Part A of the Pollution Prevention and Control \(Scotland\) Regulations 2012 \(PPC 2012\)](#).

²[Microsoft Word - FP_3_Cost Assessment with SS comments.docx \(ofgem.gov.uk\)](#)

| SHEPD proposal | Date | Cost (prices at the time of submission) | Ofgem approval |
|--|------|---|----------------|
| pre link, ANM costs, LPS capex and opex costs pre and post link, costs to transition LPS to standby. | | | |

SHEPD's Original Proposal: Northern Isles New Energy Solution (NINES) and the Integrated Plan

| SHEPD proposal | Cost | Ofgem approval |
|---|-----------------------|----------------|
| NINES trial to reduce capacity of replacement LPS | £15m (2010/11 prices) | Yes |
| Replacement dual fuel 90MW power station | £967m (2013 prices) | No |

In 2011, SHEPD proposed a two-phase approach for Shetland, with a pilot project, NINES, as the first phase of the integrated plan. The project aimed to trial a set of alternative solutions, including demand side response and energy storage, that if successful could be implemented to reduce the overall cost of meeting the electricity needs of Shetland. On completion of NINES, SHEPD proposed to use the learning to inform the second phase of the integrated plan, which would involve the replacement of LPS. It was expected that the solutions trialled by NINES would allow a significant reduction in the capacity of the LPS replacement and enable the connection of more renewable generators.

SHEPD required £15m to fund the NINES pilot project. SHEPD set out the below options and costs as part of its NINES proposal, in 2010/11 price base.

Following a consultation, Ofgem approved the additional funding for the NINES trial in September 2011³.

In 2013, SHEPD put forward its Integrated Plan for Shetland. This used the outcomes of Phase 1 (NINES trial) to inform Phase 2, which was the upgrading or replacement of LPS.

An option considered and discounted under the Integrated Plan was for a distribution link (or two links) to the mainland. This was discounted as the cost was expected to be in the order of £3bn at that time.

Instead, it was proposed that a replacement full duty modern dual fuel power station would provide the most robust, economic and efficient enduring solution for Shetland. The proposed capacity for the new station was 90MW, which took account of a 7MW reduction as a result of the implementation of NINES. This was to be sited at Lerwick's Rova Head. SHEPD undertook a tender process, with tender

³ [Decision on funding for the Shetlands Northern Isles New Energy Solutions \(NINES\) Project \(ofgem.gov.uk\)](http://ofgem.gov.uk)

submissions indicating a capital cost for a replacement fuel power station within the range of £140m-200m. Full lifecycle costs over a 25-year asset life were forecast to be £967m (in 2013 prices).

In April 2014, Ofgem rejected SHEPD's Integrated Plan proposal⁴ for a replacement power station, on the basis that there was not enough detail on the alternatives that had been considered, and Ofgem was not satisfied that alternatives to the proposal to build a new power station had been adequately considered, or that there was sufficient evidence to demonstrate that the costs put forward were the most efficient and competitive.

Ofgem's view was that the lowest cost and most efficient solution for Shetland would be determined by a competitive market process and therefore placed a number of conditions on SHEPD to appoint an independent auditor; run an open and public consultation; and run a competitive process to identify the most efficient solution for Shetland.

SHEPD's Shetland New Energy Solution (SNES)

| SHEPD proposal | Cost | Ofgem approval |
|---|-------|----------------|
| National Grid (NGSLL)-Aggreko 60MW distribution link with back-up diesel generators | £394m | No |

In July 2017, following the appointment of an independent auditor and as a result of a competitive market process, the successful bid was identified as a NGSLL-Aggreko solution to build a 60MW distribution link between Shetland and the mainland, with back-up diesel generators on Shetland to operate when the distribution link was out of service. The only other bid that was technically compliant was to build a new full duty diesel power station.

The estimated cost of this solution was around £40m per annum, with a NPV of £581.7m. There would also be additional costs to SHEPD to continue to run LPS whilst the distribution link was being built.

In July 2017, Ofgem concluded that this represented the most efficient solution and was minded to approve the costs. However, in November 2017, **Ofgem rejected the proposal due to two significant industry developments** which meant that a more cost-efficient option may be available. Specifically, changes under the Industrial Emissions Directive meant that LPS could continue to operate until 2030 (this was previously 2020), which could be done at significantly lower cost than the NGSLL-Aggreko solution. Ofgem asked SHEPD to provide details of how security of supply could be continued on Shetland from 2019 to 2025, which SHEPD responded to and confirmed that with targeted investment, LPS could continue to provide security of supply until 2025. Ofgem also noted that the CfD auction might result in reduced costs to customers through an integrated solution, specifically that there could be potential further savings to consumers from a joined-up approach should a transmission link be built.

⁴ [Ofgem's determination of SHEPD's submission under CRC18A](#)

In its decision document, Ofgem noted that another competitive process would likely be needed. This would either be for a whole new energy solution, should a transmission link not go ahead, or for back-up to a future transmission link to ensure security of supply.

SHEPD Whole System solution

| SHEPD proposal | Cost | Ofgem approval |
|--|-------------|----------------|
| Whole system solution – connection to the HVDC link | £251m | Yes |
| Whole system solution – LPS as back up solution including Power Purchase Agreement costs pre link, ANM costs, LPS capex and opex costs pre and post link, costs to transition LPS to standby | £56m in ED2 | Yes |

In March 2018, Ofgem instructed SHEPD to explore options to secure demand for Shetland consumers in conjunction with a proposed Shetland transmission link. SHEPD proposed a whole system solution to Ofgem in 2018, with SHEPD to make a contribution to the HVDC transmission link, paying a share of costs in return for services. SHEPD calculated that a fair value of the transmission link to distribution customers was £251m.

This cost was compared to the “next best option” for Shetland as identified by the 2017 NES process. The costs and assumptions behind the NGSLL/Aggreko solution were reviewed to ensure that they remained valid. On the basis of this exercise, £394m was used as the benchmark cost against which the link contribution was compared.

Ofgem published a minded to approve position in December 2019⁵, and confirmed approval in July 2020⁶ following approval of the pre-requisites of the link Needs Case and SHEPD CUSC modifications.

As part of SHEPD’s RIIO-ED2 Business Plan, SHEPD proposed total costs of £56m in relation to the ongoing costs to provide security of supply on Shetland. These were the costs to continue to run LPS until the link is in place, the costs to transition LPS to standby and the costs to run LPS in standby in the case of any transmission outages. In addition, this includes the costs to continue the PPA with ██████ until the link is in place and the ongoing costs of running the ANM scheme. **Ofgem approved these costs in its RIIO-ED2 Final Determination⁷ in November 2022.**

In addition to this, SHEPD originally proposed £42.2m for the standby solution to secure supplies on Shetland in the time it takes for LPS to get up and running. However, as we were still undergoing the tender process for the standby solution at the time of the final Business Plan submission, this cost was uncertain and as such we instead proposed a bespoke uncertainty mechanism to be triggered once the

⁵ [Decision on Scottish Hydro Electric Power Distribution’s proposals to contribute towards proposed electricity transmission links to Shetland, Western Isles and Orkney | Ofgem](#)

⁶ [Update on decision to approve SHEPD’s proposed methodology to contribute to the Shetland transmission project | Ofgem](#)

⁷ [RIIO-ED2 Final Determinations | Ofgem](#)

costs of the solution were more certain. This proposal was provided in an update from SHEPD to Ofgem in April 2022⁸. **Ofgem approved this uncertainty mechanism in its RIIO-ED2 Final in November 2022⁶** and this is now included as SHEPD's Special Licence Condition 3.2 Part Q.

Application of Shetland 2MVA Direction

In 2015, BEIS introduced the Shetland 2MVA Direction, which allows SHEPD to charge additional costs to demand customers >2MVA connecting on Shetland where they are triggering additional works and costs. This was brought in as it was expected that such large customers could result in significant additional capital costs and it would not be appropriate for these costs to be cross subsidised by all GB electricity consumers.

Following an application by [REDACTED], we considered the application of the Shetland 2MVA Direction and agreed its application with Ofgem and BEIS. The connection will require an additional two engines to be installed at LPS, which will require to be fully utilised by [REDACTED] in the event of a transmission outage. On that basis it was agreed that the costs of these additional charges should be applied to [REDACTED].

We also reviewed whether [REDACTED] should be charged for an element of the proposed standby solution, which would be utilised to provide power to [REDACTED] in the event of an unplanned outage in the 45 minutes it would take for LPS to be up and running. We considered this on the same principle as our standard connection charging arrangement, whereby if there is capacity available then parties can go ahead and connect, and only where a customer is triggering additional works and costs should these be charged to them. On that basis, as [REDACTED] could be accommodated within the procured 65.3MW service, and no additional works were being triggered, it was agreed that no charge should be applied to them in relation to the standby solution.

⁸ SHEPD letter to Ofgem 22 April 2022