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Dear Grant

Consultation on the cost of the new energy solution for Shetland SNES

Element Power (EP) appreciates the opportunity afforded by Ofgem to respond to the consultation on the Shetland New Energy Solution (SNES)..

Our response is divided into 5 parts:

1. Introduction to Element Power
2. Response to Question 1
3. Response to Question 2
4. Response to Question 3
5. Specific Request to Ofgem regarding SNES

Our key ask is that Ofgem add break clauses to the two contracts for the SNES and review the case for proceeding with each of the SNES contracts once all permits, licences and permissions are in place and both contracts are fully ready to construct.

1. Introduction to Element Power (EP)

Element Power develops projects to enable the effective integration and transmission of renewable electricity in the United Kingdom and North Europe. Element Power is the developer of the Greenlink Interconnector which has received Ofgem Cap and Floor IPA, is in the European 2nd list of Projects of Common Interest (PCI) and has received funding under the Connecting Europe Facility (CEF).

Element Power is developing the Maali Interconnector which has been recognised in the European Ten Year Transmission Plan¹ (TYNDP 2016) with an annual welfare benefit of €50-90 million and an estimated capital cost of ~€500 million.

By linking the Shetland Isles with Norway, the Maali HVDC interconnector project would link Norway to the north of Scotland and the rest of Great Britain via the proposed Shetland to Scottish Mainland transmission HVDC link. In the process, Maali would reduce electricity costs for GB consumers, deliver increased security of supply to Shetland, and provide a means to export surplus wind power in Shetland and Scotland to Norway; reducing north-south flows and transmission bottlenecks in Great Britain; increasing decarbonisation of energy supplies and economic welfare in all these localities. In BEIS 'call for evidence' for 'A Smart, Flexible Energy System'² interconnectors are recognised as a tool which makes it possible for the UK electricity system to operate more efficiently and thereby reduce costs to consumers.

¹ <https://www.entsoe.eu/Documents/TYNDP%20documents/TYNDP%202016/projects/P294.pdf>

² <https://www.gov.uk/government/consultations/call-for-evidence-a-smart-flexible-energy-system>

2. Response to Question 1

Question 1: Do you have any views on the costs of the preferred SNES?

The outcome of the SNES competition as a cable (rather than a new power station) was apparently unexpected by all the parties. It raises the question: if a cable is the right SNES, what is the most cost efficient voltage and rating of cable that could be installed?

EP uses cost benchmarking to track expected costs for our HVDC projects, in a similar way that Ofgem uses OFTO cost benchmarking³. Compared to other HVDC projects SNES is clearly an outlier in terms of capacity, voltage and cost. We understand that to meet the requirements of the tender National Grid has deliberately suppressed the voltage and rating of the HVDC cable and converters.

As a result, when we compare SNES with other projects in GB and Europe we see that the cost effectiveness of such a long, low voltage and low capacity HVDC link is of an order of magnitude less efficient than other Ofgem approved and commercial projects.

Project	Data Date	Power (MW)	Voltage (kV)	Route length (km)	GW km	Capex (£M)	Cost £M / GWkm	Cost £M / MW
EWIC	2009	500	200	262	131	341	2.60	0.68
BritNed	2011	1000	450	259	259	488	1.88	0.49
NEMO	2014	1000	400	134	134	334	2.49	0.33
Caithness - Moray	2014	1200	320	160	192	486	2.53	0.41
NSN Link	2015	1400	525	730	1,022	1,039	1.02	0.74
NORD Link	2015	1400	525	623	872	1,052	1.21	0.75
IFA2	2016	1000	400	240	240	555	2.31	0.56
FAB Link	2016	1400	320	216	302	603	1.99	0.43
North Connect	2016	1400	500	650	910	1,280	1.41	0.91
Viking	2017	1400	400	766	1,072	1,046	0.98	0.75
SNES (HVDC capex)	2017	60	80	257	15	279	18.07	4.64
<i>SNES 600MW 320kV</i>	<i>2017</i>	<i>600</i>	<i>320</i>	<i>257</i>	<i>154</i>	<i>282</i>	<i>1.83</i>	<i>0.47</i>
<i>SNES 1000MW 500kV</i>	<i>2017</i>	<i>1000</i>	<i>500</i>	<i>257</i>	<i>257</i>	<i>302</i>	<i>1.18</i>	<i>0.30</i>

Table 1 – HVDC cost comparison data

For comparison we have used the cost model to demonstrate the costs of potential 600MW and 1000MW links to Shetland which are far more cost effective.

³ SNES consultation para 4.20

3. Response to Question 2

Question 2: Do you have any views on whether the recommended SNES represents the optimal level of cost efficiency currently available?

The process undertaken by SSE was to run a competition which appears to have determined the most cost effective way to replace the Lerwick Power Station. However, an HVDC link of only 60MW capacity and +/- 80kV is not the optimal level of cost efficiency for a link of this length with other needs and uses beyond replacing the power station, such as the connection of renewable energy generation, long term decarbonisation of Shetland and further interconnection.

4. Response to Question 3

Question 3: Do you have any views on whether the proposed incentive arrangements are sufficient to maximise the availability of the service, and to minimise increases in costs to consumers on an ongoing basis?

There is insufficient information to fully review the incentive arrangements as the details of the contracts, penalty clauses and delay damages are not included in the consultation.

For example regarding the stated contractual start date of 1st January 2021, the consequences for any delay in the full implementation of SNES are unclear. Statements such as “SNES should be in place by 2020”⁴ do not imply a binding contractual commitment.

The planned timescale for the project is quite ambitious and does not appear to have contingencies for permitting delays and weather risks:

“3.15. The survey and design phase is planned for completion in Q4 2018, with procurement and manufacture continuing through to Q2 2020. Installation completion is planned for mid-Q3 2020. This means the Shetland link should be available for operation by late 2020, as required by the ITT process.”

Due to weather risk alone, it is conceivable that the cable may not be completed until Q2 or Q3 of 2021 and we note that:

“a year of dual LPS and SNES operation to ensure the new SNES is fully embedded.”

It is not clear how such a timetable sits with the SEPA licencing for the Lerwick Power Station which has “been granted temporary derogations to environmental requirements by the Scottish Environmental Protection Agency (SEPA) ...are time-limited and will expire at the end of 2020”⁵

Could Ofgem state in their response how the SEPA permits and risks will be managed and what are the incentives on Aggreko and NGSLL in the contracts in this regard?

⁴ Consultation on SNES Executive Summary and para 3.15

⁵ Consultation on SNES para 1.3.

5. Specific request to Ofgem regarding SNES

We strongly recommend that Ofgem add break clauses to the two contracts⁶ for the SNES (the NGSLL 60MW cable and Aggreko power station). Ofgem should review both the SNES contracts once all permits, licences and permissions are in place and both contracts are fully ready to construct before making a final decision to proceed.

The process of undertaking the necessary surveys, environmental and social impacts stakeholder engagements, consultations and consents could take between a few and several months. During this period there could be other developments and therefore Ofgem should make its final decision to progress the contracts once the SNES is ready to implement.

This approach would be exactly in line with Ofgem's SWW process, Ofgem's interconnector cap and floor regime and Ofgem's developing CATO process. It is in line with a least worst regrets (LWR) approach used by the GB system operator in the Network Option Assessment (NOA) process which is endorsed by Ofgem⁷ (noting Ofgem have criticised the detailed implementation of LWR for NOA not LWR itself).

As the successful bidders, Aggreko and NGSLL should be compensated for all reasonable costs in progressing the SNES and obtaining all permits and contracts so that, regardless of whether the SNES is progressed or not, at that stage Aggreko and NGSLL are not out of pocket.

This approach of inserting a break clause in the contracts would align the SNES Shetland power station process with Ofgem's approach to other large investments in transmission and interconnection.

We note that although the SNES is considered under the distribution arrangements its costs are of similar orders of magnitude to interconnector and transmission projects.

We note that Ofgem⁸ is:

“...introducing competition into the delivery of other new, separable and high value (£100m or over) projects”.

However, we note that Ofgem itself has not undertaken the competition for the £581.7m 60MW project connecting Shetland to Scotland. The competition was run by SSE to deliver a replacement power station. Given the outturn of that competition (which unexpectedly includes a cable), it is now time for Ofgem to run a parallel wider review process for connecting Shetland to the GB and European Grids, including the transmission connection option, in order to ensure that the outcome is the best value for GB consumers. That review can proceed whilst the planning for the SNES is undertaken by the successful bidders.

We would like to compare the SNES process to those used by Ofgem on other projects with this level of cost to the GB consumer, especially the Strategic Wider Work (SWW) process which receives a high degree of Ofgem and third party scrutiny and public consultation.

We note that Ofgem's SWW factsheet⁹ states:

⁶ SNES consultation para 3.8.

⁷ https://www.ofgem.gov.uk/system/files/docs/2016/10/final_letter_on_noa_methodology_0.pdf

⁸ <https://www.ofgem.gov.uk/electricity/transmission-networks/critical-investments/strategic-wider-works>

“these developments were not agreed as part of the RIIO-T1 price control as the timing and costs of particular projects were uncertain at the time of the settlement. To help manage this uncertainty we introduced the SWW arrangements”.

We note that the Shetland 60MW link was not agreed at price control and therefore should be treated as a SWW or equivalent.

The factsheet also states:

“The SWW arrangements provide flexibility by allowing TOs to bring forward projects when more information is available (rather than only allowing TOs to develop projects that were agreed at the start of the price control). This helps to manage uncertainty and ensure value for money for consumers by ensuring that network infrastructure projects are progressed at the most appropriate time”.

Our proposal that Ofgem should introduce a break clause in the SNES contract for the Shetland 60MW link is precisely in line with Ofgem’s other processes.

The factsheet states:

“we will apply more scrutiny to larger and/or more technologically complex projects than to projects that are smaller and/or more straightforward.”

It is clear that the SNES is more complex given the interaction with renewable generation, aging fossil generation, security of supply, 600MW transmission link (already in the SWW process) and the proposed Maali interconnector to Norway. Whilst Aggreko and NGSLL are progressing the SNES through planning and permitting, this will give Ofgem time to undertake the appropriate level of scrutiny before a final decision is made.

The thresholds for SWW projects are stated in Ofgem’s guidance¹⁰ as £50m in SSE, £100m in SP and £500m in NGET areas. The Shetland Power Station SNES with an NPV of £581.7m would count as an SWW project anywhere in GB and is 10 times the threshold for a SWW project in north of Scotland.

We note that the process for SWW following the needs case involves two consultations with assessment and decision by Ofgem over a period of over one year – see Figure 1 below. The proposal to progress the SNES in a two stage process, with break clauses in the contracts, would allow the consultation and assessment required by Ofgem for projects of this magnitude, without delaying the project.

⁹ https://www.ofgem.gov.uk/sites/default/files/docs/2013/12/strategic_wider_works_factsheet_0.pdf

¹⁰

https://www.ofgem.gov.uk/sites/default/files/docs/2013/10/guidance_on_the_strategic_wider_works_arrangements_in_riio_t1.pdf



Figure 1 Ofgem’s SWW process.

In our view our request for a break clause and for further review is in line with Ofgem’s duties in particular:

- “•promote efficiency and economy on the part of those licensed
- secure a diverse and viable long-term energy supply, and shall, in carrying out those functions, have regard to the effect on the environment.”

Yours

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