FEEDBACK FROM FLEXIBILITY SERVICE PROVIDERS ON SCOTLAND'S ISLANDS REI

20/01/2025

Scottish & Southern Electricity Networks

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INTRODUCTION

We conducted a Request for Information (RFI) to assess the potential for implementing Flexibility Services across island regions, engaging with commercial, industrial, and community organisations. The objective was to understand existing capabilities, identify barriers and preferences relating to service design, while exploring opportunities to reduce reliance on diesel generators, manage demand peaks, and integrate more renewables.

The RFI revealed interest, with twelve organisations expressing a willingness to participate, though their readiness and capabilities varied. Key barriers were identified, including high infrastructure costs, challenges with grid connections, regulatory complexities, and limited customer engagement. Active Network Management (ANM) requirements and site-specific constraints further complicated participation. Community-led projects highlighted the importance of reinvesting in local resilience, affordable housing, and social value, though low population density and limited financial incentives hindered scalability. Financial incentives above the average may be necessary to recruit participants effectively and overcome these barriers.

Building on these findings, the next steps involve working further with interested providers, quantifying and contracting flexibility capacity, and continuing discussions with aggregators and electricity suppliers to broaden participation. Efforts will also focus on addressing grid access and infrastructure challenges. Pilot programmes will be developed and trialled to refine approaches and demonstrate the value of flexibility services, particularly in reducing diesel reliance. Finally, the publication of RFI learnings is expected to stimulate further interest and engagement and we continue to welcome responses from potential providers.

The RFI highlighted both the potential and the challenges of implementing Flexibility Services across island regions. While immediate opportunities are limited, sustained collaboration, investment, and market development will be crucial to unlocking renewable integration and achieving long-term energy resilience in these communities.

SUMMARY OF FEEDBACK

12 organisations expressed their willingness to provide Flexibility Services, but capabilities vary. Given the small data set, it was difficult to identify any trends, but a few recurring themes were identified.

Flexible Assets Identified

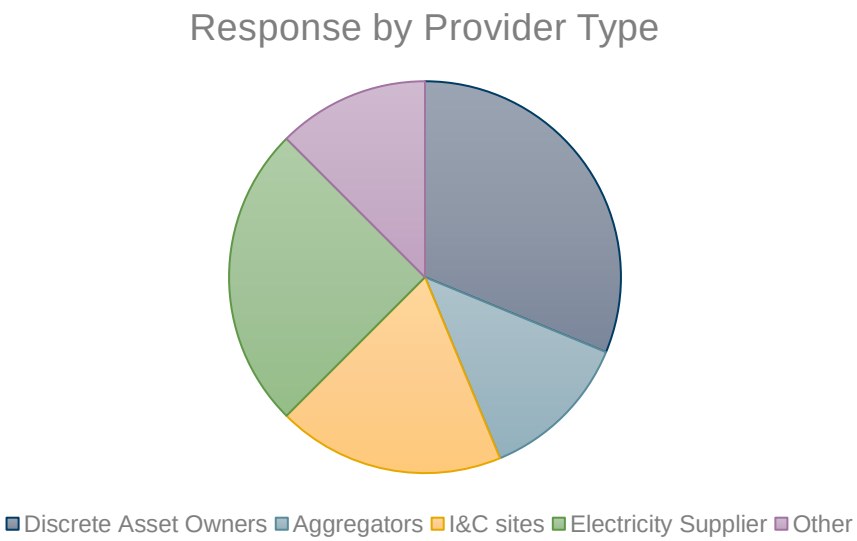

Figure 1: Breakdown of Respondents by Asset Type

A range of flexible assets were included in the response, including aggregators, industrial & commercial, electricity suppliers and discrete assets such as hydro plants, wind turbines, and planned batteries. When compared with the current portfolio of Flexibility Service Providers (FSPs), it is notable that we received less response from behind the meter aggregators than typically participate in the market and more from discrete asset owners.

The responses include those with assets currently installed, but also those looking at expanding their portfolio further. Several organisations plan to expand their renewable energy installations, including additional solar panels, battery energy storage system (BESS), and hydrogen production units. Some are awaiting subsidy awards or seeking commercial partners to further scale their operations. One of the key topics put forward by discrete asset owners was how they could include flexibility in the economic case for a planned connection, or to enhance their connection agreement. Where participants had a planned generation asset but didn't have a date, they were signposted to flexible connections. To help potential participants understand commercial incentives, they were directed to our contracts register in conjunction with the network needs identified in the initial RFI document.

Notification Times and Contract Preferences

We asked about the notification period between instruction and request. The aim of this was to understand the appetite for flexibility amongst respondents and the timeframes we could expect from them in responding to needs, as one of the use cases would be in the event of an unplanned outage to a cable feeding each islands region.

The timescale for responding to flexibility requests varies. Some organisations can respond within a day of need, while others require more lead time, such as a week or even a month. Notification timeframes seem to vary based on operational capacity – the availability of people on-site to manage dispatch.

Most respondents prefer long-term, multi-year contracts, indicating a need for stability and commitment in flexibility service agreements. A few express openness to shorter-term (less than one month) contracts under specific conditions. Respondents clearly value certainty, specifically revenue certainty. This could therefore be

difficult to fit with the typical use case across the Island communities of needing additional generation or reduced demand at the time of faults. To use Flexibility Services in these cases there may be a requirement to guarantee revenue without dispatch.

There was no correlation between Provider type (i.e. aggregator, discrete asset) and a preference for long-term contracts; however, amongst the providers that are theoretically able to provide flexibility immediately (as outlined in the Next Steps section) there was a preference for mid-term contracts. This also seems to have been misunderstood in some instances, whereby the contract was understood as the service window. Having spoken with respondents, there seems to be a preference for long term contracts if there is a definite commercial advantage to providing flexibility, particularly for assets not yet connected.

Pricing Structures

We also aimed to understand how much and at what frequency potential providers would seek payment.

Participants express varied price expectations, with some requiring up to £400-500 per MWh for Flexibility Services. Given we have previously accepted bids as high a £566 for availability and £3,650 for utilisation, these prices aren't necessarily prohibitively expensive. We were informed verbally that expanding capacity to provide domestic flexibility in some of the regions could be prohibitively expensive due to supply chain and labour restrictions. The overriding theme from discrete asset owners awaiting connection was that they didn't yet know what value they would seek.

Most prefer a two-part payment structure: an availability payment for contracting capacity and an additional payment after actual utilisation.

Respondents awaiting a connection for their discrete asset raised the issue that they would like to build flexibility into their proposal for financing, but that it's hard to do so without more clarity on pricing and usage. A flexibility price calculator could be of use to potential stakeholders around this issue, as the question around value persists even outside of this RFI. Additionally, it's difficult to go back to respondents with definite usage figures at this stage, as we will only procure flexibility if it is the most economical option. Calculating the cost of diesel reduction that could theoretically be covered by flexibility could be a step to clarifying our position on how often we might use the assets identified.

Geographical Availability

Organisations offer Flexibility Services in different parts of the Scottish Islands, including the Outer Hebrides, Inner Hebrides, Orkney, and Shetland. Some focus exclusively on specific areas, such as Islay, Mull, Tiree, or Shetland, while electricity suppliers and aggregators have broader coverage across multiple regions. Currently, the only area where we have identified flexible assets that we can contract immediately is Harris in the Outer Hebrides but there will be continued engagement with respondents in all areas.

Limitations and Challenges

Limitations with grid access and connection offers can restrict the ability of discrete assets to import and export energy flexibly. Constrained connections for generation assets, and ANM connections that don't permit export were also commonly discussed. Many discrete asset owners sought assurances over usage to build the relevant assumptions into their connection agreement or power purchase agreement (PPA) to allow them to participate in flexibility.

The need for active customer consent and engagement is a recurring challenge amongst suppliers and aggregators, especially in terms of availability and willingness to provide flexibility. There is uncertainty over the amount of flexibility recruited in the regions outlined in the RFI

An issue common amongst all respondents was uncertain financial incentives which can deter participation. A common issue came from discrete asset owners awaiting connections was that they sought assurances on pricing and usage to build into their businesses case for loans from the bank. This issue arises more from uncertain time periods of usage than expected £/MWh; if the service windows are short then it may not be worth the Provider's time and effort to set themselves up for Flexibility. Furthermore, a lack of internal capacity or resources to progress feasibility studies and develop commercial partnerships can impede progress across respondents.

The organisations surveyed present a mix of readiness and capacity for providing flexibility services in the island locations covered by the RFI. While several are already offering or close to offering flexibility through assets like BESS and hydro power, others are in the process of scaling up generation sites or resolving technical and commercial barriers.

NEXT STEPS

There are several actions we can take following the RFI to pursue flexibility in the identified island regions.

One energy supplier has expressed interest in trialling flexibility at a few of their industrial and commercial (I&C) sites in these areas. They have approximately 25 I&C customers, totalling an annual volume of ~22 GWh. We are working with them to determine how much flexible capacity this represents, but they have yet to begin recruiting providers.

Additional providers, already signed to overarching agreements, may participate in flexibility initiatives in the islands, though they did not respond to the RFI. One aggregator of I&C assets may have capacity in these regions, and another supplier is expected to provide capacity, with discussions ongoing. Another organisation that did respond to the RFI has been unavailable for further discussions but indicated an estimated 10 MW of flexible capacity across the regions, which we will continue to explore. Since the RFI's publication and the closure of responses, further interest has been expressed by other companies. We anticipate that publishing learnings from this process will generate additional interest.

Summary of Recommendations

The RFI has successfully highlighted that there is keen interest in Flexibility Services in the Island communities from both commercial assets and community led schemes. However, there are clear complexities and barriers for participation, particularly around ANM and Grid Access.

The RFI has not identified a single area where Flexibility Services can be currently used to remove the reliance on diesel generators totally although it may be possible to reduce their use in some areas.

Given the keen interest in Flexibility Services in the Islands it is recommended that at least two initial areas are developed to a commercial service in the near term. This would need to be done whilst also developing clear process for participation in services for those on ANM. The two proposed areas are:

- Lewis and Harris first through a Stability Service and then for thermal constraints where capacity is available
- Flexibility Services on Harris

Although conversations are ongoing regarding the feasibility of other respondents' assets. In most cases, SSEN has to confirm the expected level of use in order for potential participants to ascertain commercial viability.

It should also be noted whilst not included in this RFI, the Broadford Grid reinforcement strategy recommend Flexibility Services, which could be delivered from the south part of the Isle of Skye.

A brief outline of recommendations and actions for each region is listed below. Note, that these do not include electricity suppliers and aggregators who have the potential to be active across multiple regions.

Orkney

- One local provider identified
- Potential for generation turn up service with that provider subject to ANM

Next Steps: Develop process for the management of Flexibility Services Providers who are connected to or controlled by ANM schemes to maximise their ability to participate in Flexibility

Outer Hebrides

- One local provider identified
- Generation turn up service

Next Steps: Move to competitive procurement of Flexibility Services

Mull, Coll, and Tiree

- Two local providers identified
- Potential for generation turn up on Mull & Tiree. Asset on Tiree could help reduce diesel usage on diesel generation once it is up and running.

Next Steps: Continue to monitor the progress of both projects and clarify the potential value of flexibility.

Islay, Jura, and Colonsay

- One local provider identified
- Hydrogen plant that is awaiting planning and subsidies that could provide generation turn up

Next Steps: Continue to communicate with stakeholder around a proposed hydro solution and provide insights to the Whole Systems team within SSEN.

Shetland

- Two local providers identified
- BESS projects with generation turn up capability

Next Steps: Develop process for the management of Flexibility Services Providers who are connected to or controlled by ANM schemes to maximise their ability to participate in Flexibility. Continue to communicate with the potential providers to help them understand the potential value of Flexibility in the area.

Western Isles Stability Service

We are aiming top open an Open Procedure tender in Q4-25 to progress a Stability Service on Lewis. This service is intended to reduce diesel emissions and the curtailment of intermittent generators (such as wind) during planned and unplanned outages to the cable from Ardmore to Harris.

Load Managed Areas

We are trialling two Demand Diversification Services (DDS) in winter 24/25 for the future management of Load Managed Areas (LMAs) in our license areas. This trial is led by Future Networks in SSEN and will ideally uncover some key learnings for progressing LMAs in the island regions covered by the RFI. Find out more here.