

SP Energy Networks

Future Networks

04 / December / 2020

**FUSION Flexibility
Services
Requisition for
Leuchars
V1.5**

FSR – Leuchars

1. Flexibility Services Requisition for Leuchars

Overview

The Flexibility Services Requisition (FSR) articulates the service requirements for Leuchars trials in 2021 (see Appendix 1) and has been developed to ensure trials occur during normal business hours. The learnings developed from these initial trials will inform subsequent FSR's in later years of FUSION which will provide a greater understanding of the application of the Universal Smart Energy Framework (USEF) to the use of flexible assets in delivering network services.

USEF Compliance

All participants¹ must be USEF compliant² as FUSION will use USEF protocols for the delivery of flexibility in the initial trials.

The following documents define what is required for USEF compliance in Project FUSION:

- [Specification of communication protocols between market participants](#)
- [Compliance to the USEF Flexibility Trading Protocol \(UFTP\) version 1.01](#)

Any costs that you would incur in responding to the needs of this FSR (e.g. UFTP development costs) may be reflected in your pricing schedule when you come to respond to the Invitation to Tender (ITT)³. The following study provides an indication of the scale of costs aggregators might anticipate for implementing USEF.

- [Quantification of market participant costs for Implementing USEF Interface compatibility](#)

Location of Flexibility

All flexible units, including distributed energy resources (DERs) and flexible assets, must be located within the areas normally supplied by Leuchars primary substation as indicated in Table 1.

¹Participants can be an individual entity or a consortium.

²Participants are not required to be currently USEF compliant provided full compliance can be demonstrated prior to the commencement of the earliest contracted availability period.

³ An 'ITT response proforma' is included within the ITT pack issued in Dec 2020. Respondents will be invited to populate this with any costs they would like to include.



FSR – Leuchars

Table 1: Post Codes applicable for providing flexibility for the Leuchars trials

| Post codes served by the Leuchars Primary Substation | | | | | | | | |
|--|----------|----------|----------|----------|----------|----------|----------|----------|
| KY16 0AA | KY16 0EN | KY16 0HA | KY16 0HQ | KY16 0JE | KY16 0JT | KY16 0LJ | KY16 0UN | KY16 9SQ |
| KY16 0DP | KY16 0EP | KY16 0HB | KY16 0HR | KY16 0JF | KY16 0JU | KY16 0LQ | KY16 0UP | VKY00728 |
| KY16 0DR | KY16 0ER | KY16 0HD | KY16 0HS | KY16 0JG | KY16 0JW | KY16 0LR | KY16 0UQ | |
| KY16 0DU | KY16 0ES | KY16 0HE | KY16 0HT | KY16 0JH | KY16 0JY | KY16 0UA | KY16 0UZ | |
| KY16 0DX | KY16 0ET | KY16 0HF | KY16 0HU | KY16 0JJ | KY16 0JZ | KY16 0UE | KY16 0XA | |
| KY16 0EE | KY16 0EU | KY16 0HG | KY16 0HW | KY16 0JL | KY16 0LA | KY16 0UF | KY16 0XB | |
| KY16 0EF | KY16 0EW | KY16 0HH | KY16 0HZ | KY16 0JN | KY16 0LB | KY16 0UG | KY16 0XD | |
| KY16 0EG | KY16 0EX | KY16 0HL | KY16 0JA | KY16 0JP | KY16 0LF | KY16 0UH | KY16 0XE | |
| KY16 0EJ | KY16 0EY | KY16 0HN | KY16 0JB | KY16 0JQ | KY16 0LG | KY16 0UJ | KY16 0XF | |
| KY16 0EL | KY16 0EZ | KY16 0HP | KY16 0JD | KY16 0JR | KY16 0LH | KY16 0UL | KY16 0XJ | |

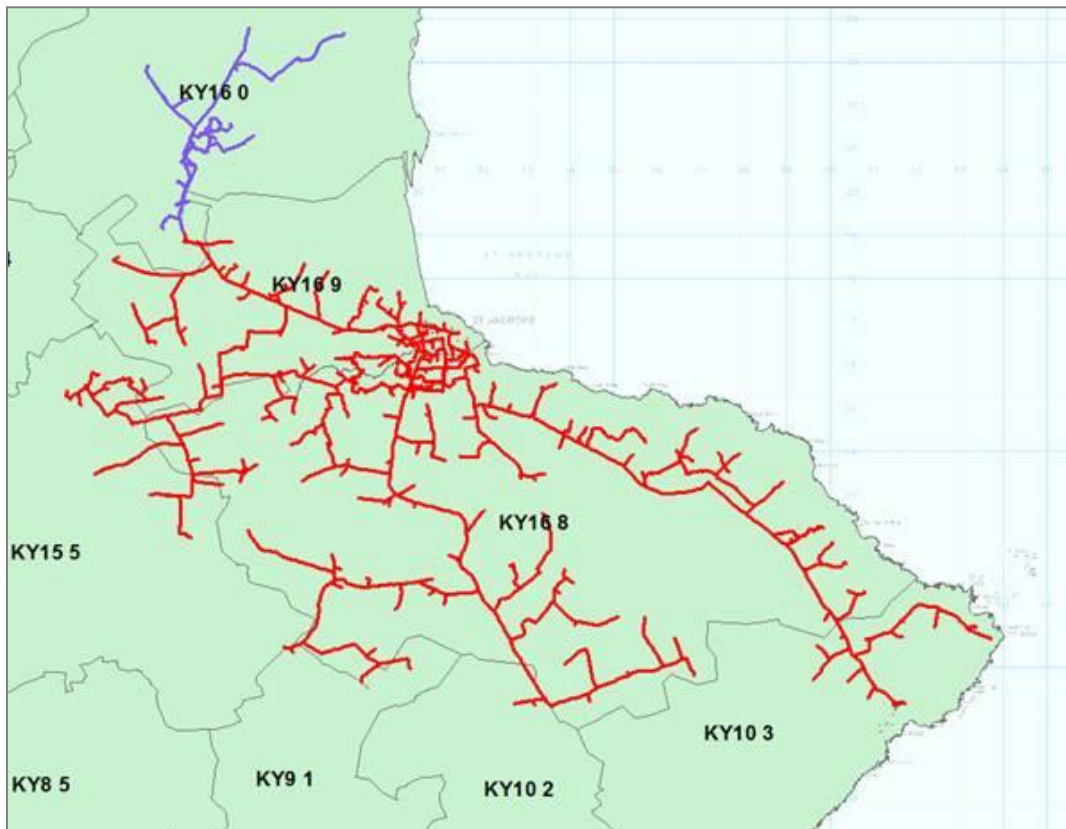


Figure 1: Leuchars network shown in purple.



FSR – Leuchars

Appendix 1 Leuchars 2021 Flexibility Services Requisition (FSR)

Table 2: Flexibility Service Requisition – Flexibility availability required during the Leuchars trials

| Ref | Year | Response Type (+ is increase demand or export; - is opposite) | | | | Period | Service Window | Days | Service Type | Maximum Response Time | Minimum Run Time (mins) | Maximum Run Time (mins) | Recovery Time * (mins) | Ramp Down Time * (mins) | Ramp Up Time * (mins) | Estimated Runs (No.) |
|-----|------|---|-----------|---------------|-------------|-----------|---|-----------|--|-----------------------|-------------------------|-------------------------|------------------------|-------------------------|-----------------------|----------------------|
| | | Demand (kW) | Gen. (kW) | Demand (kVAr) | Gen. (kVAr) | | | | | | | | | | | |
| 1 | 2021 | -250 | 250 | N/A | N/A | Oct - Dec | 09:00 – 10:30 11:00 – 13:00 15:00 – 17:00 | Mon - Fri | Sustain Peak Management | 17 hrs | 15 | 60 | 30 | 30 | 30 | 12 |
| 2 | 2021 | -250 | 250 | N/A | N/A | Jul – Sep | 09:00 – 10:30 11:00 – 13:00 15:00 – 17:00 | Mon – Fri | Sustain Peak Management | 17 hrs | 15 | 60 | 30 | 30 | 30 | 8 |
| 3 | 2021 | -250 | 250 | N/A | N/A | Oct - Dec | 14:00 - 16:00 | Mon – Fri | Secure DSO Constraint Management (Pre-Fault) | 30 mins | 15 | 60 | 30 | 30 | 30 | 12 |
| 4 | 2021 | -250 | 250 | N/A | N/A | Jul - Sep | 14:00 - 16:00 | Mon – Fri | Secure DSO Constraint Management (Pre-Fault) | 30 mins | 15 | 60 | 30 | 30 | 30 | 8 |
| 5 | 2021 | -250 | 250 | N/A | N/A | Jun - Dec | 14:00 - 16:00 | Mon – Fri | Dynamic DSO Constraint Management (Post-Fault) | 15 mins * | 15 | 60 | 30 | 30 | 15 | 20 |

* Can be reviewed subject to asset / DER capabilities

Table 2 Identifies the total flexibility requirements for the Leuchars initial trials;

- Participants shall use the 'ITT response proforma' to indicate the extent to which they can provide all the above services and their technical specification.
- The service(s) should be delivered from flexible units located within one or more of the postcodes described in section 1.
- The capacities reflected in this FSR have been deliberately kept low to minimise the impact of these trials on the network. (Subsequent flexibility tenders in the FUSION project are expected to procure greater capacities of availability in the same trial area).
- The minimum total aggregate capacity of a group of assets that can qualify for bidding is 1kW.
- The capacity that is called upon to be 'utilized' in any given event may be lower than the total amount of 'availability' procured under this 'availability' contract.
- A summary overview of the service descriptions is provided in Appendix 3 of this document.
- Exact characteristics of these services will be defined in schedule 1 of the Flexibility Services Agreement (FSA) which is scheduled for signing by no later than Feb 2021. A template FSA is available on the Project FUSION website and is also included in the ITT pack.



FSR – Leuchars

Appendix 2 – Summary of Pre-Trial Tests

Table 3: Flexibility Service Requisition – Pre-trial tests during FUSION

| Ref | Year | Response Type (+ is increase demand or export; - is opposite) | | | | Period | Service Window | Days | Service Type | Duration (mins) | Indicative Test Windows |
|-----|------|---|-----------------|---------------|-------------------|------------|----------------|-----------|--|-----------------|---|
| | | Demand (kW) | Generation (kW) | Demand (kVAr) | Generation (kVAr) | | | | | | |
| T1 | 2021 | -250 | 250 | N/A | N/A | -Feb - May | 09:00 - 17:00 | Mon - Fri | Sustain Peak Management | 30 | 09:30 – 11:30 12:00 – 14:00 14:30 – 16:00 |
| T2 | 2021 | -250 | 250 | N/A | N/A | Feb - May | 09:00 - 17:00 | Mon - Fri | Secure DSO Constraint Management (Pre-Fault) | 30 | 09:30 – 11:30 12:00 – 14:00 14:30 – 16:00 |
| T3 | 2021 | -250 | 250 | N/A | N/A | Feb - May | 09:00 - 17:00 | Mon - Fri | Dynamic DSO Constraint Management (post-fault) | 30 | 09:30 – 11:30 12:00 – 14:00 14:30 – 16:00 |

Table 3 indicates suggested utilisation windows to consider for pre-trial testing of end-to-end service delivery.

Pre-trial testing is intended to allow flexibility service providers the opportunity to test the various elements of their service delivery process prior to the commencement of their contracted availability period.

The successful delivery of the contracted availability sought in Table 2, will rely upon tenderers having successfully integrated various constituent elements of the service delivery chain. These necessary elements will include (but not necessarily be limited to) the tenderer:

1. Enabling any necessary flexible **assets in the field** (including the installation of any necessary controls etc and conclusion of necessary contracts with customers)
2. Enabling their **own platform** so that it complies with the [UFTP communications specification](#).
3. **Integrating** their own platform with SP Energy Networks 'FUSION Flexibility Procurement' (FFP) platform (to allow for demonstrative end-to-end delivery of flexibility ahead of commencement of contracted availability period).

The objective of this pre-trial testing window is to allow for successful tenderers to conclude and demonstrate the successful implementation of these necessary elements prior to the commencement of contracted availability period.

The exact timing and nature of the tests would depend on the readiness of the elements and/or interactions being tested.

A suggested approach is provided below for indicative purposes only;

- Feb - Apr: Develop and test communications and processes only; no delivery of flexibility is expected during this time period;
- Apr - May: Integrate platforms and hardware and test various aspects of the service delivery in order to demonstrate full end-to-end readiness in advance of the commencement of the contracted availability period.

Table 3 is not prescriptive. It is intended simply to suggest indicative test windows for your consideration.

There will no availability payment for any of the pre-trial tests shown in Table 3 but SPEN agrees to pay a nominal utilisation fee, the value of which is yet to be determined at SPEN's sole discretion.



FSR – Leuchars

Appendix 3 – FUSION Service Descriptions

Table 4: Service descriptions

| Service to be Trialled | Summary of Service |
|--|---|
| Sustain Peak Management | A service to provide the DSO with a planned reduction in demand or increase in generation in advance of a forecast capacity constraint at peak time, e.g. to reduce the loading on a transformer during tea-time peak. |
| Secure DSO Constraint Management (pre-fault) | A service to provide the DSO with an immediate reduction in demand or increase in generation during a planned outage of one or more critical assets or in the event of network disturbances to maintain security standards and avoid any customer minutes lost. |
| Dynamic DSO Constraint Management (post-fault) | A service to provide the DSO with an immediate reduction in demand or increase in generation following an unplanned outage of one or more critical assets to maintain security standards and avoid any customer minutes lost. |

