

## Appendix 1 – System Coordination (March 2021)

### Structure of the Appendix

This Appendix provides an initial overview of the Function, including the snapshot of the roadmap of the Function and some key statistics.

We then go through each activity and the unique steps that sit under the activity. With the term “unique” we indicate all Common Steps aggregated at organisation level, where possible, as well as steps which aggregate Individual Steps (see section 2.7.2 of the main document for reference).<sup>1</sup>

We provide a summary table of each step which includes all the associated information as of the date of this publication. The fields of the table are explained below:

Step	Name of the step as included in the DSO Roadmap
<b>Step type:</b>	<i>Development / definition activity or network action or code change process or enabler/dependency.</i>
<b>Description:</b>	<i>Description of the step as included in the DSO Roadmap</i>
<b>ENA ONP Product:</b>	<i>Only relevant for steps which are associated to an ENA ONP Product.</i>
<b>Timeline:</b>	<i>Start date and completion date of the step. For aggregated steps, start date shows the earliest start date of the responses and completion date the latest completion date of the responses.</i>
<b>Organisation type:</b>	<i>Involved organisations who are responsible for delivering this step. If the step type is “Code change process”, then a delivery body which consists of a number of stakeholders (DNOs, Ofgem, TOs, ESO), is responsible for the code change process. In this case the step is allocated to the “Delivery body”.</i>
<b>Progress:</b>	<i>This field shows the number of organisations in each implementation level.</i>
<b>Additional information:</b>	<i>Additional information such as barriers, dependencies, good practices and links to public information is included in this field.</i>

**Table 1 – Step table template, definition of the fields**

### Function 1

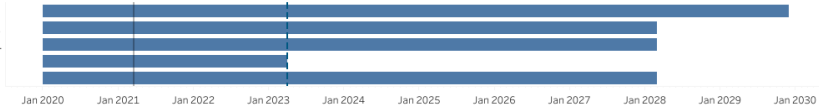
Function 1 – System Coordination consists of 91 unique steps, some of which are common across DNOs, T.E.F. projects and TOs or duplicated across different activities of this function. We received in total 243 contributions by the involved stakeholders (i.e. 243 steps by all organisations, which were aggregated to 91 unique steps, where possible).

As of March 2021, Figure 1 shows that the roadmap of the “System Coordination” Function will be completed by 2030. Please note that timescales are only relevant to steps that have been planned or being implemented by the involved organisations. There are no dates for steps that are at conceptual level, meaning that the organisations plan to implement the step, but they do not know the timescale of the implementation (please refer to section 2.7.3 of the main document for reference).

<sup>1</sup> If a step is relevant to the wider industry, it is called Common Step. A step which is required for individual organisation to implement DSO functionality is called Individual Step. Individual steps are aggregated into a single generic step combining all individual network actions and described only at a high-level, anonymised basis.

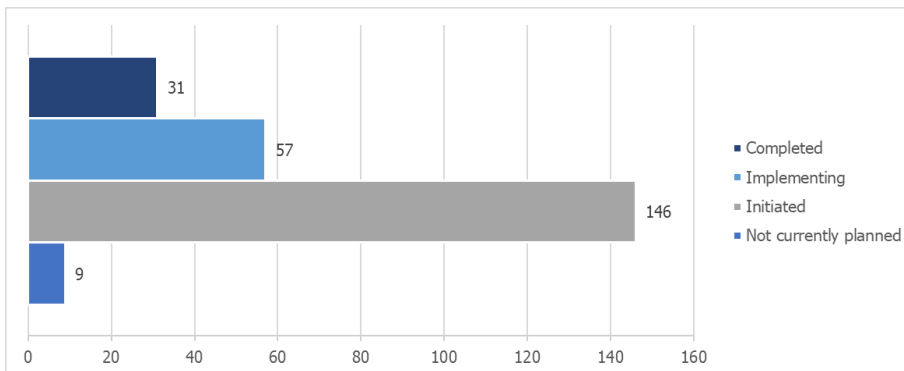
**Activity**

- A. Co-ordination with GB System Operator
- B. Co-ordination with other DSOs and Distribution Networks (incl..
- C. Co-ordination with local energy systems including industrial ne..
- D. Co-ordination of networks to enable cross vector energy excha..
- E. Co-ordination of local network services.



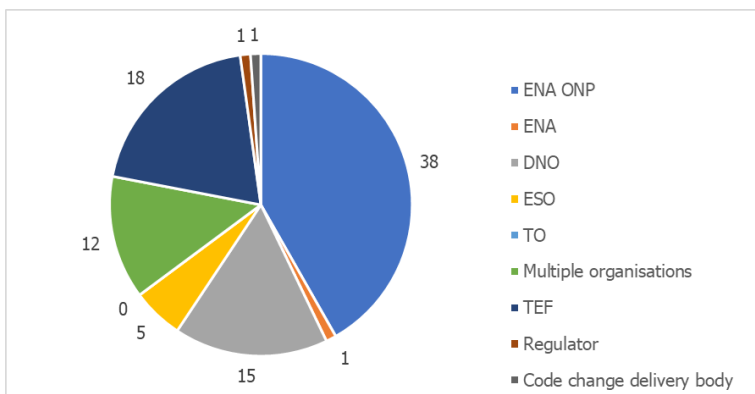
**Figure 1 System Coordination Roadmap**

Figure 2 shows the total number of organisations' contributions to the unique steps. Most steps (~60%) of this function are in the organisations' pipeline to implement ("Initiated"). 13% of them have been completed and approximately 24% of the steps are being implemented.



**Figure 2 Progress against implementation of "System Coordination" Function (No. of steps-contributions of each organisation)**

Figure 3 shows the number of unique steps that are led by each organisation type in the "System Coordination" Function. Most steps are led by ENA ONP, followed by T.E.F. steps and DNO steps. It should be noted that nearly 13% of the steps involve multiple organisations (i.e. DNOs, TOs, ESO). Details can be viewed in the Activities' sections.



**Figure 3 Number of steps led by organisation type in Function 1**

## Activity A: Co-ordination with GB System Operator

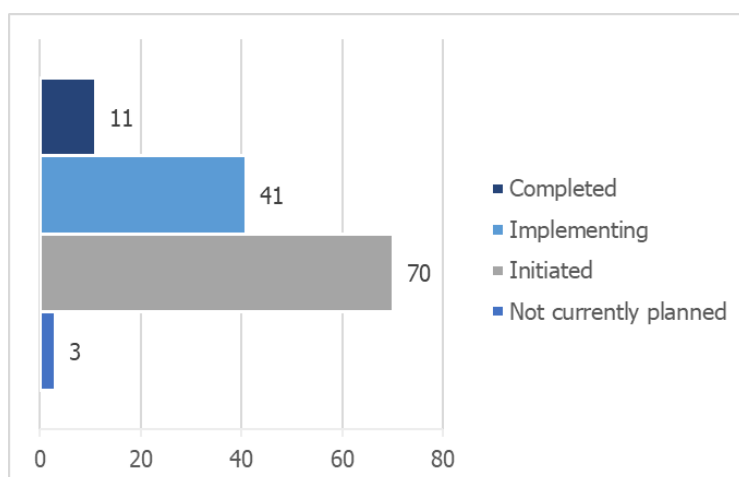
Description: Managing MW and MVar demand and generation within a local network area and managing exchanges to and from the GB transmission system with agreed technical and commercial limits.

Figure 4 displays the roadmap for activity A which consists of 40 unique steps:



**Figure 4 System Coordination – Activity A roadmap**

Figure 5 shows the total number of organisations' contributions to the unique steps. As of March 2021 most steps (~56%) of this activity are in the organisations' pipeline to implement ("Initiated"). Only a few of them have been completed and roughly one third of the steps (~33%) is being implemented.



**Figure 5 Progress against implementation of "System Coordination" – Activity A (No. of steps-contributions of each organisation)**

The tables on the following pages provide detailed information for each step under Activity A.  
Step 1

<b>Step:</b>	<b>Enhanced transmission/ distribution system coordination and control.</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	ENA ONP Workstream 1B Product 3 (2019) redefines the real time information transfers that will be needed to enhance transmission/distribution system coordination and control.
<b>ENA ONP Product:</b>	2019 WS1B P3
<b>Timeline:</b>	January 2019 - January 2020
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Completed(1)
<b>Additional information:</b>	The outcomes of this ENA ONP product have informed next steps for DNOs and the ESO (see step 2 below). Also this product will continue to progress within 2020 ENA ONP activities (2020 WS1B P3), see step 7 and 8. Link to ENA ONP product: <a href="https://www.energynetworks.org/industry-hub/resource-library/open-networks-2019-ws1b-p3-final-report.pdf">https://www.energynetworks.org/industry-hub/resource-library/open-networks-2019-ws1b-p3-final-report.pdf</a>

Step 2

<b>Step:</b>	<b>Co-ordinated Use of DER Intertipping to Manage Transmission Constraints</b>
<b>Step type:</b>	Network actions
<b>Description:</b>	Develop technical processes to deliver co-ordinated operational DER tripping schemes for transmission system needs.
<b>ENA ONP Product:</b>	2019 WS1B P3
<b>Timeline:</b>	January 2019 - October 2021
<b>Organisation type:</b>	ESO(1), DNO(6)
<b>Progress:</b>	Initiated(4), Implementing(3)
<b>Additional information:</b>	This step is linked to Step 1 and ENA ONP developments around this topic. Link to ENA ONP product: <a href="https://www.energynetworks.org/industry-hub/resource-library/open-networks-2019-ws1b-p3-final-report.pdf">https://www.energynetworks.org/industry-hub/resource-library/open-networks-2019-ws1b-p3-final-report.pdf</a>

### Step 3

<b>Step:</b>	<b>Develop common contract for flexibility services</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	ENA ONP Workstream 1A Product 4 delivered in 2020 a flexibility Services Standard Agreement to be adopted by all DNOs (for all Flexibility Services).
<b>ENA ONP Product:</b>	2020 WS1A P4
<b>Timeline:</b>	January 2019 - March 2020
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Completed(1)
<b>Additional information:</b>	<p>This step has informed step 4 for DNOs and the ESO. Working with law firm CMS, the ENA product team produced a standard contract for the procurement of flexibility and an associated implementation plan. The contract has been drafted by all of Britain's DNOs and takes into account vital input from the industry. The contract will be used by all of Britain's DNOs for procuring flexibility, as it seeks to improve the customer journey and ease engagement with the energy system. The standard contract and implementation plan can be accessed and downloaded at the <a href="#">ENA website</a>.</p> <p>Network companies and the ENA have highlighted that a second version of the contract may be released, following ESO Alignment work.</p> <p>Link to ENA ONP's relevant documents:  <a href="#">Implementation plan for standard agreement</a>  <a href="#">Standard Contract</a>  <a href="#">Contract Summary</a></p>

### Step 4

<b>Step:</b>	<b>Develop common contract for flexibility services</b>
<b>Step type:</b>	Network actions
<b>Description:</b>	DNOs to adopt the first version of Flexibility Services Standard Agreement that was developed by ENA ONP in 2020. This agreement is common across all DNOs and used for all flexibility services.
<b>ENA ONP Product:</b>	2020 WS1A P4
<b>Timeline:</b>	January 2019 - June 2021
<b>Organisation type:</b>	DNO(6)
<b>Progress:</b>	Implementing(3), Completed(3)
<b>Additional information:</b>	<p>This step is dependent on Step 3 (above).</p> <p>Links to ENA ONP's relevant documents:  <a href="#">Implementation plan for standard agreement</a>  <a href="#">Standard Contract</a>  <a href="#">Contract Summary</a></p>

### Step 5

<b>Step:</b>	<b>Define New DSO Services</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	ENA ONP Workstream 1A Product 5 (2020) aims to deliver new flexibility products that have been developed consistently across DNOs. This activity will cover new flexibility products only, and seek to ensure that all operational, commercial and technical parameters are aligned across DNOs, insofar as practicable. Over the course of RIIO-ED1, the ENA ONP will monitor and broaden the suite of new services as required.
<b>ENA ONP Product:</b>	2020 WS1A P5
<b>Timeline:</b>	January 2020 - December 2020

<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Completed(1)
<b>Additional information:</b>	Outcomes from T.E.F. projects will inform this ENA ONP development activity (step 26 and 28). This step is linked to step 6 of this activity. Links to 2020 WS1A P5 deliverables of ENA ONP are provided below: <a href="#">Webinar slides</a> <a href="#">DNO flexibility services, Revenue Stacking</a>

#### Step 6

<b>Step:</b>	<b>Procure and Operate New DSO Services</b>
<b>Step type:</b>	Network actions
<b>Description:</b>	Procure and operate new DSO flexibility services in line with outcomes from ENA ONP Workstream 1A Product 5 (2020).
<b>ENA ONP Product:</b>	2020 WS1A P5
<b>Timeline:</b>	January 2020 - December 2022
<b>Organisation type:</b>	DNO(6)
<b>Progress:</b>	Initiated(5), Implementing(1)
<b>Additional information:</b>	This step is linked to Step 5 of this Activity and dependent on the ENA ONP WS1A P5 outcomes. DNOs have highlighted that network needs and market maturity should be considered when developing new DSO services. Links to 2020 WS1A P5 deliverables of ENA ONP are provided below: <a href="#">Webinar slides</a> <a href="#">DNO flexibility services, Revenue Stacking</a>

#### Step 7

<b>Step:</b>	<b>Real Time Data Exchange and Forecasting - Phase 1</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	ENA ONP Workstream 1B Product 3 (2020) will complete and review ongoing trials to determine and document preferred methods for real-time data exchange and operational forecasting to support whole system activities including Service Conflict Management, Connect & Manage and Operational Intertripping of distribution connected resources. The timing for the reporting of outcomes in this product will depend on the timing of the Regional Development Programmes being used to test data exchange and the case studies.
<b>ENA ONP Product:</b>	2020 WS1B P3
<b>Timeline:</b>	January 2020 - December 2020
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Completed(1)
<b>Additional information:</b>	This work builds on the WS1B Product 3 work carried out through 2019. It will draw on ongoing trials including regional development programmes to identify the data exchange requirements for different levels of DSO functionality. Outcomes from T.E.F. projects will also inform this ENA ONP development activity (step 27). Link to ENA ONP deliverables on RDP learnings: <a href="https://www.energynetworks.org/assets/images/ON20-WS1B-P3%20RDP%20Learnings-PUBLISHED.23.12.20.pdf">https://www.energynetworks.org/assets/images/ON20-WS1B-P3%20RDP%20Learnings-PUBLISHED.23.12.20.pdf</a>

#### Step 8

<b>Step:</b>	<b>Real Time Data Exchange and Forecasting - Phase 2</b>
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<b>Step type:</b>	Development / definition activity
<b>Description:</b>	Develop a good practice guide for the implementation of data exchange specifications for OTS, C&M and management of service conflicts. Based on outcomes from ENA ONP Workstream 1B Product 3 (2020) - Phase 1.
<b>ENA ONP Product:</b>	2020 WS1B P3
<b>Timeline:</b>	January 2020 - December 2020
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Completed(1)
<b>Additional information:</b>	In the updated Project Initiation Document, ENA ONP highlighted that development of metering requirements for DER providing services to the ESO and DSOs will be also part of phase 2. The product has now been completed and all the relevant deliverables are provided below: <a href="#">Operational forecasting Final report</a> <a href="#">Process Diagram</a> <a href="#">Operational Tripping Schemes Requirements</a> <a href="#">OTS Functional Design and Data Exchange Requirements</a>

#### Step 9

<b>Step:</b>	<b>Real Time Data Exchange and Forecasting</b>
<b>Step type:</b>	Network actions
<b>Description:</b>	Developing mature processes and IT infrastructure to facilitate operational data exchange in alignment with Open Networks WS1B, P3 2020 paper on Real time exchange & forecasting
<b>ENA ONP Product:</b>	2020 WS1B P3
<b>Timeline:</b>	April 2018 - December 2025
<b>Organisation type:</b>	ESO(1), DNO(6)
<b>Progress:</b>	Initiated(5), Implementing(2)
<b>Additional information:</b>	This network action depends on ENA ONP outcomes and Good Practice Guide for data exchange (to be delivered within 2021). UKPN's Power Potential projects and WPD's Regional Development Programme (RDP) in the south west are underpinning developments in this area. The ENA ONP product has now been completed and all the relevant deliverables are provided below: <a href="#">Operational forecasting Final report</a> <a href="#">Process Diagram</a> <a href="#">Operational Tripping Schemes Requirements</a> <a href="#">OTS Functional Design and Data Exchange Requirements</a>

#### Step 10

<b>Step:</b>	<b>Ongoing Regional Development Programmes</b>
<b>Step type:</b>	Network actions
<b>Description:</b>	Development of Regional Development Programmes with industry partners as and when required. Objective is to inform protocols for short-term contingency planning between DSO & ESO utilising ancillary services. Implement new commercial contracts that optimise use of existing network assets by allowing DER to connect and provide transmission constraint management services to help manage their impact. ESO/ DNOs/ TOs collaboration to develop enhanced ways of working that facilitate active DER management for transmission system needs. DNOs and ESO to develop a process that facilitates proactive identification of future RDPs.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	August 2016 - March 2028



<b>Organisation type:</b>	TO(3), DNO(6), ESO(1)
<b>Progress:</b>	Initiated(3), Implementing(6), Completed(1)
<b>Additional information:</b>	Currently most companies are in discussion with the ESO or already implementing a regional development programme (RDPs). Most information can be found on the ESO's website: <a href="https://www.nationalgrideso.com/research-publications/regional-development-programmes">https://www.nationalgrideso.com/research-publications/regional-development-programmes</a>

#### Step 11

<b>Step:</b>	<b>Development of a proactive RDP identification process</b>
<b>Step type:</b>	Network actions
<b>Description:</b>	Agree the form of a systematic process to identify needs cases for further RDPs, to 'productionise' what has so far been a 'learning by doing'; project-based approach.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	N/A
<b>Organisation type:</b>	ESO(1)
<b>Progress:</b>	Initiated(1)
<b>Additional information:</b>	This is an ESO-led step, included in the <a href="#">ESO forward plan</a> . The step will look to identify future RDPs during RIIO-2. The ESO will work with the ENA ONP to develop a proactive approach to identify future RDPs.

#### Step 12

<b>Step:</b>	<b>Energy Forecasting</b>
<b>Step type:</b>	Network actions
<b>Description:</b>	ESO will evolve their systems to create a new advanced platform for energy forecasting (PEF). This transformation will provide more information in an accessible manner to all stakeholders. This will include information relevant to Distribution System Operation including additional solar and wind forecasts.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	January 2019 - April 2021
<b>Organisation type:</b>	ESO(1)
<b>Progress:</b>	Implementing(1)
<b>Additional information:</b>	ESO-led step included in the <a href="#">ESO forward plan</a> .

#### Step 13

<b>Step:</b>	<b>Information access</b>
<b>Step type:</b>	Network actions
<b>Description:</b>	Develop new data explorer providing access to data across the ESO and new data portal. This will facilitate data access to parties across the whole electricity system. DNOs and parties connected to distribution networks are valued stakeholders in this process.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	April 2020 - August 2023
<b>Organisation type:</b>	ESO(1)
<b>Progress:</b>	Implementing(1)
<b>Additional information:</b>	ESO-led step included in the <a href="#">ESO forward plan</a> .

#### Step 14

<b>Step:</b>	<b>Develop Whole System Approach To Reactive Power Services</b>
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<b>Step type:</b>	Development / definition activity
<b>Description:</b>	The ESO and the DNOs to work together to increase system flexibility by using more DER (Distributed Energy Resources) capabilities and provide network support at a distribution and transmission level, including new reactive power markets. As part of that, the ESO is working with UKPN on the Power Potential (NIC project) to understand how reactive power services can be co-ordinated for both transmission and distribution needs. Through this the ESO will generate additional capacity on the whole electricity system.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	January 2017 - April 2023
<b>Organisation type:</b>	ESO(1), DNO(6)
<b>Progress:</b>	Not currently planned(1), Initiated(4), Implementing(2)
<b>Additional information:</b>	This step is currently implemented by the ESO and UKPN, who are working together on the Power Potential project. DNOs are monitoring outcomes of this project for further implementation of the step. For more information on project Power Potential, please see link below: <a href="https://www.nationalgrideso.com/future-energy/innovation/projects/power-potential">https://www.nationalgrideso.com/future-energy/innovation/projects/power-potential</a> <a href="https://innovation.ukpowernetworks.co.uk/projects/power-potential/">https://innovation.ukpowernetworks.co.uk/projects/power-potential/</a>

#### Step 15

<b>Step:</b>	<b>Transform capability in modelling &amp; data management</b>
<b>Step type:</b>	Network actions
<b>Description:</b>	Evolve data and modelling capabilities to use more granular information on distribution networks and connected parties. This will inform more efficient development and operation of the GB transmission system and aligns with broader work to develop an ESO data platform.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	April 2021 - March 2023
<b>Organisation type:</b>	ESO(1)
<b>Progress:</b>	Initiated(1)
<b>Additional information:</b>	ESO-led step, part of the RIIO-2 business plan. <a href="https://www.nationalgrideso.com/document/158051/download">https://www.nationalgrideso.com/document/158051/download</a>

#### Step 16

<b>Step:</b>	<b>Enhance training and simulation with DNOs and wider industry</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	Engage with DNOs to understand how the ESO can provide the initial training for distribution system operation control room engineers. Provide training on modelling and training on whole system solutions and interfaces.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	April 2022 - March 2026
<b>Organisation type:</b>	ESO(1)
<b>Progress:</b>	Initiated(1)
<b>Additional information:</b>	ESO-led step, part of the RIIO-2 business plan. <a href="https://www.nationalgrideso.com/document/158051/download">https://www.nationalgrideso.com/document/158051/download</a>

#### Step 17

<b>Step:</b>	<b>ESO proposal to consider whole system Grid Code by 2025</b>
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<b>Step type:</b>	Network action
<b>Description:</b>	Work with all stakeholders to create a fully digitalised, whole system Grid Code by 2025. ESO RIIO-2 proposal for a whole system Grid Code would see combining of transmission and distribution codes in an IT system with artificial intelligence (AI)-enabled navigation and, document and workflow management tools.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	April 2022 - March 2025
<b>Organisation type:</b>	ESO
<b>Progress:</b>	Initiated(1)
<b>Additional information:</b>	ESO-led step, part of the RIIO-2 business plan. <a href="https://www.nationalgrideso.com/document/158051/download">https://www.nationalgrideso.com/document/158051/download</a>

#### Step 18

<b>Step:</b>	<b>Whole System FES - Signposting of Potential Network Capacity Requirements</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	ENA ONP Workstream 1B Product 5 (2020) seeks to improve how DNO network capacity shortfalls and forecast network requirements are described and publicised to the wider market. Changes will be recommended and, if there is value in using a standard approach, this will be proposed for adoption by all DNOs.
<b>ENA ONP Product:</b>	2020 WS1B P5
<b>Timeline:</b>	January 2020 - December 2020
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Completed(1)
<b>Additional information:</b>	This is an ENA ONP-led step. In May 2020 findings of the survey on network operator current practices for evaluating and signposting future network capacity were published <a href="#">here</a> .  The final report was published in Nov. 2020: <a href="https://www.energynetworks.org/assets/images/ON20-WS1B-P5%20Proposed%20Standardised%20Network%20Capacity%20Report-PUBLISHED.23.12.20.pdf">https://www.energynetworks.org/assets/images/ON20-WS1B-P5%20Proposed%20Standardised%20Network%20Capacity%20Report-PUBLISHED.23.12.20.pdf</a>

#### Step 19

<b>Step:</b>	<b>Whole System FES - Signposting of Potential Network Capacity Requirements</b>
<b>Step type:</b>	Network actions
<b>Description:</b>	DNOs to implement recommended signposting of potential network capacity requirements, as developed in ENA ONP Workstream 1B Product 5 (2020).
<b>ENA ONP Product:</b>	2020 WS1B P5
<b>Timeline:</b>	October 2020 - December 2020
<b>Organisation type:</b>	DNO(6)
<b>Progress:</b>	Initiated(6)
<b>Additional information:</b>	This step is linked to step 18 outputs (2020 WS1B P5). In May 2020 findings of the survey on network operator current practices for evaluating and signposting future network capacity were published <a href="#">here</a> . The final report was published in Nov. 2020: <a href="https://www.energynetworks.org/assets/images/ON20-WS1B-P5%20Proposed%20Standardised%20Network%20Capacity%20Report-PUBLISHED.23.12.20.pdf">https://www.energynetworks.org/assets/images/ON20-WS1B-P5%20Proposed%20Standardised%20Network%20Capacity%20Report-PUBLISHED.23.12.20.pdf</a>

#### Step 20

<b>Step:</b>	<b>Enable DNO - ESO control centre data exchange</b>
<b>Step type:</b>	Network actions
<b>Description:</b>	Build and Implement appropriate communication link between DNO-ESO control centres., e.g. ICCP link.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	January 2015 - December 2029
<b>Organisation type:</b>	DNO(6)
<b>Progress:</b>	Initiated(2), Implementing(4)
<b>Additional information:</b>	This is a step for DNOs which is also dependant on ESO's capability to deliver the appropriate communication links and requires liaison with the Grid's control room. This step sits outside ENA ONP activities.

#### Step 21

<b>Step:</b>	<b>USEF Implementation Trial</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	Implementation of new and existing roles and responsibilities through Project FUSION in GB. This will help inform future system co-ordination structures and toolsets.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	June 2021 - December 2022
<b>Organisation type:</b>	TEF(1)
<b>Progress:</b>	Initiated(1)
<b>Additional information:</b>	This a FUSION-led step. Link to project FUSION can be found below: <a href="https://www.spenergynetworks.co.uk/pages/fusion.aspx">https://www.spenergynetworks.co.uk/pages/fusion.aspx</a>

#### Step 22

<b>Step:</b>	<b>Service conflict resolution, DER dispatch and associated data exchanges.</b>
<b>Step type:</b>	Network actions
<b>Description:</b>	Developing mature processes and ICT infrastructure for data exchange and increased system visibility and control. This should be capable of facilitating the management of service conflicts and simple or complex optimisation on distribution networks; in alignment with Open Networks WS1B, P3 2019 paper on Real time exchange & forecasting.
<b>ENA ONP Product:</b>	2019 WS1B P3
<b>Timeline:</b>	January 2018 - December 2023
<b>Organisation type:</b>	DNO(6)
<b>Progress:</b>	Initiated(3), Implementing(3)
<b>Additional information:</b>	Step agreed during Function Surgeries, driven by ENA ONP developments. Link to ENA ONP deliverables: <a href="https://www.energynetworks.org/industry-hub/resource-library/open-networks-2019-ws1b-p3-final-report.pdf">https://www.energynetworks.org/industry-hub/resource-library/open-networks-2019-ws1b-p3-final-report.pdf</a>

#### Step 23

<b>Step:</b>	<b>RDPs - enhanced network operation</b>
<b>Step type:</b>	Network actions

<b>Description:</b>	Develop systems/processes to further improve the efficiency and economy of using DER and distribution network options to provide transmission constraint solutions. This should include addressing any technical, commercial and/or regulatory challenges in achieving asset/service optimisation
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	January 2018 - December 2024
<b>Organisation type:</b>	DNO(6)
<b>Progress:</b>	Not currently planned(1), Initiated(2), Implementing(3)
<b>Additional information:</b>	This step is a continuation of step 10. DNOs raised as a barrier the lack of clarity around funding allocation to services used for transmission related constraints. As per DNOs, this activity will use insights of 2020 ONP WS1B P1 and requires ESO, TOs, ONP and Ofgem's input to be successful.

#### Step 24

<b>Step:</b>	<b>DSO Services and Use Cases - Development</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	Develop new DSO Services and Use Cases alongside ENA ONP's development activity under WS1A P5 (2020). This is a TRANSITION and FUSION joint delivery.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	July 2019 - December 2021
<b>Organisation type:</b>	TEF(1)
<b>Progress:</b>	Implementing(1)
<b>Additional information:</b>	This step was included by Transition.

#### Step 25

<b>Step:</b>	<b>Change Management of Flexibility Services Standard Agreement</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	ENA ONP over the course of RIIO-ED1 to maintain, update and enhance the Flexibility Services Standard Agreement as required.
<b>ENA ONP Product:</b>	2020 WS1A P4
<b>Timeline:</b>	January 2020 - April 2023
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Implementing(1)
<b>Additional information:</b>	More information on the planned ongoing review process can be found here: <a href="#">Implementation plan for standard agreement</a>

#### Step 26

<b>Step:</b>	<b>DSO Services - Simulation and Testing</b>
<b>Step type:</b>	Enablers / Dependencies / Barriers

<b>Description:</b>	Testing of the Non DSO Services through predominately the LEO Minimum Viable Service (MVS) or MVS+ testing phases. This should include laboratory testing and simulation to support market understanding and business case development. In addition, TRANSITION will interface with TraDER and Piclo Exchange which are considering stackability.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	June 2020 - December 2022
<b>Organisation type:</b>	TEF(1)
<b>Progress:</b>	Implementing(1)
<b>Additional information:</b>	Step added by Transition. <a href="https://ssen-transition.com/">https://ssen-transition.com/</a> <a href="https://ssen-transition.com/dso/leo/">https://ssen-transition.com/dso/leo/</a>

#### Step 27

<b>Step:</b>	<b>Real time data exchange and forecasting - trials</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	Trial methods for forecasting and real-time data exchange which will be reviewed by ENA ONP providing further insights in the associated steps.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	April 2020 - December 2022
<b>Organisation type:</b>	TEF(2)
<b>Progress:</b>	Initiated(1), Implementing(1)
<b>Additional information:</b>	Projects Transition and EFFS will provide insights to ENA ONP, relevant for steps 7,8,9. For more information on TRANSITION and EFFS, please see links below: <a href="https://ssen-transition.com/">https://ssen-transition.com/</a> <a href="https://www.westernpower.co.uk/projects/effs">https://www.westernpower.co.uk/projects/effs</a>

#### Step 28

<b>Step:</b>	<b>DSO Services - Demonstration</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	Trial the newly developed DSO services with assets connected at LV, HV and EHV, through various customer types and a number of industry actors (trader, supplier, aggregator, asset owner, etc.). This is a TRANSITION- led activity, delivered in part by LEO.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	May 2021 - April 2023
<b>Organisation type:</b>	TEF(1)
<b>Progress:</b>	Initiated(1)
<b>Additional information:</b>	Step added by Transition. Links to TRANSITION and LEO projects below: <a href="https://ssen-transition.com/">https://ssen-transition.com/</a> <a href="https://ssen-transition.com/dso/leo/">https://ssen-transition.com/dso/leo/</a>

## Step 29

<b>Step:</b>	<b>ESO / DNO Boundary Co-ordination - Scenario Development</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	TRANSITION to consider cases where coordination across the ESO / DNO boundary may be required in operational timescales. Develop scenarios for testing.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	August 2020 - December 2022
<b>Organisation type:</b>	TEF(1)
<b>Progress:</b>	Initiated(1)
<b>Additional information:</b>	Step added by Transition. <a href="https://ssen-transition.com/">https://ssen-transition.com/</a>

## Step 30

<b>Step:</b>	<b>ESO / DNO Boundary Co-ordination - Simulation</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	TRANSITION to simulate ESO / DNO boundary scenario, testing coordination approaches. This will be with a network boundary between ENWL or SSEN and National Grid ESO.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	March 2021 - September 2022
<b>Organisation type:</b>	TEF(1)
<b>Progress:</b>	Initiated(1)
<b>Additional information:</b>	Step added by Transition. <a href="https://ssen-transition.com/">https://ssen-transition.com/</a>

## Step 31

<b>Step:</b>	<b>Good practice and emerging issues on OTS Functional Design and Data exchange requirements.</b>
<b>Step type:</b>	Network actions
<b>Description:</b>	2020 WS1B P3 report identifies emerging issues & good practices for DNOs, the ESO and TOs, related to areas such as cyber security aspects and OTS component availability and planned outages. DNOs, the ESO and TO implement identified activities where this is relevant.
<b>ENA ONP Product:</b>	2020 WS1B P3
<b>Timeline:</b>	February 2020 - December 2022
<b>Organisation type:</b>	ESO(1), TO(3), DNO(6)
<b>Progress:</b>	Not currently planned(1), Initiated(6), Implementing(3)
<b>Additional information:</b>	This is a step driven by ENA ONP deliverables of 2020 WS1A P3. The product has now been completed and all the relevant deliverables are provided below: <a href="#">Operational forecasting Final report</a> <a href="#">Process Diagram</a> <a href="#">Operational Tripping Schemes Requirements</a> <a href="#">OTS Functional Design and Data Exchange Requirements</a>

## Step 32

<b>Step:</b>	<b>Alignment on common contracts for flexibility services</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	ENA Open Networks is working towards improving the Standard Agreement that was developed in 2020 and adopted by DNOs. Within 2021 ENA ONP Workstream 1A Product 4 will seek to include in the DNOs' agreement liability, indemnity and insurance (L, I & I) elements resultant from the Ofgem/BEIS workshop in 2020 and release an updated Version 1.2. ENA ONP is also aiming to commence alignment between the Standard Contract

and ESO's general Terms and Conditions document to produce Version 2 of the industry Standard Agreement for full consultation before implementation.

<b>ENA ONP Product:</b>	2021 WS1A P4
<b>Timeline:</b>	February 2021 - December 2021
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Implementing(1)
<b>Additional information:</b>	This is a step with several deliverables across 2021 from ENA ONP. ENA ONP has already delivered the updated version 1.2. More information can be found below: <a href="#">Standard agreement presentation v1.2</a> <a href="#">V1.2 updated common contract</a>

#### Step 33

<b>Step:</b>	<b>Consultation on Standard Agreement for flexibility services</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	2021 WS1A P4 will produce 2 updated versions of the Standard Agreement within 2021. ENA ONP will run an external consultation on version 2 which will align Standard Agreement with ESO T&Cs documents.
<b>ENA ONP Product:</b>	2021 WS1A P4
<b>Timeline:</b>	July 2021 - August 2021
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Initiated(1)
<b>Additional information:</b>	This step is one of the ENA ONP activities for developing the standard agreement for flexibility services. More information on this step can be found in ENA ONP 2021 project initiation document: <a href="https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf">https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf</a>

#### Step 34

<b>Step:</b>	<b>Alignment on common contracts for flexibility services</b>
<b>Step type:</b>	Network actions
<b>Description:</b>	DNOs and the ESO to adopt the updated Flexibility Services Standard Agreement which will provide alignment between the Standard DNO Contracts and ESO general Terms and Conditions.
<b>ENA ONP Product:</b>	2021 WS1A P4
<b>Timeline:</b>	January 2020 - December 2022
<b>Organisation type:</b>	ESO(1), DNO(6)
<b>Progress:</b>	Initiated(4), Implementing(2), Completed(1)
<b>Additional information:</b>	This step is dependent on ENA ONP's work on 2021 WS1A P4. More information on this step can be found in ENA ONP 2021 project initiation document: <a href="https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf">https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf</a>

#### Step 35



<b>Step:</b>	<b>Develop draft primacy rules for addressing flexibility service conflicts.</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	2021 WS1A P5 will develop a draft set of principles and primacy rules (Version 1) for addressing flexibility service conflicts (T-D). These rules will look to balance: the local networks' technical requirements; the risks to the overall operability of the whole system; the value for Flexibility Service Providers (FSPs) through the facilitation of market / price driven actions; the needs of emerging market based platform developers; and ultimately the end consumer.
<b>ENA ONP Product:</b>	2021 WS1A P5
<b>Timeline:</b>	January 2021 - September 2021
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Implementing(1)
<b>Additional information:</b>	More information on this step can be found in ENA ONP 2021 project initiation document: <a href="https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf">https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf</a>

#### Step 36

<b>Step:</b>	<b>Trial draft primacy rules/concepts for addressing flexibility services conflicts.</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	Following the publication of draft set of principles and primacy rules for addressing flexibility service conflicts (T-D), ENA ONP will trial the draft Primacy Rules / concepts and review impacts [in the Regional Development Programme Areas where the use cases can be accommodated in the live environment].
<b>ENA ONP Product:</b>	2021 WS1A P5
<b>Timeline:</b>	October 2021 - December 2022
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Initiated(1)
<b>Additional information:</b>	More information on this step can be found in ENA ONP 2021 project initiation document: <a href="https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf">https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf</a>

#### Step 37

<b>Step:</b>	<b>Finalise Primacy Rules and governance</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	ENA ONP will update principles and primacy rules for addressing flexibility service conflicts (T-D) based on trial learnings and will publish an roll-out implementation plan for network companies.
<b>ENA ONP Product:</b>	2021 WS1A P5
<b>Timeline:</b>	January 2023 - March 2023
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Initiated(1)
<b>Additional information:</b>	More information on this step can be found in ENA ONP 2021 project initiation document: <a href="https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf">https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf</a>

#### Step 38

<b>Step:</b>	<b>Apply Service Conflict Primacy Rules to planning and operational processes</b>
<b>Step type:</b>	Network actions
<b>Description:</b>	DNOs and the ESO to develop and sign off a full roll out programme to accommodate the Primacy Rules, agree change process and governance of Primacy Rules. Depending on the solution(s) identified likely to require major changes to operational processes , enhanced data exchanges / systems. This implementation plan will most likely take place in ED2.
<b>ENA ONP Product:</b>	2021 WS1A P5
<b>Timeline:</b>	March 2023 - December 2023
<b>Organisation type:</b>	ESO(1), DNO(6)
<b>Progress:</b>	Initiated(7)
<b>Additional information:</b>	This step depends on outcomes from ENA ONP 2021 WS1A P5 (steps 25 to 27). More information on this step can be found in ENA ONP 2021 project initiation document: <a href="https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf">https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf</a>

#### Step 39

<b>Step:</b>	<b>Improve operational data sharing</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	2021 Workstream 1B Product 7 will support and inform an upcoming licence condition to improve operational data sharing. This product will identify operational data and information that would be beneficial for network companies to share with non-network market participants, and minimum standards for doing so. Specific data sets to consider will be data network topology data, network configuration data, outage data, constraint forecasting data and historian data.
<b>ENA ONP Product:</b>	2021 WS1B P7
<b>Timeline:</b>	February 2021 - September 2021
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Implementing(1)
<b>Additional information:</b>	<a href="https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf">https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf</a>

#### Step 40

<b>Step:</b>	<b>Improve operational data sharing</b>
<b>Step type:</b>	Network actions
<b>Description:</b>	DNOs and the ESO to implement process changes for facilitating sharing of operational data. This step will be informed by upcoming licence condition and ENA Open Networks' development under 2021 Workstream 1B Product 7.
<b>ENA ONP Product:</b>	2021 WS1B P7
<b>Timeline:</b>	September 2021 - April 2023
<b>Organisation type:</b>	ESO(1), DNO(6)
<b>Progress:</b>	Initiated(7)
<b>Additional information:</b>	This step depends on ENA ONP deliverables (step 30 of this activity). See: <a href="https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf">https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf</a>

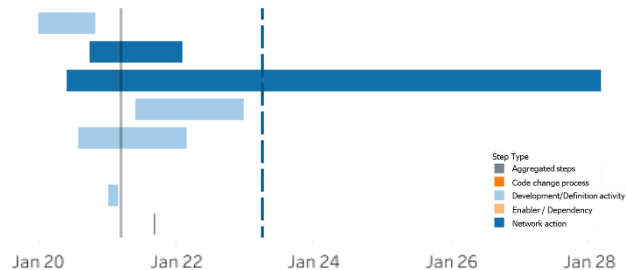
## Activity B: Co-ordination with other DSOs and Distribution Networks (including IDSOs)

Description: Managing MW and Mvar demand and generation within a local network area and managing exchanges to and from other distribution networks within agreed technical and commercial limits. These distribution networks will include networks operated by the same DSO, other DSOs, DNOs and Independent DNOs.

Figure 6 displays the roadmap for activity B which consists of 8 unique steps:

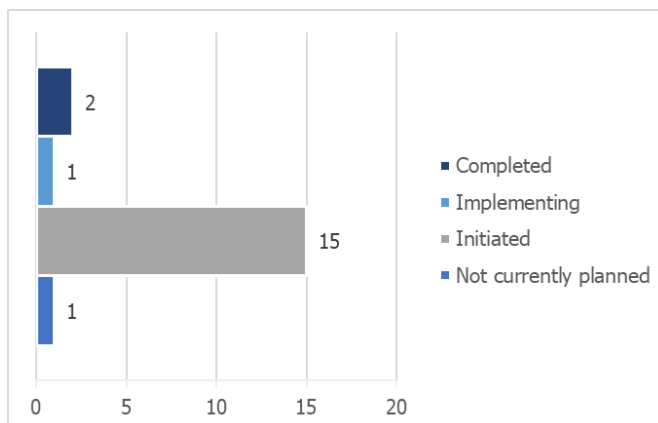
### Step

1. Whole System FES - Signposting of Potential ..
2. Whole System FES - Signposting of Potential ..
3. Coordinated data exchange and system for co..
4. USEF Implementation Trial
5. ESO / DNO Boundary Co-ordination - Scenario ..
6. ESO / DNO Boundary Co-ordination - Simulation ..
7. Review of Technology Business Management ..
8. Steps from individual organisations related t..



**Figure 6 System Coordination – Activity B roadmap**

Figure 7 shows the total number of organisations' contributions to the unique steps. As of March 2021 most steps (~79%) of this activity are in the organisations' pipeline to implement. Only one step is being implemented, while two steps have already been completed.



**Figure 7 Progress against implementation of "System Coordination" – Activity B (No. of steps-contributions of each organisation)**

The tables on the following pages provide detailed information for each step under Activity B.

### Step 1

Step:	Whole System FES - Signposting of Potential Network Capacity Requirements
Step type:	Development / definition activity
Description:	ENA ONP Workstream 1B Product 5 (2020) seeks to improve how DNO network capacity shortfalls and forecast network requirements are described and publicised to the wider market. Changes will be recommended and, if there is value in using a standard approach, this will be proposed for adoption by all DNOs.
ENA ONP Product:	2020 WS1B P5
Timeline:	January 2020 - November 2020
Organisation type:	ENA ONP(1)
Progress:	Completed(1)
Additional information:	This is an ENA ONP-led step. In May 2020 findings of the survey on network operator current practices for evaluating and signposting future network capacity were published <a href="#">here</a> . The final report was published in Nov. 2020: <a href="https://www.energynetworks.org/assets/images/ON20-WS1B-P5%20Proposed%20Standardised%20Network%20Capacity%20Report-PUBLISHED.23.12.20.pdf">https://www.energynetworks.org/assets/images/ON20-WS1B-P5%20Proposed%20Standardised%20Network%20Capacity%20Report-PUBLISHED.23.12.20.pdf</a>

### Step 2

Step:	Whole System FES - Signposting of Potential Network Capacity Requirements
Step type:	Network actions
Description:	DNOs to implement recommended signposting of potential network capacity requirements, as developed in ENA ONP Workstream 1B Product 5 (2020).
ENA ONP Product:	2020 WS1B P5
Timeline:	October 2020 - February 2022
Organisation type:	DNO(6)
Progress:	Initiated(5), Completed(1)
Additional information:	In May 2020 findings of the survey on network operator current practices for evaluating and signposting future network capacity were published <a href="#">here</a> . The final report was published in Nov. 2020: <a href="https://www.energynetworks.org/assets/images/ON20-WS1B-P5%20Proposed%20Standardised%20Network%20Capacity%20Report-PUBLISHED.23.12.20.pdf">https://www.energynetworks.org/assets/images/ON20-WS1B-P5%20Proposed%20Standardised%20Network%20Capacity%20Report-PUBLISHED.23.12.20.pdf</a>

### Step 3

Step	Coordinated data exchange and system for commercial planning data with other DNOs/ IDNOs
Step type:	Network actions
Description:	Consider appropriate communication link between DNO-IDNO and DNO-DNO to optimise commercial decision making by networks regarding network and non-network solutions.
ENA ONP Product:	N/A
Timeline:	June 2020 - March 2028
Organisation type:	DNO(6)
Progress:	Not currently planned(1), Initiated(5)
Additional information:	This step is driven by the DNOs, outside the ENA ONP workstreams.

#### Step 4

<b>Step:</b>	<b>USEF Implementation Trial</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	Implementation of new and existing roles and responsibilities through Project FUSION in GB. This will help inform future system co-ordination structures and toolsets.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	June 2021 - December 2022
<b>Organisation type:</b>	TEF(1)
<b>Progress:</b>	Initiated(1)
<b>Additional information:</b>	More information can be found at FUSION's website: <a href="https://www.spenergynetworks.co.uk/pages/fusion.aspx">https://www.spenergynetworks.co.uk/pages/fusion.aspx</a>

#### Step 5

<b>Step:</b>	<b>ESO / DNO Boundary Co-ordination - Scenario Development</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	TRANSITION to consider cases where coordination across the ESO / DNO boundary may be required in operational timescales. Develop scenarios for testing.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	August 2020 - March 2022
<b>Organisation type:</b>	TEF(1)
<b>Progress:</b>	Initiated(1)
<b>Additional information:</b>	Step added by Transition. <a href="https://ssen-transition.com/">https://ssen-transition.com/</a>

#### Step 6

<b>Step:</b>	<b>ESO / DNO Boundary Co-ordination - Simulation</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	TRANSITION to simulate ESO / DNO boundary scenario, testing coordination approaches. This will be with a network boundary between ENWL or SSEN and National Grid ESO.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	N/A
<b>Organisation type:</b>	TEF(1)
<b>Progress:</b>	Initiated(1)
<b>Additional information:</b>	Step added by Transition. <a href="https://ssen-transition.com/">https://ssen-transition.com/</a>

## Step 7

Step:	Review of Technology Business Management (TBM) - phase 1
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	2020 WS1B Product 8 will be a scoping activity delivered to establish the feasibility of adopting TBM as a potential mechanism for capturing what IT and OT systems and applications are currently being used by network companies. Phase 1 will assess the current architectures that network companies use to capture their current internal IT and OT systems and applications and will consider the application of TBM as a common mechanism to provide greater transparency to Ofgem and the industry on systems that are currently in use to deliver DSO functionality. This product will share their findings with the workstream and Steering Group and agree next steps with the Steering Group.
<b>ENA ONP Product:</b>	2021 WS1B P8
<b>Timeline:</b>	January 2021 - March 2021
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Implementing(1)
<b>Additional information:</b>	More information on this step can be found in ENA ONP 2021 project initiation document: <a href="https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf">https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf</a>

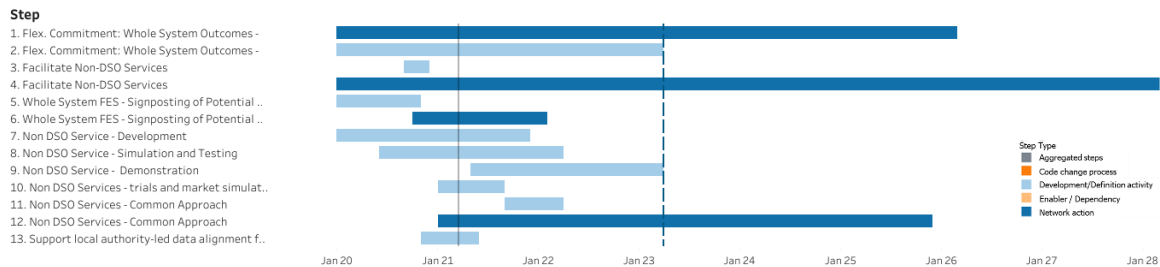
## Step 8

Step	Steps from individual organisations related to this activity
<b>Step type:</b>	Aggregated steps
<b>Description:</b>	This step aggregates steps required for individual DNOs or TOs to implement DSO functionality, but which have no wider industry relevance.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	September 2021
<b>Organisation type:</b>	DNO(2)
<b>Progress:</b>	Not currently planned(1), Initiated(1)
<b>Additional information:</b>	Individual steps added by DNOs focus on improving data exchange and visibility of data between DNOs and IDNOs.

### Activity C: Co-ordination with local energy systems including industrial networks, community schemes, smart cities etc.

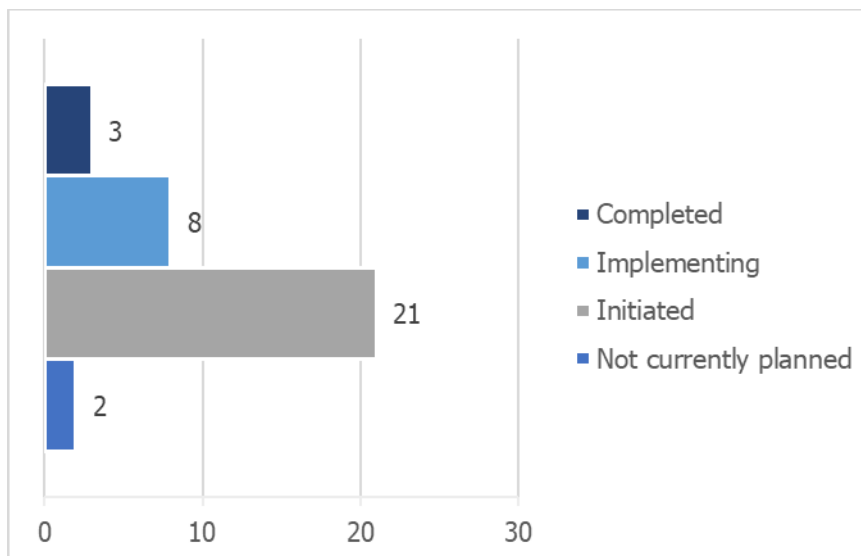
Description: Managing MW and Mvar demand and generation within a local network area and managing the interfaces to local energy systems and arrangements within agreed technical and commercial limits. These local energy systems and arrangements might include community energy arrangements, smart city arrangements as well as the private networks used to supply industrial complexes.

Figure 8 illustrates the roadmap for activity C which consists of 11 unique steps:



**Figure 8 System Coordination – Activity C roadmap**

Figure 9 shows the total number of organisations' contributions to the unique steps. As of March 2021 most steps (~62%) of this activity are in the organisations' pipeline to implement ("Initiated"). 23.5% of the steps is being implemented, while three steps have already been completed.



**Figure 9 Progress against implementation of "System Coordination" – Activity C (No. of steps-contributions of each organisation)**

The tables on the following pages provide detailed information for each step under Activity C.



## Step 1

Step	Flex. Commitment: Whole Systems Outcomes - Wider Industry
<b>Step type:</b>	Network actions
<b>Description:</b>	As part of ENA Flexibility Next Step 6 (Work together towards whole systems outcomes), to expand flexibility commitments to the wider energy industry, including the gas, heat, transport and waste sectors, to ensure that changes deliver the best outcomes for everyone on a whole energy system basis.
<b>ENA ONP Product:</b>	Flex. Commitment
<b>Timeline:</b>	January 2018 - March 2026
<b>Organisation type:</b>	ESO(1), DNO(6)
<b>Progress:</b>	Not currently planned(1), Initiated(3), Implementing(3)
<b>Additional information:</b>	<p>Network companies have highlighted that this Flexibility Commitment is also driven by ENA ONP Workstream 4.</p> <p>One of the barriers raised for Wider Industry Whole System Outcomes is that different energy vectors have different price control mechanisms and, in some cases, different regulators.</p> <p>Other barriers include the lack of standard flexibility trading platform, the need for co-ordination and commitment from other vectors (not only from electricity).</p> <p>Link to flexibility commitment documents:</p> <p><a href="https://www.energynetworks.org/assets/files/ENA%20Flexibility%20Commitment%20Our%20Six%20Steps%20for%20Delivering%20Flexibility%20Services.pdf">https://www.energynetworks.org/assets/files/ENA%20Flexibility%20Commitment%20Our%20Six%20Steps%20for%20Delivering%20Flexibility%20Services.pdf</a></p> <p><a href="https://www.energynetworks.org/assets/files/ON-PRJ-DNO%20Implementation%20of%20Flexibility%20Next%20Steps%20-%20Final.pdf">https://www.energynetworks.org/assets/files/ON-PRJ-DNO%20Implementation%20of%20Flexibility%20Next%20Steps%20-%20Final.pdf</a></p>

## Step 2

Step	Flex. Commitment: Whole Systems Outcomes - Wider Industry
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	As part of ENA Flexibility Next Step 6 (Work together towards whole systems outcomes), to expand flexibility commitments to the wider energy industry, including the gas, heat, transport and waste sectors, to ensure that changes deliver the best outcomes for everyone on a whole energy system basis.
<b>ENA ONP Product:</b>	Flex. Commitment
<b>Timeline:</b>	June 2019 - April 2023
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Initiated(1)
<b>Additional information:</b>	<p>This step has dependencies with development under ENA ONP Workstream 4.</p> <p>Link to flexibility commitment documents:</p> <p><a href="https://www.energynetworks.org/assets/files/ENA%20Flexibility%20Commitment%20Our%20Six%20Steps%20for%20Delivering%20Flexibility%20Services.pdf">https://www.energynetworks.org/assets/files/ENA%20Flexibility%20Commitment%20Our%20Six%20Steps%20for%20Delivering%20Flexibility%20Services.pdf</a></p> <p><a href="https://www.energynetworks.org/assets/files/ON-PRJ-DNO%20Implementation%20of%20Flexibility%20Next%20Steps%20-%20Final.pdf">https://www.energynetworks.org/assets/files/ON-PRJ-DNO%20Implementation%20of%20Flexibility%20Next%20Steps%20-%20Final.pdf</a></p>

### Step 3

Step	Facilitate Non-DSO Services
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	ENA ONP Workstream 1A Product 6 (2020) tests the principles/rules of engagement for market participants to trade energy locally or exchange capacity and curtailment obligations within the context of the TEF projects and the BEIS Flexibility exchange demonstration competition (Flex) and Power Forward projects. It also tests the data sets that were identified by 2019 WS1A P6 to enable neutral facilitation of these new markets both pre & post transaction to ensure there is no detrimental impact on the network. Over the course of RIIO-ED1, the ENA ONP will monitor and facilitate the development of new non-DSO services as required.
<b>ENA ONP Product:</b>	2020 WS1A P6
<b>Timeline:</b>	September 2020 - December 2020
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Completed(1)
<b>Additional information:</b>	This step will use information and outcomes from project TRANSITION (see steps 7, 8 and 9 below) and is linked to step 4 of this activity. The final report of this product is provided below: <a href="https://www.energynetworks.org/assets/images/ON20-WS1A-P6%20Non%20DSO%20Services-PUBLISHED.23.12.20.pdf">https://www.energynetworks.org/assets/images/ON20-WS1A-P6%20Non%20DSO%20Services-PUBLISHED.23.12.20.pdf</a>

### Step 4

Step	Facilitate Non-DSO Services
<b>Step type:</b>	Network actions
<b>Description:</b>	Implement outcomes from ENA ONP Workstream 1A Product 6 (2020) to facilitate local energy trading or exchange capacity and curtailment obligations. IT/infrastructure changes may be required to provide data for the facilitation of new markets and identification and management of potential conflicts.
<b>ENA ONP Product:</b>	2020 WS1A P6
<b>Timeline:</b>	March 2019 - March 2028
<b>Organisation type:</b>	DNO(6)
<b>Progress:</b>	Initiated(5), Implementing(1)
<b>Additional information:</b>	High complexity related to enabling trades of capacity has been raised as a potential barrier. It is also envisaged that where there is active trading, this will need to be regulated by Ofgem. DNOs are waiting for outputs from ENA ONP 2020 WS1A P6 (step 3) and TEF projects to further implement this step. As per DNOs, implementation of this step will also require IT system for data sharing. The final report of 2020 ENA ONP product is provided below: <a href="https://www.energynetworks.org/assets/images/ON20-WS1A-P6%20Non%20DSO%20Services-PUBLISHED.23.12.20.pdf">https://www.energynetworks.org/assets/images/ON20-WS1A-P6%20Non%20DSO%20Services-PUBLISHED.23.12.20.pdf</a> To be noted that this step will also use outputs of 2021 ENA ONP products.

## Step 5

Step:	Whole System FES - Signposting of Potential Network Capacity Requirements
Step type:	Development / definition activity
Description:	ENA ONP Workstream 1B Product 5 (2020) seeks to improve how DNO network capacity shortfalls and forecast network requirements are described and publicised to the wider market. Changes will be recommended and, if there is value in using a standard approach, this will be proposed for adoption by all DNOs.
ENA ONP Product:	2020 WS1B P5
Timeline:	January 2020 - November 2020
Organisation type:	ENA ONP(1)
Progress:	Completed(1)
Additional information:	This is an ENA ONP-led step. In May 2020 findings of the survey on network operator current practices for evaluating and signposting future network capacity were published <a href="https://www.energynetworks.org/assets/images/ON20-WS1B-P5%20Proposed%20Standardised%20Network%20Capacity%20Report-PUBLISHED.23.12.20.pdf">here</a> . The final report was published in Nov. 2020: <a href="https://www.energynetworks.org/assets/images/ON20-WS1B-P5%20Proposed%20Standardised%20Network%20Capacity%20Report-PUBLISHED.23.12.20.pdf">https://www.energynetworks.org/assets/images/ON20-WS1B-P5%20Proposed%20Standardised%20Network%20Capacity%20Report-PUBLISHED.23.12.20.pdf</a>

## Step 6

Step:	Whole System FES - Signposting of Potential Network Capacity Requirements
Step type:	Network actions
Description:	DNOs to implement recommended signposting of potential network capacity requirements, as developed in ENA ONP Workstream 1B Product 5 (2020).
ENA ONP Product:	2020 WS1B P5
Timeline:	October 2020 - February 2022
Organisation type:	DNO(6)
Progress:	Initiated(5), Completed(1)
Additional information:	This step is linked to step 5 outputs (2020 WS1B P5). In May 2020 findings of the survey on network operator current practices for evaluating and signposting future network capacity were published <a href="https://www.energynetworks.org/assets/images/ON20-WS1B-P5%20Proposed%20Standardised%20Network%20Capacity%20Report-PUBLISHED.23.12.20.pdf">here</a> . The final report was published in Nov. 2020: <a href="https://www.energynetworks.org/assets/images/ON20-WS1B-P5%20Proposed%20Standardised%20Network%20Capacity%20Report-PUBLISHED.23.12.20.pdf">https://www.energynetworks.org/assets/images/ON20-WS1B-P5%20Proposed%20Standardised%20Network%20Capacity%20Report-PUBLISHED.23.12.20.pdf</a>

## Step 7

Step	Non DSO Service - Development
Step type:	Development / definition activity
Description:	Joint work between TRANSITION and ENA ONP Workstream 1A Product 6 (2020), with TRANSITION also facilitating access to Project LEO, TraDER and Piclo Exchange partners.
ENA ONP Product:	N/A
Timeline:	July 2019 – December 2021
Organisation type:	TEF(1)
Progress:	Implementing(1)
Additional information:	Step added by Transition. More information on the project below: <a href="https://ssen-transition.com/">https://ssen-transition.com/</a>

## Step 8

Step	Non DSO Service - Simulation and Testing
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	Testing of the Non DSO Services through predominately the LEO Minimum Viable Service (MVS) or MVS+ testing phases. This should include laboratory testing and simulation to support market understanding and business case development. In addition, TRANSITION will interface with TraDER and Piclo Exchange which are considering other aspects of emerging / potential markets.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	June 2020 - April 2022
<b>Organisation type:</b>	TEF(1)
<b>Progress:</b>	Initiated(1)
<b>Additional information:</b>	Step added by Transition. More information on the projects below: <a href="https://ssen-transition.com/">https://ssen-transition.com/</a> <a href="https://ssen-transition.com/dso/leo/">https://ssen-transition.com/dso/leo/</a>

## Step 9

Step	Non DSO Service - Demonstration
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	Demonstration of the Non DSO Services through predominately the latter two TRANSITION trial phases. In addition, TRANSITION will interface with TraDER and Piclo Exchange which are considering other aspects of emerging / potential markets and set to demonstrate these in early 2021.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	May 2021 - April 2023
<b>Organisation type:</b>	TEF(1)
<b>Progress:</b>	Initiated(1)
<b>Additional information:</b>	Step added by Transition. More information on the project below: <a href="https://ssen-transition.com/">https://ssen-transition.com/</a>

## Step 10

Step:	Non DSO Services - trials and market simulations
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	2021 WS1A P6 is a continuation of 2019 WS1A P1 and 2019/202 P6 and incorporates outputs from the Non-SCR Access Working Group (P1 & P2) on the exchange of capacity and curtailment obligations and the Flexible Connections (ANM enabled) ONP PID 2021 Priorities Workshop that was attended by the ENA, BEIS and Ofgem. In 2021 this product will focus on the principles/rules of engagement for market participants to trade/share capacity. As part of that scope it will also test the market principles and data sets that were identified by 2019 WS1A P1 and P6 to enable neutral facilitation of this new market both pre & post transaction to ensure there is no detrimental impact on the network.
<b>ENA ONP Product:</b>	2021 WS1A P6
<b>Timeline:</b>	January 2021 - September 2021
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Implementing(1)
<b>Additional information:</b>	<a href="https://www.energynetworks.org/assets/images/Resource%20library/O N21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf">https://www.energynetworks.org/assets/images/Resource%20library/O N21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf</a>

## Step 11

<b>Step:</b>	<b>Non DSO Services - Common Approach</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	Drawing on learning from market simulations and shared and traded capacity trial, ENA ONP will establish a common methodology across DNOs.
<b>ENA ONP Product:</b>	2021 WS1A P6
<b>Timeline:</b>	September 2021 - April 2022
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Initiated(1)
<b>Additional information:</b>	This is a continuation of 2020 WS1A P6 and is linked to step 10 of this activity. More information on this step can be found in ENA ONP 2021 project initiation document: <a href="https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf">https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf</a>

## Step 12

<b>Step:</b>	<b>Non DSO Services - Common Approach</b>
<b>Step type:</b>	Network actions
<b>Description:</b>	Based on outcomes of the work that will be delivered by ENA ONP through WS1A P6 (in 2021 and 2022), DNOs to adopt a common approach to sharing and trading capacity (e.g. rules and requisite datasets that enable facilitation of these markets by DNOs).
<b>ENA ONP Product:</b>	2021 WS1A P6
<b>Timeline:</b>	January 2021 - December 2025
<b>Organisation type:</b>	DNO(6)
<b>Progress:</b>	Not currently planned(1), Initiated(5)
<b>Additional information:</b>	This step is dependent on outcomes of ENA ONP work in this areas (steps 10 and 11). More information on this step can be found in ENA ONP 2021 project initiation document: <a href="https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf">https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf</a>

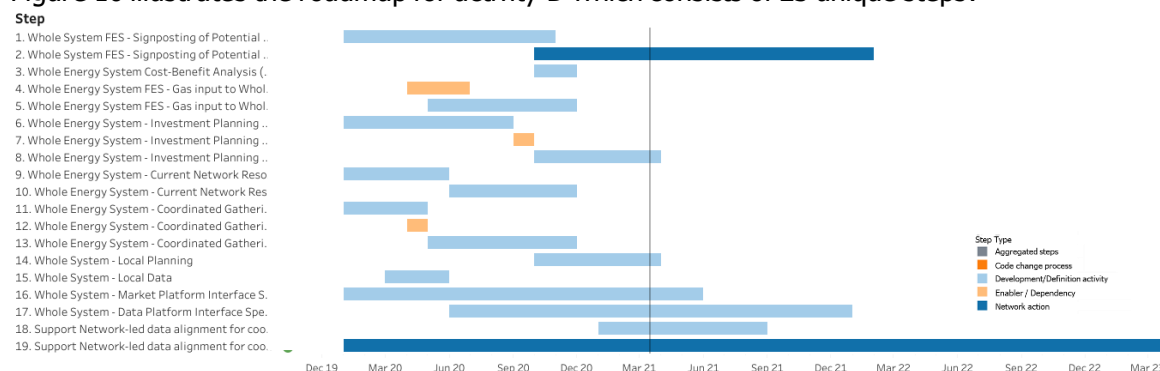
## Step 13

<b>Step:</b>	<b>Support local authority-led data alignment for coordinated gathering of regional data.</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	Under 2021 WS4 Product 3 ENA ONP will continue to liaise with Ofgem/BEIS to support progress on Local Authority led data alignment approach to regional data gathering .
<b>ENA ONP Product:</b>	2021 WS4 P2
<b>Timeline:</b>	November 2020 - June 2021
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Implementing(1)
<b>Additional information:</b>	This product is a continuation of 2020 work. More information on this step can be found in ENA ONP 2021 project initiation document: <a href="https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf">https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf</a>

## Activity D: Co-ordination of networks to enable cross vector energy exchanges.

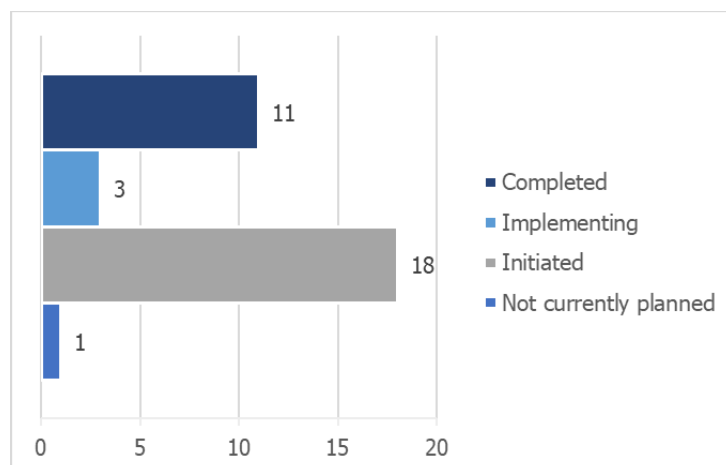
Description: Managing the distribution network so that cross-vector energy exchanges are facilitated where these are acceptable technically and commercially.

Figure 10 illustrates the roadmap for activity D which consists of 23 unique steps:



**Figure 10 System Coordination – Activity D roadmap**

Figure 11 shows the total number of organisations' contributions to the unique steps. As of May 2020 most steps (~55%) of this activity are in the organisations' pipeline to implement ("Initiated"). One third of them have been completed and 3 of them are being implemented.



**Figure 11 Progress against implementation of "System Coordination" – Activity D (No. of steps-contributions of each organisation)**

The tables on the following pages provide detailed information for each step under Activity D. It is worth noticing that this activity consists mainly of developments/definition activities from ENA ONP and TEF projects.



## Step 1

Step:	Whole System FES - Signposting of Potential Network Capacity Requirements
Step type:	Development / definition activity
Description:	ENA ONP Workstream 1B Product 5 (2020) seeks to improve how DNO network capacity shortfalls and forecast network requirements are described and publicised to the wider market. Changes will be recommended and, if there is value in using a standard approach, this will be proposed for adoption by all DNOs.
ENA ONP Product:	2020 WS1B P5
Timeline:	January 2020 - November 2020
Organisation type:	ENA ONP(1)
Progress:	Completed(1)
Additional information:	<p>This is an ENA ONP-led step. In May 2020 findings of the survey on network operator current practices for evaluating and signposting future network capacity were published <a href="#">here</a>.</p> <p>The final report was published in Nov. 2020:  <a href="https://www.energynetworks.org/assets/images/ON20-WS1B-P5%20Proposed%20Standardised%20Network%20Capacity%20Report-PUBLISHED.23.12.20.pdf">https://www.energynetworks.org/assets/images/ON20-WS1B-P5%20Proposed%20Standardised%20Network%20Capacity%20Report-PUBLISHED.23.12.20.pdf</a></p>

## Step 2

Step:	Whole System FES - Signposting of Potential Network Capacity Requirements
Step type:	Network actions
Description:	DNOs to implement recommended signposting of potential network capacity requirements, as developed in ENA ONP Workstream 1B Product 5 (2020).
ENA ONP Product:	2020 WS1B P5
Timeline:	October 2020 - February 2022
Organisation type:	DNO(6)
Progress:	Initiated(5), Completed(1)
Additional information:	<p>This step is linked to outputs of 2020 WS1B P5. In May 2020 findings of the survey on network operator current practices for evaluating and signposting future network capacity were published <a href="#">here</a>.</p> <p>The final report was published in Nov. 2020:  <a href="https://www.energynetworks.org/assets/images/ON20-WS1B-P5%20Proposed%20Standardised%20Network%20Capacity%20Report-PUBLISHED.23.12.20.pdf">https://www.energynetworks.org/assets/images/ON20-WS1B-P5%20Proposed%20Standardised%20Network%20Capacity%20Report-PUBLISHED.23.12.20.pdf</a></p>

## Step 3

Step	Whole System Cost-Benefit Analysis (CBA)
Step type:	Development / definition activity
Description:	ENA ONP Workstream 4 Product 1 (2020) seeks to develop the basis for a whole system CBA to enable effective whole system decision making, across 3 phases. Phase 1 involves development of recommendations for broad principles, key elements and scope to be applied to a whole system CBA, and the circumstances in which a whole system versus sector specific model should be used. Phase 2 will develop detailed specification and parameters, following Go/No Go decision from Ofgem, ENA ONP Steering Group and Gas Futures Group (GFG). Phase 3 will scope the development of Whole System CBA Model and potential studies to trial, following Go/No Go decision from Ofgem, ENA ONP Steering Group and Gas Futures Group (GFG).
ENA ONP Product:	2020 WS4 P1



<b>Timeline:</b>	October 2020 - December 2020
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Completed(1)
<b>Additional information:</b>	The 2020 product has been completed. More information on the deliverables can be found below: <a href="#">Phase 1 report</a> <a href="#">User guide</a> <a href="#">Final report</a>

#### Step 4

Step	Whole Energy System FES - Gas input to Whole System FES
<b>Step type:</b>	Enablers / Dependencies / Barriers
<b>Description:</b>	Go/No go decision from Ofgem, ENA ONP Steering Group and Gas Futures Group (GFG) for phase 2 of the Whole System FES - Gas input to Whole System FES work undertaken under ENA ONP Workstream 4 Product 3 (2020).
<b>ENA ONP Product:</b>	2020 WS4 P3
<b>Timeline:</b>	April 2020 - April 2020
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Completed(1)
<b>Additional information:</b>	This step is an enabler for Step 5.

#### Step 5

Step	Whole Energy System FES - Gas input to Whole System FES
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	ENA ONP Workstream 4 Product 3 (2020) starts with a scoping activity to understand and define the scope for streamlining of the Whole System FES process across Electricity and Gas and pending a Go/No Go decision, will look to bring further alignment to the FES process by expanding processes developed in WS1B P2 in 2019 to gas. As part of this, the ENA ONP product team will review ongoing work through other forums in the industry and will consider opportunities to streamline approaches to D FES (Gas and Electricity) and streamline D (Gas and Electricity) input to GB FES. phase 2 will undertake further work on gas input to Whole System FES.
<b>ENA ONP Product:</b>	2020 WS4 P3
<b>Timeline:</b>	May 2020 - December 2020
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Completed(1)
<b>Additional information:</b>	This step was dependent on Step 4 and the "Go/No Go" Decision. The development of the step has now been completed. More information is provided below: <a href="#">Phase 1 report</a> <a href="#">Phase 2 report</a>

#### Step 6

Step	Whole System - Investment Planning Phase 1
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	ENA ONP Workstream 4 Product 4 (2020) further assesses the Whole System Optioneering opportunity and will understand any links with the ESC's Local Areas Energy Planning (LAEP) project and LHEES (a Scottish Government initiative) and will present a proposal for a Go/No Go Decision. If approved, this product will develop detailed processes to deliver the implementation of this.
<b>ENA ONP Product:</b>	2020 WS4 P4
<b>Timeline:</b>	January 2020 - September 2020
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Completed(1)
<b>Additional information:</b>	This is the phase 1 of ENA ONP-led development activity on Whole System – Investment Planning. This step will also be informed by TEF outcomes (see step 14). Final report is provided below: <a href="https://www.energynetworks.org/assets/images/Resource%20library/ON20-WS4-P4%202020%20Report-PUBLISHED.23.12.20.pdf">https://www.energynetworks.org/assets/images/Resource%20library/ON20-WS4-P4%202020%20Report-PUBLISHED.23.12.20.pdf</a>

#### Step 7

Step	Whole System - Investment Planning Phase 1
<b>Step type:</b>	Enablers / Dependencies / Barriers
<b>Description:</b>	Go/No go decision from Ofgem, ENA ONP Steering Group and Gas Futures Group (GFG) at the end of phase 1 of ENA ONP Workstream 4 Product 4, which developed a proposal for Whole System Optioneering.
<b>ENA ONP Product:</b>	2020 WS4 P4
<b>Timeline:</b>	September 2020 - October 2020
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Completed(1)
<b>Additional information:</b>	This step was dependent on outcomes of step 11. It is also an enabler for Phase 2 of the ENA ONP development activity (Step 8).

#### Step 8

Step	Whole System - Investment Planning Phase 2
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	Following Ofgem's Go/No Go decision on the Whole System Optioneering Proposal (ENA ONP Workstream 4 Product 4), the ENA ONP team will develop detailed processes, template etc. to further develop and implement the Whole System Optioneering approach.
<b>ENA ONP Product:</b>	2020 WS4 P4
<b>Timeline:</b>	October 2020 - April 2021
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Implementing(1)
<b>Additional information:</b>	This product has now been continued to 2021 deliverables. More information on this step can be found in the 2021 Project Initiation Document: <a href="https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf">https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf</a>

#### Step 9

Step	Whole System - Current Network Resource Data Analysis
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<b>Step type:</b>	Development / definition activity
<b>Description:</b>	ENA ONP Workstream 4 Product 6 (2020) will consider, identify and document what data currently exists for published network resources or other resources that already exist and could be published, as well as an initial view of priority data gaps. The output of this analysis will feed into the ENA Data Working Group that is considering more widely how network data can be sourced and presented.
<b>ENA ONP Product:</b>	2020 WS4 P6
<b>Timeline:</b>	January 2020 - June 2020
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Completed(1)
<b>Additional information:</b>	This is the phase 1 of ENA ONP-led development activity on Whole System – Current Network Data Analysis. More details can be found on the final report <a href="https://www.energynetworks.org/assets/images/Resource%20library/ON20-WS4-P6%20Capacity%20Data-Mapping%20(PUBLISHED).pdf">https://www.energynetworks.org/assets/images/Resource%20library/ON20-WS4-P6%20Capacity%20Data-Mapping%20(PUBLISHED).pdf</a>

#### Step 10

Step	Whole System - Current Network Resource Data Analysis phase 2
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	The output of the Current Network Resource Data Analysis will feed into the ENA Data Working Group that is considering more widely how network data can be sourced and presented.
<b>ENA ONP Product:</b>	2020 WS4 P6
<b>Timeline:</b>	June 2020 - December 2020
<b>Organisation type:</b>	ENA(1)
<b>Progress:</b>	Initiated(1)
<b>Additional information:</b>	This step is dependent on Step 9.

#### Step 11

Step	Whole System - Coordinated Gathering Regional Data Phase 1
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	ENA ONP Workstream 4 Product 5 (2020) looks to define a single process to acquire, update, and share the critical data from regional bodies required for planning medium and long term incremental network capacity
<b>ENA ONP Product:</b>	2020 WS4 P5
<b>Timeline:</b>	January 2020 - May 2020
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Completed(1)
<b>Additional information:</b>	This is the phase 1 of ENA ONP-led development activity on Whole System – Coordinated Gathering Regional Data. Phase 1 report can be found below: <a href="https://www.energynetworks.org/assets/images/Resource%20library/ON20-WS4-P5%20Coordinated%20Regional%20Data%20Gathering%20Final%20Report%20(PUBLISHED).pdf">https://www.energynetworks.org/assets/images/Resource%20library/ON20-WS4-P5%20Coordinated%20Regional%20Data%20Gathering%20Final%20Report%20(PUBLISHED).pdf</a>

#### Step 12

Step	Whole System - Coordinated Gathering Regional Data Phase 1
<b>Step type:</b>	Enablers / Dependencies / Barriers

<b>Description:</b>	Go/No go decision from Ofgem, ENA ONP Steering Group and Gas Futures Group (GFG) at the end of phase 1 of ENA ONP Workstream 4 Product 5 on coordinated gathering regional data arrangements.
<b>ENA ONP Product:</b>	2020 WS4 P5
<b>Timeline:</b>	April 2020 - May 2020
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Completed(1)
<b>Additional information:</b>	This step depends on outcomes of step 11. It is also an enabler for Phase 2 of the ENA ONP development activity (Step 13). More details can be found on the 2020 PID: <a href="https://www.energynetworks.org/assets/files/ON-PRJ-2020%20PID%20Post-Consultation-PUBLISHED.pdf">https://www.energynetworks.org/assets/files/ON-PRJ-2020%20PID%20Post-Consultation-PUBLISHED.pdf</a>

#### Step 13

Step	Whole System - Coordinated Gathering Regional Data Phase 2
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	Following Ofgem's Go/No Go decision on the Phase 1 of ENA ONP Workstream 4 Product 5, phase 2 will undertake further work on coordinated gathering regional data.
<b>ENA ONP Product:</b>	2020 WS4 P5
<b>Timeline:</b>	May 2020 - December 2020
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Completed(1)
<b>Additional information:</b>	This step is dependent on Step 12 and the "Go/No Go" Decision. The phase 2 report can be found here: <a href="https://www.energynetworks.org/assets/images/ON20-WS4-P5%20Final%20Report-PUBLISHED.23.12.20.pdf">https://www.energynetworks.org/assets/images/ON20-WS4-P5%20Final%20Report-PUBLISHED.23.12.20.pdf</a> This step will also be informed by TEF outcomes (see step 21).

#### Step 14

Step	Whole System - Local Planning
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	Prototype planning tool for future clean growth which integrates housing, transport, grid infrastructure and generation. TRANSITION will interface with LEO (and ReFLEX where appropriate) who are leading delivery of this step. This step ties with ENA ONP development activities related to Whole System - Investment Planning.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	October 2020 - April 2021
<b>Organisation type:</b>	TEF(1)
<b>Progress:</b>	Initiated(1)
<b>Additional information:</b>	This step will inform ENA ONP activities (steps 12,13,14). This is a TRANSITION-led step. More information on projects TRANSITION and LEO below: <a href="https://ssen-transition.com/">https://ssen-transition.com/</a> <a href="https://ssen-transition.com/dso/leo/">https://ssen-transition.com/dso/leo/</a>

#### Step 15

Step	Whole System - Local Data
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	Temporal and related dataset requirements report. TRANSITION will interface with LEO who are leading delivery of this step. This step ties with ENA ONP development activities related to Whole System - Coordinated Gathering Regional Data.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	March 2020 - June 2020
<b>Organisation type:</b>	TEF(1)
<b>Progress:</b>	Initiated(1)
<b>Additional information:</b>	This step will inform ENA ONP activities (steps 11,12,13). This is a TRANSITION-led step. More information on projects TRANSITION and LEO below: <a href="https://ssen-transition.com/">https://ssen-transition.com/</a> <a href="https://ssen-transition.com/dso/leo/">https://ssen-transition.com/dso/leo/</a>

#### Step 16

Step	Whole System - Market Platform Interface Specifications
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	Possible market interface and configuration specifications. Outputs due throughout the period, with first published on TRANSITION website library back in May 2019. TRANSITION will interface with LEO (and ReFLEX where appropriate) who are involved in the overall delivery of this step.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	February 2019 - June 2021
<b>Organisation type:</b>	TEF(1)
<b>Progress:</b>	Implementing(1)
<b>Additional information:</b>	This is a TRANSITION-led step. More information on projects TRANSITION and LEO below: <a href="https://ssen-transition.com/">https://ssen-transition.com/</a> <a href="https://project-leo.co.uk/dso/dso-defined/">https://project-leo.co.uk/dso/dso-defined/</a>

#### Step 17

Step	Whole System - Data Platform Interface Specifications
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	Possible Local data platform specification and API. Outputs due throughout the period. TRANSITION will interface with LEO (and ReFLEX where appropriate) who are leading delivery of this step.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	June 2020 - January 2021
<b>Organisation type:</b>	TEF(1)
<b>Progress:</b>	Initiated(1)
<b>Additional information:</b>	This is a TRANSITION-led step. More information on projects TRANSITION and LEO below: <a href="https://ssen-transition.com/">https://ssen-transition.com/</a> <a href="https://project-leo.co.uk/dso/dso-defined/">https://project-leo.co.uk/dso/dso-defined/</a>

#### Step 18

<b>Step:</b>	<b>Support Network-led data alignment for coordinated gathering of regional data</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	Under 2021 WS4 Product 3 ENA ONP will continue the development of network-led data alignment approach to regional data gathering. ENA ONP will create detailed processes and templates for adoption as well as the repository of regional data as per 2020 recommendations.
<b>ENA ONP Product:</b>	2021 WS4 P3
<b>Timeline:</b>	January 2021 - September 2021
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Implementing(1)
<b>Additional information:</b>	More information on this step can be found in the 2021 Project Initiation Document: <a href="https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf">https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf</a>

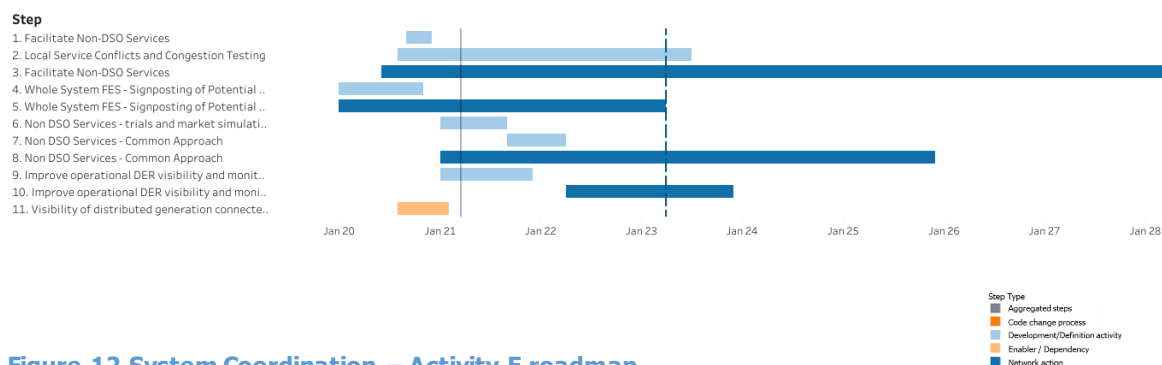
#### Step 19

<b>Step:</b>	<b>Support Network-led data alignment for coordinated gathering of regional data</b>
<b>Step type:</b>	Network actions
<b>Description:</b>	2020 WS4 Product 3 proposed a process for networks to follow when using a network led data alignment approach. Within 2021 Network Companies to support data alignment and share regional data with ENA ONP.
<b>ENA ONP Product:</b>	2021 WS4 P3
<b>Timeline:</b>	January 2020 - April 2023
<b>Organisation type:</b>	TO(3), ESO(1), DNO(6)
<b>Progress:</b>	Not currently planned(1), Initiated(9)
<b>Additional information:</b>	This step is dependent on ENA ONP work in this area. More information on this step can be found in the 2021 Project Initiation Document: <a href="https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf">https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf</a>

## Activity E: Co-ordination of local network services

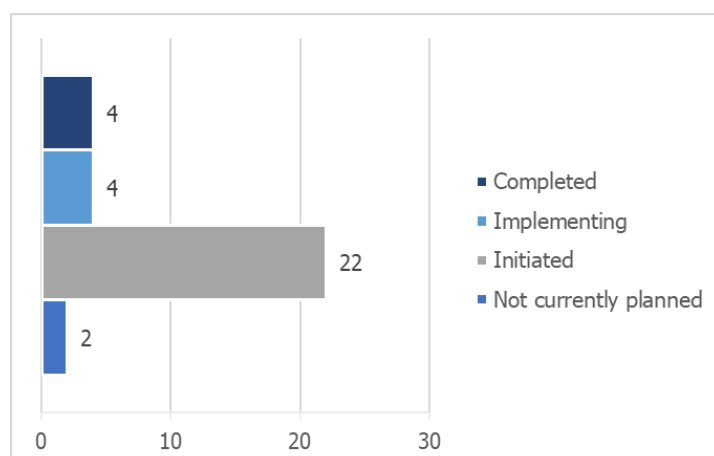
Description: Contributing to the management of other networks and wider systems (e.g. transmission voltage management, overall frequency management) through the facilitation and co-ordination of local network services provided by DER.

Figure 12 illustrates the roadmap for activity E which consists of 11 unique steps:



**Figure 12 System Coordination – Activity E roadmap**

Figure 13 shows the total number of organisations' contributions to the unique steps. As of March 2021 most steps planned for implementation by network companies ("Initiated").



**Figure 13 Progress against implementation of "System Coordination" – Activity E (No. of steps-contributions of each organisation)**

The tables on the following pages provide detailed information for each step under Activity E.  
Step 1

Step	Facilitate Non-DSO Services
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	ENA ONP Workstream 1A Product 6 (2020) tests the principles/rules of engagement for market participants to trade energy locally or exchange capacity and curtailment obligations within the context of the TEF projects and the BEIS Flexibility exchange demonstration competition (Flex) and Power Forward projects. It also tests the data sets that were identified by 2019 WS1A P6 to enable neutral facilitation of these new markets both pre & post transaction to ensure there is no detrimental impact on the network. Over the course of RIIO-ED1, the ENA ONP will monitor and facilitate the development of new non-DSO services as required.
<b>ENA ONP Product:</b>	2020 WS1A P6
<b>Timeline:</b>	September 2020 - December 2020
<b>Organisation type:</b>	ENA ONP(1)



<b>Progress:</b>	Completed(1)
<b>Additional information:</b>	The final report of this product is provided below: <a href="https://www.energynetworks.org/assets/images/ON20-WS1A-P6%20Non%20DSO%20Services-PUBLISHED.23.12.20.pdf">https://www.energynetworks.org/assets/images/ON20-WS1A-P6%20Non%20DSO%20Services-PUBLISHED.23.12.20.pdf</a>

#### Step 2

<b>Step</b>	<b>Local Service Conflicts and Congestion Testing</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	TRANSITION trialling of Service Conflicts and Congestion at a local level. Includes both DSO and Non-DSO service demonstrations, with a simulated ESO service.
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	August 2020 - July 2023
<b>Organisation type:</b>	TEF(1)
<b>Progress:</b>	Initiated(1)
<b>Additional information:</b>	This is a TRANSITION-led step. For more information on TRANSITION, please see link below: <a href="https://ssen-transition.com/">https://ssen-transition.com/</a>

#### Step 3

<b>Step</b>	<b>Facilitate Non-DSO Services</b>
<b>Step type:</b>	Network actions
<b>Description:</b>	Implement outcomes from ENA ONP Workstream 1A Product 6 (2020) to facilitate local energy trading or exchange capacity and curtailment obligations. IT/infrastructure changes may be required to provide data for the facilitation of new markets and identification and management of potential conflicts.
<b>ENA ONP Product:</b>	2020 WS1A P6
<b>Timeline:</b>	March 2019 - March 2028
<b>Organisation type:</b>	DNO(6)
<b>Progress:</b>	Initiated(5), Implementing(1)
<b>Additional information:</b>	High complexity related to enabling trades of capacity has been raised as a potential barrier. It is also envisaged that where there is active trading, this will need to be regulated by Ofgem. DNOs are waiting for outputs from ENA ONP 2020 WS1A P6 (step 3) and TEF projects to further implement this step. As per DNOs, implementation of this step will also require IT system for data sharing. The final report of 2020 ENA ONP product is provided below: <a href="https://www.energynetworks.org/assets/images/ON20-WS1A-P6%20Non%20DSO%20Services-PUBLISHED.23.12.20.pdf">https://www.energynetworks.org/assets/images/ON20-WS1A-P6%20Non%20DSO%20Services-PUBLISHED.23.12.20.pdf</a> To be noted that this step will also use outputs of 2021 ENA ONP products.

#### Step 4

<b>Step:</b>	<b>Whole System FES - Signposting of Potential Network Capacity Requirements</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	ENA ONP Workstream 1B Product 5 (2020) seeks to improve how DNO network capacity shortfalls and forecast network requirements are described and publicised to the wider market. Changes will be recommended and, if there is value in using a standard approach, this will be proposed for adoption by all DNOs.
<b>ENA ONP Product:</b>	2020 WS1B P5
<b>Timeline:</b>	January 2020 - November 2020
<b>Organisation type:</b>	ENA ONP(1)

<b>Progress:</b>	Completed(1)
<b>Additional information:</b>	<p>This is an ENA ONP-led step. In May 2020 findings of the survey on network operator current practices for evaluating and signposting future network capacity were published <a href="#">here</a>.</p> <p>The final report was published in Nov. 2020:  <a href="https://www.energynetworks.org/assets/images/ON20-WS1B-P5%20Proposed%20Standardised%20Network%20Capacity%20Report-PUBLISHED.23.12.20.pdf">https://www.energynetworks.org/assets/images/ON20-WS1B-P5%20Proposed%20Standardised%20Network%20Capacity%20Report-PUBLISHED.23.12.20.pdf</a></p>

#### Step 5

<b>Step:</b>	<b>Whole System FES - Signposting of Potential Network Capacity Requirements</b>
<b>Step type:</b>	Network actions
<b>Description:</b>	DNOs to implement recommended signposting of potential network capacity requirements, as developed in ENA ONP Workstream 1B Product 5 (2020).
<b>ENA ONP Product:</b>	2020 WS1B P5
<b>Timeline:</b>	January 2020 - April 2023
<b>Organisation type:</b>	DNO(6)
<b>Progress:</b>	Initiated(3), Implementing(2), Completed(1)
<b>Additional information:</b>	<p>This step is linked to step 4 outputs (2020 WS1B P5). In May 2020 findings of the survey on network operator current practices for evaluating and signposting future network capacity were published <a href="#">here</a>.</p> <p>The final report was published in Nov. 2020:  <a href="https://www.energynetworks.org/assets/images/ON20-WS1B-P5%20Proposed%20Standardised%20Network%20Capacity%20Report-PUBLISHED.23.12.20.pdf">https://www.energynetworks.org/assets/images/ON20-WS1B-P5%20Proposed%20Standardised%20Network%20Capacity%20Report-PUBLISHED.23.12.20.pdf</a></p>

#### Step 6

<b>Step:</b>	<b>Non DSO Services - trials and market simulations</b>
<b>Step type:</b>	Development / definition activity
<b>Description:</b>	2021 WS1A P6 is a continuation of 2019 WS1A P1 and 2019/202 P6 and incorporates outputs from the Non-SCR Access Working Group (P1 & P2) on the exchange of capacity and curtailment obligations and the Flexible Connections (ANM enabled) ONP PID 2021 Priorities Workshop that was attended by the ENA, BEIS and Ofgem. In 2021 this product will focus on the principles/rules of engagement for market participants to trade/share capacity. As part of that scope it will also test the market principles and data sets that were identified by 2019 WS1A P1 and P6 to enable neutral facilitation of this new market both pre & post transaction to ensure there is no detrimental impact on the network.
<b>ENA ONP Product:</b>	2021 WS1A P6
<b>Timeline:</b>	January 2021 - September 2021
<b>Organisation type:</b>	ENA ONP(1)
<b>Progress:</b>	Implementing(1)
<b>Additional information:</b>	<p>More information on this step can be found in ENA ONP 2021 project initiation document:  <a href="https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf">https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf</a></p>

## Step 7

Step:	Non DSO Services - Common Approach
Step type:	Development / definition activity
Description:	Drawing on learning from market simulations and shared and traded capacity trial, ENA ONP will establish a common methodology across DNOs.
ENA ONP Product:	2021 WS1A P6
Timeline:	September 2021 - April 2022
Organisation type:	ENA ONP(1)
Progress:	Initiated(1)
Additional information:	This is a continuation of 2020 WS1A P6 and is linked to step 10 of this activity. More information on this step can be found in ENA ONP 2021 project initiation document: <a href="https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf">https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf</a>

## Step 8

Step:	Non DSO Services - Common Approach
Step type:	Network actions
Description:	Based on outcomes of the work that will be delivered by ENA ONP through WS1A P6 (in 2021 and 2022), DNOs to adopt a common approach to sharing and trading capacity (e.g. rules and requisite datasets that enable facilitation of these markets by DNOs).
ENA ONP Product:	2021 WS1A P6
Timeline:	January 2021 - December 2025
Organisation type:	DNO(6)
Progress:	Not currently planned(1), Initiated(5)
Additional information:	This step is dependent on outcomes of ENA ONP work in this areas (steps 10 and 11). More information on this step can be found in ENA ONP 2021 project initiation document: <a href="https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf">https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf</a>

## Step 9

Step:	Improve operational DER visibility and monitoring
Step type:	Development / definition activity
Description:	ENA Open Networks Workstream 1B Product 6 (2021) will define the needs cases for DER visibility and monitoring for the ESO and DNOs under a range of uses cases; define the functional specifications for these use cases; use these to derive a cost-benefit analysis framework for DER visibility and monitoring against the use cases; and undertake the cost-benefit analysis.
ENA ONP Product:	2021 WS1B P6
Timeline:	January 2021 - December 2021
Organisation type:	ENA ONP(1)
Progress:	Implementing(1)

<b>Additional information:</b>	More information on this step can be found in ENA ONP 2021 project initiation document: <a href="https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf">https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf</a>
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#### Step 10

<b>Step:</b>	<b>Improve operational DER visibility and monitoring</b>
<b>Step type:</b>	Network actions
<b>Description:</b>	DNOs and the ESO to improve operational DER visibility and monitoring, based on outcomes of ENA Open Networks project (2021 workstream 1B Product 6). ENA ONP's work will articulate the uses and needs for DG and DER visibility. DNOs and the ESO to use these outcomes as an input into the roll-out and specification of monitoring equipment DER sites.
<b>ENA ONP Product:</b>	2021 WS1B P6
<b>Timeline:</b>	April 2022 - December 2023
<b>Organisation type:</b>	ESO(1), DNO(6)
<b>Progress:</b>	Not currently planned(1), Initiated(6)
<b>Additional information:</b>	This step is dependent on step 9 of this activity (2021 WS1B P6 outcomes). More information on this step can be found in ENA ONP 2021 project initiation document: <a href="https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf">https://www.energynetworks.org/assets/images/Resource%20library/ON21-2021%20Project%20Initiation%20Document%20Pre%20Consultation-PUBLISHED.02.02.21.pdf</a>

#### Step 11

<b>Step:</b>	<b>Visibility of distributed generation connected to the GB distribution networks</b>
<b>Step type:</b>	Enablers / Dependencies / Barriers
<b>Description:</b>	In August 2020, Ofgem published a call for evidence on DG visibility, clearly signalling their intention to establish a clear policy on DG monitoring requirements. Ofgem to publish their conclusions and next steps following analysis of industry's responses to the consultation
<b>ENA ONP Product:</b>	N/A
<b>Timeline:</b>	August 2020 - February 2021
<b>Organisation type:</b>	Regulator(1)
<b>Progress:</b>	Completed(1)
<b>Additional information:</b>	More information on Ofgem's decision and next steps can be found below: <a href="https://www.ofgem.gov.uk/publications-and-updates/next-steps-visibility-distributed-generation-connected-gb-distribution-networks">https://www.ofgem.gov.uk/publications-and-updates/next-steps-visibility-distributed-generation-connected-gb-distribution-networks</a>