



Open Networks Project

Consultation on Phase 2 Work Programme

30 January 2018

Energy Networks Association

Document Ref: ON-Phase 2 Programme

Introduction and Background to the Open Networks Project

In December 2016, Energy Networks Association (ENA) members gave their commitment to the Open Networks Project, a major collaboration that will transform the way that electricity networks will operate and work for customers.

Launched in January 2017, ENA's Open Networks Project has started to lay the foundations of a smart energy grid in the UK. It is a key initiative to deliver Government policy set out in the Ofgem and BEIS Smart Systems and Flexibility Plan, the Government's Industrial Strategy and the Clean Growth Plan.

The Open Networks Project has introduced real momentum into the development work required to enable the UK's energy networks to:

- Facilitate our customers' transition to a low carbon future, including the electrification of heat and transport.
- Address the challenges rising from the continued uptake of local generation.
- Evolve to be market enablers for a whole range of new smart energy technologies.
- Reduce costs to customers by contracting for flexibility services alongside investment in traditional and innovative network solutions.
- Play a key role in delivering overall lowest energy system costs for customers.

Electricity is an essential service to our customers, and their reliance on it will grow, for example with the electrification of transport. Network operators must meet these challenges whilst:

- Continuing to deliver safe and secure operation of their Networks.
- Ensuring efficient and timely access to networks for customers.
- Continuing to provide value for money.
- Ensuring that our universal service continues to be available to all customers on a fair basis.

The ENA Open Networks Project is intending to meet these goals by transforming the way our energy networks work and underpinning the delivery of the smart grid. It brings together transmission and distribution network operators from Great Britain, Northern Ireland and the Republic of Ireland and has included a broad range of stakeholders in its development work, including the energy regulator Ofgem, Government departments, independent Distribution Network Operators (iDNOs), customers, generators, suppliers, storage providers, respected academics, Citizens Advice Bureau and other NGOs amongst others.

The Open Networks Project is carrying out extensive and comprehensive assessment of transmission-distribution interactions and future Distribution System Operator functionality. We are taking a "whole system" approach to transmission and distribution (with consideration of gas, heat and other cross-vector industries) and we will take account of other network-led and wider industry work. For example, we will continue to work closely with the Future Power System Architect (FPSA) initiative. Any changes to existing industry codes and frameworks that are proposed as a result of Open Networks work will be taken through the appropriate industry governance processes.

In December 2017, we published our report "Opening Markets for Network Flexibility; 2017 Achievements and Future Direction", which can be found here:

<http://www.energynetworks.org/electricity/futures/open-networks-project/eoy-report-2017.html>

In order to facilitate open debate and discussion across industry, all outputs from the Project are being published here, alongside additional information:

<http://www.energynetworks.org/electricity/futures/open-networks-project/open-networks-project-workstream-products.html>

Purpose of this Consultation

Following our successful delivery in 2017, we have scoped and planned our development work for 2018 and it is this plan of work, set out in the attached [Phase 2 Project Initiation Document](#), which we are inviting responses to in this consultation. It is very important for the success of the project that we focus on the right topics and that we are informed by the widest possible stakeholder perspective.

This Phase 2 workplan has been built up with stakeholder input through our Advisory Group, but this consultation is an opportunity for all stakeholders to consider the full workplan and feedback on priorities, scope, time-scales and those areas where detailed consultation is proposed through 2018.

The paper outlines the 2018 workplan and asks a short set of questions. We have established the project to be adaptable and feedback will be used to:

- Prioritise the work to be carried out in Phase 2.
- Add further products to the Phase 2 programme if needed or defer proposed products from the Phase 2 programme if these do not address priority areas of work.
- Adjust the detailed scope and timing of products.
- Adjust the proposed stakeholder engagement, communication and consultation plans.

This consultation is being processed quickly so that feedback can be used to adjust the Phase 2 workplan. The consultation is not holding up progress on the project, as we have begun Phase 2 on the basis of what is set out in the [Phase 2 Project Initiation Document](#).

How to Engage and Respond

We will be hosting an open webinar/webex on this consultation on 15th February and further details will be provided on the ENA website and to people on our stakeholder distribution list. You can sign up for this distribution list or ask any questions by emailing the Open Networks project at the address below.

The consultation closes on 23rd February 2018. Please send your responses electronically to opennetworks@energynetworks.org.

We intend to publish all responses on the ENA website, therefore if your response is confidential and not for publication, please clearly notify us or if elements are confidential, please provide us with a full version for consideration and a non-confidential version for publication.

All are welcome to respond:

Feedback on this paper is welcomed from all stakeholders, including (but not exclusively): network users, energy market participants; network operators, independent distribution network operators, aggregators, suppliers, DER, consumers, community energy schemes, new and existing business models and technologies.

Phase 2 2018 Programme Overview

The Phase 2 work in 2018 will build on and add to the work carried out in Phase 1. The project will continue to be managed through 5 workstreams considering:

- 1) T-D Processes,
- 2) Customer Experience,
- 3) DNO to DSO Transition,
- 4) Network Charging and
- 5) Communications.

Much of the work will be delivered through workstream products with well-defined outputs. The Phase 2 programme develops and adds to the work started in Phase 1. New products have been developed through the gap analysis and stakeholder reviews carried out during Phase 1.

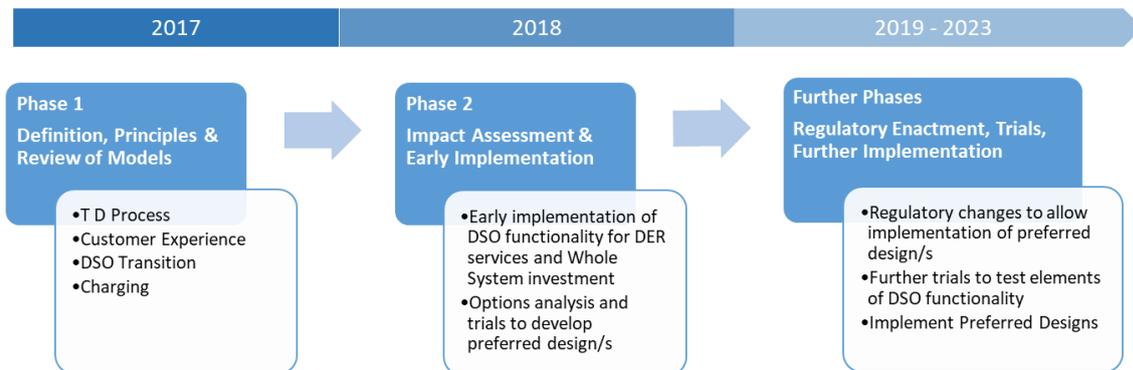


Figure 1 Short/Medium/Long-Term Open Networks Programme Phases

Overall, the Phase 2 programme is significantly larger than Phase 1. Around twice as many network operator resources are planned to be directly engaged across the different workstreams and products. Given the number of products, there will also be interactions and dependencies between workstreams and products such that project management will be even more important, and we are working on clarifying the interactions between workstreams.

Work carried out in Phase 2 will continue to draw on innovation projects and other case studies including those summarised in Figure 2. In addition, 3 projects approved as part of the 2017 Network Innovation Competition (Fusion, Electricity Flexibility and Forecasting System and Transition) will be used to trial aspects of the work.



Figure 2 Case Study Timelines

Stakeholder Engagement & Products Proposed for Consultation

Given the increased size and scope of the programme, effective engagement with stakeholders will continue to be crucial. We will continue to use the Stakeholder Advisory Group¹ to provide input to our development work as we progress and we will engage other groups (e.g. DER Connections Group) for input to particular products.

There are some key products that we wish to go beyond our project stakeholder groups and put out to public consultation to gather the widest possible set of stakeholder views. Stakeholders have asked us for a schedule of when to expect these consultation papers and our latest view of public consultations and when these would be issued is given below.

| Product | Description | Timing |
|----------------------------------|--|--------|
| Overall Project | | |
| | Future Workplan & Prioritisation for 2018. | Jan 18 |
| WS1 – T-D Processes | | |
| 1 | Investment Processes Whole system investment models and proposed extension to NOA framework to include DER solutions. | Dec 18 |
| 10 | Current good practice document for flexibility connections. Potential formal consultation. | Apr 18 |
| WS2 – Customer Experience | | |
| 2 | Position paper for capacity recycling. A formal consultation is likely to be linked to Ofgem’s review of Network Access and Forward Looking Charges. | Sep 18 |
| 5 | Improve customer information and improve network operator processes including queue management. Potential formal consultation. | Oct 18 |
| WS3 – DSO Transition | | |
| 5 | Seek input on DSO modelling, leading DSO models and key criteria on which to base cost benefit assessment. | Jun 18 |

Figure 3 Plan for Public Consultations on Open Networks Products

We expect that any consultation associated with Workstream 4 will be carried out through the Ofgem-led work of the Charging Futures Forum and Charging Delivery Body.

Workstream Overview

Workstream 1 (WS1) will continue to focus on transmission-distribution (T-D) investment and operational planning processes and on how to improve these in the shorter term to enable greater DER access to networks and services, introduce whole system investment planning, provide further information to customers and ensure continued network reliability. This will build on work carried out in Phase 1 including the commercial principles and models for accessing DER services that were consulted on in August 2017.

¹ The Stakeholder Advisory Group is a representative group containing approximately 40 experts from across the GB energy industry including Suppliers, Aggregators, iDNOs, industry groups, academia, Generators, consumer groups, the gas industry, Government, Ofgem and other industry parties. The group works closely with the Open Networks project team to shape and review workstream products. Membership of the Stakeholder Advisory Group is detailed at the following link [Stakeholder Advisory Group](#).

Tangible customer benefits from the 2018 work should include new opportunities for DER to provide services to support transmission and distribution network operators and to participate in whole system investment solutions. A broader range of information will be made available to distribution customers and service providers through 2018. Network operators will also take forward actions to ensure that the wider benefits of DER are not undermined by unintended impacts on network reliability.

13 separate WS1 products are included in Phase 2. These are more fully described in the Phase 2 Project Initiation Document.

| WS1 Products | | Description | Timescale |
|--------------|---|---|---------------------|
| 1 | Investment Processes | Enable a whole system approach utilising a range of investment and operability options across T&D. Build on 2017 Product 3 to extend the Networks Options Assessment (NOA) process for transmission network reinforcement to include distribution sourced options. This product would include public consultation late in 2018. | Ongoing to Dec 2018 |
| 2 | DER Services Procurement | Put in place the framework for providing contract visibility, conflict resolution and service optimisation across T&D networks. (Build on 2017 Product 4.) Consider the operational exchanges to schedule and despatch services. | Ongoing to Dec 2018 |
| 3 | Industry Framework Interactions | Ensure that Open Networks outputs are reflected into code & framework development including European Network Code adoption and BSC modifications. | Jan to Dec 2018 |
| 4 | Reliability Standards & Emergency Requirements | Ensure that emerging Whole System investment & operational processes maintain security of supply across T&D and cover requirements under emergency conditions. | Jan to Dec 2018 |
| 5 | Whole System FES | Establish a whole system approach to Future Energy Scenarios. | Jan to Sep 2018 |
| 6 | Regional Service Requirements | Define and publish regional service requirements and constraint heat maps. | July 2018 onwards |
| 7 | ANM Information | Establish processes to capture ANM system status and performance for investment planning purposes. | May to Dec 2018 |
| 8 | System Wide Resource Register | Review the feasibility of putting in place a system-wide resource register for GB generation, storage and flexible demand (T&D). | Jan to Sep 2018 |
| 9 | TSO-DSO Transmission Impacts | Complete work to replace Statement of Works and embed updated TSO-DSO processes across GB. | Jan to Jun 2018 |
| 10 | Facilitating Connections – Current Practice for Flexible Resources | Review current DNO approaches to flexibility queue management and publish a document to stakeholders to clarify DNO practice at present on handling flexibility. This product is expected to include a public consultation in April 2018 to seek customer views on good practice. | Ongoing to May 2018 |
| 11 | Facilitating Connections – Action Plan and Report | Develop gap analysis and action plan for flexible resources in connection queues (including storage as per action 1.6 from the Smart Systems and Flexibility Plan) and publish to stakeholders. | Feb to Dec 2018 |
| 12 | TSO/DSO & DER Data Requirements | In light of DSO-TSO changes (Statement of works), consider revisions to existing data exchange processes. Also, update the data requirements to be provided from DER customers when they apply for a connection and after they agree a connection from the DNO. | Jan to Dec 2018 |
| 13 | Operational Data & Control Architectures | Further develop the architectures and mechanisms for operational data exchange. This will support other products. | Jan to Dec 2018 |

Workstream 2 (WS2) will continue to focus on improving customer experience. It will look to improve the information available to customers to support network connection and service provision, review and recommend ways to better manage ongoing network connections and provide greater clarity on the use of industry terminology.

At present, WS2's scope and products are clearer for the first half of 2018. Much of this early work is focussed on agreeing and promoting existing good practice across network operators. In doing this, WS2 product teams will work closely with WS1 and WS3 product teams where scope is closely related. Later in 2018, as T-D processes are updated through WS1 and as DSO functionality is agreed through WS3, it is likely that WS2 products will be further developed.

Tangible customer benefits from the 2018 work should include enhanced information to support network connections and service provision. Approaches across distribution networks should also be more consistent. The work could also provide opportunities to better use existing network capacity.

8 separate WS2 products are included in Phase 2. Again, these are more fully described in the Phase 2 Project Initiation Document.

| WS2 Products | | Description | Timescale |
|--------------|--|---|-----------------|
| 1 | Good Practice ahead of Connection Applications | Review network operator approaches for handling prospective connection applications and publish good practice for supporting customers pre-application. | Jan to Jul 2018 |
| 2 | Management of Capacity | Identify and review options for managing and planning capacity that may be contracted for but may not be being used by customers. Options and principles would be laid out in a position paper and recommendations would be provided to Ofgem & BEIS. This product is expected to include a public consultation around September to help establish recommendations. | Jan to Oct 2018 |
| 3 | Explanation of 'Terms' & 'Definitions' | Produce a document that explains commonly used terms such as 'firm' and 'unfirm'. This would be published and used by network operators going forward to provide greater clarity for customers. | Jan to Jun 2018 |
| 4 | Information on Flexibility Services | Review how information should be provided to customers on potential DNO requirements for flexibility services. Agree good practice. | Apr to Dec 2018 |
| 5 | Good Practice Following Connection Applications | Review approaches for handling customer connections in the post-application phase and agree good practice around areas including connection queue management. This product is expected to include a public consultation late in the year to seek feedback on proposals. | Jan to Dec 2018 |
| 6 | Guidance on Post Connection Changes | Provide guidance to customers on the impacts of changes to DER operational regimes. Agree when and how changes should be notified to DNOs. | Jan to Sep 2018 |
| 7 | Provision of Constraint Information | Review what information on constraints and curtailment would be useful to customers, what can be provided and establish good practice for network operators. | Apr to Dec 2018 |
| 8 | 2017 Product Updates | Review the changes to connection arrangements agreed through WS1's 2017 Product 6 and update WS2 2017 products (including journey maps) if required. | Jan to Apr 2018 |

Workstream 3 (WS3) will continue to determine the functionality that DSOs will require going forward. Specific Phase 2 objectives include the completion of ongoing SGAM (Smart Grid Architecture Model) modelling to fully describe and scope the models for DER services procurement. This builds on 2017 work to establish commercial principles and a range of potential models for accessing DER services. The modelling will also be extended to cover whole system planning of the electricity system.

Phase 2 will also develop a cost benefit analysis to compare the costs and benefits of the different potential DSO models. It would look to agree those elements of consolidated DSO models that can be prioritised for action and identify any gaps in ongoing industry work to firm up technological requirements for DSOs and the wider industry. By the end of Phase 2, we would look to put in place an implementation plan to take forward those elements of DSO where functionality has been agreed by network operators and stakeholders and to show what steps might be needed to transition to a GB market model for DSO.

The tangible customer benefits from the 2018 programme include a clear articulation of DSO functionality, an articulation of DSO value, and a proposed plan for implementing elements of DSO

functionality to address key areas for customers and consumers relating to DER services procurement and whole system investment. This will draw heavily from the work being carried out in Workstream 1 under Products 1 and 2.

Whilst Workstream 3 is focussed on agreeing enduring DSO arrangements, the Phase 2 work plan is designed to enable early delivery of DSO functionality through progressing 'no regrets' actions to enable DSO, by surfacing key regulatory enablers and by utilising ongoing industry work as far as practicable. For example, if elements of DSO functionality are common to different models, these "market agnostic" elements could be taken forward ahead of wider industry agreement on a preferred market model.

8 separate WS3 products are included in Phase 2. Again, these are more fully described in the Phase 2 Project Initiation Document.

| WS3 Products | | Description | Timescale |
|--------------|--|---|-----------------|
| 1 | SGAM Modelling of DSOs and DER Procurement | Future DSO Model SGAM Frameworks & Analysis (Started in Phase 1). | Jan to Apr 2018 |
| 2 | Further SGAM Modelling of DSO Functionality | Further modelling to address stakeholder feedback on Commercial Principles and to cover further areas of DSO functionality. | Mar to Dec 2018 |
| 3 | Market Agnostic DSO Elements | Complete Assessment of "Market Agnostic" elements of DSO functionality such that no regrets DSO implementation actions can be brought forward. | Mar to Dec 2018 |
| 4 | Independent Review of DSO Models including CBA | Commission and support an independent assessment of the transition to different DSO models. As well as cost benefit analysis (CBA), this should include dimensions such as UK/EU regulatory compliance, sustainability, customer satisfaction, complexity, Smart Network indicators and impacts on vulnerable consumers. The assessment is intended to compare models and underpin regulatory impact assessments. | Apr to Nov 2018 |
| 5 | DSO Model Validation & Review Including Public Consultation | Detailed review of SGAM outputs to ensure these provide a sound basis for DSO direction setting and implementation. Public consultation on market models and next steps is planned for June 2018. | May to Sep 2018 |
| 6 | Key Enablers for DSO | Identify and document key enablers to implement DSO functionality (e.g. IT systems, comm's infrastructure, organisational changes, contract requirements, regulatory changes, funding). These would support comparisons and feed into the implementation plan. | Apr to Nov 2018 |
| 7 | Further Trials to Address Gaps in DSO Functionality | Identify and initiate further trials to address any gaps. This will look to utilise ongoing projects including those approved as part of the 2017 NIC competition that will be aligned through the ON project - Fusion, Electricity Flexibility and Forecasting System and Transition. If necessary, further projects would also be considered. | Mar to Dec 2018 |
| 8 | Preferred DSO Models & Proposed Implementation Plan | Draw on earlier work to determine elements of DSO Models that have been agreed by NO's & Stakeholders and develop and propose an Implementation Plan. | Nov to Dec 2018 |

Workstream 4 (WS4) will continue to focus on network charging. Its main areas of work will be to support Ofgem's CFF (Charging Futures Forum) and related Task Forces to help provide development resource and network operator input to existing and future industry charging reviews. WS4 will also support Ofgem's CDB (Charging Delivery Body) in translating the results from the CFF into manageable actions and ensuring their delivery. It will provide continued input and support to inform the CFF on reforms required for network residual charges and provide support on charging to the wider Open Networks project.

Finally, WS4 will develop recommendations to remove inefficient signals in charging and remuneration of TSO/DSO services such that customers and flexibility providers are presented with a level playing field whilst ensuring whole system cost reflectivity (rather than focusing on individual licensed parties) to deliver the best value for customers.

Energy Networks Association

Workstream 5 (WS5) will use a combination of public affairs, press, social media and direct engagement to raise stakeholder awareness around the need to think holistically across the transmission-distribution boundary, the DSO transition and its importance, the opportunities for stakeholders to engage with the Open Networks Project and the role network operators are playing in laying the foundations for the UK's smart electricity grid.

WS5 will look to use a wide range of engagement techniques. These will include social media, webinars, industry events and Westminster panel events alongside the other approaches used in Phase 1.

Key Questions on Phase 2 Programme

Please consider and respond to the following questions, referring to the [Phase 2 Project Initiation Document](#) where possible:

- Q1. Which specific areas of 2018 work or “Products” are most important to you and why?**
- Q2. Are there any other areas of work or “Products” you would like to see included in the Open Networks Phase 2 workplan and if yes, why and how should they be prioritised compared with other work?**
- Q3. Should any areas of work or “Products” be removed or deferred and if yes, why?**
- Q4. Do you agree with the proposed “Products” for wider consultation and what other work should be consulted on and why?**
- Q5. Have you any feedback on the proposed timescales for delivery and consultation through Phase 2?**
- Q6. How would you like to provide input to the Open Networks Project and be kept informed of developments?**

Next steps

The consultation closes on 23rd February 2018. Please send your responses to opennetworks@energynetworks.org.