Document Control

Authorities

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<th>Version</th>
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<th>Authorisation</th>
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<tr>
<td>1.2</td>
<td></td>
<td>Open Networks Project Steering Group</td>
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Related Documents

<table>
<thead>
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<tr>
<td>Reference 1</td>
<td>Open Networks Project 2018 Review</td>
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Change History

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<th>Version</th>
<th>Change Reference</th>
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<tr>
<td>0</td>
<td>N/A</td>
<td>Various versions reviewed and updated from Workstream and Steering Group input</td>
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Distribution

To be published alongside consultation document for views from external stakeholders
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1 Introduction

1.1 About ENA and our members

Energy Networks Association (ENA) represents the “wires and pipes” transmission network operators in the UK and distribution network operators for gas and electricity in the UK and Ireland. Our members control and maintain the critical national infrastructure that delivers these vital services into customers’ homes and businesses.

1.2 Purpose of this Project Initiation Document

This Project Initiation Document (PID) outlines what the Open Networks Project will deliver in 2019, how it will be delivered and when. It is a best view at this point.

The areas of work outlined in this document have been identified on the basis of work done to date, new areas of market agnostic developments identified through the least regrets analysis of the Future Worlds and stakeholder feedback. In addition to scope, this document also outlines the governance processes for delivery.

A public consultation will be launched on the non-commercial and non-sensitive areas of this PID in January 2019 to request stakeholder feedback on development priorities and approach and this PID will be revised based on stakeholder feedback.

The Open Networks Project will evolve over time as we learn and we need to be adaptable in delivering our objectives. We expect that the products and development work will evolve during the year and the Steering Group will provide guidance on the direction of the project.

1.3 Background to 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 both local Distribution Networks and national Transmission 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.

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.

1.4 Business Leaders’ Commitment

The Business Leaders of the Network Operators, Transmission Operators and Electricity System Operator (ESO) have reiterated their commitment to a long-term project to be led by ENA to progress the transition to DSO through enabling flexibility markets and delivering whole system outcomes to reduce cost for consumers.
We highlighted to the Business Leaders that we need to be adaptable in our approach to the project as we learn, as there will be a number of challenges and changes that we can’t foresee now. Ofgem and BEIS have stressed the need for us to be adaptable in our project.

1.5 Longer Term View

The Open Networks project is a long-term piece of work to deliver network improvements and transition them into our existing market arrangements which ENA will set out in a long-term programme. Phase 2 of the project has been completed in 2018 and Phase 3 will run through 2019. Following that, ENA will continue to support a collaborative development project along the journey to transition to DSO.

We expect that the project development work will evolve over time and we will adapt, but a broad timeline for development is set out below. Different initiatives will take different times to complete and there is the potential for staggered roll-out of some processes across different geographic areas, as Open Networks can’t deliver “one-size-fits all” solutions for many of the challenges which can be geographic.

Figure 1 Open Networks Development Timeline

1.5.1 Overarching Programme Objectives

The objectives of the overall Open Networks Project remain to:

- Share information and work collaboratively across network operators, with Ofgem, BEIS and other stakeholders to progress the transition to DSO and improve outcomes for customers.
- Maintain a leading position for network operators in the development of Open Networks.
- Ensure that the customer is kept at the centre of any process development to ensure that their experience can be improved, we allow connecting customers to realise value from their technology and that our outputs deliver lower cost outcomes for all consumers and society.
- Bring consistency in approaches across networks through existing and new processes to support the transition to DSO, interactions with each other and interactions with customers.
- Enable data visibility and better access to non-confidential data across transmission and distribution and for customers.
Open Networks Project Phase 2 2018 Project Initiation Document v1.2

- Ensure conflicts of interest are proactively identified and appropriate measures are put in place to address them appropriately.
- Take a whole electricity system approach to ensure that the value across the wider system is considered and widen this to consider a whole energy system approach.
- Inform the regulatory debate around funding (including ET2 & ED2).

These overall objectives underpin how we approach the development work in Open Networks and then we have further targeted objectives for each workstream.

1.5.2 BEIS/Ofgem Smart Systems and Flexibility Plan Update

In October, Ofgem & BEIS published an update on their Smart Systems and Flexibility Plan and recognised ENA’s progress through the Open Networks Project in 2018 and reiterated the onus on the networks to continue opening network requirements to flexibility and removing barriers for connecting storage.

The table below outlines the next steps that have been documented in the update that relate of the Open Networks project and how the Open Networks will support them in 2019.

<table>
<thead>
<tr>
<th>Action Ref</th>
<th>Next steps outlined in update</th>
<th>What Open Networks will do in 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6</td>
<td>“The ENA, through the Open Networks Project, will consult on specific changes to the queue management process by the end of 2018, with a view to changes being implemented by network operators soon after.”</td>
<td>We will review the consultation responses to identify key stakeholder messages and will outline our next steps for implementation of good practice for queue management and interactivity in Workstream 2. We will be working closely with industry to close the gaps that were identified for development in the consultation.</td>
</tr>
<tr>
<td>3.5</td>
<td>“DNOs will now open up network requirements to markets and competition on a business-as-usual basis. In doing so, they should address the potential conflict of interests between them being a procurer of network services and a potential provider of network solutions. We expect DNOs to publish data, at regular intervals, on the volume of flexibility they have procured, to demonstrate progress in their transition to DSOs. The Government and Ofgem are prepared to take further action if the network and system operators DNOs do not take adequate measures to address conflicts of interest.” “The ENA has engaged a consultant to conduct an impact assessment relating to its ‘Future Worlds’ options. This will consider the costs and benefits related to how the role of DNO/DSOs and other system actors may evolve beyond opening network requirements to market competition. This work, and stakeholder views related to it, will be provided to Ofgem and the Government, as one element of input as part of their wider considerations for the need for wider system developments.”</td>
<td>ONP will continue to proactively identify conflicts of interest for DNOs and other actors in the Future Worlds and any potential unintended consequences in Workstream 3. The 2018 Review will publish 2018 figures for flexibility and we will continue to publish these periodically. ONP will be leading a public consultation in Q1 2019 on the findings of Baringa’s analysis of the Future Worlds to get stakeholder views. ONP will share the consultation findings and our work on key enablers as well as the further work defined in the DSO Transition workstream below.</td>
</tr>
</tbody>
</table>
We are working with industry to deliver change at a pace that achieves meaningful short-term improvements for customers and also agreement on how markets should operate in the longer term. For further details of how we have made developments on this in 2018, please refer to the 2018 Project Review.
2 Project Scope, Workstreams & Dependencies

2.1 In Scope

ENA is responsible for leading Phase 3 of the Open Networks Project in collaboration with 10 of UK and Ireland’s network operators and owners, respected academics, NGOs, government departments and the energy regulator.

In developing the scope for 2019, we have considered a number of areas of work and feedback that we have received from stakeholders to date. We will continue to take an agile approach to ensure that what we deliver is fit for purpose, taking into account of emerging developments and stakeholder needs.

Trials that are identified under Phase 3 of this project will utilise NIC funded projects (including the recently agreed Transition, Electricity Flexibility and Forecasting System and Fusion projects) and NIA projects where feasible. These trials will be informed by Open Networks and provide substantive input to inform the work under this project.

We have allocated the scope of work across 6 workstreams that are defined in more detail in the associated sections of this PID and workstream scoping documents. These define the outcomes and products for each workstream.

We have 3 workstreams on shorter term improvements that can be developed and progressed whilst the transition to a Future World for DSO is in development. This has been split into 3 workstreams as there are 3 different topic areas to focus development work on and because the body of work would be too great for 1 workstream:

- **Workstream 1A – Flexibility Services** will continue work to define and develop standardised approaches across DNOs in their procurement of flexibility services, as well as initiating new work to design changes to facilitate and encourage new markets and platforms for flexibility (e.g. peer-to-peer trading).

- **Workstream 1B – Whole Electricity System Planning & T-D Data Exchange** will take forward the work completed in 2018 on investment planning and forecasting to implement new
processes as BAU and to further develop coordinated planning approaches in investment, operational and real time timescales.

- **Workstream 2 – Customer Information Provision & Connections** will roll-out good practice developed in 2018, bringing a level of convergence across networks in the connections process, progress queue management developments and will further improve visibility of information for customers and between network operators.

We have focused **Workstream 3 – DSO Transition** to inform the transition to DSO and be targeted on activities required to transition to a Future World for DSO. WS3 will continue to support the assessment of the Future Worlds and the various pathways to the transition to DSO to continue to build an evidence base for any Ofgem and BEIS regulatory decision making.

We have initiated a new **Workstream 4 – Whole Energy System** to scope and progress cross vector thinking and developments.

**Workstream 5 – Communications and Stakeholder Engagement** will continue to promote stakeholder engagement and communications for the Open Networks Project.

This is described diagrammatically below:
In order to reflect continuity in the areas of development, we have retained the workstream numbers from 2018. The diagram below shows how the 2018 workstreams map across 2019.

### 2018 Workstreams
- Workstream 1: T–D Process
- Workstream 2: Customer Experience
- Workstream 3: DSO Transition
- Workstream 4: Charging
- Workstream 5: Comms & Stakeholder Engagement

### 2019 Workstreams
- Workstream 1A: Flexibility Services
- Workstream 2: Customer Information Provision & Connections
- Workstream 3: DSO Transition
- Workstream 4: Whole Energy Systems
- Workstream 5: Comms & Stakeholder Engagement

#### 2.2 Out of Scope
We have identified that individual DNO or ESO initiatives may support this work and will inform this work, but may not fall within the scope of this project.

EV readiness is excluded from the scope of the Open Networks project, however as it is a key driver for Open Networks and closely links to flexibility (being enabled in this project), collaboration will continue with the Low Carbon Technologies Working Group that has been setup under ENFG to work on it.

Behind the meter activities are generally not included in the scope of network processes and therefore Open Networks, although facilitating markets for services that may be driven from behind the meter activity (e.g. domestic generation for aggregation) is in scope.

#### 2.3 External Dependencies and Interfaces
As the Open Networks project is starting to get into detailed process development, we recognise that there is an increased need for the project to interface with external working groups to ensure that the work between Open Networks and other industry initiatives is aligned.

These dependencies need to be managed at a project level to ensure the right level of engagement and then at a more detailed product level to ensure that we are clearly defining and understanding:

- Where outputs from the Open Networks are fed into relevant groups/projects to inform their work.
Key outputs delivered in the industry are taken into consideration in the development work under Open Networks project.

The following table introduces some of the external dependencies that have been identified at the initiation stage of the project. It is to be noted as part of the early development work for each product, the detailed linkages and interactions with external working groups will need to be identified and managed as required through the life of the products. The onus is on the product teams to manage the dependencies with input from the workstreams and the Steering Group.

Recognising the level of interaction that will be required with Charging, trials and RIIO T2, a dedicated SME will be allocated to ensure appropriate interfacing with ON products.

<table>
<thead>
<tr>
<th>Category</th>
<th>Dependency Group</th>
<th>Description</th>
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</thead>
</table>
| Charging | Ofgem Significant Code Review | This is a key initiative that is expected to be supported by the Regulation team in ENA and sit outside the Open Networks Project. There are key interactions with all of the workstreams and particularly:  
- charging functions and the price driven Future World  
- key enablers  
- connection arrangements  

*It is proposed that Paul McGimpsey continues in a similar role to that which he has played to date in taking a leading role on charging and the key interface to Open Networks.* |
| Data     | Energy System Data Taskforce | The Energy System Data Taskforce ¹ has been established by BEIS, Ofgem and Innovate UK to develop a set of recommendations on improving data availability and transparency to facilitate greater competition, innovation and markets that lead to a more efficient and cost effective energy system. The five core areas of focus for the taskforce are the following:  
- Data Availability & Value  
- Opportunities  
- Architecture  
- Governance  
- Risks  

This taskforce is being run by Energy Systems Catapult and the current view is to deliver the work in 4 sprints with a view to deliver the final report in May 2019. There are a number of products that have been delivered under ONP to date and are being planned for 2019 that will need to feed into the work packages being delivered by this taskforce. The way of working and network representation on this taskforce would need to be... |

¹ TOR can be viewed here [https://www.gov.uk/government/groups/energy-data-taskforce](https://www.gov.uk/government/groups/energy-data-taskforce)
<p>| ENA Data Group | The ENA Data Group is a sub-committee that sits under ENA’s Research and Development (R&amp;D) Managers Group that is the forum to collaboratively address data issues and share best practices. This group is looking at data governance including best practice for data collection and processing and is well placed to provide input to ONP on shorter term data improvements (in planning and operational timescales) and can help inform view on enabling data governance arrangements needed for DSO. As part of the detailed scoping under ONP, these dependencies need to be identified at a product level with agreed inputs/outputs and level of interaction. |
| T.E.F. | The T.E.F. Project The Transition (SSEN), Electricity Flexibility and Forecasting Systems (WPD) and Fusion (SPEN), also known as T.E.F, are the joint DSO NIC 2017 projects that have been approved by Ofgem. These projects are very closely linked to the work under ONP as they build upon the DSO functions and Future Worlds work and are a vehicle to practically test various areas of DSO functionality such as platforms, forecasting systems and flexibility markets through Universal Smart Energy Framework (USEF). The T.E.F projects are a key dependency for the ONP and the interaction needs to be identified at a product level with agreed inputs/outputs and when these will be shared. <em>Kyle Murchie is allocated as a dedicated contact for all trials activity to reflect the importance of this activity.</em> |
| DSO Related Innovation Trials | New NIC and other NIA projects Relevant new projects need to be Highlighted to Open Networks to consider dependencies. <em>Kyle Murchie is allocated as a dedicated contact for all trials activity to reflect the importance of this activity.</em> |
| Industry Initiatives | FPSA The Future Power Systems Architecture (FPSA) project, led by IET and ESC, focusses on the overall industry framework and is complementary to the Open Networks Project. Continued engagement is needed to ensure that the projects are aligned and that the Open Networks project remains the clear focal point for network transformation. The FPSA project team will continue to input to the Open Networks project through the Advisory Group. |
| Smart Systems Forum | BEIS/Ofgem Smart Systems Forum brings together representatives from the wider industry to help implement and steer the Smart Systems &amp; Flexibility Plan and cover wider network issues related to the evolution of the electricity system. ONP will continue to provide updates and input through the ENA representatives on the group. |</p>
<table>
<thead>
<tr>
<th>ENA Strategic Telecoms Group</th>
<th>This working group is led by ENA as a forum for ENA members to review current understanding and approaches and to facilitate the development of ongoing and future telecommunications initiatives through internal and external expert involvement and collaboration. As part of any detailed modelling for Future Worlds, liaison with this group will be required to seek input on telecommunication system developments for the DSO transition.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RIIO 2 ENA ERG, Ofgem &amp; BEIS</td>
<td>Ensure input is provided to relevant groups from Open Networks products to inform RIIO T2 and ED2. <em>We have added the chair of the ENA Electricity Regulation Group, James Hope, to the Steering Group to act as liaison and manage dependencies for RIIO 2</em></td>
</tr>
<tr>
<td>Code Groups SQSS, GC, DC, SEC, STC, DCUSA, CUSC and BSC</td>
<td>Taking a similar approach to 2018, a schedule of code interactions needs to be maintained to outline the interaction that is needed between the various code mods and the ONP products in 2019.</td>
</tr>
<tr>
<td>RIIO 2 Ofgem consultation on licence conditions</td>
<td>Ofgem published their consultation on licence conditions and guidance for network operators to support an efficient, coordinated and economical whole system in Dec 18 that proposed new licence conditions. These proposed licence conditions are a key dependency for ONP products developing coordinated processes across T and D to deliver whole electricity system outcomes.</td>
</tr>
</tbody>
</table>

### 2.4 Risks and Issues

Risks and Issues are managed by the Open Networks Steering Group as part of the monthly reporting and review.
3 Project Structure & Governance

3.1 Project Governance

The project governance structure is as below:

3.1.1 ENA Board

The ENA Board is engaged with progress and any issues from the Open Networks Project. Paul Fidler will report to the ENA Board from ENFG.

3.1.2 ENFG

ENFG will be the group that holds the funding for the Open Networks project, but will delegate authority for the spend of that budget and the management and delivery of the project to the Open Networks Steering Group. Paul Fidler will report to ENFG from ON Steering Group on any of these items. The ENFG is convening monthly before the Steering Groups by teleconference to identify and address any more strategic issues that might apply to the project.

3.1.3 Open Networks Project Steering Group

The ON Project Steering Group is the key group with responsibility to direct the delivery of the project to time, cost and quality. Any deviations to the approved PID will be managed by the Steering Group and escalated to the ENFG if there is further budget likely to be required or a significant impact on time or quality.

We expect that key products or deliverables will come to the Steering Group for approval and sign-off, but a high proportion of products will be delivered and approved within workstreams.

The ON Project Steering Group will be chaired by an ENA Member representative (Nigel Turvey from WPD at this point of the project) and supported by the Project team as secretariat.

The ON Project Steering Group will be a small group with a single representative (with alternate) from each operator organisation including Ofgem and BEIS, ENA representation from the Operations
Director, Project Director and the Head of Press and Public Affairs to provide a link to the ENA Public Affairs Committee (PAC). We have added the Chair of ERG to the Steering Group this year to recognise the importance of the link to RIIO2.

The Steering Group meet monthly to formulate the programme and drive progress and this would allow the group to set the priorities and scope, whilst still maintaining transparency.

The ON Project Steering Group will assess:

- Priorities and scope through the PID and project plan with updates.
- Product/deliverable approval.
- Progress against plan.
- Escalated risks and issues.
- Costs against budget.
- Key decisions.
- Previous actions.

The ON steering group will represent the networks from a united programme perspective. Single operators may disagree with outputs or direction, but the programme will progress with the majority view. To ensure this, any communication of the outputs of the group will make it clear whether the view expressed is a unanimous or a majority view.

3.1.4 Open Networks Project Advisory Group

The Open Networks Project Advisory Group is a critical group for stakeholder input to the project developments. This meets every 2 months. This has worked well to date with representatives published on the ENA website here.

Input and feedback at Project Advisory Group meetings are recorded and all specific points are addressed. Input and feedback to date has been used to shape the Project workplan and outputs including this PID.

3.1.5 Ofgem & BEIS

The ON Project will work closely with Ofgem and BEIS and we expect that the project outputs will contribute to future Ofgem and Government considerations on future markets.

Ofgem and BEIS input to the Project Steering Group and to specific workstreams and product teams where this is of particular value. Ofgem and BEIS representatives also attend the Project Advisory Group.

3.1.6 DER Connections Steering Group

The ON project will closely liaise with the DER Connections Group and to provide regular updates and to take their input on key customer facing deliverables.

3.1.7 ERG (Electricity Regulation Group)

The ON project will closely liaise with the ERG to take their input on regulatory issues. In 2019, we have expanded the membership of the Steering Group to include a representative from ERG to ensure that regulatory perspective is provided at an appropriate level.
3.1.8 COG (Commercial Operations Group)

The ON project will closely liaise with the COG, provide regular updates and take their input on commercial issues.

3.1.9 Open Networks Project Team

The ON Project Director, Jason Brogden, reports to the ON Steering Group and is responsible for the day-to-day delivery of the project as set out in this PID. The Project Director will manage the resources on the project within the budget allocated to deliver the defined products to time, cost and quality.

The Project Director and the project team will have the autonomy to communicate directly with stakeholders, including Ofgem & BEIS, whilst making it clear whether any views expressed are a personal opinion or the view of the group (be it unanimous or majority).

Jason is supported by the ON Project Manager, Farina Farrier.

3.1.10 Workstream Working Groups & Resources

Working Groups will be formed to develop products in the different workstreams in the same way that they were for previous phases of the project. Allocated ENA member resources will develop products with review and guidance given from the workstream working groups and the Advisory Group, where relevant.

There will be an ENA technical architect with responsibility for consistency and providing technical input across multiple products across workstreams. There are links between many products across workstreams and therefore these links and consistency is important (e.g. information provision).

We anticipate that each workstream working group will continue to be chaired by a Steering Group member wherever possible and supported by the Project team as secretariat. This will help guide development and provide a link to the Steering Group.

There are a number of products that flow over from 2018 development and the key themes covered in the Workstreams are also a continuation of previous work in many cases. We will seek to allocate the same resources as previously working on these areas from 2018 to 2019.

We expect that the Project Director will direct the resources deployed from members to work on the products in the workstreams.

Recognising the level of interaction that will be required with charging, trials and RIIO T2, a dedicated SME will be allocated to ensure appropriate interfacing with ON products.

External consultancy resource will be deployed where necessary and there is a budget allocation made for potential consultancy resource/spend where it can be identified in advance.

3.2 Reporting

Progress Reports will be provided to the Steering Group at every meeting. The reports will include progress on products to time, cost, and associated risks and issues.

There will be written reports and decision papers to support any key decision points. All reports will be distributed and controlled by the project team.

3.3 Stakeholder Management

The project will continue to meet and discuss ON with key stakeholders through various forums including but not limited to the Advisory Group. The project will also engage with wider industry
including MPs, regulatory, government departments, civil servants, press, gas networks, trade associations, think tanks, charities, generators, suppliers, technology suppliers, aggregators, community groups, local authorities, regional development agencies, manufacturers (e.g. cars, batteries), flexibility service providers, consumers.

The level of stakeholder engagement for 2019 is expected to increase from 2018 with further resource allocated to communications. We will maintain a focus on the following two aspects of engagement:

- Input to and review of our key products and deliverables through the Advisory Group
- Ensuring that the wider stakeholder community are engaged with ON Project developments and have opportunities to engage.

For Workstream products requiring wider review and input, our approach includes:

- Continued collaborative development with Advisory Group
- Wider consultation on key products including webinars
- A more structured plan for public consultation is included in Section 4.5 of this document.

In 2019, we will continue to focus on wider stakeholder community engagement. Activity will include:

- Public newsletter
- Speaking opportunities at external events
- Breakfast briefing events
- Panel events
- Webinars

A calendar of all consultations and planned stakeholder events will be maintained on the ENA Open Networks Website and details will be shared with stakeholders as they become available.
4 Delivery Approach & Planning

4.1 Introduction & Approach
This PID will act as the scoping document for delivery of products in the project. A lesson learnt from 2018 is to try to avoid losing time at the beginning of the year by spending too much time scoping, particularly when some products are a continuation of 2018 deliverables. We have to be flexible in our approach.

The products and the activities needed to deliver those products will be captured in a product tracker along with their review cycles and meetings that we expect input from (e.g. Advisory Group or DER Connections Steering Group). We will then update and monitor achievement against that product tracker to report progress.

4.2 Product Internal and External Dependencies
Continued management of dependencies between products and workstreams will be required in 2019 and we intend to capture and monitor specific dependencies within the project where we can.

4.3 Project Closure
The criteria for project closure will need to be agreed and handover completed to the next phase of the project and/or into operations/Business As Usual.

4.4 Change Control
Once products have been approved, they will be baselined and will also be subject to change control. Should a change to a published product be requested, the impact of the change will be assessed, and a decision whether to proceed with the change will be made. The Project Management function will decide which body is the most appropriate to assess the impact of the change – and the body approving the change will depend on the result of this impact assessment. Where there is negligible impact, the body originally approving the item will usually approve the change; where there a more substantive impact the ON Steering Group will usually approve the change; and if there is any material cost or time impact the ENFG will approve the change.

We expect that there will be iterations of some of the project products (e.g. Terms and Definitions).

4.5 Products Expected for Public Consultation

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
<th>Launch Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Project</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Future Workplan &amp; Prioritisation for 2019</td>
<td></td>
<td>Jan 19</td>
</tr>
<tr>
<td>WS3 – DSO Transition</td>
<td></td>
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<tr>
<td>P1</td>
<td>Impact Assessment</td>
<td>Early Mar 19</td>
</tr>
<tr>
<td>WS1A – Flexibility Services</td>
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<tr>
<td>P1</td>
<td>DSO Services – Market Principles</td>
<td>Jun 19</td>
</tr>
<tr>
<td>WS1B – Whole Electricity System Planning &amp; T-D Data Exchange</td>
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<tr>
<td>N/A</td>
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<tr>
<td>WS2 – Customer Information Provision &amp; Connections</td>
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<tr>
<td>P2</td>
<td>Queue Management</td>
<td>Aug 19</td>
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<tr>
<td>WS4 – Whole Energy Systems</td>
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</tbody>
</table>
There are a number of products within Workstream that have been identified for potential public consultation, depending on stakeholder appetite for consultation. We are conscious of not overloading stakeholders with too many consultations from Open Networks amongst many other industry initiatives. We will ask in the consultation on this 2019 Workplan which are the key areas of priority for stakeholders to provide input to through consultation and the number of consultations we should publish.

4.6 Products Expected for Advisory Group Review

Taking a similar approach to 2018, we will share products through their development cycle with the Advisory Group to ensure that their feedback can help steer and inform the outputs.
5 Workstream 1A – Flexibility Services

5.1 Workstream Objectives

There are 3 key objectives of the Flexibility Services Workstream:

1. Develop and deliver good practice and convergence of directly contracted DSO services to customers across DNOs to deliver a consistent experience for customers

2. Facilitate markets outside the direct procurement of service by DSOs to allow third parties to develop effective and liquid market platforms for customers to realise value for flexibility

3. Support the wider use of DSO services by removing barriers and encouraging the consideration of flexibility solutions

5.2 Workstream Scope

For the delivery of good practice and convergence of DSO service procurement, we will build on the work done on DER services in 2018 under Workstream 1 with:

- Additional Services further to active power
- Consistent processes for DSO service procurement
- Good practice or standards for commercial terms in DSO service contracts (e.g. contract length, exclusivity)
- Good practice for whole system optimisation between network operators

For the delivery of markets outside direct DSO procurement, we need to consider:

- What the markets might be – analyse and identify the market opportunities
- How we might facilitate those markets – what data we might need to provide to the market; what visibility; what data we might require back from market platforms so that we can ensure customers realise value

Need to ensure that Flexibility Workstream Delivers on Facilitating, Standardising & Simplifying through this process

5.3 Workstream Products, Dependencies & Schedule

<table>
<thead>
<tr>
<th>Ref</th>
<th>Product</th>
<th>Timeline / Resources</th>
<th>Consult</th>
<th>SG Review</th>
<th>AG Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Flexibility Market Principles</td>
<td>Jan 19 – Jun 19</td>
<td>Public Consultation</td>
<td>Review as required</td>
<td>Review as required</td>
</tr>
</tbody>
</table>
Outline guiding principles for flexibility marketplace for DSO services that ensure competition and mitigate against any conflicts of interest or unintended consequences to make sure consumers benefit from a fair and more efficient system. This product will:

a) Develop guiding principles to drive the right behaviour for the DNOs, potential platform providers and market participants involved in the procurement of flexibility to resolve network issues.

b) Build on work done to date under ONP such as Commercial Principles for Market Facilitation, principles of neutral market facilitation and will consider work done by other industry projects such as Universal Smart Energy Framework (USEF). This product links closely with WS3 as it will take input from WS3’s work on unintended consequences and conflicts of interest and will feed into further WS3 developments to inform the DSO transition.

This output will be delivered as a report.

Stakeholders have indicated through responses to the Future Worlds consultation that this is an area of high priority to them and as a result we have scoped this as a product and will be consulting on this.

<table>
<thead>
<tr>
<th>2</th>
<th>DSO Services – Procurement Processes</th>
<th>Jan 19 – Aug 19</th>
<th>Could be consulted on if there is appetite from Stakeholders</th>
<th>Review as required.</th>
<th>As required to support development</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>DSO Services – Procurement Processes</td>
<td>Jan 19 – Aug 19</td>
<td>Could be consulted on if there is appetite from Stakeholders</td>
<td>Review as required.</td>
<td>As required to support development</td>
</tr>
</tbody>
</table>

Develop consistent processes to support the procurement of the DSO services taking into account the flexibility market principles from Product 1 and the output from the 2018 development work under Workstream 1. This includes:

a) Undertake review of procurement activities (as identified in 2018 work) to date undertaken by DNOs and identify good practice and any gaps that need to be addressed. Additional areas to address would include:
   - Testing/prequalification requirements
   - Process for decision making for asset vs market flexibility
   - Consistent approach to flexibility reporting (look forwards, performance reports etc.)

b) Identify data that needs to be made available to DER to support the procurement of DSO services.
c) Identify ways in which this data can consistently be made available for potential platform providers to facilitate procurement. Identify outputs that DNOs would require from potential platform providers to meet their needs.

d) Undertake public consultation on the procurement processes and update process based on findings.

<table>
<thead>
<tr>
<th>3</th>
<th>DSO Services – Dispatch and Settlement Processes</th>
<th>Jul 19 – Oct 19</th>
<th>N/A</th>
<th>Review as required.</th>
<th>As required to support development</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Review current activation, dispatch and settlement processes and develop good practice for activation and dispatch and identify what DNO capabilities are required to support this. This good practice should include alignment of DSO and NG ESO services in terms of procurement, timescales, service windows and contract terms as much as possible.</td>
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<tr>
<th>4</th>
<th>DSO Services – Commercial Arrangements</th>
<th>Jan 19 – Dec 19</th>
<th>N/A</th>
<th>Review as required.</th>
<th>As required to support development</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>Undertake review of current flexibility service agreements across DNOs, identify good practice and a staged approach to achieving commonality in flexibility service agreements.</td>
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<td>b)</td>
<td>Identify requirements and develop implementation plan for taking forward the staged approach to achieving commonality.</td>
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<td>c)</td>
<td>Develop good practice for alignment across DSO and NGESO services in terms of procurement timescales, service windows and contract terms (to include the applicability of ‘exclusivity’ terms and scope to participate in multiple markets).</td>
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<tr>
<td>d)</td>
<td><strong>Consider mechanisms for a consistent and effective review/validation of service provision and feedback loop for service providers – e.g. consequences of defaulting under contract.</strong> Identify rights and obligations for driving contract performance that can consistently be used across DNOs.</td>
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</table>

This development work will not include the consideration of access rights which will be covered under Workstream 2 and the development work outside Open Networks on charging.

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<thead>
<tr>
<th>5</th>
<th>DSO Services – Conflict Management &amp; Co-optimisation</th>
<th>Jan 19 – Dec 19</th>
<th>N/A</th>
<th>Review as required.</th>
<th>As required to support development</th>
</tr>
</thead>
</table>
Take learnings available through the Regional Development Programmes (RDPs) under 2018 WS1 P13 and 2019 WS1B P4 to:

a) Develop a good practice for conflict resolution (ESO-DNO or DNO-DNO or DNO-other e.g. industrial facility, Suppliers) for these DSO services.

b) Develop good practice for co-optimisation of services between ESO and DSO.

These products will describe conflicts in service and not conflicts of interest in providing services.

<table>
<thead>
<tr>
<th>6</th>
<th>Facilitation of new markets</th>
<th>Jul 19 – Dec 19</th>
<th>N/A</th>
<th>Review as required</th>
<th>As required to support development</th>
</tr>
</thead>
</table>

In addition to directly procured DSO services, we need to consider how we can facilitate other markets that the DSO might be able to enable or support in the future (e.g. peer-to-peer trading platforms, capacity management, trading flexibility to take on or avoid constraints). Development work should include considering:

- what data needs to be provided to facilitate new markets,
- what data needs to be sent to network operators after any action/trade is made
- trial scenarios that can help to develop and understand these markets and the required DSO actions to facilitate these

Green text represents items identified through Least Regrets Analysis.

Blue text represents products rolled over from 2018.

5.4 Workstream Assumptions

The key assumptions for Workstream 1A are noted below:

Resources

- Sufficient resources will be deployed by each of the ENA member organisations to deliver the products in the timescales defined and consultancy support may be engaged to support Product 4.

- For products on the development and convergence of directly contracted DSO services, we have continuity in resource from WS1 Product 2 development in 2018.

- Named resources will be identified by each of the ENA member organisations and these will be allocated in product working groups.

- Additional resources from the ENA member organisations may be engaged from time to time to provide subject matter expertise on more specialised knowledge areas.
6 Workstream 1B – Whole Electricity System Planning & T-D Data Exchange

6.1 Workstream Objectives & Customer Benefits

The objective of this workstream is to:

- Take a whole electricity system approach to optimise existing processes across the Transmission and Distribution boundary by identifying synergies and developing more efficient processes for key network operator activities such as investment planning, operational planning and forecasting.

6.2 Workstream Products, Dependencies & Schedule

<table>
<thead>
<tr>
<th>Ref</th>
<th>Product</th>
<th>Timeline / Resources</th>
<th>Consu lt</th>
<th>SG Review</th>
<th>AG Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Investment Planning</td>
<td>Jan 19 – Dec 19</td>
<td>N/A</td>
<td>Review as required</td>
<td>As require to support develop ment</td>
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<tr>
<td></td>
<td>Continue further development of the Regional NOA methodology developed in 2018 to incorporate additional options to include in the assessment of investment solutions.</td>
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<td></td>
<td>a) Continue to evolve Regional NOA process to:</td>
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<td></td>
<td>• Agree and develop a consistent approach to costing transmission and distribution solutions.</td>
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<td></td>
<td>• Continue to evolve the CBA process to adequately cater for distribution based solutions; build, non-build and market based.</td>
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<td></td>
<td>• Market test the outputs from the High Volts case studies (RFI to all market participants)</td>
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<td></td>
<td>• Develop new case studies for different system needs to further evolve the Regional NOA</td>
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<td></td>
<td>b) Further development/assessment of funding options for Regional NOA for D solutions in collaboration with ERG for RIIO 1 and for the transition period between T2 and ED2 (2021 – 2023) and RIIO 2.</td>
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<td></td>
<td>• RIIO 1 proposals to be agreed by Ofgem (Jan – Mar 19)</td>
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</tbody>
</table>
- Development of RIIO 2 and transition period options (Jan – Jul 19)

c) Identify and submit code change proposals as required.

d) Incorporate regional voltage methodology into NOA 19/20 methodology and continue to evolve processes for Regional NOA for other system needs. (by Apr 19)

### Further description

**Background:** In 2018, WS1 Product 1 Investment Planning developed the Regional Network Options Assessment (NOA) methodology to look at how Distribution system solutions (operational and asset) can be considered alongside Transmission network solutions to resolve issues such as high volts on the Transmission network. This product is a continuation of this work for further development of the Regional Networks Options Assessment (NOA) process to include market based solutions and continue development of funding options in agreement with ERG and Ofgem.

#### Whole Electricity System FES

**Complete detailed process development for coordinating National and Regional FES.**

<table>
<thead>
<tr>
<th>Jan 19 – Dec 19</th>
<th>N/A</th>
<th>Review as required.</th>
<th>As required to support development</th>
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<tbody>
<tr>
<td>a) Jan 19 – Jun 19</td>
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<td>b) Apr 19 – Oct 19</td>
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<td>c) Apr 19 – Sep 19</td>
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<td></td>
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<tr>
<td>d) Oct 19 – Q2 2020</td>
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<td></td>
<td></td>
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<tr>
<td>e) Jan 19 – Dec 19</td>
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</table>

- Identify and implement tactical improvements to DNO ESO TO liaison to feed into 2019 FES.
  - Agree 2019 coordination (Jan – Feb)
  - DNO ESO TO liaison to product 2019 FES
- Finalise templates and processes for information exchange to support 2020 delivery of Whole Electricity System FES.
- Identify and agree licence and code changes required to support data exchange and ongoing FES delivery.
- Support delivery of whole electricity system FES
- Support Whole Energy System Workstream by providing input on potential whole energy system interactions for 2020 and beyond.

### Further description

**Background:** This product is a continuation of 2018 WS1 Product 5 Whole System FES. This product developed a ‘hybrid approach’ to Future Energy Scenarios (FES) to enable a more coordinated approach between the ESO and the DNOs through common building blocks. The aim of this product in 2019 is to take forward the ‘hybrid FES’ approach for full implementation by 2020.

#### Real time data exchange & Forecasting

<table>
<thead>
<tr>
<th>Jan 19 – Dec 19</th>
<th>N/A</th>
<th>Review as required.</th>
<th>As required to</th>
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</table>
3. a) Complete UKPN and WPD RDP end to end Trials and identify wider learning that can be applied across GB. Document benefits/drawbacks of TSO constraint headroom approach vs DSO assessed approach alongside operational processes, data exchange requirements, comms links requirements, network characteristics defining conflicts of services complexity. This work will recommend the preferred approach and required code changes.

b) Support roll-out of architecture of control/comms systems between T and D to achieve whole system coordination that allows managing conflicts of services, N-3 (operational tripping scheme) and Connect & Manage.

c) Review current practices for forecasting across the short and medium timescales and identify areas for improvement. As part of the review, map out current forecasting practices across the different timescales (e.g. renewable generation a few hours ahead/day ahead, expected worst case conditions over winter season, peak PV output over summer season).

d) Investigate and address issue of service conflict between local and national actions. (Based on findings from 2018 WS1 P4.3)

e) Revisit key learnings from other GB/international work (including latest findings from Power Potential, Project Terre and any others) on enhanced T D operational interfaces and identify learning that can be applied across GB.

f) Provide input to development of longer term Future Worlds (reference product number from WS1)

g) Provide sufficient information to the ESO to enable TERRE – information
from DSO on service capabilities and from the ESO on instructions.

**Further description**

Background: This product is a continuation of work scoped out in 2018 under WS1 Product 13 (Operation Data and Control Architectures) that could not be completed due to a delay in the timeline of the RDPs in WPD and UKPN’s network area to trial a NETSO led and DSO led model approaches. The end to end trials are scheduled for completion for summer 2019 and the aim of this product is to develop operational data exchange standards and control architectures on the basis of the learnings through these RDPs and will propose an approach to take these forward.

<table>
<thead>
<tr>
<th>4</th>
<th><strong>Data exchange in planning timescales</strong></th>
<th><strong>Jan 19 – Dec 19</strong></th>
<th><strong>N/A</strong></th>
<th>Review as required.</th>
<th>As required to support development</th>
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</thead>
</table>
| a) | T-D Data Exchange Mechanisms - Review the ongoing use of web portals to transfer data between network companies. Identify shortfalls and make improvements. | a) Jan 19 – Jun 19  
   b) Jan 19 – Jun 19  
   c) Jan 19 – Dec 19  
   d) Apr 19 – Sep 19  
   e) Jul 19 – Dec 19 | | | |
| b) | T-D Data Exchange Scope / Short Term – Implement recommendations from ON 2018 WS1 Product 12 to improve data transfer. | | | | |
| c) | T-D Data Exchange Scope / Medium Term –  
   - Consider overall requirements for data exchange between network companies taking account of 2018 ON work including WS1 P1 (Investment Processes), WS1 P5 (Whole System FES) and WS1 P8 (Whole System Resource Register). Identify any additional scope for T-D exchange as a result of these products. (Jan – Mar 2019)  
   - Consider Outcomes of RDP work including RDPs assessed under 2018 WS1 P13 on Operational Data Exchange mechanisms and new RDPs such as 2018 WS1 P11 pilot. Identify any additional scope for T-D exchange as a result of this work. (Apr – Jun 2019)  
   - Consider outcomes from related Grid Code and Connection & Use of System Code changes covering data exchange | | | | |
## T-D Data Exchange / Network Models
- Review the developing requirements to exchange network models for T-D regional whole network analysis. Provide report on current position and expected requirements for improved and extended network models over the next 3 years. (Apr – Sep 2019)

## T-D Data Exchange / Common Information Model (CIM)
- Review potential use of CIM for BAU data exchange

### Further description
Background: This product is a continuation of 2018 WS1 Product 12 (TSO/DSO & DER Data Requirements) to take a wider approach to look at how data exchange in planning timescales can be made more efficient considering new data exchange requirements that may come out of ONP’s work on Whole System FES, System Wide Resource Register, the revised Transmission Impact Assessment process and through ongoing grid code changes including GC0106.

### 6.3 Workstream Assumptions

The key assumptions for Workstream 1B are noted below.

**Resources**
- Sufficient resources will be deployed by each of the ENA member organisations to deliver the products in the timescales defined.
- Named resources will be identified by each of the ENA member organisations and these will be allocated in product working groups.
- Additional resources from the ENA member organisations may be engaged from time to time to provide subject matter expertise on more specialised knowledge areas.

**Timelines**
- The timeline for P3 Real Time Data Exchange and Forecasting is dependent on the delivery timescales of the RDPs and the current timescales are based on the RDPS being completed in summer 2019.

Blue text represents products rolled over from 2018.
7 Workstream 2 – Customer Information Provision & Connections

7.1 Workstream Objectives & Customer Benefits

For information provision, we need to ensure that we are delivering

- Benefits to customers of enhanced information provision to aid them through the connections and contracting processes and facilitate the realisation of value for their connected technology
- Information to potential 3rd party market facilitators/makers to allow the realisation of value outside direct DSO contracted services (as highlighted in the Flexibility Workstream)
- Information sharing between transmission and distribution networks to benefit customers through the most cost-effective planning and operation of networks.

7.2 Workstream Products, Dependencies & Schedule

<table>
<thead>
<tr>
<th>Ref</th>
<th>Product</th>
<th>Timeline / Resources</th>
<th>Consult</th>
<th>SG Review</th>
<th>AG Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>System Wide Resource Register – Detailed Design and Early Implementation</td>
<td>Jan 19 – Dec 19</td>
<td>N/A</td>
<td>Review as required.</td>
<td>As required to support development</td>
</tr>
</tbody>
</table>

Build on 2018 work to further develop options for a phased implementation of a system wide resource register for sharing data on DER and reinforcement queues.

Reference existing sources of information

a) Setup central webpage for stakeholders to reference existing sources of data across GB networks. (Jan 19 – Apr 19)
b) Monitor use of central webpage to assess usage and interest. (Apr 19 – Jun 19)

c) Propose code changes to address confidentiality issues identified in 2018 (Feb 19 – Jun 19)

d) Analyse data requirements identified in 2018 to better understand the cost benefit case and agree on data requirements to take forward. (Jan – Apr 19)
e) Develop options for GB wide resource register (e.g. extend embedded TEC Register). These options should factor in outputs from other 2018 ON products and other data sources. These options would be presented to the Steering Group to make a decision on next
stage for a GB wide resource register. (Apr 19 – Jun 19)

f) Establish network company processes for DER register. (Jul 19 – Dec 19)

g) Finalise and implement system improvements for DER register. (Jul 19 – Dec 19)

h) Agree code changes for wider DER register. (Jul 19 – Dec 19)

### Further description

This product builds on the work completed in 2018 under 2018 WS1 P8 that reviewed the feasibility of having a central system wide resource register in place that provides information on DER resources and provides visibility to customers of the reinforcement queue. The aim of this product is to implement short term improvements that were identified in 2018 and to undertake detailed development of options for the design and implementation of this central register. This product will also continue assessment of confidentiality issues that have been identified and will propose code changes to address them. We should consider output from other workstreams and particularly any Workstream 1A and 1B data findings.

<table>
<thead>
<tr>
<th>Queue Management</th>
<th>Jan 19 – Dec 19</th>
<th>Public Consultation</th>
<th>Review as required</th>
<th>As required to support development</th>
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<tbody>
<tr>
<td>2</td>
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<tr>
<td>a) Update roadmap and scenarios from 2018 WS1 P11 based on CFF consultation and the 2018 consultation responses on queue management (2018 WS2 P5). Develop detailed report covering these scenarios for flexibility queue management. These scenarios will underpin the development of proposed approaches for queue management and interactivity. (roll over from 2018)</td>
<td>a) Jan 19 – Mar 19</td>
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<tr>
<td></td>
<td>b) Jan 19 – Jul 19</td>
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<td></td>
<td>c) Jun 19 – Aug 19</td>
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<td>d) Aug 19 – Sep 19</td>
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<td></td>
<td>e) Apr 19 – Dec 19</td>
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<td>b) Develop improved queue management approaches across Transmission and also across Distribution, including:</td>
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<td>- Agreed principles of queue management</td>
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<tr>
<td>- Suitable milestones</td>
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<tr>
<td>- Alignment with any work on access and queue management under Ofgem’s CFF SCR.</td>
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<tr>
<td>- Investigate opportunities for alignment of approaches across T and D</td>
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<tr>
<td>c) Review proposed queue management approaches with Ofgem and BEIS to agree on a minded to position on an approach consult on industry with.</td>
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<tr>
<td>d) Undertake public consultation on the minded to approach to get wider industry views. Review consultation responses, publish findings and update the approach.</td>
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<td></td>
<td>Identify and agree any potential code changes at transmission and distribution to support the preferred approach and develop action plan to support roll out. Support may include workshops with network connections teams and impacted stakeholders.</td>
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</table>

**Further description**

This product takes forward the work done under ONP in 2018 under WS2 P5 and WS1 P10 & P11 to address action 1.6 from the Smart Systems and Flexibility Plan. This product will outline longer term improvements to the connection queue through the development of a consistent queue management policy across networks. This product will need to take into account any work that is progressed under Ofgem’s Significant Code Review and any network company owned initiative on access.

### 3 Interactivity

<table>
<thead>
<tr>
<th></th>
<th>Review consultation responses from 2018 WS2 P5. Update agreed practice and publish a response to the consultation. Develop additional processes to facilitate interactivity across networks, including:</th>
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</thead>
<tbody>
<tr>
<td>a)</td>
<td>Jan 19 – Dec 19</td>
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<tr>
<td>b)</td>
<td>Jan 19 – Mar 19</td>
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<tr>
<td>c)</td>
<td>Apr 19 – Jun 19</td>
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<tr>
<td>d)</td>
<td>Jan 19 – May 19</td>
</tr>
<tr>
<td>e)</td>
<td>Jun 19 – Sep 19</td>
</tr>
<tr>
<td>f)</td>
<td>Mar 19 – Dec 19</td>
</tr>
</tbody>
</table>
workshops with network connections teams.

Further description
ONP in 2018 under WS2 P5 and WS1 P10 & P11 to address action 1.6 from the Smart Systems and Flexibility Plan. This product focuses on the development of interactivity processes based on gaps that were outlined in the 2018 WS2 P5 consultation to ensure a quicker and more efficient connections process, ensuring fairness by treating customers in the application date order.

| 4 | Connections Agreement Review | Jun 19 – Jul 19 | N/A | Review as required and approve if more work to be initiated. | As require to support develop ment |

Blue text represents products rolled over from 2018.

**Terms & Definitions product:** During 2019 we will continue to review the Terms and Definitions product and update and maintain this where we can see enhancements of new areas of clarity are raised by customers.

### 7.3 Workstream Assumptions

The key assumptions for Workstream 2 are noted below.

**Resources**

- Sufficient resources will be deployed by each of the ENA member organisations to deliver the products in the timescales defined.

- Named resources will be identified by each of the ENA member organisations and these will be allocated in product working groups. This has been completed for Product 1.

- Additional resources from the ENA member organisations may be engaged from time to time to provide subject matter expertise on more specialised knowledge areas.

- Subject Matter Experts from the wider industry may be engaged as per Terms of Reference to support product development.

**Key dependencies**

- Monitor and review flexibility tenders in the market and WPD’s trial on extending the use of their “Flexible Power” product to allow flexibility options to be assessed as part of the new connections process. The aim of this monitoring exercise would be to determine the feasibility of combining flexibility and connections agreements, as identified above.

- The work on access delivered under Ofgem’s Significant Code Review (SCR) for access is a key dependency and product in this workstream will require regular check points to ensure that developments from the SCR are factored into the product development work to ensure alignment.
8 Workstream 3 – DSO Transition

8.1 Workstream Objectives

The aim of this workstream is to support the development of a detailed view on the pathways for the DSO transition and provide evidence base to support regulatory and policy decision making.

8.2 Workstream Products and Dependencies

The below diagram gives a high-level view on the key workstream activities, products to be developed in this workstream and the dependencies and flow of those products.

8.3 Workstream Products, Dependencies & Schedule

<table>
<thead>
<tr>
<th>Ref</th>
<th>Product</th>
<th>Timeline / Resources</th>
<th>Consult</th>
<th>SG Review</th>
<th>AG Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Impact Assessment</td>
<td>2018 – Sep 19</td>
<td>Public Consultatio</td>
<td>Review as</td>
<td>Possible review before launching</td>
</tr>
<tr>
<td></td>
<td>Consultation on Baringa’s IA</td>
<td>a) Jan 19 –Mar 19</td>
<td>in Mar 19</td>
<td>as required.</td>
<td>consultation.</td>
</tr>
<tr>
<td></td>
<td>findings:</td>
<td>b) Mar 19 – May 19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>c) May 19 - Jun 19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>d) Jun 19 – Sep 19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>e) Jun 19 – Sep 19</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Consolidate Future World Characteristics</td>
<td>Jun 19 – Sep 19</td>
<td>N/A</td>
<td>Review as required.</td>
<td>Review as required to support development.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Key Enablers &amp; Decisions required</td>
<td>Sep 19 – Dec 19</td>
<td>N/A</td>
<td>Review as required.</td>
<td>Review as required to support development.</td>
</tr>
</tbody>
</table>

Further description

Background: This product is an outcome of our work on the Future Worlds in 2018 where we modelled and consulted on five potential industry architectures that are capable of delivering a smart flexible energy system in the UK. Baringa were commissioned by ONP to undertake an independent assessment of the Worlds to highlight relative differences and pathways to the transition to DSO.

The aim of this product is to give stakeholders the opportunity to review Baringa’s findings and provide any further input to inform the analysis. The analysis and outputs from this consultation will be provided to Ofgem and BEIS as an evidence base to inform policy and regulatory decision making to enable to transition. This product will also be taking forward development work to close any gaps that have been highlighted through Baringa’s work and will further develop actions to mitigate potential conflicts of interest and unintended consequences in the Future Worlds.
and handover as part of evidence pack to Ofgem and BEIS.

### Further description

Background: As part of the Future Worlds consultation, we highlighted a number of areas that we believe are key enablers for the transition to a smart flexible energy system in the UK. Taking the consultation feedback forward, the aim of this product is to build on the 2018 work to identify enablers more widely for other parties impacted by the transition and consider Home Energy Management Systems, consumer access devices and interactions linked to Internet of Things. Cyber security requirements and the scalability of any services will be key. In addition, this product will develop a view on the key decisions that need to be addressed by Ofgem and BEIS from a regulation and policy perspective to enable the transition.

<table>
<thead>
<tr>
<th>4</th>
<th>Review DSO Transition Roadmap</th>
<th>Sep 19 – Dec 19</th>
<th>N/A</th>
<th>Review as required.</th>
<th>Review as required to support development.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Further description</strong></td>
<td>Based on findings from the Impact Assessment, update roadmap to provide clarity on the short, medium and long term actions required to facilitate the transition to DSO.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5</th>
<th>Identify Future World Elements to Trial</th>
<th>Sep 19 – Dec 19</th>
<th>N/A</th>
<th>Review as required.</th>
<th>Review as required to support development.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Further description</strong></td>
<td>Based on the IA findings and the consultation, outline the elements that need to be developed further through the T.E.F projects or otherwise.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6</th>
<th>Further Modelling</th>
<th>Sep 19 onwards</th>
<th>N/A</th>
<th>Review as required.</th>
<th>Review as required to support development.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Further description</strong></td>
<td>Identify Future Worlds (or Hybrids) that require further modelling to better understand the next layers of detail including system requirements. Undertake further modelling which may include dynamic modelling and completion of the lower layers of SGAM to</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
understand system requirements.

Identify governance process and methodology for updating the SGAM models based on the Future Worlds consultation responses, outputs from T.E.F and other relevant industry initiatives.

<table>
<thead>
<tr>
<th>Further description</th>
</tr>
</thead>
</table>
| Background: The Future Worlds were developed using Smart Grid Architecture Modelling (SGAM) methodology that allowed us to capture the various actors in the models and the communication links between them across three of the five interoperability layers (business, function and information) to help us compare and contrast the various Worlds and the roles of actors within them. Recognising the differences in system requirements and architectures across DNOs, ONP made a decision in 2018 to populate the lower interoperability layers (communication and component) at a later stage when a more detailed view on the Future Worlds and elements that are likely to progress is available.

This aim of this product is to continue this work and to develop a more detailed view on system requirements through further modelling work. Based on the outcomes of the independent impact assessment and other WS3 products such as the Product 3 Future Worlds Characteristics, this product will outline the specific areas that will be modelled in detail and will identify an appropriate modelling methodology to take forward and deliver the work.

This work will take into account feedback from the consultation on the Impact Assessment. |

We have shown in the flow diagram above how this work has followed on from last year’s development.

### 8.4 Workstream Assumptions

The key assumptions for Workstream 3 are noted below.

#### Resources

- Sufficient resources will be deployed by each of the ENA member organisations to deliver the products in the timescales defined and consultancy support may be engaged to support the delivery of some products.
- We will have continuity of resources from 2018 Workstream 3.
- Named resources will be identified by each of the ENA member organisations and these will be allocated in product working groups.
- Additional resources from the ENA member organisations may be engaged from time to time to provide subject matter expertise on more specialised knowledge areas.

#### Existing Statutory and Regulatory Policy

- It is recognised that existing energy systems policy is developing and, over the next few years, this may change in areas that impact the scope of the Open Networks project. Workstream 3 will seek to make progress against the existing energy systems policy and framework. Where longer term solutions are being considered, work will not be constrained by existing policy as it is assumed that this may evolve.
- It is assumed that we will continue to engage with BEIS and Ofgem to address relevant statutory and regulatory policy that may be required for DSO implementation.
9 Workstream 4 – Whole Energy Systems

9.1 Introduction

Our 2017 definition of “Whole Energy System” and our work to date has been electricity network focused whilst recognising cross-vector information exchange and opportunities. Reflecting on stakeholder views, the ONP will be initiating a new workstream in 2019 to consider a more integrated approach to whole energy systems that extends to other energy vectors including gas, heat, transport, waste and water.

A key question to address is whether more cost effective decisions for planning or operation could be made by electricity networks and other infrastructure providers if a whole energy systems view was taken into account (e.g. could there be more effective investment in gas infrastructure to alleviate a potentially expensive constraint in electricity infrastructure).

This workstream will include representation from these vectors and will undertake a review of existing academic research and industry initiatives (e.g. Project Freedom, Integrel, Green City Vision, other NIA & NIC projects etc.) on whole energy systems in early 2019 to understand how ONP can build on this and scope any potential development to deliver tangible improvements and benefits in the short (ED2), medium (ED3) and long term (beyond ED3).

Following this review and scoping exercise, the ONP Steering Group will make a decision on any further work to be undertaken.

ONP will publish the findings and decision from this review process and depending on the outcomes may consult on this. Should the decision be to progress with further development work within this workstream, the workstream and project team will identify and plan the scope of work through products and deliverables for delivery in 2019.

Areas of work that may be identified may include the following approaches to widen existing electricity network processes such as:

- Operational planning - consider mechanisms and governance for data sharing between different vectors, methodology for consolidated cross vector approach to forecasting and network planning (for multiple timescales such as hours ahead/day ahead, peak PV, expected worst case winter etc.).

- Investment planning - consider joined up approach to planning more efficient and lower cost reinforcements where required.

- Future Energy Scenarios – consider common building blocks for scenario generation across other vectors for a more consolidated and joined up approach.

- Future Whole energy system governance (e.g. regulation) – consider how the above may be facilitated in regulation and governance.

The Project Initiation Document has started to define the workstream for delivery and we are building on that in this Terms of Reference for the Workstream and the workstream meetings. The intention is not to be prescriptive at the point for what it will deliver, but to give flexibility to the workstream itself to define and scope a plan for deliverables for 2019. We have put some suggestions in here to initiate thinking.
9.2 Workstream Objectives & Customer Benefits

Whole energy system thinking will deliver benefits for customers and consumers by realising more cost-effective network investment and operation across the whole energy system.

This is an outline for development in Q1 2019 and we will need to mobilise the workstream in advance. We need a broad cross-industry Workstream to deliver these benefits.

9.3 Workstream Products, Dependencies & Schedule

<table>
<thead>
<tr>
<th>Ref</th>
<th>Product</th>
<th>Timeline / Resources</th>
<th>Consult</th>
<th>SG Review</th>
<th>AG Review</th>
</tr>
</thead>
</table>
| 1   | Define ToR, objectives and scope for delivery in 2019.  
    • Review of existing industry initiatives and any outcomes delivered  
    • Align with ENA gas initiatives  
    • Link to RIIO2 | Jan 19 – Apr 19 | N/A | Apr 19 | Mar 19 |

9.4 Workstream Resource Requirements

The first meeting is scheduled for 23rd January 2019 and then the workstream meetings will be every second Tuesday in the month from February.

We need to mobilise a Workstream group to develop the first product above to scope the work. We need input from electricity and gas network companies, but we also want to open this to non-network companies so that we can take their views into account. We intend to ask for representation from all DNOs, ESO, TOs and suitable representatives from the Gas Futures Group in ENA. We would ideally like to have representation from heat, transport, waste and water and will ask for suitable contacts/representatives from:

- Ofgem
- BEIS
- ADE (to include heat networks)
- Energy Systems Catapult
- CAB
- OLEV (for transport)

We expect that the Workstream meeting will define the scope and deliverables to April 2019 and then establish product development teams of Subject Matter Experts (SMEs) that will develop products in between the workstream meetings. This is the way that the Open Networks project has worked to date and is represented below:
We expect that sufficient resources will be deployed by each of the ENA member organisations to deliver the products in the timescales defined. Named resources will be identified by each of the ENA member organisations and these will be allocated to the Workstream meeting to begin with and then subsequently in product working groups. Additional resources from the ENA member organisations, including Gas members, may be engaged from time to time to provide subject matter expertise on more specialised knowledge areas.

9.5 Workstream Governance

Non-ENA Workstream Members are expected to take the outputs from the workstream into their own internal governance structures for review and input to ensure all relevant feedback/input is delivered back to the Workstream.

We expect that the outputs from the Workstream will be sent to the Open Networks Steering Group and the Gas Futures Group for approval.

9.6 Workstream Assumptions

The key assumptions for Workstream 4 are noted below.

Resources

- Sufficient resources will be deployed by each of the ENA member organisations and external parties to deliver the products in the timescales defined.

- Named resources will be identified by each of the ENA member organisations and these will be allocated to the Workstream meeting to begin with and then subsequently in product working groups.

- Additional resources from the ENA member organisations, including Gas members, may be engaged from time to time to provide subject matter expertise on more specialised knowledge areas.
10 Workstream 5 – Communications and Stakeholder Management

10.1 Workstream Objectives

To use a combination of public affairs, press, social media and direct engagement to raise stakeholder awareness of:

- The DSO transition and its importance through Open Networks Project
- The opportunities for stakeholders to engage with the Project
- The role network operators are playing in laying the foundations for the UK’s smart electricity grid.

This workstream will continue to:

- Proactively support stakeholder engagement for key Open Networks Output
- Provide comms input and review into key publications (e.g. consultations, EoY report)
- Engage with parliamentarians & policy makers
- Generate media and stakeholder interest
- Press Releases
- Social Media
- Interviews
- Research material to support key messaging
- Event speaking opportunities
- Exhibitions

10.2 Workstream Products, Dependencies & Schedule

<table>
<thead>
<tr>
<th>Ref</th>
<th>Product</th>
<th>Timeline/ frequency</th>
<th>Target audience</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ENA organised breakfast briefing events, to be held at ENA’s offices</td>
<td>Quarterly – up to 2 a year</td>
<td>Energy sector, think-tanks, policymakers, trade &amp; national media</td>
</tr>
<tr>
<td>2</td>
<td>ENA sponsored Westminster panel events or private dinners, to be held at external venues and in partnership with appropriate external organisations</td>
<td>Quarterly – up to 2 a year</td>
<td>Energy sector, think-tanks, policymakers, Government, MPs &amp; researchers, trade &amp; national media</td>
</tr>
<tr>
<td>3</td>
<td>Webinars to provide opportunities for the wider stakeholder community to feed into appropriate Open Networks consultations and products.</td>
<td>In line with Workstream consultations and product timelines</td>
<td>Energy sector, policymakers</td>
</tr>
<tr>
<td>4</td>
<td>Content for PR/PA work (e.g. think-tank research, polling) to help create media stories on Open Networks related issues</td>
<td>3 per year</td>
<td>Energy industry, think-tanks, policymakers, Government, MPs &amp; researchers, trade &amp; national media</td>
</tr>
</tbody>
</table>
5 | Online media-buying (advertising) to promote Open Networks events, webinars & consultations on key websites (e.g. trade press) | Co-ordinated around key announcements | Energy industry, think-tanks, policymakers, Government, MPs & researchers, trade & national media

7 | ‘Drop-in’ stand/exhibition at industry events (e.g. LCNI, Power Responsive, DNO events) | Up to 4 a year | Energy industry, think-tanks, policymakers

8 | Social media collateral (animations, infographics) to promote Open Networks | Quarterly – up to 4 7 day campaigns a year. Material repurpose and reused in addition to that | Energy industry, think-tanks, policymakers, Government, MPs & researchers, trade & national media

9 | Communications and engagement strategy development | Annual | ENA, ENA members, ON Steering Group

10.3 Workstream Assumptions

Planning
Planning will be based around Project milestones once they have been agreed by the Steering Group. This will determine the exact time, nature and frequency of the deployment of resources. Those resources included here would lead to a significant increase in activity under Workstream 4, compared to 2018.

ENA members
ENA will work with individual member companies to use their own communications activity to promote Open Networks as set out.

ENA Press & Public Affairs Strategy
Open Networks is one of three Strategic Projects as part of ENA’s Press & Public Affairs Strategy, as agreed by ENA’s Public Affairs Committee. It therefore forms a key part of ENA’s wider communications activity.

Oversight
Workstream 5 will continue to be overseen by a sub-committee of ENA’s Public Affairs Committee. The Chair of Workstream 5 and ENA’s Head of Press & Public Affairs will continue to report on the progress of Workstream 5 to the Open Networks steering group on a monthly basis.
11 Monitoring Implementation

The ONP will monitor the rollout and implementation of practices based on 2018 products across network companies to have visibility of the progress being made and understand any barriers to deployment of consistent approaches across networks.

The monitoring will be undertaken as an internal project activity on a bi-annual basis with input from the network company representatives on the relevant workstreams. Following a review of progress and issues, an external facing high level progress update will be published.

The following products will be monitored for deployment:

- 2018 WS2 P1 (Good Practice ahead of Connection Applications)
- 2018 WS2 P4 (Information on Flexibility Services)
- 2018 WS2 P5 (Good Practice Following Connection Applications)
- 2018 WS2 P6 (Guidance on Post Connection Changes)
- 2018 WS2 P7 (Provision of Constraint Information)
- 2017 (Information on Distribution Connections Options)
- 2018 WS1 P7 (ANM Information) - Monitor roll-out of methodology to assess curtailment and evaluate ANM system reliability.
- 2018 WS1 P2 (DER Services) - Monitor roll-out of active power services and others that are defined in 2019 across all DNOs and associated procurement processes. To include progress update, highlighting any issues and lessons learned

In addition to providing visibility of implementation, this exercise will highlight the key recommendations from the work done to date in a single location that DNOs may wish to include in their ICE plans to further demonstrate progress and improvements to customers.
# Appendix A – Mapping of 2018 Products to 2019

<table>
<thead>
<tr>
<th>2018 Product Ref</th>
<th>Product Name</th>
<th>2019 Product Ref</th>
<th>Product Name</th>
<th>Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>WS1 P1</td>
<td>Investment Processes</td>
<td>WS1B P1</td>
<td>Investment Planning</td>
<td>Continued development</td>
</tr>
<tr>
<td>WS1 P2</td>
<td>DER Services Procurement</td>
<td>WS1A All products</td>
<td>All products under Flexibility Services workstream</td>
<td>Continued development</td>
</tr>
<tr>
<td>WS1 P3</td>
<td>Industry Framework Interactions</td>
<td>N/A</td>
<td>N/A</td>
<td>Managed through dependency group for Codes in 2019 and will be fed into relevant products.</td>
</tr>
<tr>
<td>WS1 P4</td>
<td>Reliability Standards &amp; Emergency Requirements</td>
<td>WS1B P3</td>
<td>Real Time Data Exchange &amp; Forecasting</td>
<td>Issue of priority of actions is continued under WS1B P3 in 2019.</td>
</tr>
<tr>
<td>WS1 P5</td>
<td>Whole System FES</td>
<td>WS1B P2</td>
<td>Whole System FES</td>
<td>Continued development</td>
</tr>
<tr>
<td>WS1 P6</td>
<td>Regional Service Requirements</td>
<td>WS1A P2</td>
<td>DSO Services – Procurement Processes</td>
<td>Output from this will be taken forward in the Flexibility Services workstream in 2019.</td>
</tr>
<tr>
<td>WS1 P7</td>
<td>ANM Information</td>
<td>N/A</td>
<td>N/A</td>
<td>The implementation of good practice will be monitored in 2019 as outlined in Section 11 of PID.</td>
</tr>
<tr>
<td>WS1 P8</td>
<td>System Wide Resource Register</td>
<td>WS2 P1</td>
<td>System Wide Resource Register.</td>
<td>Continued development</td>
</tr>
<tr>
<td>WS1 P9</td>
<td>TSO-DSO Transmission Impacts</td>
<td>N/A</td>
<td>N/A</td>
<td>Managed through dependency group for codes in 2019 and will be fed into relevant products.</td>
</tr>
<tr>
<td>WS1 P10</td>
<td>Facilitating Connections – Existing Processes for Flexible Resources</td>
<td>N/A</td>
<td>N/A</td>
<td>Complete as it was superseded by other products in 2018 (WS1 P11).</td>
</tr>
<tr>
<td>WS1 P11</td>
<td>Facilitating Connections – Action Plan and Report</td>
<td>WS2 P2 &amp; P3</td>
<td>Queue Management Interactivity</td>
<td>Continued development</td>
</tr>
<tr>
<td>WS1 P12</td>
<td>TSO/DSO &amp; DER Data Requirements</td>
<td>WS1B P4</td>
<td>Data Exchange in Planning Timescales</td>
<td>Roll-over of 2018 activities and continued development.</td>
</tr>
<tr>
<td>WS1 P13</td>
<td>Operational Data &amp; Control Architectures</td>
<td>WS1B P3</td>
<td>Real Time Data Exchange and Forecasting</td>
<td>Roll-over of 2018 activities and continued development.</td>
</tr>
<tr>
<td>WS2 P1</td>
<td>Good Practice ahead of Connection Applications</td>
<td>N/A</td>
<td>N/A</td>
<td>Monitor implementation as outlined in Section 11 of PID.</td>
</tr>
<tr>
<td>WS2 P2</td>
<td>Management of Capacity</td>
<td>N/A</td>
<td>N/A</td>
<td>Monitor implementation as outlined in Section 11 of PID.</td>
</tr>
<tr>
<td>WS2 P3</td>
<td>Explanation of ‘Terms’ &amp; ‘Definitions’</td>
<td>N/A</td>
<td>N/A</td>
<td>Continue to maintain and update as required.</td>
</tr>
<tr>
<td>WS2 P4</td>
<td>Information on Flexibility Services</td>
<td>N/A</td>
<td>N/A</td>
<td>Monitor implementation as outlined in Section 11 of PID.</td>
</tr>
<tr>
<td>WS2 P5</td>
<td>Good Practice Following Connection Applications</td>
<td>N/A</td>
<td>N/A</td>
<td>Monitor implementation as outlined in Section 11 of PID.</td>
</tr>
<tr>
<td>WS2 P6</td>
<td>Guidance on Post Connection Changes</td>
<td>N/A</td>
<td>N/A</td>
<td>Monitor implementation as outlined in Section 11 of PID.</td>
</tr>
<tr>
<td>WS2 P7</td>
<td>Provision of Constraint Information</td>
<td>N/A</td>
<td>N/A</td>
<td>Monitor implementation as outlined in Section 11 of PID.</td>
</tr>
<tr>
<td>WS3 P1 &amp; P2</td>
<td>SGAM Modelling</td>
<td>N/A</td>
<td>N/A</td>
<td>Complete as it was superseded by other products in 2018.</td>
</tr>
<tr>
<td>WS3 P3</td>
<td>Market Agnostic DSO Elements</td>
<td>N/A</td>
<td>N/A</td>
<td>Continued monitoring through WS3.</td>
</tr>
<tr>
<td>WS3 P5</td>
<td>DSO Model Validation &amp; Review Including Public Consultation</td>
<td>N/A</td>
<td>N/A</td>
<td>Complete as it was superseded by other products in 2018.</td>
</tr>
<tr>
<td>WS3 P6</td>
<td>Key Enablers for DSO</td>
<td>WS3 P3 Key Enablers &amp; Decisions Required</td>
<td>Continued development.</td>
<td></td>
</tr>
<tr>
<td>WS3 P7</td>
<td>Further Trials to Address Gaps in DSO Functionality</td>
<td>WS3 P5 Identify Future World Elements to Trial</td>
<td>Managed through this product and dependency group for Trials in 2019 and will be fed into relevant products.</td>
<td></td>
</tr>
</tbody>
</table>