Thank you for joining this Open Networks Project Advisory Group session.

- This webinar will commence at 09:30.
- If you are unable to play the audio through your device, you can dial in by calling +44 20 3855 5885 and using access code 575 681 404. All microphones have been set to mute to avoid background noise.
- Please ask questions or make comments via the chat function throughout the meeting.
- This meeting will be recorded for ENA record keeping purposes.
- If you would like to receive information about the Open Networks Project or have any feedback you would like to submit, please get in touch with us at opennetworks@energynetworks.org.
- We would welcome you all to please take a moment to visit www.slido.com so you can take part in our Q&A's later in the meeting. The event code is #ONAG
Advisory Group ToR

The Advisory Group is essential to our project to:

▪ Ensure stakeholders are aware and taking the Project into account;
▪ Request input from stakeholders to improve the quality of our products;
▪ Increase awareness about project risks & issues, ask for views on risks & issues and collaboratively resolve where appropriate.

We will provide input to:

▪ Steering Group on project scope, progress, risks & issues;
▪ Workstreams with deliverable comments/feedback.

We will seek to send information in advance of meetings to ensure that views can be sought by trade associations in advance. Our objective is to encourage open feedback from you all across all of our work.

Thank you for the continued input.
<table>
<thead>
<tr>
<th></th>
<th>Topic</th>
<th>Duration</th>
<th>Presenter</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Welcome &amp; Introduction</td>
<td>5m</td>
<td>Sotiris Georgiopoulos (UKPN)</td>
<td>09:30 – 09:35</td>
</tr>
<tr>
<td>2</td>
<td>General Updates</td>
<td>5m</td>
<td>Farina Farrier (ENA)</td>
<td>09:35 – 09:40</td>
</tr>
<tr>
<td>3</td>
<td>Communication Activity</td>
<td>5m</td>
<td>Emily Jones (Communications Project Lead ON)</td>
<td>09:40 – 09:45</td>
</tr>
<tr>
<td>4</td>
<td>Product Updates</td>
<td>40m</td>
<td>Peter Turner (NPG)</td>
<td>09:45 – 10:25</td>
</tr>
<tr>
<td>5</td>
<td>Breakout 1 - WS1A P1 user forum &amp; open governance</td>
<td>25m</td>
<td>Simon Brooke (ENWL)</td>
<td>10:25 – 10:50</td>
</tr>
<tr>
<td>6</td>
<td>Break</td>
<td>5m</td>
<td></td>
<td>10:50 – 10:55</td>
</tr>
<tr>
<td>7</td>
<td>Breakout 2 – Flexible Connections (ANM)</td>
<td>30m</td>
<td>Fiona Navesey (ON ENA)</td>
<td>10:55 – 11:25</td>
</tr>
<tr>
<td>8</td>
<td>Breakout 3 - WS1B P6 Operational visibility of DER</td>
<td>20m</td>
<td>Ali Reza Ahmadi (UKPN)</td>
<td>11:25 – 11:45</td>
</tr>
<tr>
<td>9</td>
<td>Gas Goes Green update</td>
<td>15m</td>
<td>Thomas Koller (ENA)</td>
<td>11:45 – 12:00</td>
</tr>
<tr>
<td>10</td>
<td>Slido Q&amp;A and Wrap-up</td>
<td>5m</td>
<td>Emily Jones and Farina Farrier (ENA)</td>
<td>12:00 – 12:10</td>
</tr>
</tbody>
</table>
## Product Updates

### Key publications since Dec

- 2020 End of Year Review (Jan)
- 2021 PID (Jan)
- V1.2 of the Common Contract (Feb)
- Queue Management Implementation Plan (Feb)
- Whole Systems CBA model incorporated into CAM consultation (Jan)

### Key upcoming publications (March-April)

<table>
<thead>
<tr>
<th>WS1A</th>
<th>WS1B</th>
<th>WS2</th>
</tr>
</thead>
</table>
| • CEM user forum creation kicked off (P1, April)  
• Stakeholder engagement to inform review of legacy Flexible Connections (ANM) contracts (P3, March)  
• Common Contract Evolution Paper (P4, March)  
• Market Simulations findings (P6, April)  
• Baseline Methodologies design & draft implementation plan (P7, April)  
• Stakeholder questionnaire on the provision of curtailment information (P9, March)  
• Use cases for operational monitoring of DER (P6, March)  
• Decision on the inclusion of <1MW for ECR, and next steps (P1, March)  
• User Commitment improvements (P5, April)  
| Q1 iteration of DSO Roadmap and Conflicts of Interest & Unintended Consequences Register (P1, March)  |
2021 Workplan Consultation

ENA has just closed a 6-week consultation on it’s 2021 workplan, open from Jan 18th – March 1st.

We have received 8 responses so far, with 2 requests for extension, and will be reviewing all responses in the coming weeks. We will publish a summary of responses, our next steps and an updated version of the PID in May 21.
Communication Activity

This can be managed by using Flexibility Services.
Stakeholder Events

March
Market Simulations – Four stakeholder workshops to support market simulation for trading and sharing capacity.

April 29th
Community Energy Forum

May 25th
Power Summit 2021 - Electric Decade

May
Queue Management Webinar

May 26th
ENAs Safety, Health and Environment (SHE) Management Conference 2021

More information on upcoming events can be found on the ENA Events webpage
The AG members have received an invite to the Market Simulations workshops.
Product Updates
Open Networks WS2 P2
Queue Management Update

Peter Turner
Queue Management (QM) background

- ‘First to contract, first to connect’ principles to date.

- Open Networks developed milestones and revised processes with extensive stakeholder engagement, looking at how flexible resources can be promoted in the queue.

- In 2021, we will build on this work to further standardise QM as appropriate and review DNO progress.
Queue Management – Progress Update

QM Open Letter

• A key deliverable of Open Networks is to bring consistency in approaches across network companies and this is reflected in the published QM guide and the implementation plan.

• Distribution - Milestones and tolerances will apply to all new and modified connection applications received on or after 1st July 2021.

• Transmission - Milestones and tolerances will be included in all new applications and modification applications submitted from 1st July 2021 onwards.
Queue Management – CUSC Mod

CUSC modification & development

• **CUSC Code Modification** – this will be raised to apply these changes formally in Connection and Use of System Code (CUSC) governance. This will be raised leading up to July.
  – The Transmission Charging Methodologies Forum (TCMF) was established under the CUSC to provide a regular forum for discussion on the development of charging methodologies.
## Implementation Plan

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>February 2021</td>
<td>Open Letter published</td>
</tr>
<tr>
<td>May 2021</td>
<td>ENA Webinar to brief stakeholders on the QM Implementation Process</td>
</tr>
<tr>
<td>June 2021</td>
<td>Network companies make the internal process and system changes necessary to facilitate the implementation dates.</td>
</tr>
<tr>
<td>June 2021</td>
<td>Individual network companies to brief their own stakeholders.</td>
</tr>
<tr>
<td>July 2021</td>
<td>Distribution companies to apply the revised QM process to all new and modified connection applications received on or after this date.</td>
</tr>
<tr>
<td>July 2021</td>
<td>Transmission companies will introduce the revised QM process to all new and modified applications received on or after this date.</td>
</tr>
<tr>
<td>July 2021</td>
<td>In parallel with the introduction of the QM process into BCA’s a Connection and Use of System Code (CUSC) modification will be initiated.</td>
</tr>
<tr>
<td>July – Sept 2021</td>
<td>Identify any further steps needed for improvement</td>
</tr>
</tbody>
</table>
Open Networks WS2 P1
Embedded Capacity Register

Steve Halsey (UKPN)
Where did we end 2020?

Originally SWRR
DCP350

- Moved to ECR
- New cells included
- Move towards “open-data” – fewer anonymised cells
- Monthly publication
- Working towards 2021 enhancements
Work for 2021

- ECR template enhancements
- Implement proposals to include ESO services and T/x reinforcement
- Extend ECR to include assets <1MW
- Consider central register

*Slightly later than PID date on basis of call last week
ECR improvements timeline

January

- Approval of revised ECR template by P1

February

- Verbal notification to DCUSA panel Feb meeting
- G98/G99 consultation
- Review responses
- Notify DCP350 proposer
- Develop narrative
- Approve narrative
- Prepare mod paperwork

March

- Formal notification to DCUSA panel Mar meeting
- Notify Managers of changes
- Submit paperwork to DCUSA
- DCUSA panel meeting

April

- 19th
- 14th
- 21st
- 31st

**G98/99 changes**

**G98 (Amendment 6)**
- G98 will be updated to remove references to the withdrawn BS EN 50438. Relevant references will be made to BS EN 50549. BS EN 50549 does not include some essential requirements that BS EN 50438 used to include, so these will be added to EREC G98. There is also a new requirement proposed for EREC G98 regarding cyber security and new text on a family approach to type testing.

The remaining proposed modifications are clarifications to existing text.

**G99 (Amendment 8)**
- There are a number of new requirements proposed for EREC G99, relating to:
  - Rapid resynchronisation
  - Annex C.6 Functional Specification for Dynamic System Monitoring
  - Cyber security

The remaining proposed modifications are minor or simple clarifications.

**DCode (v47)**
- Data describing the source of energy for generation, and the conversion technology, has been redefined in the Grid Code. These will replace the previous list in Schedule 5(b). In addition, a clarification on the nature of grid references has been added to Schedule 5(a), again recognizing the requirements of the Embedded Capacity Registers.
- The definitions of Minimum Stable Operating Level and Minimum Regulating Level have been added to align with their use in G99.
ECR Improvements

- Aligning technologies with proposals to revise EREC G99 document
- Re-defining the current cells relating to technology type to Energy Source and Energy Conversion Technology Types.
- Aligning some column names/titles with industry norms – for example Installed Capacity becomes Registered Capacity
- Improvements to the contents page
- Removal of reference to MVA such that only references to MW exist
- General “housekeeping” type modifications
New tables

<table>
<thead>
<tr>
<th>Source</th>
<th>Energy Source</th>
<th>Energy Conversion Technology</th>
<th>CHP Co-generation (Y/No)</th>
<th>Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Advanced Fuel (produced via gasification or pyrolysis of biofuel or waste)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>B</td>
<td>Biofuel - Biodiesel from anaerobic digestion (excluding landfill gas)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>C</td>
<td>Biofuel - Landfill gas</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>D</td>
<td>Biofuel - Sewage gas</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>E</td>
<td>Biofuel - Other</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>F</td>
<td>Biomass</td>
<td>-</td>
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</tr>
<tr>
<td>G</td>
<td>Fuuril - Brown coal/lignite</td>
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<tr>
<td>H</td>
<td>Fuuril - Coal</td>
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<tr>
<td>I</td>
<td>Fuuril - Gas</td>
<td>-</td>
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<tr>
<td>J</td>
<td>Fuuril - Hard coal</td>
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<td>K</td>
<td>Fuuril - Oil</td>
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<td>L</td>
<td>Fuuril - Otolithol</td>
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<tr>
<td>M</td>
<td>Fuuril - Peat</td>
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</tr>
<tr>
<td>N</td>
<td>Fuuril - Other</td>
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<tr>
<td>O</td>
<td>Geothermal</td>
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<td>P</td>
<td>Hydrogen</td>
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<tr>
<td>Q</td>
<td>Nuclear</td>
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<tr>
<td>R</td>
<td>Solar</td>
<td>-</td>
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<td>-</td>
</tr>
<tr>
<td>S</td>
<td>Stored Energy (all stored energy irrespective of the original energy source)</td>
<td>-</td>
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</tr>
<tr>
<td>T</td>
<td>Waste</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>U</td>
<td>Water (frozen water or ice)</td>
<td>-</td>
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</tr>
<tr>
<td>V</td>
<td>Wind</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>W</td>
<td>Other</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>X</td>
<td>Data not available</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Investigating converting form to machine readable/electronic completion format with technology matrix.

Replicate matrix/auto-formatting in G98/99 application forms.
Open Networks ON WS1A P4
Standard Agreement V1.2

Alex Howison SSEN
Product Team & Summary Points

Summary

• Version 1.2 Final draft now completed for review ahead of implementation

• Significant changes across the version following Stakeholder feedback and DNO revision, these slides give an overview of key changes to support stakeholder review of the contract.

• Evolution Paper and Liabilities/Indemnities work paused to focus on V1.2 delivery

<table>
<thead>
<tr>
<th>Company</th>
<th>Primary Representative</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSEN-D</td>
<td>Alex Howison – Product Lead Gemma Lampert</td>
</tr>
<tr>
<td>NG (SO)</td>
<td>Andrew Rice/David Spence</td>
</tr>
<tr>
<td>NIEN</td>
<td>Bradley Cormac</td>
</tr>
<tr>
<td>NPG</td>
<td>John Leighton</td>
</tr>
<tr>
<td>SPEN-D</td>
<td>Wendy Mantle</td>
</tr>
<tr>
<td>ENWL</td>
<td>Lois Clark</td>
</tr>
<tr>
<td>UKPN</td>
<td>Stathis Mokka, Helen Hassan &amp; Rebecca Slattery</td>
</tr>
<tr>
<td>WPD</td>
<td>Helen Sawdon</td>
</tr>
</tbody>
</table>
**Key changes**

- Insurance Clause completely removed in place of additional paragraph in Liabilities & Indemnities Clause
- Discretionary Services and Variations to Services clauses shifted from core contract into Schedules
- DNO specific variances to V1.1 absorbed within this version to reduce use of ‘special conditions’ appendix
- Additional Appendix for ‘Dispatch Systems/Technical Requirements’ added (Covering system requirements such as Flexible Power)
- Additional wording added to Confidentiality clause to cover CEP License changes
- Multiple changes/updates to Glossary and simplification to clauses across the agreement
- Core ‘Contract’ has dropped to 20 pages (including signatory and title pages) with 7 Schedules, providing increased alignment with ESO approach
### Feedback Change examples

<table>
<thead>
<tr>
<th>Feedback Area</th>
<th>Feedback examples</th>
<th>Response</th>
</tr>
</thead>
</table>
| Aggregators   | ‘The standard contract needs adjusting to ensure it works for aggregators, including the aggregation of demand response from smaller assets. The main body of the agreement is worded as if the Provider owns or operates the assets and is not in line with aggregators’ business models, including those that use Virtual Power Plants (VPPs). As a default position, the requirements of the contract should be capable of being met commonly as part of demand aggregation through a third party, unless there is a legitimate reason for site-specific obligations. There are several examples around monitoring, testing and DNOs having the rights to visit and installing ‘on site’ that are not appropriate for aggregation, especially where this involves small or residential sites.’  

‘The agreement is drafted for individual DERs that provide flexibility of more than [50kW] (Schedule 1) and changing assets requires a minimum of 30 days’ notice (Clause 4.2) which we believe could be detrimental to a fair, transparent and commoditised flexibility market. This approach ignores the practice of aggregators, suppliers and traders who aggregate smaller DERs to provide a reliable delivery of flexibility services. We believe this is an oversight that could reduce the attractiveness, competitiveness and liquidity of DNO flexibility markets in the short-term, all of which are vital for the growth of flexibility services. This approach also ignores the risk management capability provided by aggregators who often rely on a larger pool of asset than required to meet their contractual commitments, automatically providing their own reserve through the use of a reconfigurable portfolio of flexibility as a risk management strategy.  

Further, the contract appears to be drafted for counterparties who own the asset rather than those who control the flexibility which may be a quirk of the drafting or a deliberate approach.’  

‘We are concerned that smaller assets or assets with smaller flexibility appear to be excluded from consideration, especially given the increase in domestic flexibility as a result of the decarbonisation of heat and transport. It is appreciated this may be a phased approach towards flexibility rather than an oversight.’  

Multiple changes across the Document, from Recitals through to the Schedules to remove singular terminology and pluralise statements to reflect the opportunity for aggregators and aggregated assets in providing Flexible Services. Requirements for site visits have been updated/relaxed as have clauses detailing equipment installation. |
## Feedback Change examples

<table>
<thead>
<tr>
<th>Feedback Area</th>
<th>Feedback Point</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provider’s Obligations</td>
<td>This should only apply during service windows, not all the time.</td>
<td>Across the contract and where possible, some references to ‘at all times’ have been removed in Version 1.2</td>
</tr>
<tr>
<td>Provider’s Obligations</td>
<td>As an aggregator we would not always have all this information. Our standard customer demand response terms to not entitle us to it from the customer.</td>
<td>Metering equipment and site specific requirements have been reduced in Version 1.2.</td>
</tr>
<tr>
<td>Providers Obligations</td>
<td>In terms of access, obligation on the Company to comply with reasonable requirements for site access. (e.g. health and safety requirements, and having to cooperate on scheduling—it’s not acceptable to many customers to give DSOs an unrestricted right of entry, even with notice.).</td>
<td>Clause has been changed within Version 1.2 to include specificity on the scenarios such access could be deemed reasonable.</td>
</tr>
</tbody>
</table>
# Feedback Change examples

<table>
<thead>
<tr>
<th>Feedback Area</th>
<th>Feedback Examples</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Insurances</strong></td>
<td>The reference to the Provider having to add the Company as a “named party” on its insurance policies should include alternative options of either noting the Company’s interest on the insurance policies or including an indemnity to principals in the insurance policies. Adding third parties as named parties to Group insurances is complex and not always possible or indeed beneficial for the third party.</td>
<td>This has been reworded in Version 1.2.</td>
</tr>
<tr>
<td><strong>Insurance</strong></td>
<td>The phrase “only to the extent of its liability under this Agreement” does not make sense and should come out.</td>
<td>This has been reworded in Version 1.2.</td>
</tr>
<tr>
<td><strong>Representations and warranties</strong></td>
<td>This is written as though the Provider owns the DER assets itself. The standard contract needs to accommodate Providers who are aggregating customer assets, as well as any assets the Provider owns. As such, these obligations should be written as the Provider “ensuring or procuring that the DER” has the things required (e.g. connection agreements and permits).</td>
<td>This section has been extensively reworked to ensure it is more open to aggregators/aggregated assets</td>
</tr>
<tr>
<td><strong>Representations and warranties</strong></td>
<td>DSR aggregators sometimes enter into open-book contracts with DER asset owners. Revenue sharing agreements are even included in the Flex Assure voluntary DSR Code of Conduct that Centrica Business Solutions is a member of.</td>
<td>This section has been extensively reworked to ensure it is more open to aggregators/aggregated assets</td>
</tr>
<tr>
<td><strong>Representations and warranties</strong></td>
<td>In an industry where it is not uncommon for aggregators to go open-book with DER asset owners on the income from flexibility services, it does not feel right to warrant that we have not communicated the charges to anyone. We suggest a carve out is included in respect of “in connection with the provision of the Flexibility Services”.</td>
<td>This section has been extensively reworked to ensure it is more open to aggregators/aggregated assets</td>
</tr>
</tbody>
</table>
Recitals
The Provider is the owner and/or operator of assets, or has entered into arrangements for rights in respect of third party owned assets that have the capability to provide Flexibility Services and wishes to make available each Site for the provision of such Flexibility Services, for example through aggregated or individual assets. The Company will pay the Provider for these Flexibility Services in accordance with this Agreement.

Providers obligations – access
Permit and grant (or secure) rights of access to and over and egress from the Site to the Company and/or its agents or subcontractors (upon reasonable notice within normal working hours) as the Company may reasonably require in order to inspect and test the DER, or to install, maintain, replace or remove communication equipment belonging to the Company in relation to the provision of flexibility services.

Insurance
The Provider shall procure (and on request provide evidence to the Company of) appropriate insurances as required by law and necessary for the safe and efficient performance of this Agreement to cover the liabilities set out in this Clause [14], with a reputable insurance company. Where possible the Provider shall add the Company as a named party on its insurance policies.
**Additional Points**

- Feedback from Aggregators still presents challenges in securing metering data and the responsibility for providing this, especially at domestic level, so further engagement on these points will be required ahead/in support of Version 2 works.

- Liabilities and Indemnities work will continue in Version 2 works, the P4 team will confirm a single approach for implementation between DNOs & the SO. DNO’s are in agreement current contract value cap is unlikely to stay in Version 2 with the most likely change being a ‘dual liability’ inline with the current WPD/SO approach, however specifics need to be confirmed.

- Version 2 works while focusing on DNO/ESO alignment will also continue to adapt to ENA Open Networks product outputs, such as the WS1AP7 baselining product, as well as stakeholder feedback submitted to DNO’s and the ENA.
Summary and next steps

• Internal DNO Review of Version 1.2 is still underway, while no major red flags are expected some small tweaks may still occur ahead of implementation.

• Any significant changes will have to be reviewed; with the likelihood these changes are inserted into the ‘Special Conditions’ appendix – these will then be revisited within Version 2 works.

• Once complete the P4 team will then focus on completing the Evolution and Liabilities & Indemnities papers ahead/alongside starting Version 2 works.

• External legal review (i.e. CMS) is not being applied to Version 1.2 however this will be applied for Version 2 later this year.
Breakout Session 1 – WS1A P1

User forum & open governance

Simon Brooke  (ENWL)
Jason Brogden  (Open Networks Project Director – ENA)
Farina Farrier   (Head of Open Networks - ENA)
Governance of the Common Evaluation Methodology

• In 2020 Open Networks developed the Common Evaluation Methodology and Tool for use by distribution licensees from 1 April 2021:
  • Potential governance arrangements discussed in the Flexibility consultation in July 2020
  • Master versions of Common Evaluation Methodology, User Manual and Tool are on its website

• In 2021 Open Networks plans to implement governance arrangements:
  • Form a Users group, under the ENA, for sharing knowledge/experience and the ongoing development of the methodology and the tool
  • Manage a change management process for amending the CEM text and the MS excel tool
  • Formalise approvals process and approval body
Open Governance Paper

We have considered the building blocks of Open Governance described in the Open Governance paper, which considers the options for: decision-making; change management; and stakeholder participation.
We will develop a Terms of Reference and would like your input

User Group:
All stakeholder groups to be represented, with Product lead as chair, at this early stage

Change Management process:
ENA will administer the process
Anyone can raise a change, User Group reviews changes and recommends analysis work e.g. qualitative and quantitative assessment against defined objectives (e.g. alignment with Ofgem/BEIS policy)

Approving body:
For 2021 the ON Steering Group will act as approvals body for WS1A P1

Approvals process:
WS1A agrees/rejects analysis work on proposed change
ON SG receives analysis and approves or rejects the change
Questions for the Advisory Group

User Group
- All stakeholder group to be represented with all DNOs, ESO, Ofgem, BEIS, CA
- Chaired by Product lead?
- Max 40 in total?
- Max two per group?
- Trade Association nominates stakeholder group representatives?

Change Management
- ENA acts as secretariat
- Anyone/ User Group member can raise a change?
- How do we ensure only valid changes are reviewed?
- User Group agree analysis work and timetable

Approval Process
- WS1A agrees which changes go forward for analysis?
- WS1A reviews analysis work and can send back for further work?
- WS1A recommends which changes are presented to Steering Group for the approval?
- Significant analysis may need to go to Steering Group if budget/resource required
Next Steps

ENA Open Networks project:
1. Publishes CEM, User Manual and Tool on its website and all the DNOs link to it by 31 Mar 21
2. Budgets for administrative support in 2021 for User Group and change management process
3. Develop Change Management process further
4. Develops ToR for User Group including membership *
5. Comes back to May Advisory Group with firmer proposals
6. Recruits User Group
7. Initiates new governance

*Includes users and stakeholders like, Ofgem, major users, flexibility providers etc.
**Straw-Man Change Management Process**

1. **Raise Change or Issue**
   - By **Anyone**

2. **User Group**
   - **User Group Reviews Change or Issue and sets out plan for analysis**

3. **WS1A**
   - **WS1A agrees/amends analysis plan within its remit and resourcing**

4. **User Group/Sub-Group**
   - **Analysis of Change/Issue by User Group or Sub-group if necessary**

5. **WS1A**
   - **Presentation of Recommendation to WS1A**

6. **ONP Steering Group**
   - **Approval/Rejection of Recommendation by ONP Steering Group**

7. **DNOs**
   - **Implementation of Approved Change**

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**Change Request or Issue Form**

**Analysis Plan**

**Analysis Plan**

**Recommendation Report to WS1A**

**Recommendation Report to ONP SG**

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We would expect approved changes to be batched into periodic releases of the CEM unless there is an urgent issue to address.
ENA groups and organisations to keep closely informed on progress and seek input as required.

Dual governance for WS4

Stakeholder forum with representation from other segments of industry to provide input into development work.

Propose that User Group includes stakeholders.
Breakout Session 2 – WS1A P3, P8, P9

Flexible Connections (ANM enabled)
Stakeholder Engagement

Fiona Navesey (ENA)
Sean Cleary (SPEN)
Sven Hoffmann (WPD)
Harriet Walsh (UKPN)
Agenda: Flexible Connection (ANM enabled) 2021 Products

- Summary of the Flexible Connection (ANM enabled) Products 5 mins

- Breakout Session – stakeholder feedback
  - Approach 5 mins
  - Key questions 20 mins
### Flexible Connections (ANM enabled) 2021 Product Summaries

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<td><strong>As the whole-system need for flexibility services closer to real-time grows, then more dynamic curtailment information will be required at asset level.</strong></td>
<td><strong>Curtailment risk fixed at point of connection; overtime the networks evolve, constraints change, and the value of user network access can vary.</strong></td>
<td><strong>Curtailment information is based on DNO forecasts. Load variations outside DNO forecast will result in higher or lower ANM curtailment; risk potentially unlimited and sits entirely with FC(ANM) assets.</strong></td>
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</table>
| **Headline activity** | • Develop a strategy for the delivery of more frequent, granular, accurate and timely curtailment information incl. at asset level.  
• Identify phased approach with improved curtailment information ahead of ED2. | • Contracts may need revisions / users may want legacy contract reviews to understand current options  
• Improve user knowledge of both ANM technology and the role for Flexible Connections | • Explore options for more equitable spread of curtailment risk across FC(ANM), DNOs and existing customers and funding approaches.  
• May include options for caps and collars on ANM curtailment. |
| **Direct Benefits** | • Improvements in the availability and frequency of both curtailment and network information should increase the opportunities for both firm and non-firm assets to provide / stack flexibility services;  
• More opportunities for flexibility markets | • Improve asset owners’ knowledge of ANM, curtailment restrictions and optionality  
• More efficient use of these assets if review enables assets to participate in more flexible services | • FC(ANM) users provided with a more equitable way of balancing curtailment risk  
• DNOs agree approach to limiting impacts of curtailment on FC(ANM) and regulatory funding approach.  
• More opportunities for flexibility markets |
### Flexible Connections (ANM enabled) 2021 Product – Feedback Request

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| **Actions** | • Agree curtailment information strategy / approach to improving the availability  
• Capture customer curtailment information needs – prioritised in ED1  
• Capture current curtailment information availability  
• Plan to address gaps and ED1 delivery  
• Clarify curtailment info deliverables for ED2 | • Review of content and range of curtailment information / clauses in legacy contracts  
• Engage stakeholders for feedback on needs and priorities  
• Develop set of principles for carrying out reviews  
• Agree regulatory approach with Ofgem | • Curtailment risk assessment  
• Optioneering for balancing curtailment risk  
• Stakeholder feedback on options  
• Agree regulatory approach with Ofgem  
• Implementation plan |
| **Question / Discussion** | Stakeholder questionnaire (March)  
• General process  
• Pre-application / publicly available info  
• Curtailment estimates during application  
• Post connection / impact of curtailments  
• ANM system reliability  
Are these the right focus areas? | • How many stakeholders currently have a Flexible Connection (ANM) contracts older than 3 years?  
• What would you expect from a review; what would the output be? | • Stakeholder feedback will be required once options are identified. |

Which of these 3 products carries most importance to stakeholders?
Breakout Session 3
Operational DER visibility and monitoring

Advice on use cases and DER Parameters

Ali Reza Ahmadi (UKPN)
P6 Scope

• This is a new area of work in Open Networks that is seeking to articulate and define the use cases for visibility and monitoring of DER on the network and establish appropriate function specifications for them. This product will develop a cost benefit analysis for these use cases.

• Define ‘uses cases’ to exemplify what data requirements really are, based on what exactly they would do. Then to design functional specs to establish what improved monitoring would look like ‘on the ground’, which would inform costs, and ultimately a CBA.
Outcome of the workshop

- Scope of P6 Product was discussed to inform the key stakeholders.

- Ofgem Call for evidence ‘Questions’ on Visibility of Distributed Generation were discussed and responses were collected from stakeholders.

- 4 broad categorised for DER monitoring include:
  1) A DER providing an ancillary service to a DNO and the ESO.
  2) A DER providing an ancillary service to a DNO only.
  3) A DER providing an ancillary service to an ESO only.
  4) A DER not providing any services but considered a candidate for monitoring for enhanced system resilience.
Example of use cases

In the broad use category of a ‘DER providing services to the ESO and DNO’ may include use cases on:

• An example where there is a need to manage the avoidance of service conflicts in BAU flex markets.
• An example where operational decisions are being made under fault conditions, informed by DER data.
• An example of interactions between ESO and DNO’s ANM schemes.
## Operational Use cases

<table>
<thead>
<tr>
<th>Use Case Name</th>
<th>DER Operational Parameters</th>
<th>DER Static Data</th>
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<tbody>
<tr>
<td>1 Efficient Operation of ANM</td>
<td>MW, MVAr, Volts and Amps, load factor (market data/planning), power available for a wind turbine unit, real-time ramp rate, general network constraint visibility, list of Ancillary Services, £/MW, £/MVAr, service windows, what services are signed up for by DER, contract information, primacy rules.</td>
<td>Protection settings, LIFO stack, Fuel type, PoC, Geographic location, DER P/Q envelope and max P/Q, MPAN, what is the frequency block associated with DER.</td>
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<tr>
<td>2 DSO Market Data</td>
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<td>3 Conflicts of Services - ESO led</td>
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<tr>
<td>4 Conflicts of Services - DSO led</td>
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<td>5 Fault Management on ESO network</td>
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<td>6 Fault Management on DNO network</td>
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<td>7 System Restoration – Black start</td>
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<tr>
<td>8 DER Service Delivery</td>
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- Accuracy; ≤3% - Target Accuracy Value.
- Means to transfer the data ESO↔DSO via ICCP.
- Type of Ancillary Service; FFR, ODFM, Secure System, Capacity market, flexible contract, is this an ANM connection.
- Resolution of data capture; Up on change or every 10 seconds. Dead-bandaging may need to be applied to manage the data traffic and frequency.

**Do you foresee any specific challenges in provision of these parameters for DER sites >200kW?**
Planning and Forecasting Use cases

- Uses in energy/demand forecasting whereby access to more granular data helps to identify regional trends.

- Assists in both the longer term network development (e.g. ETYS, NOA, DFES, FES) and shorter-term planning activities by enabling more accurate historical trends to be applied to network studies, scenario planning and CBA analysis.

- Provides value in post-event analysis activities to understand how DER in certain regions behaved following a system (T/D) disturbance.

- If collecting the likes of real-time PMU data, possibly assists network owners in future investment cases to mitigate harmonic distortion/transients on their respective networks.
Net zero pathway
Governance

PROGRAMME ADVISORY GROUP
Government, Ofgem, Committee on Climate Change, Health & Safety Executive, Institution of Gas Engineers and Managers, electricity network operators, green gas producers, gas suppliers, industry exports, academia

PROGRAMME STEERING GROUP
Cadent, Northern Gas Networks, SGN, Wales & West Utilities and National Grid

WORKSTREAM 1
Investing in net zero

WORKSTREAM 2
Gas quality and safety

WORKSTREAM 3
Consumer options

WORKSTREAM 4
System enhancement

WORKSTREAM 5
Hydrogen transformation

WORKSTREAM 6
External affairs and stakeholder engagement

DELIVERING THE NET ZERO PATHWAY
2021 Deliverables

Workstream 1
Investing in net zero
1.1 Net Zero Strategy & Scenario
1.2 Zero Carbon Commitment (v2)
1.3 Local, regional and national pathways and planning studies

Workstream 2
Gas quality and safety
2.1 Blending delivery timeline

Workstream 3
Consumer options
3.1 Hydrogen: Cost to Customer
3.2 Licensing regime for industrial cluster hydrogen infrastructure
3.3 GHG reduction potential for off grid communities
3.4 Impact of reducing gas demand

DEVELOPING THE NET ZERO PATHWAY
2021 Deliverables

Workstream 4
System enhancement

4.1 Supporting green
gas producers
4.2 Opportunities for
CHP conversion
4.3 Network fugitive
emissions

Workstream 5
Hydrogen transformation

5.1 Delivering
BEIS/industry
hydrogen activity
5.2 Hydrogen
connection
agreement

Workstream 6
Communications
and stakeholder
engagement

6.1 Green gas data
6.2 Defining a smart
gas network

Delivering the Net Zero Pathway

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Thank you

GasGoesGreen@energynetworks.org
Slido Q&A

Emily Jones (ON Communications Lead – ENA)
Wrap up
Farina Farrier (Head of ON – ENA)