



Challenge Group
ENA Open Networks

19 February 2024

Agenda

| Item | Start | Finish | Time | Item | Presenter |
|------|-------|--------|------|---|--|
| 1 | 10:30 | 10:35 | 5 | Welcome - Natasha Mills - new ADE representative - Samuel Adekanle - new REA representative - Bob Fearnley – new INA representative Apologies - Maddie Brooks – Emma Burns representing Octopus - Emma Carr - Atzin Madrid representing Electralink - Phil Coventry (Community Energy England) | Maxine Frerk (Challenge Group Chair) |
| 2 | 10:35 | 10:45 | 10 | Recent industry developments and ON impact Open discussion on industry developments and their potential impact on Open Networks Reminder on open consultation on Standard Contract Ver 3.0 | Maxine Frerk (Challenge Group Chair) & All |
| 3 | 10:45 | 11:05 | 20 | Flexibility Products and Stackability | Matt Watson (NG ED, technical working group member) & Avi Aithal (Head of ON, ENA) |
| 4 | 11:05 | 11:25 | 20 | Settlement | Gavin Stewart (SSEN D, technical working group Lead) |
| 5 | 11:25 | 11:55 | 30 | Open Networks 2024 | Avi Aithal (Head of ON, ENA) |
| 6 | 11:55 | 12:00 | 5 | AOB | Maxine Frerk (Challenge Group Chair) & All |

Recent industry developments and ON impact

Open discussion on industry developments and their potential impact on Open Networks

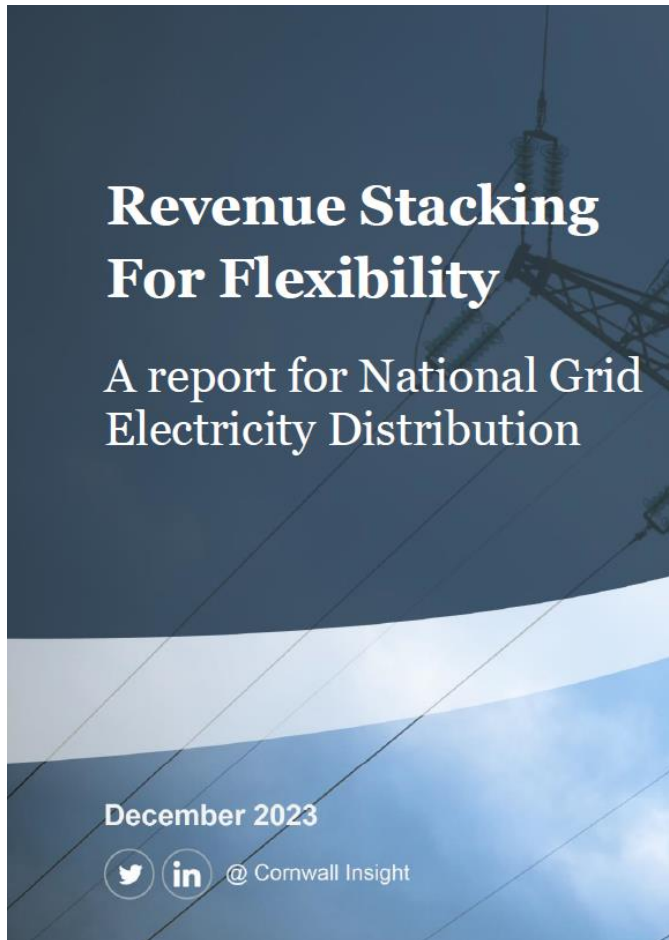
Reminder on open consultation on Standard Contract Ver 3.0

Maxine Frerk (Challenge Group Chair)

Flexibility Products and Stackability

Matt Watson (NG ED) & Avi Aithal (ENA)

Revenue Stacking Summary Infographic



Three Key Takeaways

Flexibility services procured to maintain security of supply are changing to meet the needs of an evolving electricity system

There is varied interaction between services

Good progress to date, but improvements include better guidance on service provision and interaction

Wide Range of Service and Revenue Streams



DSO Services



Frequency response



Markets or mechanisms



Reserve



Constraint management

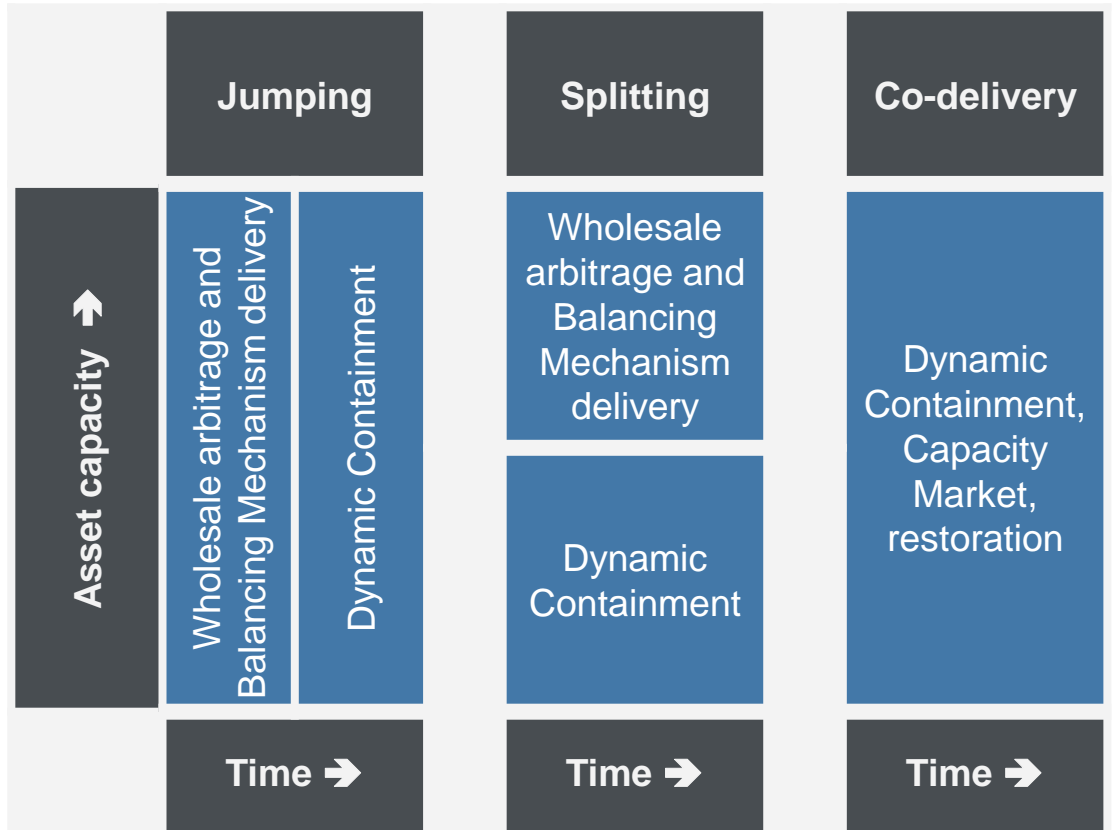


System security and restoration

Limited, but Improving, Stackability Options

- **Jumping** – moving from one revenue stream to another in adjacent or nearby time periods
- **Splitting** – asset’s MW capacity split and offered to different services simultaneously in the same time period
- **Co-delivery** – the same MW acts (in the same way) offered to more than one service in the same time period

Implicit and explicit stackability



Source: Cornwall Insight

Addressing Challenges Should Improve Provision

Challenge

Recommendation

? Uncertainty over co-delivery

✓ Clarify co-delivery – CBA

? Poor visibility of ability to stack

✓ Establish cross-service guidance

? Inconsistent service window timeframes

✓ Align windows (short time supports jumping)

? Non-firm connections are a challenge

✓ Establish guidance on eligibility for non-firm connections

? No obligation to consider challenges and future service needs

✓ Develop principles to maximise liquidity/ stacking

Getting your feedback

Are there any additional challenges to revenue stacking we should be considering?

What are the highest priority recommendations we should focus on?

How should these recommendations be taken forward?

Appendices

Co-delivery of services

Ability to co-deliver different services

| Revenue stream/ Service | Wholesale | Balancing Mechanism | NIV Chasing | Capacity Market | Short Term Operating Reserve | Firm Frequency Response | Enhanced Reactive Power Service | DSO services | Local Constraint Market | MW Dispatch Service | Demand Flexibility Service | Slow Reserve | Quick Reserve | Balancing Reserve | Electricity Restoration Services | Dynamic Containment | Dynamic Moderation |
|----------------------------------|-----------|---------------------|-------------|-----------------|------------------------------|-------------------------|---------------------------------|--------------|-------------------------|---------------------|----------------------------|--------------|---------------|-------------------|----------------------------------|---------------------|--------------------|
| Balancing Mechanism | Yellow | Black | | | | | | | | | | | | | | | |
| NIV Chasing | Orange | | | | | | | | | | | | | | | | |
| Capacity Market | Green | | | | | | | | | | | | | | | | |
| Short Term Operating Reserve | Orange | | | | | | | | | | | | | | | | |
| Firm Frequency Response | Orange | | | Green | Orange | Black | | | | | | | | | | | |
| Enhanced Reactive Power Service | Orange | | | | | | | | | | | | | | | | |
| DSO services | Green | | | | | | | | | | | | | | | | |
| Local Constraint Market | Yellow | | | | | | | | | | | | | | | | |
| MW Dispatch Service | Yellow | | | | | | | | | | | | | | | | |
| Demand Flexibility Service | Orange | | | | | | | | | | | | | | | | |
| Slow Reserve | Yellow | | | Green | | | | | | | | | | | | | |
| Quick Reserve | Yellow | | | Green | | | | | | | | | | | | | |
| Balancing Reserve | Yellow | | | Green | | | | | | | | | | | | | |
| Electricity Restoration Services | Blue | | | | | | | | | | | | | | | | |
| Dynamic Containment | Yellow | | | Green | | | | | | | | | | | | | |
| Dynamic Moderation | Yellow | | | Green | | | | | | | | | | | | | |
| Dynamic Regulation | Yellow | | | Green | | | | | | | | | | | | | |

True co-delivery remains unviable for most services – with the exception of the CM – this may be with good reason

There may be instances where co-delivering may be beneficial for the system, incentivising multiple service interaction. This is a broader question for industry

Interpretation can depend on the circumstance or structure of the service - e.g. how to define reverse actions or payments for availability but not utilisation

| Key | |
|--------|---|
| Black | Explicitly unstackable |
| Orange | Technical challenges inhibit |
| Yellow | Utilisation available in opposite direction |
| Green | Codeliverable |
| Blue | Restoration availability possible |

Source: Cornwall Insight

Splitting of Services

Ability to split different services

| Revenue stream/ Service | Wholesale | Balancing Mechanism | NIV Chasing | Capacity Market | Short Term Operating Reserve | Firm Frequency Response | Enhanced Reactive Power Service | DSO services | Local Constraint Market | MW Dispatch Service | Demand Flexibility Service | Slow Reserve | Quick Reserve | Balancing Reserve | Electricity Restoration Services | Dynamic Containment | Dynamic Moderation | |
|----------------------------------|-----------|---------------------|-------------|-----------------|------------------------------|-------------------------|---------------------------------|--------------|-------------------------|---------------------|----------------------------|--------------|---------------|-------------------|----------------------------------|---------------------|--------------------|------------------------|
| Balancing Mechanism | Green | Black | | | | | | | | | | | | | | | | |
| NIV Chasing | Yellow | | | | | | | | | | | Orange | Orange | | | | | Explicitly unstackable |
| Capacity Market | | | | | | | | | | | | Yellow | Yellow | | | | | Implicitly unstackable |
| Short Term Operating Reserve | Orange | | | | | | | | | | | Green | Green | | | | | Implicitly stackable |
| Firm Frequency Response | Green | Green | Yellow | N/A | Orange | Black | | | | | | | | | | | | Explicitly stackable |
| Enhanced Reactive Power Service | Green | Green | Yellow | N/A | Orange | Black | | | | | | | | | | | | Replacement |
| DSO services | Orange | Orange | Orange | N/A | Orange | Black | | | | | | | | | | | | |
| Local Constraint Market | Yellow | Orange | Orange | N/A | Orange | Black | | | | | | | | | | | | |
| MW Dispatch Service | N/A | N/A | N/A | N/A | Orange | Black | | | | | | | | | | | | |
| Demand Flexibility Service | Orange | Orange | Orange | N/A | Orange | Black | | | | | | | | | | | | |
| Slow Reserve | Green | Green | Orange | N/A | Orange | Black | Green | Orange | Orange | N/A | Orange | Black | Black | | | | | |
| Quick Reserve | Green | Green | Orange | N/A | Orange | Black | Green | Orange | Orange | | | | | | | | | |
| Balancing Reserve | Green | Green | Orange | N/A | Orange | Black | Green | Orange | Orange | | | | | | | | | |
| Electricity Restoration Services | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | | | | | | | | |
| Dynamic Containment | Green | Green | Orange | N/A | Orange | Black | Green | Orange | Orange | | | | | | | | | |
| Dynamic Moderation | Green | Green | Orange | N/A | Orange | Black | Green | Orange | Orange | N/A | Orange | Orange | Orange | Orange | N/A | Green | Black | |
| Dynamic Regulation | Green | Green | Orange | N/A | Orange | Black | Green | Orange | Orange | N/A | Orange | Orange | Orange | Orange | N/A | Green | Green | |

Service splitting is more readily viable, notably for nameplate ESO services, wholesale, and the BM

However, this can rely on interpretation of service terms, guidance if available, ensuring providing one service does not inhibit ability to provide the other, and providing two services does not result in penalty

Splitting of DSO services remains challenging, particularly with ESO services. Requirements to be a BMU and submit PNs can also be prohibitive

Source: Cornwall Insight

Jumping of services

Ability to jump different services

| Revenue stream/ Service | Wholesale | Balancing Mechanism | NIV Chasing | Capacity Market | Short Term Operating Reserve | Firm Frequency Response | Enhanced Reactive Power Service | DSO services | Local Constraint Market | MW Dispatch Service | Demand Flexibility Service | Slow Reserve | Quick Reserve | Balancing Reserve | Electricity Restoration Services | Dynamic Containment | Dynamic Moderation |
|----------------------------------|-----------|---------------------|-------------|-----------------|------------------------------|-------------------------|---------------------------------|--------------|-------------------------|---------------------|----------------------------|--------------|---------------|-------------------|----------------------------------|---------------------|--------------------|
| Balancing Mechanism | Green | Black | | | | | | | | | | | | | | | |
| NIV Chasing | Green | | | | | | | | | | | Orange | Orange | | | | |
| Capacity Market | N/A | | | | | | | | | | | Yellow | Yellow | | | | |
| Short Term Operating Reserve | Green | | | | Black | Black | | | | | | Green | Green | | | | |
| Firm Frequency Response | Green | | | | | | | | | | | | | | | | |
| Enhanced Reactive Power Service | Green | | Yellow | | | | | | | | | | | | | | |
| DSO services | Green | | | | | | | | | | | | | | | | |
| Local Constraint Market | Green | Orange | | | | | | | | | | | | | | | |
| MW Dispatch Service | Green | Orange | | N/A | Orange | Orange | Orange | Green | Orange | Black | | | | | | | |
| Demand Flexibility Service | Yellow | Orange | Yellow | N/A | Orange | Orange | Orange | | | | | | | | | | |
| Slow Reserve | Green | | | N/A | Green | Green | Green | | | | | | | | | | |
| Quick Reserve | Green | | | N/A | Green | Green | Green | | | | | | | | | | |
| Balancing Reserve | Green | | Orange | N/A | Green | Green | Green | | | | | | | | | | |
| Electricity Restoration Services | Green | | | N/A | Green | Green | Green | Green | Orange | Orange | Orange | Green | Green | Green | Black | | |
| Dynamic Containment | Green | | | N/A | Green | Green | Green | | Yellow | | | | | | | | |
| Dynamic Moderation | Green | | | N/A | Green | Green | Green | | Yellow | | | | | | | | |
| Dynamic Regulation | Green | | | N/A | Green | Green | Green | | Yellow | Orange | Orange | Green | Green | Green | Green | Green | Green |

Jumping between services remains more viable than co-delivering or splitting

Consideration of delivery windows is important; more granular windows support stacking, but there may be good reason to have longer-procurement windows

Services are in competition with each other – FSPs are more likely to focus on those with highest value, more jumpable, and those with greatest accessibility

Situations preventing jumpability can include strict exclusivity clauses, BMU requirements, & ANM schemes

Source: Cornwall Insight

Challenges identified

Broader uncertainty on co-deliverability and whether this is intentional. Priority/concern on this varies between procuring parties.

Visibility of the ability to stack services is opaque and unclear. In instances it depends on interpretation of legal text or operational conflicts/ misalignment between services. This can lead to misunderstanding of how services can be stacked and lower liquidity in the market place.

Service window timeframes vary between services. Assets jumping between services may lose revenue waiting for new period to begin.

Long procurement timelines mean the value for flexibility may be unknown at the point of contract award. FSPs will price this into their bids, however the issue is that it may lead to assets taking penalties if counterfactual value significantly increases in run up to delivery. Therefore firmness of delivery may be lower than DNO expects.

Service terms and requirements are varied, T&Cs can put significant liability on FSPs, stymying participation.

Service requirements can hinder FSP's ability to split, jump or stack services. This is typically most relevant of starting positions of BM-registered assets that comprise a BMU, and some ESO-related services.

Baselines from which service delivery and performance are assessed differ between ESO and DSO services. They also vary between DSO.

RBS excludes many services including DSO services.

Eligibility of assets with non-firm connections is not clearly outlined in a number of services, the assumption is that they can enter but will face non-delivery penalties if curtailed.

Data used to demonstrate delivery is sourced from several points – meters, settlements (adjusted or not). This causes conflicts that can result in over or under-compensation.

No obligation to continue to consider these impacts or needs for future services or procurement platforms.

The design of flexibility services for very small scale flexibility limit stacking options, due to the speed of deployment and system need. This approach limits may be the best solution for the ESO in the short-term but is unlikely to be the optimal whole of market approach as it may result in higher costs than necessary in other services.

Report recommendations

| High priority | |
|-----------------|---|
| 01 | Make a decision on whether value should be achievable for delivery of multiples services with the same MW |
| 02 | Establish cross- service guidance. Establish a regular opportunity for Q&A (FAQ or annual forum) |
| 03 | Information regularly reviewed, updated and put in one readily accessible location online |
| 04 | Align service window timeframes where possible. Shortening them supports jumping (e.g. a BESS requiring time to charge) |
| 05 | Provide clear guidance on non-firm connection eligibility for every service |
| 06 | Enhanced information sharing on curtailment likelihood, supporting procuring entities in allowing service provision when curtailment likelihood is low |
| Medium priority | |
| 07 | In instances where possible move as close to real time procurement as possible. An alternative solution may be to align penalties for non-delivery to current market conditions, although this may be contractually difficult |
| 08 | Co-develop a contractual framework with common elements/areas and schedules for ESO/DSO specific requirements |
| 09 | While there are potentially good reasons for different starting requirements, they prevent service splitting. e.g. actions in DSO services for BM participants may contravene Grid Code |
| 10 | Zero output starting requirements (if enforced, e.g. through FPNs) prohibit service splitting. Further, starting points that cannot be adjusted for provision of other services may also prohibit service splitting |
| 11 | Review service requirements to understand if they are necessary for service provision |
| 12 | Align baseline approaches across DNOs. Base exceptions on requirements for the DNO and clear communication on the differences with FSPs |

Settlement

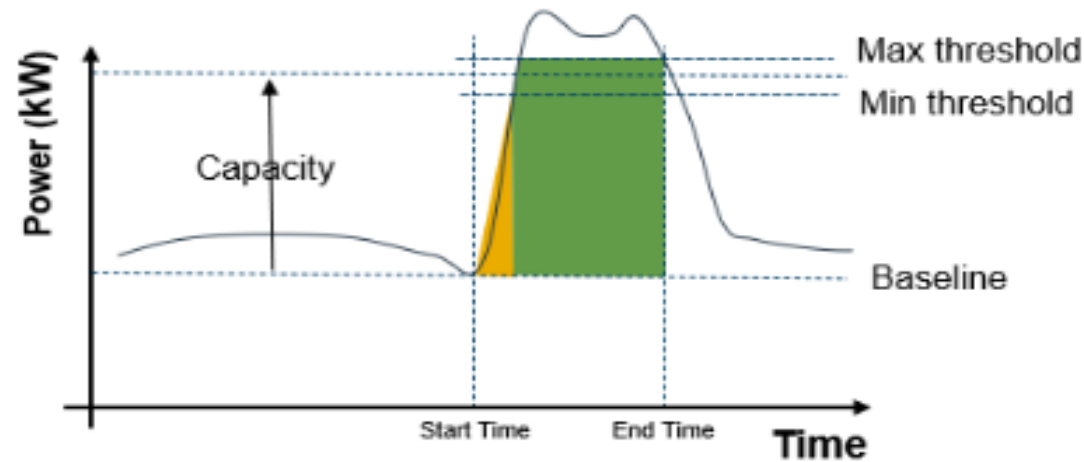
Gavin Stewart (SSEN D)

Settlement Overview

Introduction to Settlement

Main Outcome:

Settlement process for the standardised flexibility service products to follow common settlement process by April 2024



Success Criteria

#5

Making it easier for flexibility service providers to participate

Standardisation of settlement process

Outcome Description:

All DNOs adopt a common settlement approach for delivery of local flexibility services.

Impact/Customer benefit:

Simplified and standardised process will ensure a consistent user experience across the country.

Wider interdependence

- Technology group (consistent with flex reporting)
- Standard agreement/contract
- Dispatch process and technology (API/Platform etc.)

In scope

- Requested metering data
- Metering granularity* (focus group)
- Process timescales
- Performance penalties
- Performance calculations

Clarifications

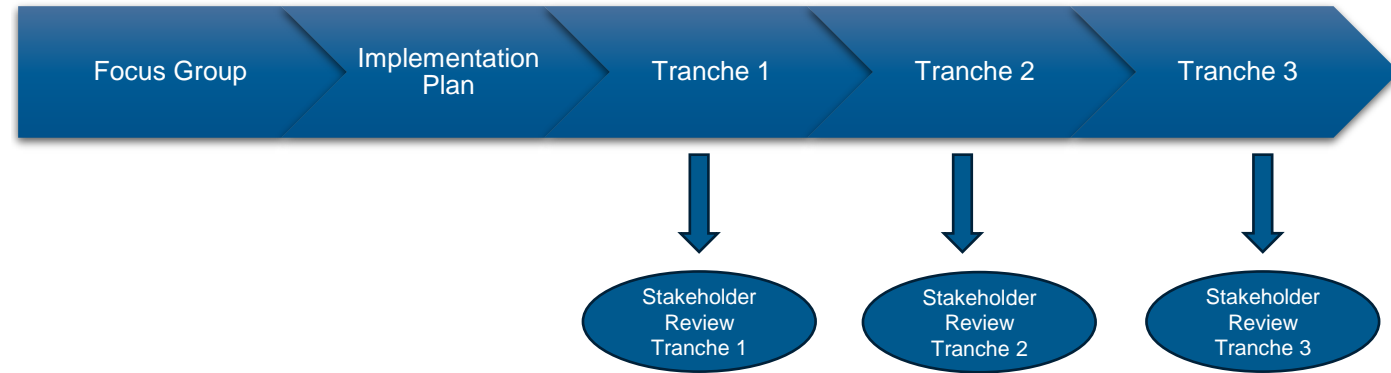
- Input will be sought from focus groups to further refine requirements of alignment

Out of scope

- Payment process automated or manual
- Settlement completed in-house/through a third party/other
- Baseline methodology
- Dispute process
- Data transmission (API/Manual/Other)

Justification

- Dependent on network requirements and individual DNO business policy



Update

Progress to date

Tranche 1 Deliverables



Agreed Metering granularity

The Technical Working Group (TWG) have drafted wording for Service Terms for the standard flexibility agreement.

Regularity of payments

The TWG have agreed the regularity of payments.

Over and Non-delivery

DNO's have agreed there will be no additional payment for over delivery and no payment for non-delivery.

Metering Data Requested

The TWG have recommendations for a API parameters and CSV templates.

Metering Accuracy Standards

The TWG have identified the appropriate metering accuracy and additional standards. Wording has been drafted and a new section added to the Standard Flexibility Agreement

Site meter location

Agreement on boundary and asset metering locations.

Our current work

Tranche 2 Deliverables



How performance/delivery is calculated

Under delivery penalties and incentives

The TWG set out to agree how performance/delivery is calculated. The original intention was to deliver a common agreed set of equations. The TWG now have the ambition to create a set of equations within a common document, supported with simple language and complimented with a worksheet. With these three tools FSPs will be able to follow our calculations in a clear and transparent manner.

The ambition is to create a single set of equations that can be applied to Availability and Utilisation which is universal to all Flexibility Products.

Where we are:

We have agreed a common set of principles/methodologies.
We have created the spreadsheet and agreed 90% of the equations and how they are applied.
We have started to draft the word document.
Target completion date is mid-March.

Next steps:

Agreement from all DNO representatives on calculations and finalising word and equations
Focus group session with stakeholders
Discussion with platform providers on timescales for implementation

Guiding principles

- **All DNO's to adopt the same performance calculations;**
- **Standardised performance calculations for Availability and Utilisation;**
- **Both Availability and Utilisation calculations to be universal across all Service Types;**
- **Where possible, calculations should be kept simple.**

Availability & Utilisation Methodology

Availability

- The Availability payment is the sum of every period where availability has been scheduled;
- Each settlement period is calculated by the Availability Agreed, multiplied by settlement period, multiplied by the Availability Fee;
- Availability is only paid if the service provider was Available.

Utilisation

- The Utilisation payment is the sum of every period where Utilisation has been instructed and delivered;
- Utilisation is capped (no additional payment for delivery above the instructed utilisation);
- There is no payment if the services is below a threshold (non-delivery);
- A multiplication performance factor is applied to under delivery (service delivery is between non-delivery threshold and the Utilisation Instruction value).

Monthly Reconciliation

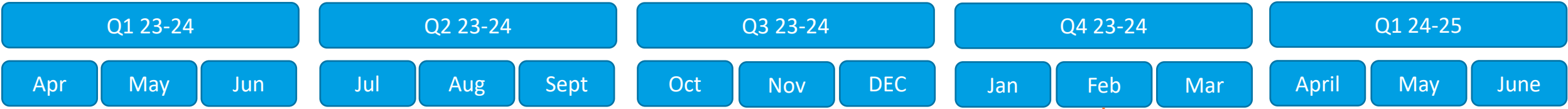
- Availability payments will be subject to an additional performance factor based on Utilisation Delivery. In principle, If a service provider is instructed to provide a service, and they fail to do so, the Availability Payment should be reduced.

Future work

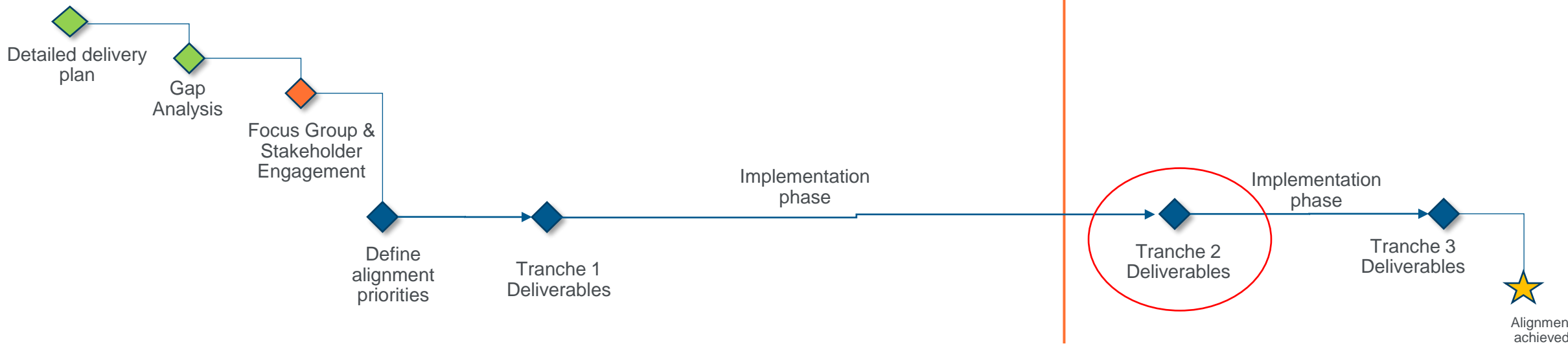
Tranche 3 Deliverables 

| | |
|--|---|
| E-2-E process timescales | The TWG have progressed with mapping out E-2-E timeframe for the different settlement approaches. From when metering data is submitted to final payment |
| Settlement – Invoice/Statement - API/CSV | This item is yet to be started. |
| Standardised Performance Information | DNOs are set to review current practices |
| When metering data is obtained and baselining is applied | This item is being delivered in the E-2-E process |

Settlement Process Milestones



Settlement Process



Challenge Group feedback

Are the deliverables still aligned to industry priorities?

Are there any new deliverables we should consider ahead of tranche 3?

Are there any challenges we should consider going into implementation?

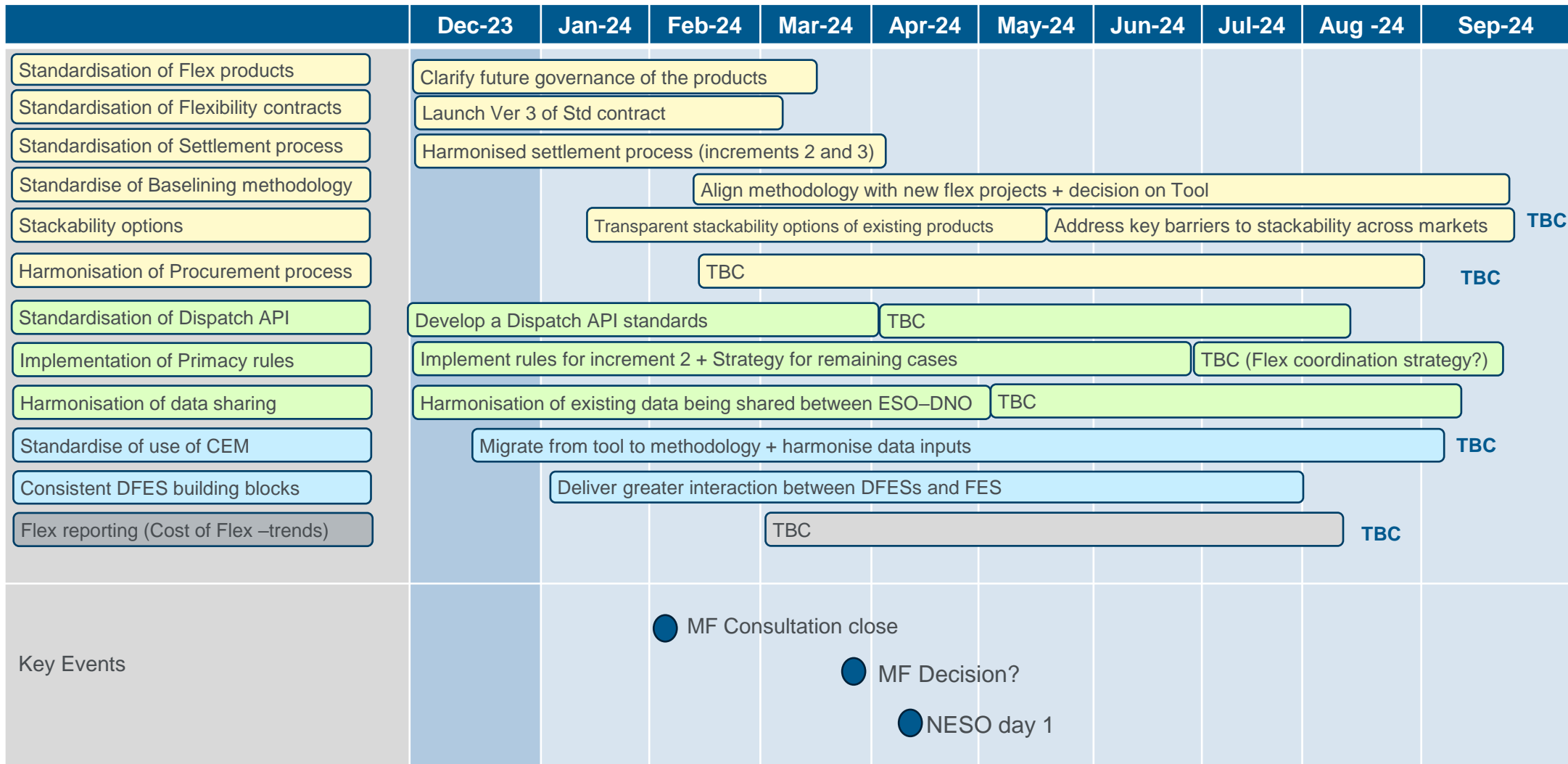
For performance calculations, are the guiding principles sufficient?

Are we delivering at a sufficient pace?

Open Networks 2024

Avi Aithal (Head of Open Networks, ENA)

Open Networks delivery timeline



Other activities and discontinued working groups

| | Work area | Status | Expected end date |
|---|----------------------------------|--|-------------------|
| 1 | ENA ER document repository | Repository backend update ongoing | Feb 2024 |
| 2 | ENA FSP sector webpage | Design initiated + resource plan ready | Apr 2024 |
| 3 | Flex event | Exploring partnering with Power Responsive | TBC |
| 4 | Future output governance options | Ongoing | Mar 2024 |

Discontinued working groups

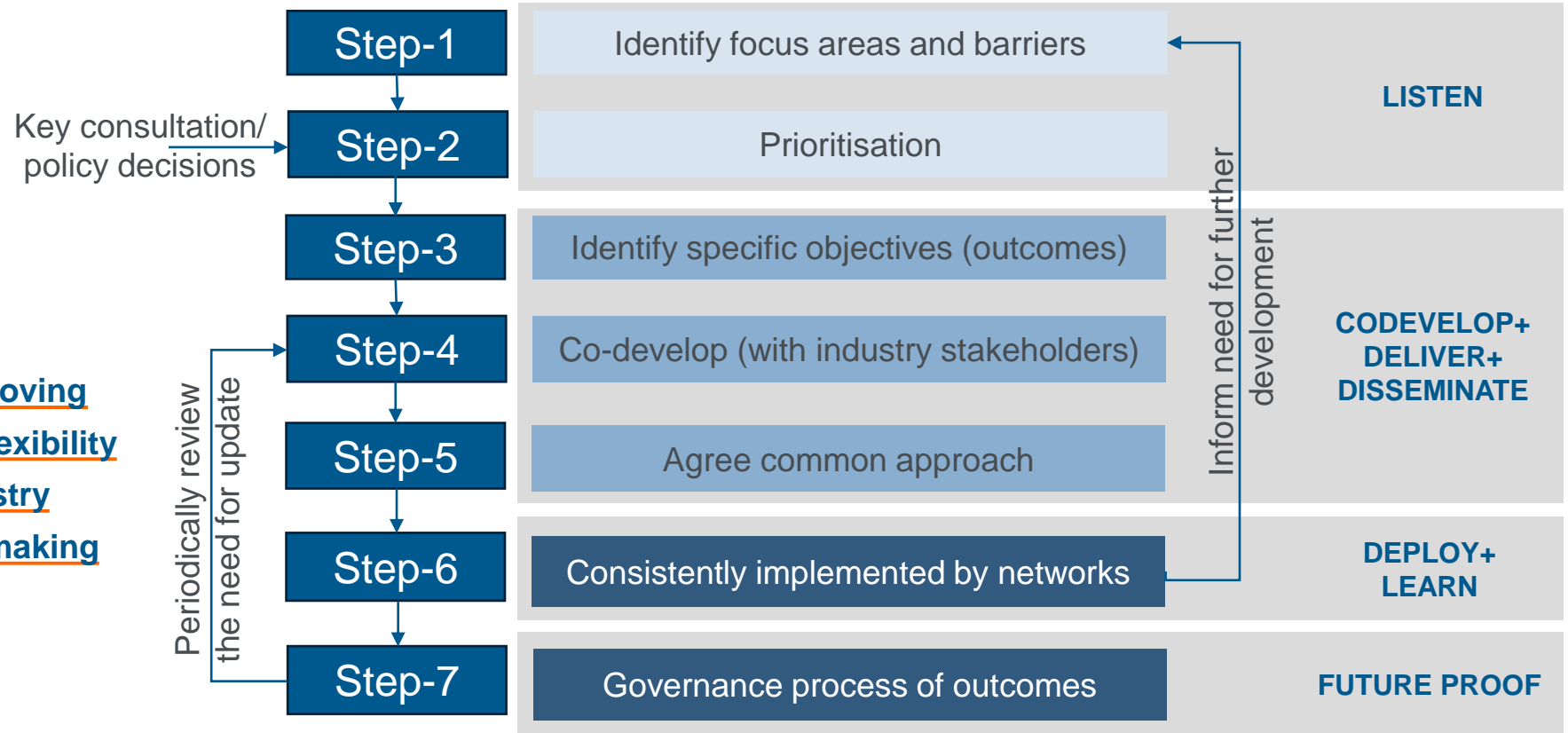
| | Work area | Status | End date |
|---|---|--|----------|
| 1 | Standardisation of Pre-qualification | Concluded | Jan 2024 |
| 2 | Consistent Network development plans | Concluded | Dec 2023 |
| 3 | Consistent Network co-ordination activities | Concluded | Dec 2023 |
| 4 | Consistent Carbon Reporting | Concluded | Dec 2023 |
| 5 | ANM reporting | Concluded | Jan 2024 |
| 6 | Consistent Flex Reporting | Updated C31E template + Discontinued after | Jan 2024 |
| 7 | Harmonise DER visibility Information | Concluded after raising modification | Jan 2024 |

List of working groups for 2024

| | Work area | Main Outputs | Expected end date |
|----|--|--|-------------------|
| 1 | Standardisation of Flex products | Clarify future governance of the products | Apr-24 |
| 2 | Standardisation of Flexibility contracts | Launch Ver 3 of Std contract | Apr-24 |
| 3 | Standardisation of Settlement process | Harmonised settlement process (increments 2 and 3) | Apr-24 |
| 7 | Standardise of Baselining methodology | Align methodology with new flex projects + decision on Tool | Sep-24 |
| 9 | Transparent stackability options | Transparent stackability options of existing products + | TBC |
| 4 | Standardisation of Dispatch API | Develop a Dispatch API standards | TBC |
| 5 | Implementation of Primacy rules | Implement rules for increment 2 + Strategy for remaining cases | Aug-24 |
| 6 | Harmonisation of data sharing | Harmonisation of existing data being shared between ESO–DNO | Apr 2024** |
| 8 | Standardise of use of CEM | Migrate from tool to methodology + harmonise data inputs | Sep-24 |
| 10 | Consistent DFES building blocks | Deliver greater interaction between DFESs and FES | TBC |
| 11 | Harmonisation of Procurement process | TBC | TBC |
| 12 | Flex reporting (Cost of Flex –trends) | TBC | TBC |

Open Networks- Our delivery approach

Open Networks is focused on removing barriers to participating in the flexibility markets and bringing wider industry stakeholders into the decision-making process.



Market Facilitator

DNOs and the FSO (as flexibility procurers) will be required to adopt the rules, processes, and standards specified by the Market Facilitator.

Potential activities of the Market Facilitation role:

Strategic leadership

- Market coordination delivery plan
- Monitor developments and identify challenges, opportunities and risks
- Identify changes to Market Facilitator's functions
- Provide advice to government and Ofgem

Market coordination

- Propose and manage changes to the processes, rules, and standards
- Develop and publish delivery plan and implementation timetable

- Stakeholder engagement
- market and technical research, analysis or modelling
- Decision-making on processes, rules, and standards

Implementation monitoring

- Monitor implementation of agreed processes, rules or standards
- Report implementation issues to Ofgem required.
- Assess how the new processes, rules and standards work in practice

Market Facilitation and Open Networks

Preliminary assessment of ON deliverables which are likely to fall within the market facilitator’s remit.

| ON Deliverable | Market Facilitation Role (TBC) |
|---|--|
| <ul style="list-style-type: none"> • Primacy rules for service conflicts • Standardisation of pre-qualification • Standardisation of flexibility products report • Baselining tool methodology • Dispatch systems interoperability • Settlement process for flexibility services report • Common contract (v3) for flexibility services • Stackability • Harmonisation of operational data sharing ESO –DNO? | <p>Market coordination (propose and manage changes to the processes, rules, and standards)</p> |
| <ul style="list-style-type: none"> • DER visibility recommendation • ESO-DSO data sharing • Flex figures • Common evaluation methodology/tool? | <p>Implementation monitoring (Assess how the new processes, rules and standards work in practice).</p> |

Market Facilitation and Open Networks

Preliminary assessment of ON deliverables which are likely to fall within the market facilitator’s remit.

| ON Deliverable | Market Facilitation Role (TBC) |
|---|--------------------------------|
| <ul style="list-style-type: none"> • Common evaluation methodology/tool • Carbon reporting methodology • Network Development Plans • Whole systems CBA • Harmonisation of operational data sharing ESO –DNO? | Not Market Facilitation Roles |
| ON Deliverable | Market Facilitation Role (TBC) |
| <ul style="list-style-type: none"> • Challenge group and focus groups -monitor developments and identify challenges, opportunities and risks • Provide advice to government and Ofgem | Strategic leadership |

AOB

Useful Links

ON 2023 launch
document

2023 Detailed
work plan

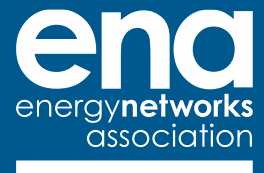
2023 Strategic
Roadmap for
Flexibility

Stakeholder
events

We welcome feedback and your input

Opennetworks@energynetworks.org

Click [here](#) to join our mailing list



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The voice of the networks