Primacy Rules

Rules for ESO/DNO Coordination

Open Networks| Primacy Rules for service conflicts

March 2023 | Version 1.0

DOCUMENT CONTROL

Authorities

Version	Issue Date	Authorisation	Comments
1	15/02/2023	Open Networks Steering group	Final draft for approval

Related documents

Reference 1	Use Case Prioritisation Framework
Reference 2	

Change history

Version	Description
1.0	First Rule set for publication

Distribution

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Introduction

About ENA

Energy Networks Association represents the companies which operate the electricity wires, gas pipes and energy system in the UK and Ireland.

We help our members meet the challenge of delivering electricity and gas to communities across the UK and Ireland safely, sustainably and reliably.

Our members include every major electricity and gas network operator in the UK and Ireland, independent operators, National Grid ESO which operates the electricity system in Great Britain and National Grid which operates the gas system in Great Britain. Our affiliate membership also includes companies with an interest in energy, including Heathrow Airport and Network Rail.

We help our members to:

- Create smart grids, ensuring our networks are prepared for more renewable generation than ever before, decentralised sources of energy, more electric vehicles and heat pumps. Learn more about our Open Networks programme.
- Create the world's first zero-carbon gas grid, by speeding up the switch from natural gas to hydrogen. Learn more about our Gas Goes Green programme.
- Innovate. We're supporting over £450m of innovation investment to support customers, connections and more.
- Be safe. We bring our industry together to improve safety and reduce workforce and public injury.
- Manage our networks. We support our members manage, create and maintain a vast array of electricity codes, standards and regulations which supports the day-to-day operation of our energy networks.

Together, the energy networks are keeping your energy flowing, supporting our economy through jobs and investment and preparing for a net zero future.

About Open Networks

Britain's energy landscape is changing, and new smart technologies are changing the way we interact with the energy system. Our Open Networks programme is transforming the way our energy networks operate. New smart technologies are challenging the traditional way we generate, consume and manage electricity, and the energy networks are making sure that these changes benefit everyone.

ENA's Open Networks programme is key to enabling the delivery of Net Zero by:

- opening local flexibility markets to demand response, renewable energy and new low-carbon technology and removing barriers to participation
- opening data to allow these flexible resources to identify the best locations to invest
- delivering efficiencies between the network companies to plan and operate secure efficient networks

We're helping transition to a smart, flexible system that connects large-scale energy generation right down to the solar panels and electric vehicles installed in homes, businesses and communities right across the country. This is often referred to as the smart grid.

The Open Networks programme has brought together the nine electricity grid operators in the UK and Ireland to work together to standardise customer experiences and align processes to make connecting to the networks as easy as possible and bring record amounts of renewable distributed energy resources, like wind and solar panels, to the local electricity grid.

The pace of change Open Networks is delivering is unprecedented in the industry, and to make sure the transformation of the networks becomes a reality, we have created three workstreams under Open Networks to progress the delivery of the smart grid.

2023 Open Networks programme Workstreams

- Network Operation
- Market Development
- Planning and Network Development

Our members and associates

Membership of Energy Networks Association is open to all owners and operators of energy networks in the UK.

- Companies which operate smaller networks or are licence holders in the islands around the UK and Ireland can be associates of ENA too. This gives them access to the expertise and knowledge available through ENA.
- Companies and organisations with an interest in the UK transmission and distribution market are now able to directly benefit from the work of ENA through associate status.

ENA members

BUUK infrastructure
Cadent Your Gas Network
electricity north west Bringing energy to your door
ESB NETWORKS
nationalgrid
ESO
Northern Gas Networks
Northern Ireland Electricity Networks
NORTHERN POWERGRID
Scottish & Southern Electricity Networks
SGN Your gas. Our network.
SP ENERGY NETWORKS
UK Power Networks Delivering your electricity
WALES&WEST UTILITIES

ENA associates

- Chubu
- EEA
- Guernsey Electricity Ltd
- Heathrow Airport
- Jersey Electricity
- Manx Electricity Authority
- Network Rail
- TEPCO

Executive Summary

The energy industry faces significant change as we transition to Net Zero. To that end the Open Networks Programme has been charged with leading a number of developments needed to ensure that the system continues to work for consumers but moreover that the benefits of a flexible energy system are available to all.

This document details the rules applicable to instances of agreed Primacy. This means the agreed rules for the mitigation of technical conflict between Electricity System Operator (ESO) and Distribution Network Operator (DNO) actions. For example, the DNO may procure services to increase generation in an area, whilst the ESO might procure services for the opposite from a nearby generator. Due to the nature of Primacy, whilst it aims to deliver the best whole system outcome, it is inevitable that in some cases individual industry participants may incur some financial impact, wherever practical these will be minimised but cannot be wholly eliminated.

Primacy rules will be developed incrementally to cover the many different cases of conflict. They will also evolve as more sophisticated processes and data exchanges are deployed both of which are key to developing the appropriate primacy rules.

These initial rules are the first step, it is anticipated that they will be updated and refined over time. Then once the rules reach a level where they can be more confidently used, they will form the basis of enduring "industry rules"; which will ultimately be incorporated into industry codes and governance.

The following rules have so far been agreed:

Use Case	**Primacy Rules**	
	DNO has Primacy	
	a. Information Sharing ahead of time	b. Closer to real time information sharing
Voltage Management, Thermal Constraint & System Inertia Instructions in the Balancing Mechanism and DNO Active Power Flexibility Services except Restore[1] on different assets	✔ A weekly unavailability report is shared by the DNO to the ESO. To be implemented by ENWL, NGED, NPG, SPEN & SSEN	In development with UKPN
ESO Transmission Constraint Management (GTD) Service and DNO Active Power Flexibility Services (GTU/DTD) except Restore on different assets	✔ A weekly unavailability report is shared by the DNO to the ESO. To be implemented by NGED due to the current limited deployment of TCM.	In development with UKPN

[1] Restore- a product defined within existing flexibility procurement services that DNO's can use.

All reporting is prefaced by reporting to DNO's from information provided to them by ESO. In addition the Working Group are making use of other external projects such as RDPs to help develop and test processes as required.

The Primacy Technical working group is developing new rules and use cases incrementally. Use cases being considered include the potential conflict between DNO ANM systems and ESO reserve products such as STOR.

Introduction to Primacy

What is Primacy?

The ESO and DNOs manage the respective transmission and distribution networks in accordance with applicable standards and licence conditions. Each organisation may require one or more services for this purpose. Conflicts between one or more of these services may lead to inefficiencies within the whole electricity system. This will in all likelihood increase given the rising procurement of services and limited coordination to date. Hence, in order to manage this potential service conflict and to enable networks to be optimised efficiently and transparently, there is a need to develop a set of clear principles and "primacy" rules. These will enable procurement, planning, scheduling and dispatch of services to be influenced by whole system value. Ensuring that the division between market/price-driven actions and the electricity system hierarchy of operational needs is clear and transparent.

These rules will look to balance: the local networks' technical requirements; the risks to the overall operability of the whole system; the value for Service Providers through the facilitation of market / price driven actions; the needs of emerging market-based platform developers; and ultimately the overall cost impact on end consumers.

It should be noted that Primacy generally focusses on the conflict between different assets within the same electrical network. How participants can manage participation in multiple services at the same time is generally driven by Stackability rules.

Primacy Principles

To develop robust rules that return clear value to consumers, there is a need for Primacy Principles. These will help guide the development of subsequent rules and ensure they deliver the right outcomes.

As viewed within this working group, Principles are the key elements used to assess the adequacy of the rules. They sit above the rule and help guide them. These are prioritised outcomes that, the rules must deliver.

The following principles were selected:

Each Primacy Rule must (in priority order)
Deliver the least Whole Electricity System cost to consumers
Facilitate Fair, Accessible and Efficient Markets
Be clear, transparent, consistent, inclusive and deliverable

Underpinning these principles there is a requirement to ensure the ESO and DNOs can continue to (in priority order):

- efficiently manage national system balance and overall operability
- ensure Transmission Network Security, and
- ensure Distribution Network Security.

This should continue to align with the latest industry standards as they evolve and continue to fairly treat asset and non-asset solutions.

The priority of these Principles will be reviewed throughout the primacy work and the development of the Use Cases. Any updates will be covered as part of the development of the governance documentation/process.

Approach to Primacy Rules Development

Due to the wide nature of potential service conflicts, the primacy working group will take an iterative approach to formation and then the subsequent implementation of Primacy Rules based on the common set of principles. We will prioritise the potential use cases, select a number to take forward, develop, test and roll out the rules, and then repeat the process. With each iteration we expect to increase our understanding of conflict management and the rules that can be associated with it.

The approach taken to prioritisation of Use Cases can be found in our Use Case Prioritisation Framework. We will continue to re-prioritise Use Cases and take them forward as the product primacy working group develops.

As new or additional services are developed the Primacy Rules Governance and development processes will be refined and updated accordingly as the group is conscious of the need to respond to market conditions. This will include instances of new ESO services, DNO services and new assets – as these emerge the new and existing rules will be refined as required and the processes updated accordingly to ensure that there is a consistent and transparent approach to primacy.

It should also be noted that the Rules, Data Exchanges and Supporting Processes for existing Use Cases will be refined as more Licensees' migrate to implementation. This is to ensure that the process remains appropriate, scalable and efficient. We will consider, and add automation wherever practicable to do so, aiming wherever possible to align with existing industry data processes and standard. This deliberately iterative process has been chosen to allow us to gain better understanding of how the rules and processes work, and feed in learning ahead of larger scale system changes.

Governance

Approach to governance

As we develop the primacy rules we need a method for governing them. This needs to allow:

- Clarity on the primacy rules & processes so that industry participants understand their obligations and the associated impacts
- Transparency in the way they get implemented and then updated
- Consistency across GB. Fairness for all DERs and Service Providers
- Agility, as the rules will inevitably need to develop and expand, this governance document will include more use cases and enhanced processes.

In time it may be necessary to move them to other industry documents perhaps in the form of an Engineering recommendation. This will be decided and consulted on with industry stakeholders in due course.

New Primacy Rules and Use Cases

These Primacy Rules have been developed by the working group. They will be developed over time in line with the evolution of flexibility markets and the requirements of ESO and DNO's in respect of maintaining system integrity. They will continue to be socialised with industry and feedback taken on board as the rules develop.

It should also be noted that we see a distinction between:

The Primacy Rules: a clear decision on who gets primacy and when data is exchanged to support this

The Data Exchange: a clear view on how and when the data is exchanged, including common data formats.

Any Supporting Processes: how the data to be exchanged is collated by one party, and then processed by the other.

The Primacy Rules and the Data Exchanges sit within the direct remit of the primacy working group and will be common across licensees. Whilst directly related, the supporting processes are the responsibility of the individual licensee. These will not be common initially; however, we do see value in aligning as we move forwards.

Over time we expect these to evolve, as the Supporting Processes and systems develop to allow for enhanced data sharing closer to real time. This will require automation and the use of industry dataflows as appropriate.

For the first iteration, the project team has agreed the following actions need to be complete ahead of the Approval process:

Action	Target End State
Definition of the Rule. Include alignment with the primacy principles	Final Rules detailed in this document

Definition of associated Data Exchanges- Includes confirmation that data is available and can be shared	Final Data Exchanges detailed in this document
Definition of supporting processes (for DNO, ESO & DER/FSPs)	High Level definition of Supporting Processes described in this document.
Dissemination of the rule with industry	Relevant stakeholders aware of change.
Identification and completion of code changes to support the rule	Relevant changes identified and made
Identification and completion of changes to connection agreements and/or service terms to support rule	Relevant changes identified and made

Once developed and tested, the technical working group will submit evidence of the above process to the Open Networks Steering group for approval. Any relevant industry approvals will be identified as part of that evidence gathering (for example if any code modifications are needed).

Once approved, rules can proceed to implementation across the DNOs where a risk of conflict is identified. Depending on the nature of the rules and the supporting processes the duration of this implementation phase will vary. Clear success criteria will be laid out as part of the approval process to ensure that there are clear expectations around implementation.

The rules developed are tied to specific Use Cases of conflict. The addition of more Use Cases to be managed by the same Rules, Data Exchanges and Supporting Processes will require an additional round of approval

Ongoing Review of rules

The product team will refine and adapt the rules as more Use Cases are defined. This will of course also include the review of existing rules as the market for flexibility services matures, which may create opportunities to improve the overall Primacy rule set; moreover this should include industry feedback as part of Stakeholder Engagement.

Engagement with Stakeholders

Standard procedures apply for those wishing to get involved in the process. The Product Team will regularly update the industry on rules as they are designed and these will be consulted upon, with and feedback incorporated where considered appropriate. Stakeholders are welcome to join the Focus Group and provide feedback accordingly and the Product Team are available should stakeholders wish to discuss any aspect of the findings of the Group. More information on how to get involved can be found on the ENA Open Networks website.

More information on specific stakeholder engagement has been included in the appendices pertaining to each use case.

Evolution of governance

We acknowledge that the governance for Primacy Rules will need to evolve over time. As the rules develop and mature, then our focus on agility will lessen, with greater focus on the other core requirements for clarity, transparency and consistency.

We will continue to monitor how we govern the Rules and will conduct yearly reviews on whether the governance needs to change. This could be supported by an ENA engineering recommendation detailing the rules. This will also include keeping abreast of legislation and other impacting governance including safety standard changes.

Impact of Primacy on investment decisions

The Primacy rules focus on the management of operational conflicts. The working group will work with other Workstreams and Products within the ENA ON to understand how to take these forward through an integrated approach. In each example of conflict there will be a level of conflict at which it is more efficient to invest to reduce or remove the conflict rather than manage it actively. The working group is developing a process to help understand and quantify this threshold and build a process to feed it into investment decision to ensure the best outcome is provided to the end consumer

Approved Primacy Rules in Operation

Use cases

As covered earlier, the product team have had to prioritise the Use Cases considered to deliver in an iterative process.

The Use Cases that have been approved to date are highlighted in the table below.

Use Case	Approved	To be implemented by
Voltage Management, Thermal Constraint & System Inertia Instructions in the Balancing Mechanism and DNO Active Power Flexibility Services except Restore for different assets	March 2023	SSEN (Dec 23), SPEN (Dec 23) and UKPN (September 23). Implementation at these dates will not include aggregated BMUs as detailed in Appendix 1- Aggregated BMU is not provided to ESO and so additional assessments are required in order to ensure that the Use Case can be implemented in those areas where Aggregated BMU's are more prevalent. NGED, NPG & ENWL forecast no conflict in the near term. Rules will be implemented once conflict is forecast.
ESO Transmission Constraint Management (GTD) Service and DNO Active Power Flexibility Services (GTU/DTD) except Restore for different assets	March 2023	TCM forecast to roll out in NGED and UKPN in mid/late 2023. NGED forecast no conflict in the near term. Rules will be implemented once conflict is forecast. UPKN will implement in line with TCM roll out. TCM not currently in development with ENWL, NPG, SPEN & SSEN

Rules in place

For each use case there are a number of options for Primacy Rules. These tend to fall into 3 broad categories:

DNO Primacy: where the DNO service takes priority, and the ESO must take mitigating actions

ESO Primacy: where the ESO service takes priority, and the DNO must take mitigating actions

Joint Primacy: where the priority is considered based on more dynamic assessment of value.

Within each option there are a number of variants depending on the specific services considered as well as the timing information sharing.

When developing the rules, we have had to take a pragmatic view on which rules to implement when. These needed to balance the efficiency of the rules and surrounding processes against their deliverability.

The latest Rules and data exchanges are highlighted below

Use Case	DNO Primacy Rules	
	a. Information Sharing ahead of time	b. Closer to real time information sharing
Voltage Management, Thermal Constraint & System Inertia Instructions in the Balancing Mechanism and DNO Active Power Flexibility Services except Restore	✔ A weekly unavailability report is shared by the DNO to the ESO. To be implemented by all DNOs.	In development with UKPN
ESO Transmission Constraint Management (GTD) Service and DNO Active Power Flexibility Services (GTU/DTD) except Restore	✔ A weekly unavailability report is shared by the DNO to the ESO. To be implemented by NGED.	In development with UKPN

Supporting the ongoing Data Exchanges, data mapping is needed to ensure that all relevant data is exchanged.

The full details of each use case are in the appendices.

Next Steps

We will continue to develop the rules to incorporate more use cases and evolve the data exchanges to make the existing rules more efficient. These will be added to this report as they are developed.

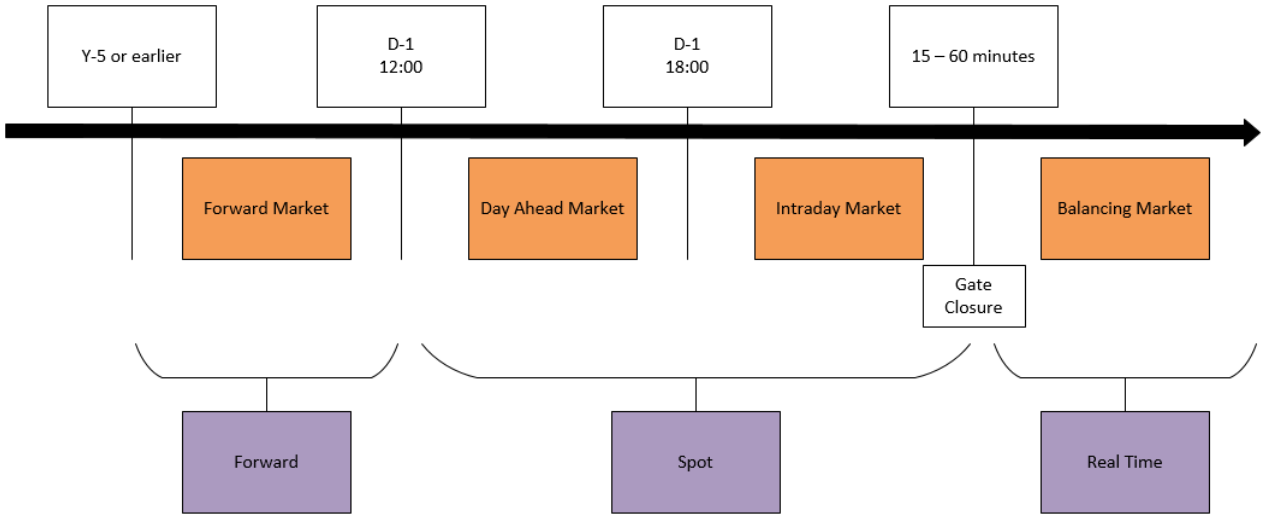
Appendix 1: Use Case details

Use Case 1: Voltage Management, Thermal Constraint & System Inertia Instructions in the Balancing Mechanism and DNO Active Power Flexibility Services except Restore for different assets

Overview of use case

The core role of NGESO is to operate the GB electricity network to ensure that supply and demand are continually balanced, and that power is able to flow across the network reliably and safely.

In order to deliver the core elements of the ESO's role, there is a reliance on service providers to help balance the overall system and ensure specific operability challenges can be resolved. While Forward Markets resolve energy requirement in advance and to a half-hourly resolution, the Balancing Mechanism (BM) enables the ESO to balance the system in real time on a minute-by-minute basis – an illustration of current market timeframes is provided in Figure 1*:



[2]

Figure 1 – Illustration of Market timescales

The Balancing Mechanism is therefore used by NGESO to balance electricity supply and demand close to real-time. This is similar to market arrangements in other countries where comparable mechanisms are used to balance the system post gate closure.

The key operating parameters and requirements for Balancing Mechanism participants are highlighted across several industry codes, including the Balancing and Settlement Code (BSC) and the Grid Code (GC). These codes define the information and data that should be submitted to NGESO, across various timescales, to declare the Balancing Mechanism Unit's market position and its ability to deviate from this, following an

[2] Illustration of BM Market Timescales

instruction from NGESO. The operation of the BM is heavily reliant on the flow of defined data between NGESO and market participants and vice versa, with much of this data being exchanged close to real-time.

As part of the key information supplied through the BM, Balancing Mechanism Units (BMUs) are required to submit Final Physical Notifications (FPNs) ahead of gate closure – this indicates the final position of each BMU's output for each half hour period. In addition, the BMU must also submit further information that enables the ESO to instruct a unit to deviate from its FPN for the reasons noted below.

Within the BM, there are a number of reasons why NGESO may need to alter the output of a BMU – these can broadly be split into 'System' and 'Energy' actions. The former seeks to instruct units to manage specific system needs (e.g., maintaining transmission network flows within pre-defined constraint limits) and the latter would issue an instruction to alter the active power output of a BMU to maintain overall energy balance.

NGESO generally carries out the role of 'residual energy balancer' for the GB market, with the vast majority of overall energy requirements being met by market activity ahead of real-time. Changes in the outturn of actual national demand, plant failure and weather-related events are some of the reasons why NGESO may need to intervene and re-balance the system.

NGESO publishes regular information (in addition to the close-to-real-time data, published by Elexon) in the form of our Monthly Balancing Services Statement. This information covers some of the broad reasons why a BM instruction may be issued to a market participant and, as can be seen from Figure 2, highlights the total volume of instructions (by reason) for any given month.

In forming an approach for introducing Primacy Rules into the BM Use Case, the working group evaluated ways in which the Use Case could be broken down into manageable pieces – this is to ensure deliverability and consistency across GB as the BM is so fundamental to overall system operation today.

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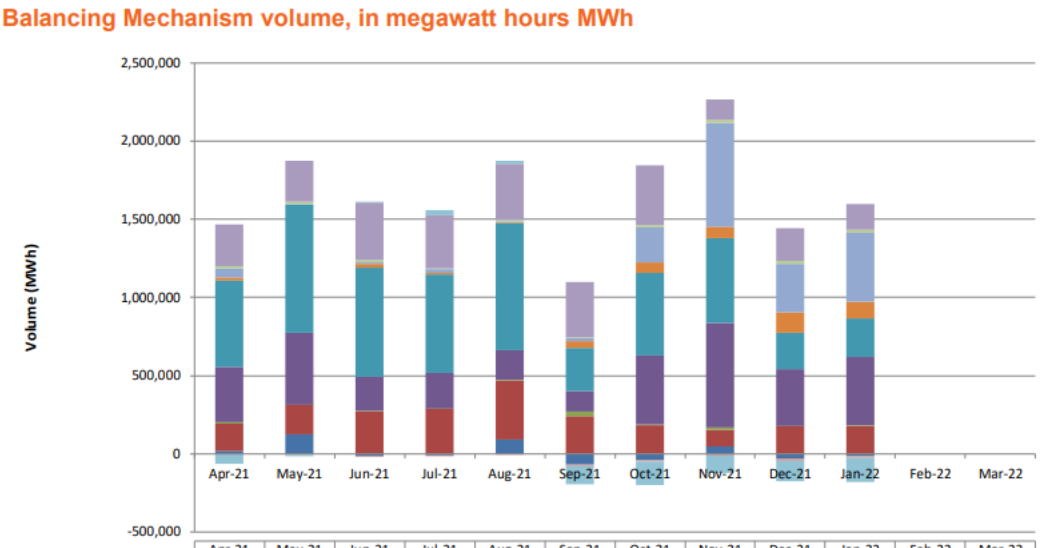


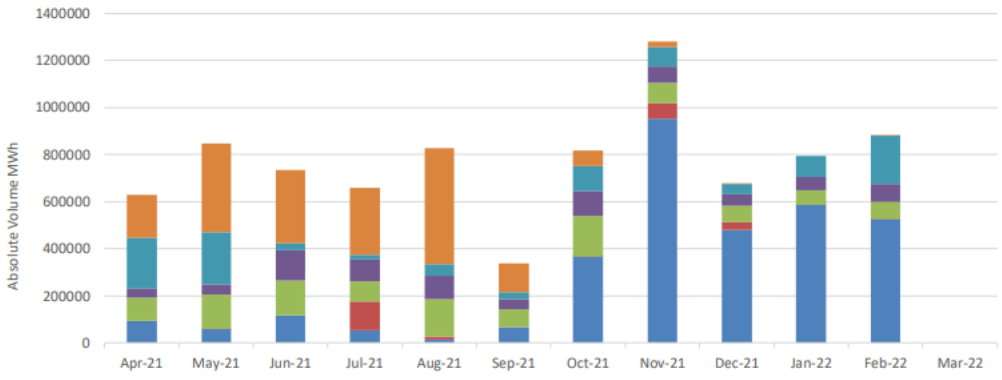
	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22
BM - Minor Components	-61,004	-11,079	3,786	33,833	18,018	-114,957	-148,607	-110,750	-130,594	-153,887	0	0
BM - Response	267,501	260,104	370,252	338,557	356,027	352,964	381,778	129,611	208,970	166,757	0	0
BM - Fast Reserve	14,346	14,212	11,800	8,436	11,145	8,451	13,224	20,975	14,976	18,039	0	0
BM - Negative Reserve	-4,227	-5,173	-2,452	-2,436	-3,865	-9,288	-13,037	-13,148	-13,215	-10,146	0	0
BM - Constraints Scotland	60,087	4,138	12,126	23,095	4,724	19,494	223,297	663,131	310,378	440,842	0	0
BM - Constraints Cheviot	19,396	0	21,379	8,041	5,478	43,788	68,452	75,729	134,599	107,130	0	0
BM - Constraints E&W	550,033	820,336	700,774	629,115	816,487	274,553	527,138	541,327	230,423	246,596	0	0
BM - Constrained Margin	355,013	462,049	219,209	228,318	189,633	130,012	442,818	669,255	363,864	434,717	0	0
BM - STOR	11,713	1,548	2,811	2,750	1,103	28,139	4,301	12,868	2,991	6,642	0	0
BM - Operating Reserve	171,008	187,909	270,403	288,031	380,875	242,540	183,536	106,722	175,355	178,181	0	0
BM - Energy balancing	19,705	123,734	-18,202	-11,565	89,447	-71,216	-39,535	48,061	-32,066	-15,293	0	0

Figure 2 - NGESO Monthly Balancing Service Statement (January 2022)

Figure 2 highlights that the bulk of instructions generally focus on the need to manage 'system' challenges, hence the working group has focused on breaking these down into sub-Use Cases relating to instructions required to manage specific system needs. With this data in mind, focussing on 'system' based instructions would allow for the higher volumes of instructions to be catered for under the initial roll-out of Primacy Rules. In addition, it will allow the DNOs and the ESO to learn from a simple implementation across some BM Use Cases; whilst seeking to deploy more sophisticated data exchange and decision making processes through future iterations.

The BM constraint costs are broken down by England and Wales, Scotland and Cheviot regions in the BM costs section of this report. ROCOF and Voltage costs are recorded in the England & Wales category.

Constraint volume, in megawatt hours (MWh)



	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22
Trades - ROCOF	181463	376846	309717	286225	489998	123174	68045	23116	270	0	524	0
BM - ROCOF	214234	219148	30278	19477	50723	29599	104677	81624	43775	89994	205040	0
Trades - Voltage	40343	44944	130194	93873	99760	42290	105737	70716	47319	53938	75692	0
BM - Voltage	98750	143742	145961	85794	160001	76380	171994	84541	71549	63076	73725	0
Trades - Transmission	0	58	0	121035	10338	0	1147	66143	33040	1130	2267	0
BM - Transmission	94725	61500	118130	53848	15869	66392	367287	954042	479878	586431	525173	0

Figure 3 - BM areas of consideration, by instruction volume

Analysing the different types of 'system' instructions in more detail – as shown in Figure 3, the working group have proposed the following areas to investigate further with regard to the deployment of Primacy Rules:

- Voltage Management
- Thermal Constraints
- System Inertia Instructions

Further work has also been carried out to highlight some of the core elements of the ESO's processes that are currently carried out, in order to ascertain where the deployment of new Primacy Rules will ultimately slot in. Given the work completed already under the TCM Use Case, it is highly likely that similar Rules could apply however, the deliverability of changes to existing BM processes and systems will need to be considered throughout the next stage of work.

Rules & processes

RULE

- The DNO flexible services hold priority over the elements of the BM Considered

- The Risk of Conflict report will be fed into the ESO's planning processes for the BM service, with the ESO rejecting BM sites where the DNO has identified a risk of conflict.

DATA EXCHANGES

To enable this rule, the following data exchanges were identified as being needed:

- This rule involves the sharing of a Risk of Conflict report between the DNO and ESO. This will be shared on a weekly basis.
- Mapping of BM Units to the DNO CMZs. As highlighted in the testing report for this use case, this mapping exercise has proven more challenging than expected (due to disparate and inconsistent data internally and across each organisation) and is carried out through a joint mapping exercise between the ESO and DNO and contains an element of engineering judgement. It also does not currently include any aggregated BM units. The location of DNO CMZs is publically available. To manage future changes to CMZs, the BM Units should be mapped to DNO network references which remain fixed whilst CMZs will change. The ESO will also need to trigger further mapping if any additional BMUs are being tested. The sharing of the Risk of Conflict report. This will be a CSV via email on Tuesday (by 5pm) each week covering the following operational week (Saturday - Friday) and will contain the fields below. This will also be published for the wider market.
    - The common DER ID
    - The start and end date and time of the unavailability
    - An unavailability reason (this specifies if the asset will be constrained or not by the DNO)
    - An unavailability cause (to allow for further use cases to be added).
    - Conflict Direction (this allows ESO to understand whether the risk would result in generation / demand turn up or turn down.

UKPN are developing more complex data exchanges as part of their RDP with the ESO to allow for more bi-directional flows of information.

SUPPORTING PROCESSES

The following supporting processes were also identified:

- The development of DNO risk of conflict forecasts, and the collation of the report. This would reflect the DNOs approach to forecasting and translate it into the identification of risk of conflict. This may initially be quite simplistic but will evolve as DNO processes mature. Enhancing the required data elements from the ESO to the DNO may be necessary to improve this forecasting.
- A process for the ESO to ingest the forecast and feed into their BM planning process.
- The data sharing processes in this use case are relatively simple. As they are not near real time, they can rely on the upload and download of data from an online portal, or the sending of CSVs via Email. There is no current privacy concern associated with the sharing of this data.

EXPLANATION

This rule has been chosen due to local nature of DNO flexibility and limited alternative options. In the event that the DNO have constraints within their own network they do not have a wide range of alternative mitigating actions they can take to resolve these constraints. However, the ESO have a much wider pool of resources they can call upon to resolve network constraints.

Alignment to Primacy Principles

Each Primacy Rule must (in priority order)	Alignment of rule
Deliver the least Whole Electricity System cost to consumers	This rule removes the conflict and removes ESO risk. The delivery of more enhanced data exchanges could lower the Whole System cost
Facilitate Fair, Accessible and Efficient Markets.	This rule removes participants when there is a clear technical need.
Be clear, transparent, consistent, inclusive and deliverable.	The rules are simple and clear. The risk of conflict report will also be published. It could be more consistent by aligning the supporting processes for development of this Risk of Conflict Report.

Changes required to industry documents

No changes were identified as required to DNO flexibility services agreements. As the DNO retains Primacy there are no impacts on its service providers.

The ESO has undertaken a review of the BSC and relevant industry codes and confirms that these current rules can be implemented without impact on existing market arrangements.

Dissemination Activities

Dissemination Activity	Date

Presented to the Primacy Focus Group	Mar & Aug 22
Draft rules published in April 2022	Apr-22
Covered in the Open Networks Consultation in 2022	Aug-22
Presented to the ADE and Energy UK	Dec-22
Open Networks Dissemination Forum	Dec-22

Approval Actions

The table below shows the approval and sign off process that the working group has followed to date, whilst some actions remain, these represent a low risk to the industry.

Action	Target End State	Evidence
Definition of the rule. Include alignment with primacy principles	Final Rules detailed in this document	Included within this Appendix
Definition of associated data processes. Includes confirmation that data is available and can be shared	Final Data Processes detailed in this document	Included within this Appendix
Definition of supporting processes (for DNO, ESO & DER/FSPs)	Final Supporting Processes detailed in this document	Included within this Appendix
Dissemination of the rule with industry	Relevant stakeholders aware of change.	Process of dissemination contained within this Appendix
Identification and completion of code changes to support the rule	Relevant changes identified and made	None required (as detailed within this Appendix)
Identification and completion of changes to connection agreements and/or service terms to support rule	Relevant changes identified and made	None required (as detailed within this Appendix)
Industry approval of rule	Open Networks Steering Group approval	Forms part of approval and dissemination of this document

Implementation Success Criteria

The following criteria are required for the implementation of the Rule, Data Exchanges, and Supporting Processes.

- The Rule, Data Exchange and Supporting Processes have been tested
- All Issues raised in testing have been mitigated

The Rule, Data Exchange and Supporting Processes are utilised where there is a potential risk of conflict. In this use case this means that the BMUs have been mapped by the relevant DNOs and the Risk of Conflict report is being shared on a weekly basis.

Outcomes of testing

Following the testing of the Data Exchanges and Supporting Processes by the ESO, ENWL and SPEN, a number of challenges were identified.

Issue Identified	Mitigation	Criticality
Limited quality and quantity of ESO data, making matching of BM Units to the DNO CMZ challenging. This is particularly acute for Aggregated BMUs	Short term: Engineering Knowledge used to map the sites. Long term: ESO to undertake Impact Assessment of work required to obtain , review any legal implications and improve the data collected on BM Units, especially for Aggregated BMUs.	Medium. The rule can proceed, however it will not apply to Aggregated BMUs initially due to the lack of provided data to the ESO.
Volume of data to be received by the ESO	Development of Data processing tool by the ESO to reduce manual data processing.	Low: The initial volumes of data are low as not all DNOs will be submitting data immediately.

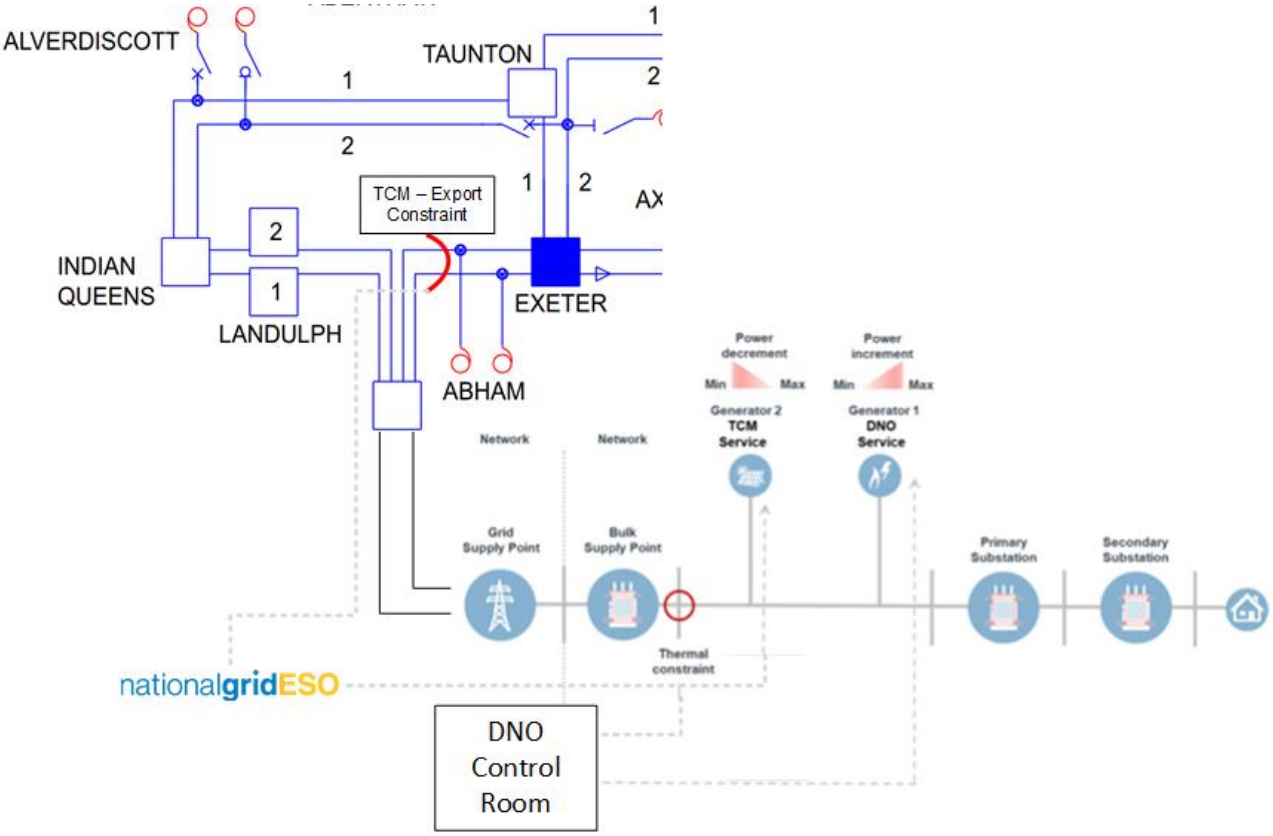
Full details can be found in the Testing Report.

Use Case 2: ESO Transmission Constraint Management (GTD) Service and DNO Active Power Flexibility Services (GTU/DTD) except Restore for different assets

Overview of use case

This Use Case involves a scenario in which the ESO is trying to reduce the export of a single/multiple generator(s) to manage a Transmission Export Constraint via its new Transmission Constraint Management Service (called MW Dispatch), at the same time, the DNO is trying to procure a Generation Turn Up (GTU)) / Demand Turn Down (DTD) service from different assets in the local area.

The MW Dispatch service is in development with NGED and UKPN. More details can be found here: [Regional Development Programmes (RDPs) | National Grid ESO]



Rules & processes

RULE

- The DNO flexible services hold priority over the ESO TCM service

- The Risk of Conflict report will be fed into the ESO's planning processes for the BM service, with the ESO rejecting BM sites where the DNO has identified a risk of conflict.

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DATA EXCHANGES

To enable this rule, the following data exchanges were identified as being needed:

- Mapping of DNO CMZs to the zones in which TCM is being procured. This is currently managed by the DNO, through the mapping of **TC**M requirements in it's BCAs with the ESO. The location of DNO CMZs is publicly available.
- The sharing of the Risk of Conflict report. This will be a CSV via email on Thursday each week covering the following operational week (Monday-Monday) and will contain the fields below. This will also be published for the wider market.
    - The common DER ID
    - The start and end time of the unavailability
    - An unavailability reason (this specifies if the asset will be constrained or not by the DNO)
    - An unavailability cause (to allow for further use cases to be added).

UKPN are developing more complex data exchanges as part of their RDP with the ESO to allow for more bi-directional flows of information.

SUPPORTING PROCESSES

The following supporting processes were also identified:

- The development of DNO risk of conflict forecasts, and the collation of the report. This would reflect the DNOs approach to forecasting and translate it into the identification of risk of conflict. This may initially be quite simplistic but will evolve as DNO processes mature. Enhancing the required data elements from the ESO to the DNO may be necessary to improve this forecasting.
- A process for the ESO to ingest the forecast and feed into their TCM planning process.

EXPLANATION

This rule has been chosen due to local nature of DNO flexibility and limited alternative options. In the event that the DNO have constraints within their own network they do not have a wide range of alternative mitigating actions they can take to resolve these constraints. However, the ESO have a much wider pool of resources they can call upon to resolve network constraints.

Alignment to Primacy Principles

Each Primacy Rule must (in priority order)	Alignment of rule
Deliver the least Whole Electricity System cost to consumers	This rule removes the conflict and removes ESO risk. The delivery of more enhanced data exchanges could lower the Whole System cost
Facilitate Fair, Accessible and Efficient Markets.	This rule removes participants when there is a clear technical need.
Be clear, transparent, consistent, inclusive and deliverable.	The rules are simple and clear. The risk of conflict report will also be published. It could be more consistent by aligning the supporting processes for development of this Risk of Conflict Report.

Changes required to industry documents

No changes were identified as required to DNO flexibility services agreements or. The service terms for MW Dispatch were developed to related codes (such as the BSC).support primacy rules.

Dissemination Activities

Dissemination Activity	Date
Presented to the Primacy Focus Group	Mar & Aug 22
Draft rules published in April 2022	Apr-22
Covered in the Open Networks Consultation in 2022	Aug-22
Presented to the ADE and Energy UK	Dec-22
Open Networks Dissemination Forum	Dec-22

Approval Actions

Action	Target End State	Evidence
Definition of the rule. Include alignment with primacy principles	Final Rules Published in ENA document	See “Overview of rules & processes” above.

Definition of associated data processes. Includes confirmation that data is available and can be shared	Final Data Processes detailed in ENA document	Included within this Appendix
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Outcomes of testing

Testing for the use case has not yet been carried out

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