



NETWORKS

# Flexibility Multiyear Plan

NATIONAL NETWORK,  
LOCAL CONNECTIONS  
PROGRAMME

DOC-230921-GYV

Updated following consultation in Q4 2021



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# Glossary

# 1 GLOSSARY

TERM	DEFINITION
AMI	Advanced Metering Infrastructure
BPD	Business Process Document
BPO	Business Process Overview
CRU	Commission for Regulation of Utilities
DER	Distributed Energy Resources
DERMS	Distributed Energy Resource Management System
DD	Detailed Design
DSO	Distribution System Operator
DSU	Demand Side Unit
DUoS	Distribution Use of System
HLD	High Level Design
HV	High Voltage
MMS	Market Management System
MV	Medium Voltage
NSAI	National Standards Authority of Ireland
PR5	Price Review 5
RESS-1	Renewable Electricity Support Scheme 1
SCADA	Supervisory Control and Data Acquisition
SEM	Single Electricity Market
TSO	Transmission System Operator

## 2

# Flexibility Multiyear Plan Overview

The core objective of the National Network, Local Connections Programme is to bring together changes in how we are generating electricity, and how we are using it, enabling all electricity customers and communities to play an active role in climate action, by using or storing renewable electricity when it is available to them locally. The Flexibility Multiyear Plan is the initial plan for rolling this out.

In Q3 and Q4 2021, we consulted on the Flexibility Multiyear Plan. This document updates the consulted document based on the feedback received. Positive and constructive stakeholder feedback was received, with 20 individual items of feedback on this document. All feedback was carefully reviewed and feedback which fell within its scope was considered in updating the Flexibility Multiyear Plan.

The key themes arising in stakeholders' feedback were

- support for the proposed pace and scale of rollout, as ambitious but necessary
- endorsement of the role of piloting, and specific individual piloting priorities
- recommendations to give time, care and consultation to market design

This updated Flexibility Multiyear Plan develops on the feedback by introduction a more adaptive approach, while maintaining the intent of the initial high level timeline. It also adapts the piloting roadmap to account for stakeholder feedback, and removes the proposed milestones for a market / regulatory process, pending CRU consideration.

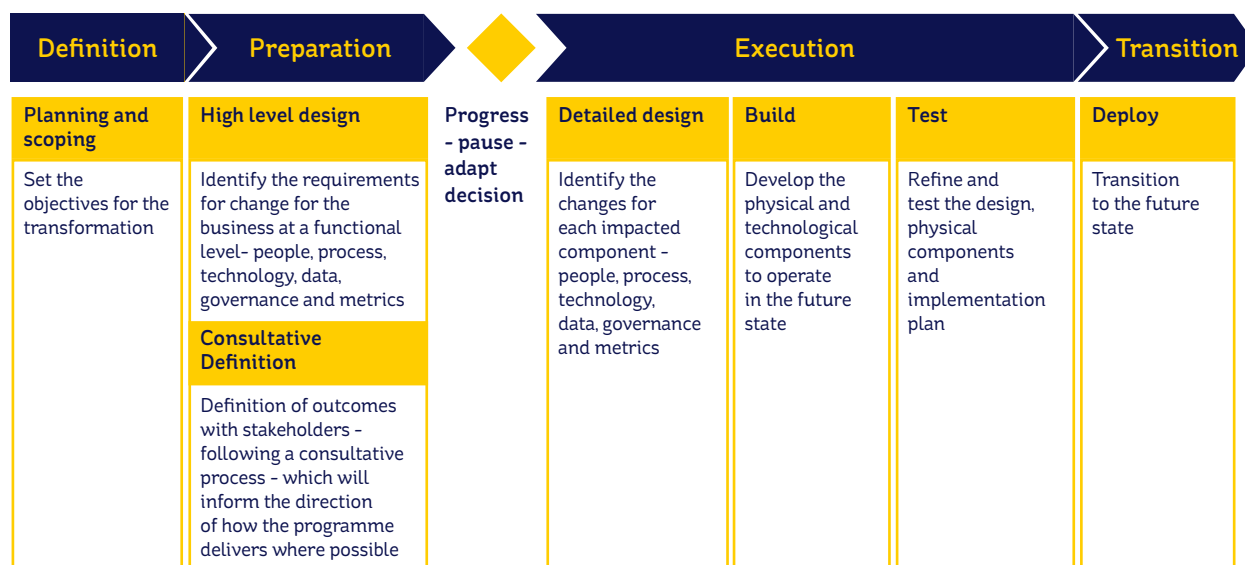
For more information on the stakeholder feedback received, ESB Networks' response to this and how this feedback has been incorporated into the National Network, Local Connections Programme delivery plans, please refer to the Consultation Core Response Paper available on the National Network, Local Connections Programme website.

## 2 FLEXIBILITY MULTIYEAR PLAN OVERVIEW

### 2.1 PROGRAMME DELIVERY APPROACH

The National Network, Local Connections Programme is using a hybrid delivery approach. This is based on ESB's Project Delivery methodology which will be applied in an agile, iterative manner through a series of pilots and releases, over the course of the programme.

The phases associated with each release are captured and described at a high level below:



Given the multi-year scope of work, this hybrid delivery approach to deliver business capabilities aligned to a number of key releases and associated pilots, allows us to take a discovery led approach. Pending the consultative definition and progress-pause-adapt decision associated with each pilot or major initiative, this discovery-led approach will see the programme demonstrating early rollout of capability, to inform the programme as it scales. Our approach to piloting is explained more in the National Network, Local Connections Piloting Roadmap Programme available [here](#).

For most initiatives within the programme, delivery phases will follow typical project delivery lifecycle phases of High Level Design (HLD), Detailed Design (DD), Build, Test and Deploy as outlined above. For example, for Pilot 1, the delivery approach will be predominantly waterfall in nature, albeit there will be a certain level of overlap between phases to cater for specific capabilities where delivery can be accelerated (e.g. where capabilities are self-contained, etc.).

Pilot 1 will also deliver an extensive HLD and DD which will be refined and refreshed during subsequent pilots/releases. Learnings from Pilot 1 will then inform the most efficient delivery approach for subsequent releases/pilots. This will be factored into overall planning at the appropriate stage.

## 2 FLEXIBILITY MULTIYEAR PLAN OVERVIEW

### 2.1 PROGRAMME DELIVERY APPROACH continued

Then, as the programme moves to Pilot 2 and beyond, the delivery approach will move increasingly towards a hybrid combination of waterfall and agile delivery approaches. For example, certain capabilities will require adaptation and extension in subsequent releases/pilots as new technological capabilities or customer needs are introduced into the programme; these updates will be delivered utilising an agile delivery approach.

### 2.2 UPDATES BASED ON PUBLIC CONSULTATION FEEDBACK

Based on the feedback received, the key actions we propose to account for these themes are:

**1 We will progress a formal proposal for the rollout of the National Network, Local Connections Programme to the CRU.**

Based on stakeholder feedback, this proposal will update proposal set out in the September 2021 publication (i.e. including Release 1 2022 – 2023, Release 2 2023 – 2024 and Release 3 2024 – 2025) with a more adaptive approach than originally proposed (as per next action).

**2 We will introduce a more adaptive approach to the programme to deliver the right pace while maintaining the ability adjust course over the life of the programme.**

Based on the feedback received, the programme will need to continuously adapt, to account for the outcomes of previous pilots, evolving customer needs, technology and industry/regulatory priorities. To achieve this:

- As each major pilot or initiative within the programme is mobilised, we will undertake a definition exercise, accounting for stakeholder, customer and industry developments;
- The definition phase will conclude with a conscious decision to “progress-pause-or-adapt” i.e. to continue with the pilot/initiative, to discontinue it (e.g. if there is no longer a need or priority attributed to it), or to adapt the objectives and approach of the pilot.

**3 We will adapt the piloting roadmap to reflect the strong stakeholder feedback received by:**

- Bringing the definition phase for the RESS 1 Early Access Pilot forward, enabling candidate project engagement in Q2 2022 pending its progress-pause-or-adapt decision, the potential for go-live from Q2/Q3 2023;
- Undertaking the definition phase for a RESS 2 Community Non-firm Access pilot, to determine the viability of a pilot to provide a number of community projects with non-firm access under N-1 conditions, pending its progress-pause-or-adapt decision potentially going live in 2023/24;
- Undertaking the definition phase for an Agile Customer/Community Pilot available to energy communities nationwide which seek to participate. Pending its progress-pause-or-adapt decision, this could involve the provision of local electricity system dashboards, and measuring the behavioural impact of different approaches to driving awareness through the dashboards.

## 2 FLEXIBILITY MULTIYEAR PLAN OVERVIEW

### 2.2 UPDATES BASED ON PUBLIC CONSULTATION FEEDBACK continued

**4** We will remove the proposed milestones for a market/regulatory process and subject to the CRU's consideration, a market consultation and approval process could be established to a timeline the CRU considers appropriate. Notwithstanding this, in our role as DSO we will:

- Undertaking the definition phase for a proof of concept of the use of a market management system, and have due regard for market issues in the definition of piloting;
- Develop and submit formal proposals relating to how the DSO will fulfil its obligations under Articles 32 (1) and 32 (2) of the Electricity Market Directive 2019/944 at a time the CRU considers appropriate.



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# What this Plan is Delivering

This Flexibility Multiyear Plan has been developed to deliver on the needs and objectives set out in the National Network, Local Connections Programme technical and policy documentation. These are available [here](#) but summaries of the documents have been captured below for reference.

## 3 WHAT THIS PLAN IS DELIVERING

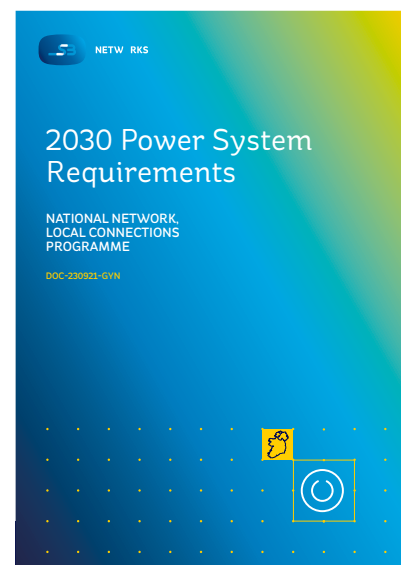
### 3.1 2030 POWER SYSTEM REQUIREMENTS

Building from the Clean Energy Package, the Climate Action Plan and ESB Networks' Strategy, the National Network, Local Connections Programme has undertaken robust multi-scenario analysis of the Irish electricity system over

the coming decade. This is being used to develop a technical strategy to address the future power system requirements (or "technical scarcities") to meet customer needs on the power system.

The 2030 Power Systems Requirements document:

- 1 Sets out the process to identify the limits on the system and its ability to provide the capacity and security to meet generation and demand needs on the system up to 2030.
- 2 Shares insights from the initial analysis, in advance of completing the full body of analysis.
- 3 Identifies how the information is being applied, including to develop the National Network, Local Connections Programme technical strategy.

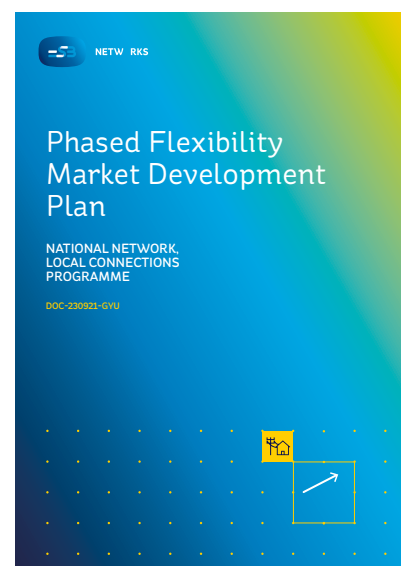


### 3.2 PHASED FLEXIBILITY MARKET DEVELOPMENT PLAN

The National Network, Local Connections Programme Phased Flexibility Market Development Plan sets out a roadmap for introducing local flexibility market arrangements on the Irish distribution system.

It includes:

- 1 The set of products to be introduced and their sequenced introduction.
- 2 The short term market framework.
- 3 Options for the medium to long term local market framework.
- 4 Options for the funding arrangements associated with different flexibility services, depending on the value driver or objective in question.
- 5 The legislative basis underpinning the introduction of flexibility services on the distribution system.



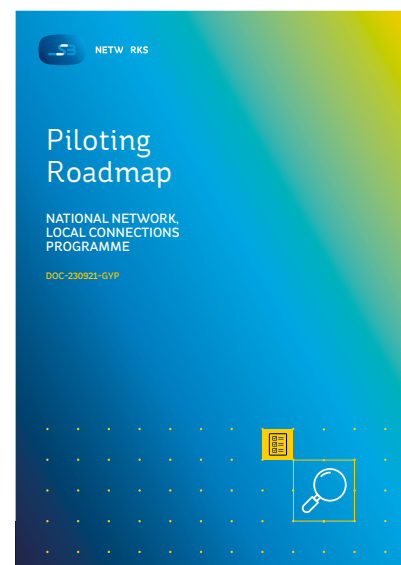
## 3 WHAT THIS PLAN IS DELIVERING

### 3.3 FLEXIBILITY PILOT ROADMAP

The National Network, Local Connections Programme Piloting Roadmap is the roadmap for piloting new flexibility services and system management approaches on the distribution system. It adopts a discovery-led approach, introducing new capabilities in live network environments. It seeks to create opportunities for customers to participate and engage with the programme over its full lifecycle.

**It includes:**

- 1 The range of objectives and criteria for each successive pilot over the period 2021 – 2024.
- 2 The timing and criteria for selecting the location of each pilot.
- 3 The learning objectives and policy context of each pilot.
- 4 The number and kinds of customer or system user who will be eligible to participate in each pilot over the life of the programme.

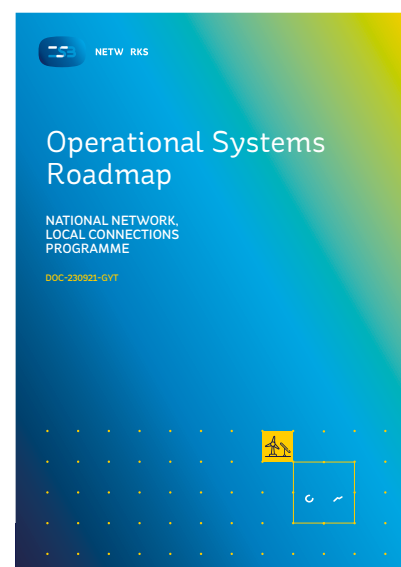


### 3.4 OPERATIONAL SYSTEMS ROADMAP

The National Network, Local Connections Programme Operational Systems Roadmap shares the outcome of a current state technology review, and the future technology roadmap for operation system upgrades and deployments. These relate in particular to Distributed Energy Resource Management System (DERMS), Distribution Management and Market Management. The paper also details the associated operational, licensing, and hardware requirements.

**It includes:**

- 1 The current state analysis and an overview of functional requirements to introduce flexibility services into distribution system management.
- 2 A technology deployment plan needed to support each successive pilot / release.
- 3 A potential long term technology deployment plan, pending the pace, scale and targets set for the National Network, Local Connections Programme.



## 3 WHAT THIS PLAN IS DELIVERING

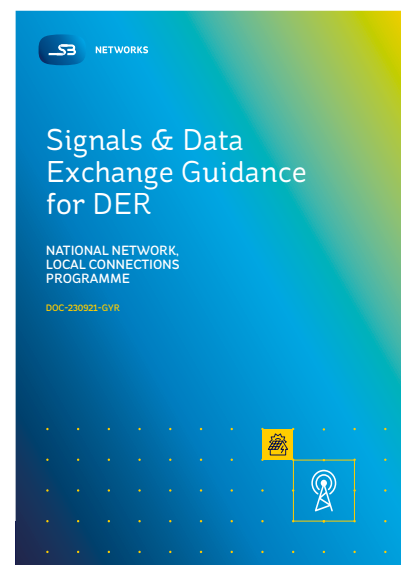
### 3.5 SIGNALS, CONTROL AND DATA EXCHANGE GUIDANCE

The National Network, Local Connections Programme Signals, Control and Data Exchange Guidance sets out clear, timely and transparent data and signalling requirements associated with new DER (Distributed Energy Resources) technologies to be able to be flexible.

This document provides one of the foundations for flexibility in Ireland – consistent technology standards and certainty for consumers and for the other organisations across the supply chain including technology wholesalers, retailers, installers and others.

**It includes:**

- 1 Standard technology requirements for microgeneration inverters, electric vehicle chargers and heat pumps.
- 2 Transparency of future signals exchange architecture for local flexibility management.
- 3 International benchmarking insights and best practice.



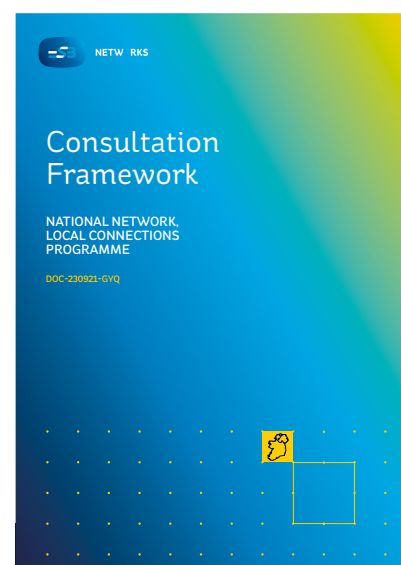
### 3.6 CONSULTATION FRAMEWORK

The National Network, Local Connections Programme Consultation Framework sets out the approach to building customer and stakeholder awareness, ownership and participation over the life of the project.

By adopting evidence-based approaches, we will ensure that clear, timely and relevant information is provided, and that our stakeholders have an opportunity to shape the programme with us.

**This document sets out:**

- 1 Our stakeholders' initial perspectives, and how we are applying these insights.
- 2 How we will engage over the life of the programme, in an insight driven way.
- 3 The role of consultation and communications in supporting piloting, continuous improvement, and making it real for customers and communities.



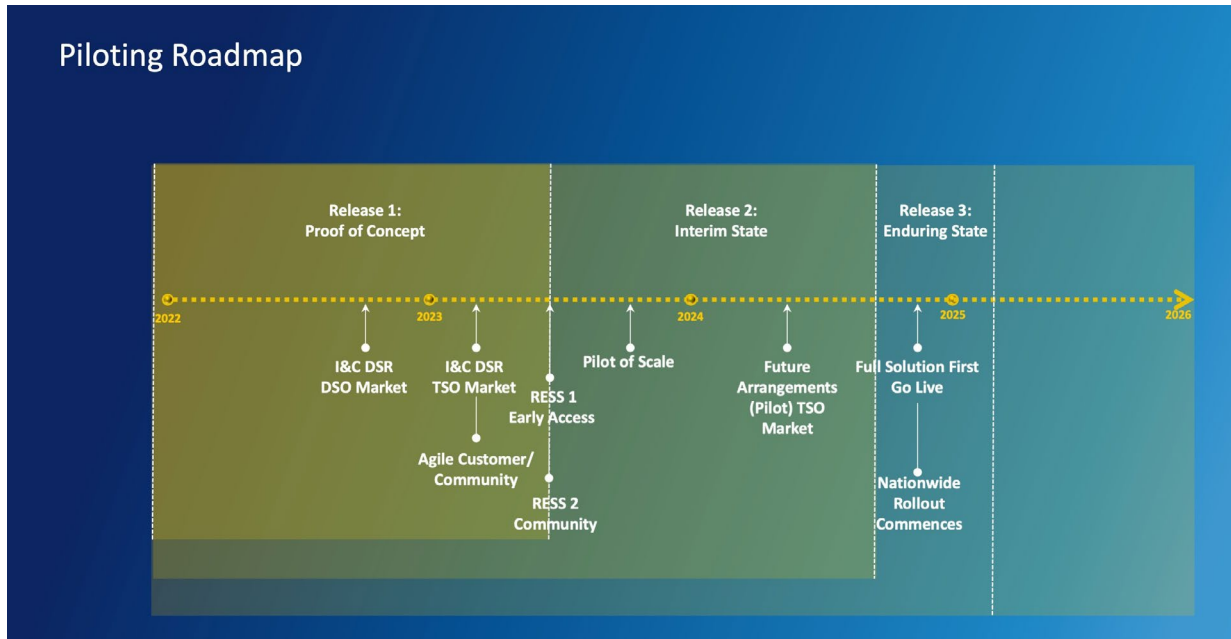
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# Programme Releases

## 4 PROGRAMME RELEASES

As described in 3.1 above, the National Network, Local Connections Programme has adopted a release-based approach to the delivery of the Flexibility Multiyear Plan.

An outline of each release is documented below.



## 4 PROGRAMME RELEASES

### 4.1 RELEASE 1

This release commences at the beginning of 2022 and will end in April 2023 pending adaptations which may be introduced through the consultative definition of the key initiatives in this release. The two proof points for us and for customers within this release are:

- 1 Pilot 1: Local/DSO Market for Demand Side Response (Industrial and Commercial Scale)**
- 2 Pilot 2: SEM/TSO Market for Demand Side Response (Industrial and Commercial Scale)**

Pending the consultative definition of these initiatives, and the associated progress-pause-adapt decisions, this release will involve the development of the following capabilities. Some of these (indicated as “core PR5” below) are required in line with the PR5 determination. Others (indicated as “ancillary” below) are ancillary developments which we are proposing should be accounted for in the definition phase of the relevant initiatives, with a view to addressing key risks and needs which we have identified during the high level design phase of the programme.

REF	CANDIDATE OUTCOMES, FOR CONSIDERATION IN CONSULTATIVE DEFINITION PHASES	PR5 OR ANCILLARY
1	Standard processes for identifying thermal or voltage scarcity associated with demand, and providing engineering definition for a service solution.	Core PR5
2	Operational safety measures relating to switching, earthing and cybersecurity with relevant processes (and/or training) updated to account for the use of flexibility services as an operational tool.	Ancillary
3	Engineering impact assessments, and process and technology updates to account for the impact of flexibility services on protection, contingency management, HILP planning, black start and load shedding activities.	Ancillary
4	Powerflow, optimization and forecast functionality available to control room staff who have been suitably trained.	Ancillary
5	Flexibility services and related pilot market, and regulatory framework appropriate to piloting in this release. Learnings and outcome report to inform the development of a market and regulatory framework for local flexibility services.	Core PR5
6	New DSO/TSO operating model to manage the interaction between local and transmission operations and services / market management. This will address (in a preliminary manner) registration, operational planning, scheduling, dispatch, redispatch and contingency management.	Ancillary
7	Processes and system functionality to utilize contracted flexibility services to manage demand congestion or network contingencies.	Core PR5
8	Preliminary (email/phone-based) modalities to enable distribution connected resources participate in TSO system services and wholesale market, addressing ex-ante, failsafe and compliance processes.	Ancillary
9	Preliminary contract flexibility services and the ability to schedule and dispatch contracted service providers.	Core PR5
10	End to end customer journeys for customers and aggregators participating in local or transmission services from the distribution system, based on the customer segments involved in pilots 1 and 2.	Ancillary
11	Validation and settlement processes for contracted flexibility service providers.	Core PR5
12	Evidence-based customer experience and satisfaction measurement/baseline with improvements identified, based on the customer segments involved in pilots 1 and 2.	Ancillary

## 4 PROGRAMME RELEASES

### 4.2 RELEASE 2

The intent of Release 2 is to progress the developments and concepts introduced in Release 1, up to April 2024 and involving:

**1 Pilot 3: Pilot of Scale**

involving multiple services and customer types, at a given network location, pending a progress-pause-adapt decision in H2 2022;

**2 Pilots 4a: RESS-1 and 4b: RESS-2 Early Access (New)**

involving early system access for RESS-1 and RESS-2 projects, pending a progress-pause-adapt decision in H1 2022. Note: care will be needed to scale these pilots such that they can be supported in a secure manner from the control room, noting that until Release 3 this will involve manual control room processes.

**3 Pilot 5: Future Arrangements (Pilot Release)**

involving a first step towards implementing new modalities enabling the participation of distributed resources in future transmission system services, pending a progress-pause-adapt decision in H1 2023;

**4 Pilot 6: Agile Customer/Community Pilot (New)**

involving the agile development of customer / community dashboards leveraging our network visibility as this becomes available (noting that this will be quite limited initially) to provide customers with insights into their local energy system, and testing and measuring the impact of different approaches to driving awareness and engagement with the local energy system, pending a progress-pause-adapt decision in H1 2022;



## 4 PROGRAMME RELEASES

### 4.2 RELEASE 2 continued

Pending the consultative definition of these initiatives, and the associated progress-pause-adapt decisions, this release will involve the development of the following capabilities

REF	CANDIDATE OUTCOMES, FOR CONSIDERATION IN CONSULTATIVE DEFINITION PHASES	PR5 OR ANCILLARY
1	Connection agreement amendment/side letter for early access arrangement for connection generation.	Core PR5
2	Standard process to identify thermal and/or voltage issues associated with demand and generation congestion. Appropriate solution in terms of the standardised flexibility services for the Release 2 pilots.	Core PR5
3	Operational safety measures accounting for the impact of flexibility services under Release 2 pilots related to switching, earthing and cybersecurity with relevant processes (and/or training) updated.	Ancillary
4	Engineering impact assessments, process and technology updates to account for the impact of flexibility services (associated with Release 2) on protection, contingency management, high impact, low probability (HILP) event planning, black start and load shedding activities.	Ancillary
5	Data policy, strategy and sharing processes/technology associated with Release 2 activities.	Ancillary
6	Adaptation and update of standardised flexibility services to support Release 2 pilots and the related flexibility market framework (incremental to Release 1).	Core PR5
7	Processes and system functionality to utilise contracted flexibility services to manage demand and generation congestion or network contingencies.	Core PR5
8	Preliminary (email/phone-based with some SCADA functionality) modalities to enable distribution connected resources participate in TSO system services and wholesale markets, addressing ex-ante, failsafe and compliance processes.	Ancillary
9	DSO dispatch of new distribution connected resources.	Core PR5
10	Contracts for flexibility services for Release 2 pilots and ability to dispatch contracted service providers.	Core PR5
11	Contingency plans to maintain network security where service providers become unavailable in operational timescales.	Ancillary
12	End to end customer journeys for customers and aggregators participating in local or transmission services from the distribution system, based on the customer segments involved in pilots 3, 4 and 5.	Ancillary
13	Evidence-based customer experience and satisfaction measurement with improvements identified, based on the customer segments involved in pilots 3, 4 and 5.	Ancillary

## 4 PROGRAMME RELEASES

### 4.3 RELEASE 3

This release seeks to introduce capabilities allowing ESB Networks to:

- 1 Replicate / roll out solutions based on the learnings of pilots 1 – 5 nationally**
- 2 Introduce and update flexibility services in an agile manner**
- 3 Improve the customer and stakeholder experience of participating in flexibility**

Pending the consultative definition of these initiatives, and the associated progress-pause-adapt decisions, this release will involve the development of the following capabilities:

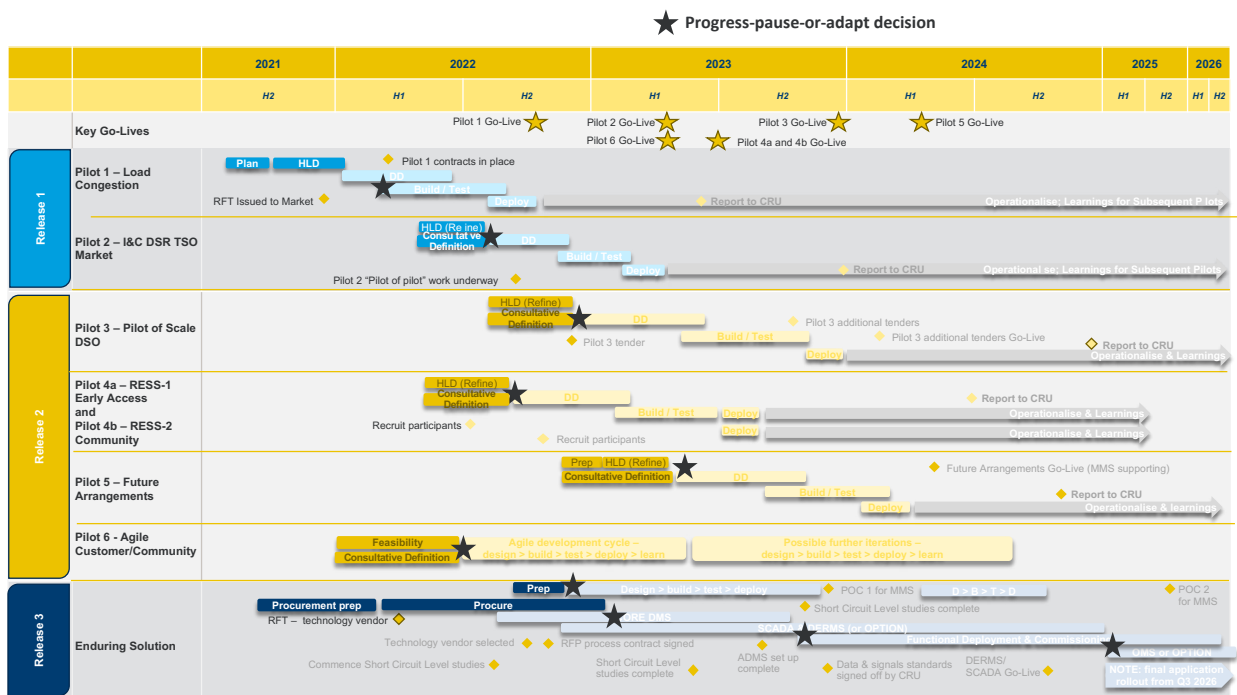
REF	CANDIDATE OUTCOMES, FOR CONSIDERATION IN CONSULTATIVE DEFINITION PHASES	PR5 OR ANCILLARY
1	Connection agreement amendment/side letter for non-firm or flexible access arrangements for connection generation developed.	Core PR5
2	Standard processes to identify thermal, voltage, short circuit level, dynamic stability issues associated with demand, and generation congestion and solutions available as standard network planning options.	Core PR5
3	Operational safety measures accounting for the impact of contracting for flexibility services under Release 3 related to switching, earthing and cybersecurity with relevant processes (and/or training) updated.	Ancillary
4	Engineering impact assessments, process and technology updates to account for the impact of flexibility services (associated with Release 2) on protection, contingency management, high impact, low probability (HILP) event planning, black start and load shedding activities.	Ancillary
5	Data policy, strategy and sharing processes/technology for Release 3 pilot.	Ancillary
6	Standardised flexibility services to address thermal, voltage, issues and the related flexibility market framework developed (incremental to Release 1 & 2). Impact assessment of the potential for short circuit level, dynamic stability products	Core PR5
7	Processes and system functionality to utilise contracted flexibility services to manage demand and generation congestion or network contingencies.	Core PR5
8	Automated modalities (based on interface between operational and market systems) to enable distribution connected resources participate in TSO system services and wholesale markets.	Ancillary
9	DSO dispatch of new distribution connected resources.	Core PR5
10	Contract flexibility services for thermal, voltage, short circuit level, dynamic stability issues and ability to directly dispatch contracted service providers.	Core PR5
11	Contingency plans established to maintain network security where service providers become unavailable in operational timescales.	Ancillary
12	End to end customer journeys for customers and aggregators participating in local or transmission services from the distribution system, based on the customer segments involved in pilots 3, 4 and 5.	Ancillary
13	Evidence-based customer experience and satisfaction measurement with improvements identified, based on the customer segments involved in pilots 3, 4 and 5.	Ancillary
14	Standard products and services available for energy communities and active energy customers, to support their interaction with local renewables and networks.	Ancillary
15	Standard dashboards and platforms available for energy communities and active energy customers, to support their interaction with local renewables and networks.	Core PR5

5

# Flexibility Milestone Plan

# 5 FLEXIBILITY MILESTONE PLAN

Please see the below high-level plan on a page for the Flexibility Multiyear Plan. This multiyear plan provides the basis of the preliminary annual milestones to be used as targets in the PR5 Flexibility Incentive. However, we propose that “final” milestones used in ex-post assessment would account for the outcome of each consultative definition process and the associated progress-pause-adapt decision. This will be important to ensure the integrity of the consultative definition process and deliver meaningful outcomes in terms of programme adaptability.



## 5 FLEXIBILITY MILESTONE PLAN

As outlined above at 3.1, the National Network, Local Connections Programme's initial pilot will include an integrated High Level Design (HLD) phase to define the 'As-Is' interim and enduring 'To-Be' for all capabilities in the programme's scope.

The output of this phase will include a series of business process overview (BPO) documents. These documents will build on our capability model to articulate the next layer of the programme's business architecture and will include sections on items such as high level technical and non-technical requirements, process descriptions and hierarchy, change impact assessment and organisation design.

The detailed design (DD) phase of Pilot 1 will drill down further (individual/role impacted level) for the subset of capabilities relevant to that pilot. One of the core outputs will be a suite of business process documents (BPDs) which cover similar items as the BPOs (listed above) but at a detailed level, and for the interim state that pilot will deliver. From Pilot 2 onwards, our HLD phases will include a refresh of BPOs taking lessons learned from phases completed in previous pilots. This will act as a mechanism to ensure solution integrity by validating our enduring solution and associated actions are still valid and achievable.

From the perspective of our customers and stakeholders, appropriate processes, services and supports will be developed, along with communications, awareness and education activities. For further detail on this, please see the National Network, Local Connections Consultation Framework available [here](#).

## 5 FLEXIBILITY MILESTONE PLAN

### 5.1 KEY MILESTONES FOR BALANCED SCORECARD TARGETS

#### 5.1.1 SYSTEMS MILESTONES & CAPABILITIES

<i>Unit</i>	2021 PR5	2022 PR5	2023 PR5	2024 PR5	2025 PR5
<b>4.18.1 Systems Developments</b>					
<b>CRITICAL PATH MILESTONES</b>					
Proof of concept release forecasting		☆			
Proof of concept market management system go-live		☆			
Technology vendor selected		☆			
SCADA dispatch			☆		
Second market management system go-live			☆		
Commence Market Management System specification				☆	
Nationwide rollout - technology go-live				☆	

The preliminary critical path technology milestones, and capabilities added, pending progress-pause-adapt decisions, as set out above, are described in the table below. These milestones and capabilities refer to:

- 1** Milestones and capabilities being introduced as per the National Network, Local Connections Programme Operations Systems Roadmap, for ESB Networks to procure and manage flexibility services.
- 2** Milestones and capabilities being introduced as per the National Network, Local Connections Programme Data Exchange & Signals Guidance, to introduce standard requirements for electricity system customers' new technologies, to be able to participate in flexibility.

Note:

- Customer and stakeholder related developments and milestones are not captured in this table, as these relate to the impact of the plan, rather than simple delivery. As such, objectives with respect to customers and stakeholders are set out later in this document as relates to the multiyear scorecard and in more detail in the National Network, Local Connections Consultation Framework.
- Release 3 refers to the nationwide rollout of flexibility i.e. the ability to introduce flexibility services and support the activities of citizen or renewable energy communities, and active energy citizens, nationwide.

## 5 FLEXIBILITY MILESTONE PLAN

### 5.1.1 SYSTEMS MILESTONES & CAPABILITIES continued

**TABLE A - SYSTEMS MILESTONES**

	DATE	MILESTONE	IMPACT	RELEASE
2022	Pending H1 2022 progress - pause - adapt process, H2 2022	Proof of concept release forecasting	Begin planning the dispatch of flexibility services and scheduling demand side units on a weekly and daily basis (for dynamic instruction sets).	R1
		Technology vendor selected	Selection of the vendor(s) for implementing the technology needed for a national rollout of flexibility by the end of PR5.	R2
		Definition phase to consider feasibility of proof of concept market management system (MMS)	With a view to supporting customers' and stakeholders' interaction with the market for Pilots 3, 4 and 5.	R3*
2023	Pending H2 2022 progress - pause - adapt process, H2 2023	Definition phase to consider appropriate mechanisms for automated dispatch	Building towards the dispatch active and reactive power set points to pilot participants in a more automated manner.	R2
2024	Pending 2022-2023 progress - pause - adapt processes, H2 2024	Nationwide Rollout – solution proof of concept go-live	Proof of concept deployment of a solution for supporting PR5 requirement <sup>1</sup> on a pilot area of the network, to be scaled pending successful pilot.	R3

<sup>1</sup> All eligible pipeline HV or MV reinforcement schemes to be tested for a flexible solution, with rolling tenders established

## 5 FLEXIBILITY MILESTONE PLAN

### 5.1.2 DSO MILESTONES & CAPABILITIES

Unit	2021 PR5	2022 PR5	2023 PR5	2024 PR5	2025 PR5
<b>4.18.2 Products &amp; Processes</b>					
<b>CRITICAL PATH MILESTONES</b>					
Commence System Strength (short circuit level) Studies	☆☆				
Commence dynamic stability studies	☆☆				
Pilot 1 contracts in place		☆			
Pilot 1 go-live			☆☆		
Early Access pilot flexible connection products			☆☆		
Pilot of Scale - flexibility schemes procurement			☆☆		
System Strength (short circuit level) Studies complete			☆☆		
Dynamic stability studies complete			☆☆		
Pilot 2 go-live				☆☆	
Pilot 3 go-live				☆☆	
Pilot 4 go-live				☆☆	
Pilot 3' schemes go to tender				☆☆	
Standard industry reporting				☆☆	
Future Arrangement initial go-live				☆☆	
Enduring products regulatory process commences				☆☆	
Enduring market framework process commences				☆☆	
Nationwide rollout - flexibility procurement				☆☆	
New products rollout					☆☆

The preliminary critical path DSO milestones and capabilities added, pending progress-pause-adapt decisions, (as set out above) are described in the table below. These milestones and capabilities refer to:

- 1** Power system engineering milestones and capabilities needed to identify the need for, define and use new flexibility services.
- 2** Market design milestones and capabilities needed to introduce and manage local flexibility markets, including the rollout of the products introduced in the National Network, Local Connections Programme Phased Flexibility Market Plan.

Note:

- Customer and stakeholder related developments and milestones are not captured in this table, as it is proposed that these relate to the impact of the plan, rather than simple delivery. As such, objectives with respect to customers and stakeholders are set out later in this document as relates to the multiyear scorecard and in more detail in the National Network, Local Connections Programme Consultation Framework.
- Release 3 refers to the nationwide rollout of flexibility i.e. the ability to introduce flexibility services and support the activities of citizen or renewable energy communities and active energy citizens nationwide.



## 5 FLEXIBILITY MILESTONE PLAN

### 5.1.2 DSO MILESTONES & CAPABILITIES continued

**TABLE B – DSO MILESTONES**

	DATE	MILESTONE	IMPACT	RELEASE
2022	Pending H1 2022 progress - pause - adapt process, H1 2022	Pilot 1 contracts in place	Giving confidence to the market and enable customers / services providers proceed with investment to prepare for pilot go-live.	R1
		RESS1 Early Access Pilot – candidate project engagement	Pending pause-progress-or-adapt decision, Early Access Pilot flexible connection products to become available enabling contracting and initial procurement for services to go live in Q4 2023.	R2
	Pending H1 2022 progress - pause - adapt process, H2 2022	Pilot 1 go-live	Going live with the use of the secure and dynamic flexibility services as part of distribution system operational management.	R1
		Pilot of Scale – flexibility schemes procurement	Procurement for a number of flexibility schemes to operate within the pilot area, including customers down to domestic level and the launch of new products.	R2
		Scope Dynamic Studies	Foundational system profiling and analysis to support TSO/ DSO coordination.	R3
	Scope System Strength (Short Circuit Level) Studies	Foundational system profiling and analysis to enable the design of future system strength flexibility products.	R3	
2023	Pending 2022 progress - pause - adapt processes, H1 2023	Pilot 2 Go-live	Week-ahead and day-ahead scheduling of individual demand sites within DSUs commences, replacing annual instruction sets.	R1
		Pilot 4a Go-live	RESS-1 projects can connect on a non-firm basis (for N-1 events).	R2
		Standard Industry Reporting	Establishment of initial standard market and regulatory reporting on the procurement and dispatch of DSO flexibility, and of TSO flexibility bids validated.	R3
	Pending 2022 progress - pause - adapt processes, H2 2023	System Strength (Short Circuit Level) Studies Progressed	Foundational system profiling and analysis to support TSO/ DSO.	R3
		Pilot 3 Go-live	Multiple flexibility schemes operating within the pilot area go live, including customers down to domestic level.	R2
		Dynamic Stability Studies Progressed	Foundational system profiling and analysis to enable the design of future system strength flexibility products coordination	R3
		Pilot 3 schemes go to tender	Tendering for additional services in the pilot location, based on updated system needs and capabilities implemented for first go-live.	R2
		Pilot 4b Go-live	Participating RESS-2 projects can connect.	R2

## 5 FLEXIBILITY MILESTONE PLAN

### 5.1.2 DSO MILESTONES & CAPABILITIES continued

**TABLE B – DSO MILESTONES**

	DATE	MILESTONE	IMPACT	RELEASE
2024	Pending 2023 progress - pause - adapt processes, H1 2024	Future Arrangements Initial Go-Live	Enabling distribution system customers participate in new transmission system services arrangements on an initial basis.	R2
	Pending 2022–2023 progress-pause-adapt processes, H2 2024	Agile Customer/ Community Pilot Go Live	Network visibility leveraged to provide customers with insights into their local energy system, and test and measure the impact of different approaches to driving awareness and engagement with the local energy system.	R3
		Nationwide Rollout – Flexibility Procurement	All eligible pipeline HV or MV reinforcement schemes to be tested for a flexible solution, with rolling tenders established.	R3
		New products rollout	Develop product criteria for piloting services relating to <ul style="list-style-type: none"> <li>• System strength (short circuit levels)</li> <li>• Dynamic stability</li> </ul>	R3

### 5.2 2025 HIGH LEVEL

This plan is a detailed plan for 2022 – 2024, as required in the Regulatory Framework and Incentives for PR5, however the indicative developments in 2025 are proposed to include:

- 1 Nationwide rollout of flexibility services**
- 2 Introduction of nationwide standard services / support for communities**
- 3 Introduction of nationwide standard services for active energy customers**
- 4 Rollout of modalities enabling distribution customers participate in transmission and SEM markets.**

6

# Scorecard Proposal

## 6 SCORECARD PROPOSAL

### 6.1 OBJECTIVES

The CRU is introducing an annual balanced scorecard based on ESB Networks' development and execution of a plan to enable customers actively participate in a flexible distribution system. The CRU will use an annual balanced scorecard approach which will be based on high-level milestones that were proposed by ESB Networks to reflect the following parameters:

- 1 Introduce tenders for flexible, non-wires alternative within ESB Networks' system development plan;**
- 2 Establish standard products and services to the benefit of all system users; and**
- 3 Establish robust reporting and transparency arrangements, to provide confidence to the market as ESB Networks' role as neutral market facilitator grows.**

The incentive is also in line with the requirements of Article 32 of the Electricity Market Directive 2019, 2019/944 (Incentives for the use of flexibility in distribution networks).

In September each year, aligning with its consultation with stakeholders, a detailed flexibility multi-year plan covering the three following years (and the two years after at high level) must be submitted to the CRU by ESB Networks. Based on the submission, the CRU will decide, by year-end, on the milestones, deliverable targets and weightings for the following year. The first multi-year plan and balanced scorecard proposals were submitted on 1 October 2021 and as outlined above, covered 2022 to 2024 as well as 2025 and 2026 at high level.

In assessing the outcome of performance, the CRU will consider the following criteria:

- 1 Quality of the plan and defined actions (20% of scoring);**
- 2 Quality of implementation of the plan (40% of scoring); and**
- 3 Effectiveness of the plan and demonstrable impact (remaining 40% of scoring).**

## 6 SCORECARD PROPOSAL

### 6.2 ASSESSMENT

ESB Networks' proposed assessment against the criteria is discussed below:

#### 6.2.1 QUALITY OF THE PLAN AND DEFINED ACTIONS

ESB Networks propose that the quality of the plan and defined actions are measured by:

- 1 Independent quality assurance, through EPRI, or another third party as contracted by ESB Networks, to the National Network, Local Connections Programme. A report shall be shared with the CRU that will document the assessment and any associated actions.**
- 2 Demonstrable adherence to the defined programme delivery method/approach.**
- 3 Demonstrable and robust risk, assumption, issue and dependency management.**

#### 6.2.2 QUALITY OF IMPLEMENTATION OF THE PLAN

ESB Networks propose that measurement of the quality of the implementation plan should be based on delivering the milestones set out in the Regulatory Reporting pack and as identified in Table A and Table B.

## 6 SCORECARD PROPOSAL

### 6.2.3 EFFECTIVENESS OF THE PLAN AND DEMONSTRABLE IMPACT

The effectiveness of the Flexibility Multiyear Plan, and demonstrable impact, will be assessed against our approach to, and outputs from, stakeholder education, awareness and engagement plan.

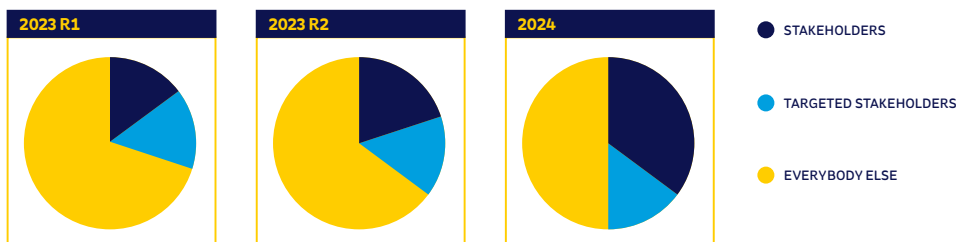
A core tenet of our National Network, Local Connections Programme is that we purposefully engage to generate insights that are directly fed back into the programme design as illustrated below.

#### TARGET AUDIENCES

**Stakeholders** on our Stakeholder List – these people are here because they want to be, they need to be, or they must be.

**Targeted stakeholders** to support this period of programme development.

**Everybody else** – people who are unaware of the programme because it is not relevant ...yet nor is it necessary for them to understand the programme...yet!



	STAKEHOLDERS (ON OUR MAP)	TARGETED STAKEHOLDERS	EVERYBODY ELSE
2022	80% of registered stakeholders have been invited to participate in activities relating to the programme.	Increase our registered stakeholder database by 10%.	Phase 1 – national awareness campaign is the tool to educate and build awareness – Deliver research via survey to measure awareness of programme and set benchmark (using independent third party to measure effectiveness and define targets to adopt in line with programme ambition).
2023 R1	80% of registered stakeholders have been invited to participate in activities relating to the programme.	Increase our registered stakeholder database by 15%.	To be confirmed once baseline is set.
2023 R2	80% of registered stakeholders have been invited to participate in activities relating to the programme.	Increase our registered stakeholder database by 15%.	To be confirmed once baseline is set.
2024	80% of registered stakeholders have been invited to participate in activities relating to the programme.	Increase our registered stakeholder database by 15%.	To be confirmed once baseline is set.

## 6 SCORECARD PROPOSAL

### 6.2.3 EFFECTIVENESS OF THE PLAN AND DEMONSTRABLE IMPACT continued

INSIGHTS FROM STAKEHOLDERS	NATIONAL CAMPAIGN ongoing at relevant intervals to 2025	GENERAL AWARENESS & EDUCATION	STAKEHOLDER RESEARCH
	CONSULTATIONS ongoing at relevant intervals to 2025	PUBLICATIONS AND NOTIFICATIONS TO NOTIFY AND COLLABORATE WITH STAKEHOLDERS IN THE DELIVERY OF THE PROGRAMME	
	RELEASE 1 2022- 2023	<p><b>PILOT 1: I&amp;C DSR LOCAL MARKET</b> Identify Stakeholders, develop and implement relevant communication and engagement plan to support all phases of this pilot.</p> <p><b>PILOT 2: DYNAMIC INSTRUCTION SETS</b> Identify Stakeholders, develop and implement relevant communication and engagement plan to support all phases of this pilot. Take lessons learned and communicate back to wider stakeholder group.</p>	
	INDUSTRY - Make it Real	Tangible output from pilots that we develop to make it real for industry.	
	RELEASE 2 2024	<p><b>PILOT 3: PILOT OF SCALE</b> Identify Stakeholders, develop and implement relevant communication and engagement plan to support all phases of this pilot.</p> <p><b>PILOT 4A &amp; 4B: RESS-1 AND RESS-2 EARLY ACCESS</b> Identify Stakeholders, develop and implement relevant communication and engagement plan to support all phases of this.</p> <p><b>PILOT 5: FUTURE ARRANGEMENTS (ENDURING) TSO MARKET / FULL SOLUTION GO-LIVE</b> Identify Stakeholders, develop and implement relevant communication and engagement plan to support all phases of this pilot.</p> <p><b>PILOT 6: AGILE CUSTOMER/COMMUNITY PILOT</b> Identify Stakeholders, develop and implement relevant communication and engagement plan to support all phases of this pilot.</p>	
	RELEASE 3 2025	<p><b>ENDURING SOLUTION</b> Replicate / roll out solutions based on the learnings of pilots 1 - 6 nationally.</p>	
	CUSTOMER COMMUNITY - Make it Real	<p>Tangible output from pilots that we develop (in partnership with industry* to deliver to customer and community groups)</p> <p>*decision to be make on this.</p>	

#### DEMONSTRATING HOW WE APPLY INSIGHTS INTO KEY ACTIVITY AS BELOW

High Level Programme Design	Case study to illustrate how insights have been applied into high level programme design.
Focus Groups	Case study to illustrate how insights have been applied into delivering relevant focus groups.
National Campaign	Case study/sample campaign elements to illustrate how insights have been applied into delivering relevant communication materials.
Consultations	Case study/sample consultation element to illustrate how insights have formed and developed our consultation approach.
Programme Releases	Clear demonstration how insights can be traced to programme scope items, which are then delivered via programme releases.

For more information on the broader National Network, Local Connections Programme Consultation Framework, please click through to the document.

7

# Dependencies

As with all transformation programmes, there are dependencies and constraints that require close and careful management to ensure the plan is delivered effectively.



## 7 DEPENDENCIES

### 7.1 EXTERNAL DEPENDENCIES

The key external dependencies have been captured below:

DEPENDENCY	DESCRIPTION	FOR	WHEN
CRU - data code ESB Networks - integration	Smart Metering interval and instrumentation data, along with MPRNs, are required. This is intended to be used to measure and verify response for domestic and small business customers. This means that we are dependent on the transposition of the Clean Energy Package assigning the CRU as the competent authority to develop a data code, and subsequently on the CRU to develop the data code which would provide for the access needed.	Release 2	Mar 2022
TSO	Timely delivery of joint TSO-DSO workplan and establishment of the JSOP operating model.	All Releases	Sep 2022
SEMC	Future Arrangements high level design decision with regard to management of distribution system customers' participation in future system services.	Release 2 Release 3	June 2022
CRU	Regulatory sandbox treatment or decision on regulatory treatment of services providers' access to system services markets.	Release 1	Oct 2022
CRU	Regulatory sandbox treatment (on pilot funding model) or decision on regulatory treatment of distribution system constraint costs and their recovery.	Release 2	Dec 2022

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# Quality Assurance

As with all transformation programmes, there are dependencies and constraints that require close and careful management to ensure the plan is delivered effectively.

## 8 QUALITY ASSURANCE

The National Network, Local Connections Programme commissioned an independent quality assurance review, undertaken by the Electrical Power Research Institute (EPRI), to assess the scope, review the delivery approach, and to provide any findings or recommendations that may be pertinent at this early stage of the programme.



A summary of the key findings related to the Flexibility Multiyear Plan are captured below:

	<p><b>Project Initiation Document</b> The Project Initiation Document (PID) provides an excellent description of the overall Programme and the strategy behind it. This document provides the roadmap for implementing the National Network, Local Connections Programme tools, infrastructure, and processes.</p>
	<p><b>DSO assumptions</b> Clear definition of assumptions and assumed role for the DSO. The role of the DSO in the energy transition is clearly defined as the interface to distributed resources. TSO/DSO coordination will provide access to these resources for wholesale market services and functions, as well as advanced forecasting.</p>
	<p><b>Stakeholder Engagement</b> Excellent stakeholder involvement. This applies to internal stakeholders, engaged through numerous workshops, to external stakeholders engaged through a combination of workshops and the ESB Networks Innovation initiative. This is key as the National Network, Local Connections Programme effort involves integration of numerous stakeholders with the planning and operation of the grid.</p>
	<p><b>Requirements</b> Detailed requirements' specifications have been developed. These specifications are the result of workshops with ESB subject matter experts as well as input from EY and support from other experts. They provide a great foundation for initial implementation of [programme] components.</p>
	<p><b>Two early initiatives</b> Two early initiatives have tremendous potential to improve reliability and to provide a foundation for broader programme implementation:</p> <ol style="list-style-type: none"> <li>Increasing the visibility of the low voltage network. This involves significantly expanded monitoring, utilising AMI data, communications infrastructure and data systems. The effort is critical to deal with electrification of heat and transport as well as to take advantage of resources on the LV system that can contribute to flexibility needs.</li> <li>Continued automation of the MV grid. This is one of the most cost-effective reliability improvement measures and can be integrated with the operation of local resources over time.</li> </ol>
	<p><b>Delivery approach</b> A staged approach to implement local markets for flexibility services has been developed with an initial approach outlined that mirrors approaches used by multiple DNOs in the UK. The initial efforts will provide the opportunity to contract for local services that can relieve expected distribution constraints. A longer-term development of a platform that integrates with aggregators, customers, communities and the TSO in real time is in the vision.</p>
	<p><b>Delivery aligned to Power System Studies</b> Overall, the detailed specification of initial capability drops and the range of power system studies being performed to provide the basis for detailed roadmap development, modelling requirements and future operational approaches provides a well-structured approach to the initial programme deliverables and should be a foundation for the broader implementation.</p>