ESB NETWORKS

Piloting Roadmap

NATIONAL NETWORK, LOCAL CONNECTIONS PROGRAMME

DOC-230921-GYP

Updated following consultation in Q4 2021

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Glossary

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TERM	DEFINITION
ADMS	Advanced Distribution Management System
BSP	Bulk Supply Point
CRU	Commission for Regulation of Utilities
DAM	Day Ahead Market
DER	Distributed Energy Resource
DSO	Distribution System Operator
HV	High Voltage
IDS	Individual Demand Site
LV	Low Voltage
MMS	Market Management System
MV	Medium Voltage
NPV	Net Present Value
OMS	Operational Management System
RESS-1	Renewable Energy Support Scheme
SCADA	Supervisory Control and Data Acquisition
SEM	Single Electricity Market
TSO	Transmission System Operator

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Piloting Roadmap 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. This document sets out the Piloting Roadmap, a discovery-led approach to introducing this in live network environment, creating opportunities for participation and engagement over the full programme lifecycle.

In Q4 2021, we consulted on the Piloting Roadmap. Positive and constructive stakeholder feedback was received, with over 80 items of feedback received from stakeholders on this document. This feedback provided a rich insight into stakeholders' perspectives. All feedback was carefully reviewed and feedback which fell within its scope was considered in updating the proposed Piloting Roadmap.

2 PILOTING ROADMAP OVERVIEW

The key themes arising in stakeholders' feedback were:

1. **Consistent support for the pace and scale of the proposed piloting roadmap.**
2. **Diverse respondents offering views on how the roadmap could be adapted to their specific perspective by increasing the number of pilots or introducing a pilot focusing on a target technology or geography.**
3. **An appetite for transparency in the lessons learned and a consultative approach to applying them.**

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

This document sets out how we are adapting the roadmap to reflect this feedback, including by:

1. **Adopting a more consultative approach to determining the location for the Pilot of Scale.**
2. **Bringing forward the definition timeline of the RESS-1 pilot and introducing an additional Community focused RESS-2 pilot.**
3. **Introducing an Agile Customer/Community pilot available to energy communities nationwide who seek to participate, involving the provision of local electricity system dashboards, and measuring the behavioural impact of different approaches to driving awareness.**

The objectives of the National Network, Local Connections Piloting Roadmap are to adopt a discovery-led approach to introducing new capabilities in live network environments over the life of the programme, and to create opportunities for customers to participate and engage with the programme over its full lifecycle.

2 PILOTING ROADMAP OVERVIEW

At a high level, each pilot will require the delivery of the following key milestones:

Identify the Customer / Network Technical Needs > Analyse the underlining network conditions, customer demand and generation, assess connection requests, and establish the nature of the flexibility services that would maintain network security or allow a customer to connect sooner.

Identify the Customer / Participant Engagement Needs > Develop customer / pilot participant journey, communications, awareness and education objectives.

Service Procurement > Where applicable, apply the evolving flexibility market framework to procure the identified requirement for flexibility services from Distributed Energy

Forecast, Schedule & Dispatch DER > Where applicable, forecast the expected output of the individual DERs that have been contracted through the procurement process as well as underlying network conditions and schedule the DER to deliver a specific profile. Issue instruction to the DERs to deliver their contracted flexibility services when required by the underlying network conditions.

Monitoring & Compliance > Based on measured performance against a baseline, remunerate performance and/or undertake compliance actions.

Each of these high-level milestones require the development of a range of new and/or the modification of existing business processes and systems, both for us and for our customers. Over the course of the National Network, Local Connections Programme, the pilots will iteratively contribute to building out the full target capability on our side and also on that of our customers. It is proposed that the pilots will increase in geographic footprint, the number and types of customers participating, the customer or network needs being met, and in how we are interacting with the wholesale market and the Transmission System Operator (TSO). This will be supported by dedicated programme resources, subject matter experts, and also by the people in our organisation delivering customer-facing and operational roles today.

As set out in the National Networks, Local Connections Consultation Frameworks, a communication and consultation plan will be developed for each pilot. This will be central to ensuring that stakeholders are engaged from the definition phase through implementation and influence how we build on the lessons learned from each pilot.

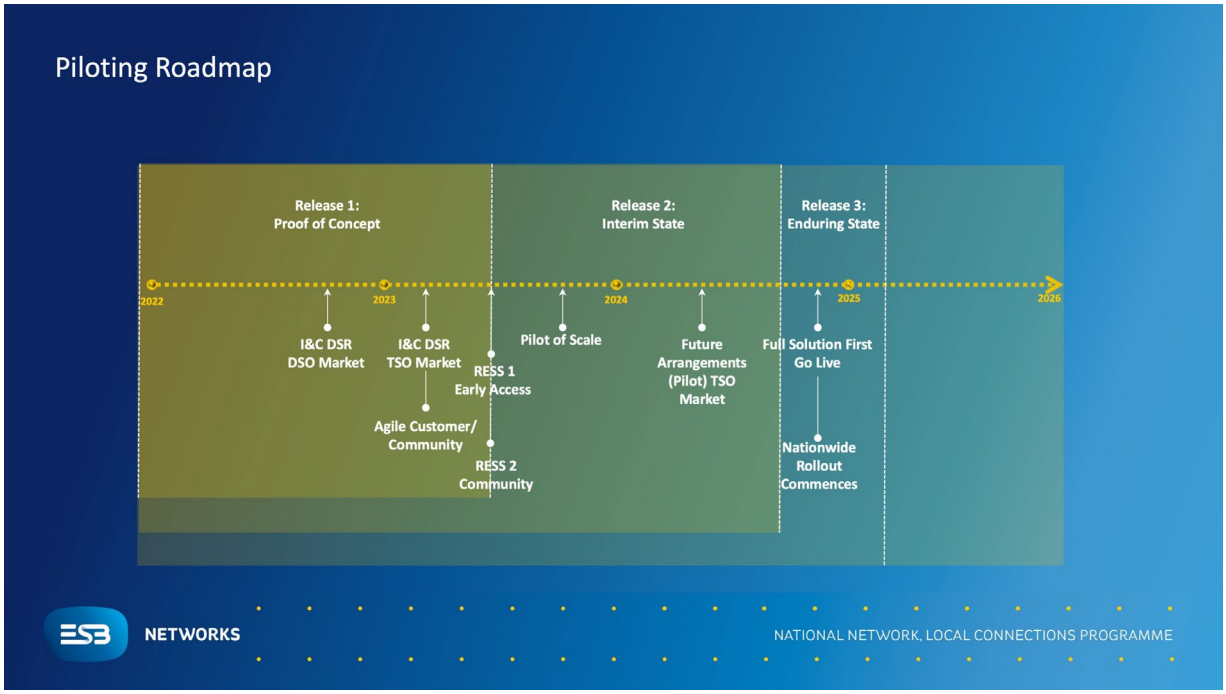
The National Network, Local Connections Programme Pilot Roadmap is being shaped by technical and customer needs, the technology and operational capability available at the time of each pilot, and the CRU's objectives regarding the use of flexibility services, as set out in Price Review 5 (PR5). In developing the piloting roadmap, we are conscious of the need to demonstrate the value that active management and participation on the distribution system will bring to different categories of distribution customers.

3 PILOTING ROADMAP OVERVIEW

As such, the nature and timing of the pilots is intended to address, the needs of existing and new customers in a phased manner. Following the consultation process of 2021, the Piloting Roadmap will now be adopted as a living stream of activity within the National Network, Local Connections Programme. In the following sections, we provide detailed descriptions of the initial intent with respect to individual pilots. As set out in the Consultation Core Response Paper available on the National Network, Local Connections Programme website, we are introducing a more adaptive and agile approach to delivering the programme, to deliver the right pace while maintaining the ability adjust course over the life of the programme to account for the outcomes of pilots, evolving customer needs, technology, industry/regulatory priorities and technical conditions on the distribution system. To achieve this:

1. **As each major pilot is mobilised, we will undertake a definition exercise, accounting for stakeholder, customer, and industry developments.**
2. **The definition phase will conclude with a conscious decision to "progress-pause-or-adapt" i.e. to continue with the pilot, 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.**

The graph below gives a summary view of how each of these pilots sits within the programme.



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Pilot 1: I&C DSR Local/DSO Market

3.1 PILOT DESCRIPTION

In our first pilot, we are targeting the procurement of flexibility services from a small number of customers in locations where new solutions are needed to support growth in demand and new customer connections. Our forecasting shows the potential for network congestion to become an issue as a result of growing social and economic activity, or new customers connecting, in these areas. Network congestion can mean that we may not be able to connect customers as quickly as we would like, and the level of service can deteriorate for existing customers.

By introducing local markets for flexibility in these areas, we hope to find a new solution to this. Flexibility may prove quicker and more cost-effective than reinforcing the network in some cases. In other cases, it may offer a means of enabling a customer to connect sooner or to temporarily improve reliability for existing customers until reinforcement is completed.

In our first pilot, we will introduce local markets for flexibility designed to support secure network operations during local network contingencies (for example network faults, or outages to support planned works on the network). This would improve reliability for existing customers and allow us to connect new customers more quickly and cost effectively.

3 PILOT 1: I&C DSR LOCAL/DSO MARKET

3.2 SELECTION CRITERIA

To identify candidate locations in the network for our first pilot, we developed criteria based on stakeholder feedback gathered through surveys, roundtable meetings, and webinar feedback over Q1 –Q2 2021. These criteria, as detailed below, were applied to develop a shortlist of locations to be analysed in greater detail, to define the network need and to define specific flexibility services for procurement..

Real world customer needs - Current and forecast network loading under normal feeding arrangements.

Customer mix in the location and their metering arrangements.

Customers' level of participation in the wholesale market or ancillary services, as generators or as part of a demand side unit.

The potential to collaborate with the TSO to support development of whole of system approaches.

Applying these criteria, a short list of eight network locations where flexibility services could deliver benefits for the local community has been developed. These are as detailed below:

LOCATION
Dublin – Watling Street 38kV Zone
Dublin – Corduff Zone (Corduff, Macetown and College Park)
Dublin – Dublin North Zone (McDermott, Pelletstown, Cabra, Wolfe Tone St. and Artane)
Wexford – Clonroche Zone
Wexford – Wexford East Zone (Mulgannon, Clonard and Carriglawn)
Meath – Trim Zone
Kildare – Blake and Edenderry Zone
Wicklow/Carlow – Wicklow-Carlow Zone (Shillelagh, Tullow and Baltinglass)

3 PILOT 1: I&C DSR LOCAL/DSO MARKET

3.3 PILOT IMPLEMENTATION

For each of these locations, the local network has been analysed, and solutions defined in terms of the Sustain, Secure, Dynamic and Restore services as defined in the National Network, Local Connections Programme Phased Flexibility Market Plan. In advance of commencing a procurement process for these services, a prior information notice was issued, and expressions of interests were sought. This raised awareness amongst companies who could potentially work with customers in the relevant locations, to provide the specified flexibility services, in addition to the consultation processes of Q4 2021.

Through the PR5 regulatory framework, the CRU allows ESB Networks allocate funding to pay for flexibility services, provided they offer a lower cost alternative to conventional reinforcement (on a net present value basis). Subject to our receiving responses to the procurement process which meet this threshold, contracts will be put in place with the successful tenderers for a period of two years.

The operational phases of the pilot will commence at the beginning of Oct'22. Contracted service providers will be dispatched to deliver in response to network conditions. Contracted services will be monitored and reviewed for validation and settlement purposes. Given the use of flexibility services on the Irish distribution system is untested and the responses to the prior information notice highlighted notable limitations in the Irish demand side response market today, contingency arrangements for the unavailability or under-delivery of contracted services will be put in place.

At the time of writing, the responses to the Prior Information Notice (PIN) received from companies with the potential to respond to the tender are being assessed in advance of the procurement process being launched. High level observations from this process, however, are that demand side units in Ireland have been developed to meet transmission needs, and as such do not yet reflect the technical requirements arising on the distribution system. This highlights the reality that the operation of the pilot in each of the targeted locations is subject to the suitability of the responses from service providers to the procurement process. It may be the case that no suitable tender responses are received in one or more of the target locations.

3 PILOT 1: I&C DSR LOCAL/DSO MARKET

3.3 PILOT IMPLEMENTATION continued

SELECTION CRITERIA
As above. Top criterion is existing customer needs relating to new connections or improved reliability.

TARGET LOCATIONS
Up to eight, subject to the outcome of procurement process.

NUMBER OF CUSTOMERS PARTICIPATING
1-20 (expected figure, pending procurement outcome).

TYPES OF CUSTOMERS PARTICIPATING
Industrial and commercial demand customers (expected figure, pending procurement outcome).

PILOT TECHNOLOGY
Interim upgrade to existing control room technology.

PILOT GO-LIVE AND DURATION
October 2022
2+ years duration

LEARNING OBJECTIVES
As set out below.

3 PILOT 1: I&C DSR LOCAL/DSO MARKET

3.4 LEARNING OBJECTIVES

CUSTOMER	DSO	LOCAL MARKETS
Define preliminary customer journey to participate in a procurement process, enter a contractual arrangement, operationalise the service provision and deliver the service when called by ESB Networks.	Develop and implement first release processes and systems to analyse and define the network needs in each of the selected locations in terms of the flexibility services required to resolve the underlying issue.	Develop and implement the pilot procurement processes and systems to tender for the required flexibility services, assess the responses received and enter contracts with cost effective providers.
Develop understanding of effective communications and recruitment approaches to promote and increase the awareness among customers of the potential to provide services to ESB Networks.	Develop and implement first release procurement processes and systems to tender for the required flexibility services assess the responses received and enter contracts with cost effective providers.	Develop an understanding of the challenges that customers face in participating in local flexibility markets and effective approaches to addressing these challenges.
Increase the understanding of the appetite of customers, and between customer categories, to become flexibility service providers	Develop and implement first release processes for the dispatch of contracted service providers, the validation of their services delivery.	Develop an understanding of price expectation and/or the costs faced by customers to participate in service provision.

3.5 ADDITIONAL INFORMATION

To learn more about the customer communications and consultation approach that will be put in place to support this pilot, please see the National Network, Local Connections Programme Consultation Framework.

To learn more about the products which we are seeking to contract in this pilot and the associated market rules, please see the National Network, Local Connections Programme Phased Flexibility Market Plan.

To learn more about when and where products like the ones introduced in this pilot are going to be needed over the coming decade, including to support the electrification of heating and transport, please see the National Network, Local Connections Programme 2030 Power System Requirements document.

4

Pilot 2: I&C DSR TSO Market

4.1 DESCRIPTION

"Instruction Sets" are limits on distribution connected customers' participation in transmission markets (the SEM and DS3) to protect against unsafe or insecure conditions on the distribution system because of their market activities.

Today, instruction sets are issued annually based on technical studies of the expected worst-case conditions over the course of the coming year. This results in many sites being prohibited from participating in the market for 6 months of the year because of conditions which may relatively arise infrequently.

The second pilot will seek to improve this process. Pending its definition phase, the intent of Pilot 2 is to introduce dynamic instruction sets. This means that the process that is undertaken annually today would move far closer to real time.

On a week ahead or day ahead basis (based on site specific needs), forecasting and local network analysis would be used to assess whether a demand site's proposed availability in the SEM or DS3 market would result in unsafe or insecure local conditions.

The proposed objective of the pilot is to increase Individual Demand Sites' ability to provide services to the TSO, without creating unsafe or insecure operating conditions on their local network.

4 PILOT 2: I&C DSR TSO MARKET

4.2 SELECTION CRITERIA

It is proposed that this pilot will be open to the participation of all individual demand sites which are currently subject to instruction sets. These sites will be identified through the existing registration process. The sites with the greatest level of interaction with the pilot will be those sites whose participation is currently limited by instruction sets, as their provision of services to the TSO would result in a in voltage or thermal violation on the distribution system under certain operating conditions.

It is intended that this pilot will support individual demand sites' participation in the TSO's DS3 and capacity markets. However, there may be business development costs arising for participating individual demand site and/or for their demand side aggregator. As such, it is appropriate that candidates be recruited on a voluntary basis. The existing arrangements will remain in place for those who chose to not participate.

4.3 PILOT IMPLEMENTATION

The operation of the pilot will be enabled using technology delivered in 2022 as part of ESB Networks' ongoing upgrade of our Operational Management System (OMS). This upgrade involves implementing proof of concept distributed energy resource management system (DERMS) applications in developed during Phase 1 of the National Networks, Local Connections Programme in a production environment. This will support closer to real time electricity system analysis, assessing the forecast impact of IDSs providing services to the TSO based on their forecast availability.

As part of the pilot implementation, enhanced communication channels will need to be established between the DSO, the relevant demand side aggregator, and the TSO. These will be used to support the necessary information exchange, regarding the forecast availability, status, schedule and dispatch of the relevant IDSs.

The milestones to be achieved in the implementation of the pilot include:

1. **Complete the upgrade to the Operational Management System to implement forecasting, power flow and optimisation applications.**
2. **Implement the required systems configuration to enable these applications to be used for assessing the impact of the participating IDSs closer to real time, based on their specific network locations.**
3. **Engage with potential pilot participants to develop the required processes for communications relating to the pilot implementation.**
4. **Publish a call for candidates to come forward to be enrolled in the pilot.**

4 PILOT 2: I&C DSR TSO MARKET

4.3 PILOT IMPLEMENTATION continued

Depending on the number of candidates that volunteer to participate in the pilot, it may be necessary to phase the operational go-live of the pilot. This will provide for:

1. **The extensive systems configuration, validation and testing of the power system modelling needed, which will vary on a network by network (and thus participant by participant) basis.**
2. **Post-go-live process validation, to ensure that the new solution can be securely supported under a range of operating conditions, in the control room and in the field.**

Pending the outcome of the definition phase, it is likely that ESB Networks will seek the participation of a small number of IDSs in a joint process development phase, running through Q4 2022 and Q1 2023. This process development phase, undertaken in preparation for the full pilot rollout, will be an important opportunity to ensure the processes implemented reflect both DSO and participants' perspectives. Candidate sites will be identified based on technical criteria, to ensure that a representative sample of the technical conditions to be supported in the full pilot rollout are accounted for in this detailed design and build exercise.

We believe that this joined development exercise is an important opportunity to develop effective processes and customer journeys from both participant / customer and system operator perspectives. It is consistent with our strong preference to adopt open, transparent and collaborative approaches to the delivery of the programme.

During this pilot's definition phase, the National Network, Local Connection Programme will review the status of the requisite OMS upgrade. To support this pilot in a secure manner, as part of normal system operation, it will be important that issues identified, and lessons learned during its development are accounted for. This software implementation is in itself a first both for ESB Networks and our operational technology vendor. As such, it will be necessary to identify at that point whether the proposed pilot as detailed above continues to be feasible.

4 PILOT 2: I&C DSR TSO MARKET

4.3 PILOT IMPLEMENTATION continued

SELECTION CRITERIA
Existing Individual Demand site who are participants in the TSO markets

TARGET LOCATIONS
Forecast up to 50, based on the current instruction set process outcome.

NUMBER OF CUSTOMERS PARTICIPATING
Forecast up to 50, based on the current instruction set process outcome.

TYPES OF CUSTOMERS PARTICIPATING
Pilot targeted to support I&C customer participating in TSO System Services as an IDS in a Demand Side Unit.

PILOT TECHNOLOGY
Interim upgrade to existing control room technology including OMS and Supervisory Control and Data Acquisition (SCADA).

PILOT GO-LIVE AND DURATION
April 2023
2+ years duration

LEARNING OBJECTIVES
As set out below

4 PILOT 2: I&C DSR TSO MARKET

4.4 LEARNING OBJECTIVES

CUSTOMER	DSO	LOCAL MARKETS
Identify customers' requirements in relation to the timing of information flow to allow them to manage their participation in TSO System Service arrangements.	Develop pilot processes and develop systems to support the reassessment of the potential impact of the provision of a TSO service by Individual Demand Sites.	Establish communication channels and related processes to allow the outcome of the reassessment process to be relayed to both impacted the DSU and the TSO.
Test different dispatch and communications options from the customer perspective.	Test alternative communications and dispatch approaches.	Increase awareness of the potential for distribution customers to provide flexibility services.
Increase engagement with the development of TSO System Service provision.	Understand the operational resource impacts and limitations of operating on a low-automation technology platform.	

4.5 RELATED MATERIAL

To learn more about the customer communications and consultation approach that will be put in place to support this pilot, please see the National Network, Local Connections Programme Consultation Framework.

To learn more about the high level framework for interaction between TSO services markets (the subject of this pilot) and DSO services markets (local flexibility services), please see the National Network, Local Connections Programme Phased Flexibility Market Development Plan.

5

Pilot 3: Pilot of Scale (Res & Commercial) Local/DSO Market

5.1 DESCRIPTION

In 2023, pending its definition phase in 2022, we are seeking to go live with a pilot of scale. This would involve contracting a range of flexibility services from all kinds of customers, across an area of the network fed from a single bulk supply point (BSP).

A BSP is point of connection between the transmission system and the distribution system. A BSP can feed between 10,000 and 150,000 customers, depending on where it is located. On average there are 30,000 customers fed from a single BSP, with an average ratio of 9 domestic customers: 1 small commercial customer: 0.001 industrial customers.

5 PILOT 3: PILOT OF SCALE (RES & COMMERCIAL) LOCAL/DSO MARKET

5.1 DESCRIPTION continued

What differentiates a BSP from other medium to large geographic footprints is that all the customers in the location are fed from the same network, so their activities and network usage interact. That is why we are seeking to pilot a range of services, work with a range of different customer types, and collaborate with EirGrid, the TSO, to pilot new ways of coordinating transmission and distribution operations.

This pilot is likely to go live during Release 2, which means that we will not yet have gone live on a new technology platform which supports more automation of flexibility services. However, we believe that this is the right time to:

1. **Develop a deep and rich understanding of customers' needs, barriers, and motivations to participate, and develop effective strategies and processes for addressing them into the future.**
2. **Develop effective processes for managing a range of different services solutions operating together, to enable "stacking" of services.**
3. **Develop and test new processes for coordinating transmission and distribution operations, including operational protocols and data exchange.**
4. **Develop and test a preliminary market management system (MMS).**

These objectives, and how best to achieve them, will be central considerations in the definition phase of this pilot, and its pause-progress-adapt decision.

One of the first key questions is to identify a candidate BSP where the pilot will be located. We propose that this should be based on a range of customer and technical criteria. Then it will be important to commence engagement and awareness activities in the location as we develop the use cases for the pilot in detail. We hope that this scaled pilot will extend the range of use cases for the use of flexibility services.

The implementation of the Pilot of Scale will build on the lessons learned in earlier pilots to improve the developed processes. In advance of launching the Pilot of Scale the National Networks, Local Connections programme will review the format of the pilot to confirm that it continues to meet the programme objectives, in the context of updated policy and regulatory positions, customer and stakeholder needs, and technical conditions on the distribution system.

5 PILOT 3: PILOT OF SCALE (RES & COMMERCIAL) LOCAL/DSO MARKET

5.2 SELECTION CRITERIA

We are seeking stakeholder perspectives on the criteria which should be used for selecting the location for this pilot. As with previous pilots, we will consider forecast demand and generation needs across voltages levels through the application of power system studies and data analytics to the National Network, Local Connections Programme power system requirement load database.

The criteria to be included in this selection process are set out below:

- FORECAST MV/LV SUBSTATION LOADING
- FORECAST MV FEEDER CONGESTION
- FORECAST 38KV STATION CONGESTION
- FORECAST 110KV STATION CONGESTION
- FORECAST LARGE SCALE DISTRIBUTION CONNECTED GENERATION
- FORECAST URBAN/RURAL CUSTOMER PROPORTION
- FORECAST DSU MARKET PARTICIPATION

In balancing between these criteria it is proposed to:

1. **Identify an area where the flexibility service will solve real world problems (such as high network loading). However as this is a pilot, it is important to have scope to test different services and approaches. Therefore, the area selected should not be so heavily loaded that a range of solutions could not be piloted in a secure manner.**
2. **Balance the proportion of urban and rural customers within the selected area, excluding areas which are predominately rural or urban and thus offer limited scope to assess the success of different solutions pending customer mix.**
3. **Exclude areas where there is minimal micro-generation/commercial scale generation expected to be connected before 2025, and thus limited potential to assess the effectiveness of solutions associated with integrating renewables.**
4. **Prefer locations where there is already demand side participation in wholesale energy and TSO system services markets to date, as this may be required to assess solutions related to stacking of services in different markets.**

5 PILOT 3: PILOT OF SCALE (RES & COMMERCIAL) LOCAL/DSO MARKET

5.2 SELECTION CRITERIA continued

Additional criteria being considered for inclusion in this process are:

TRANSMISSION CONSTRAINTS	By managing demand, DSO may be able to reduce existing transmission constraints. Also, there is the potential of enabling a connection which may not be feasible given transmission constraints with flexible connection arrangements.
COMMUNITY INITIATIVES	Engagement in an area with a strong focus in energy conservation could make community buy-in easier.
SIMILAR PILOTS	Working in an area where there are other parties conducting a pilot may enable shared learnings to be achieved.
HYBRID CONNECTIONS	The capacity factor of an independent power producer (IPP) for hybrid generation could increase if two technology types (e.g. wind and solar) were installed.
LV MONITORING & SMART METERING	Having both LV monitoring and smart metering in place will give a full picture of the distribution system down to the LV customer. Subject to access to smart metering data being established.

In advance of launching the pilot, these criteria will be applied to establish a shortlist of candidate locations to be used as the basis of stakeholder consultation. The objective of this consultation will be to guide the selection of the pilot location based the degree of stakeholder and community interest in participation in the pilot.

5 PILOT 3: PILOT OF SCALE (RES & COMMERCIAL) LOCAL/DSO MARKET

5.3 PILOT IMPLEMENTATION

Pending its definition phase in 2022, the core focus of this pilot is to develop a full appreciation of customer needs, including as related to customer experience, awareness and education, and participant processes. This pilot is quite different from earlier ones, in that it will actively seek to involve domestic customers. From a system operator perspective, it will seek to put in place flexible solutions for thermal and voltage constraints, increasing our ability to connect new customers and provide secure, reliable electricity. Once the pilot location has been selected, pilot processes and systems to routinely address the full range of technical and customer needs will be developed. This may require additional baselining and research in the location.

Where the use of flexibility is deemed viable, an assessment of the network need will be carried out to define the flexible services required. This will be done in a manner which accounts for any previously contracted flexibility service in the pilot area. Pending what has been learned in earlier piloting, and the definition phase of this pilot, it is likely that an open procurement process will be conducted in the pilot location. Potential pilot participants will be assessed based on their network locations and their ability to address the identified challenges in the location.

Subject to the responses received to the procurement process, and with the aim of delivering a cost-effective outcome, contracts will be put in place with the successful tenderers for a period of two years. The operational phases of the pilot can commence from the beginning of Oct'23, with contracted participants dispatched to deliver in response to local demand and generation conditions. The delivery of the contracted services will be monitored and reviewed for validation and settlement purposes.

SELECTION CRITERIA
As above.

TARGET LOCATIONS
One location of scale.

NUMBER OF CUSTOMERS PARTICIPATING
This will vary by customer category. We will seek at a minimum 20 customers per category and issue a call for proposals to involve a large number of domestic customers (i.e. 100 - 1,000).

TYPES OF CUSTOMERS PARTICIPATING
Domestic, commercial and industrial demand customers, and aggregators.

PILOT TECHNOLOGY
Interim upgrade to existing control room technology (OMS) and existing SCADA system.

PILOT GO-LIVE AND DURATION
October 2023

LEARNING OBJECTIVES
As set out below.

5 PILOT 3: PILOT OF SCALE (RES & COMMERCIAL) LOCAL/DSO MARKET

5.4 LEARNING OBJECTIVES

CUSTOMER	DSO	LOCAL MARKETS
Develop and test effective recruitment, education and awareness strategies.	Develop and implement selection processes for a BSP to be utilised in the Pilot of Scale.	Develop and implement the procurement processes and systems flexibility services.
Develop end to end customer journeys for domestic, industrial and commercial customers, including through aggregation.	Pilot processes and systems to analyse and define the network needs.	Test concepts like "effectiveness factors" to reflect different customers' ability to address different network issues.
Understand the technical capability of different types of customer and technology developments that could improve customers' ability to participate.	Pilot processes for dispatch of contracted service providers, validation and contract settlement.	Price discovery across different flexibility services and customer categories.

5.5 ADDITIONAL INFORMATION

To learn more about the customer communications and consultation approach that will be put in place to support this pilot, please see the National Network, Local Connections Programme Consultation Framework.

To learn more about the products which we are seeking to contract in this pilot, please see the National Network, Local Connections Programme Phased Flexibility Market Development Plan.

To begin to consider likely locations for this pilot, and to learn more about when and where products like the ones introduced in this pilot are going to be needed over the coming decade, including to support the electrification of heating and transport, please see the National Network, Local Connections Programme 2030 Power System Requirements document.

6

Pilot 4a: RESS-1 Early Access

6.1 DESCRIPTION

In 2023, pending its definition and pause-progress-adapt decision, we are seeking to go live with a pilot exploring the use of flexible connections to connect renewable generators more quickly.

Generators supported by the government's Renewable Energy Support Scheme (RESS-1) are under a contractual obligation to be in commercial operation by the end of Dec 23. Failure to meet this obligation could result in their participation in RESS-1 being revoked and their performance bond being called by the Minister for the Environment, Climate and Communications.

In several cases, deep reinforcement works on the distribution system are required to connect these new generators. These works are often complex and involve long-lead items, making them inherently riskier.

6 PILOT 4A: RESS-1 EARLY ACCESS

6.1 DESCRIPTION continued

The objective of the RESS-1 early access pilot is to apply flexibility to offer early network access to RESS-1 generators whose connection works are higher risk due to the deep reinforcement works required. This is to reduce the potential risk to the customer associated with the Dec'23 RESS-1 Commercial Operation Longstop Date.

ESB Networks' original proposal for this pilot was to create a local market to contract for flexibility in the locations where these new generators are connecting. The flexibility secured in these local markets would be used to allow the generators connect prior to the completion of deep works. Flexibility would be used during periods of high generation and low demand, and/or under contingency operating conditions.

Under this proposal, the connecting RESS-1 generator would be qualified to participate in the local flexibility market alongside existing generation, or demand customers (subject to the generator accepting their early access offer and meeting the defined qualification criteria). Flexibility contracts would have been awarded to the least cost tenderer(s) that resolved the risk of congestion (due to generation).

However, when put to public consultation in Q4 2021, there was a clear stakeholder response that the timelines for this pilot should be accelerated as much as possible, at the expense of developing the proposed market-based arrangements. Having considered this feedback, our updated proposal removes the local flexibility markets element of the pilot, and provides for flexible connection arrangements, on a temporary basis, as a simple bilateral arrangement between the pilot participants and ESB Networks. In adopting this revised proposal, there is an implicit cost in terms of the loss of learning on the local flexibility market however it is considered that this acceptable in the context of the stakeholder feedback received.

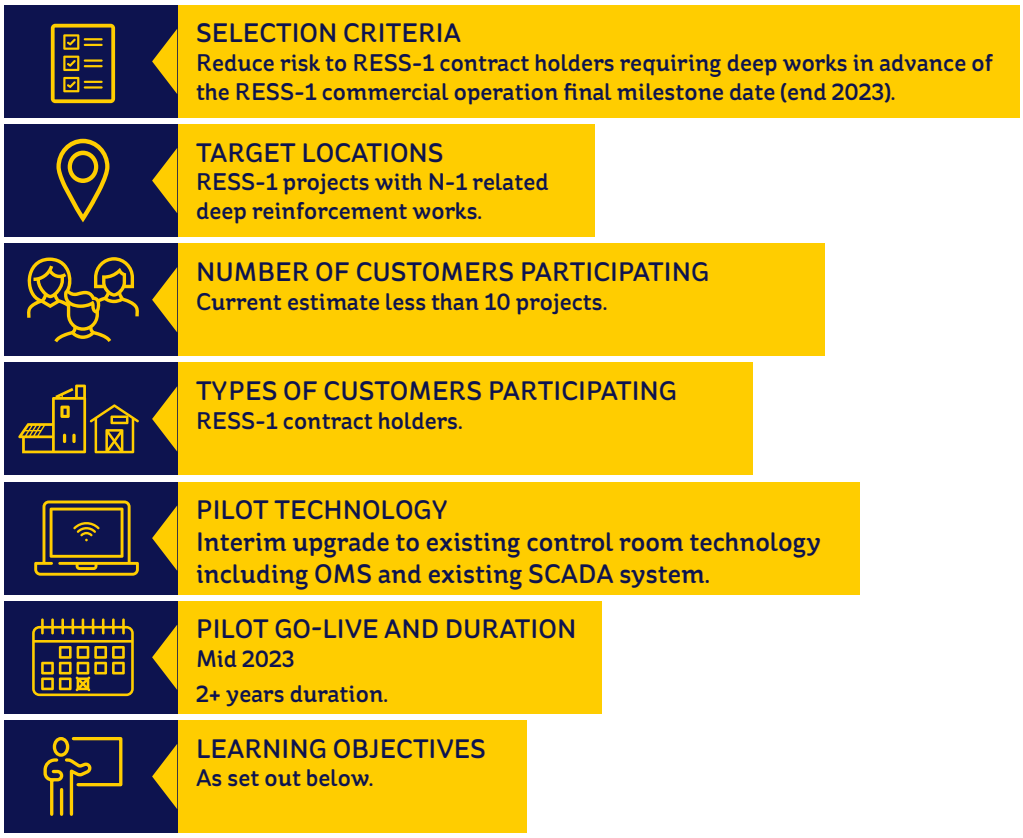
This would make it possible for the timelines for pilot implementation to be accelerated by up to six months, potentially going live operationally from mid-2023 (pending the participants' readiness for energisation). For each participating RESS-1 project, the implementation of the pilot will be subject to the development and agreement of technical arrangements to maintain network security, along with suitable contractual arrangements.

6 PILOT 4A: RESS-1 EARLY ACCESS

6.3 PILOT IMPLEMENTATION

The RESS-1 pilot is intended to allow the connection of renewable generation ahead of the completion of the required N-1 contingency related deep reinforcement works. As a result, the secure and safe operation of the network will depend on the ability of the participating project to reliably receive and respond to instructions sent by ESB Networks to modify the project's active power output over the duration of the pilot.

A key aspect of the project implementation will be the development and agreement with participants of the technology, the related processes and testing requirements that will ensure required control of the active power output of participants. Appropriate contractual arrangements and procedural documentation will be developed to capture these requirements. The pilot arrangements will remain in effect until the N-1 contingency related deep reinforcement works have been completed at which point the pilot will close.



6 PILOT 4A: RESS-1 EARLY ACCESS

6.4 LEARNING OBJECTIVES

CUSTOMER	DSO
Develop understanding of the Impact of DSO active power control on their operations.	Piloting dispatch processes for active power control on the distribution system.
Develop understanding of the impact of flexible connections on commercial arrangement with the DSO.	Develop understanding of the impact of flexible connections on commercial arrangements with generation customers.
Develop understanding of the generator technology requirements to implement active power control of renewable generation on the distribution system	Develop understanding of the DSO technology requirements to implement active power control of renewable generation on the distribution system.

6.5 ADDITIONAL INFORMATION

To learn more about the customer communications and consultation approach that will be put in place to support this pilot, please see the National Network, Local Connections Programme Consultation Framework.

To learn more about where, when and why flexible connections may be an increasingly important part of how we connect renewable generation on the Irish distribution system, please see the National Network, Local Connections 2030 Power System Requirements.

7

Pilot 4b: RESS-2 Community

7.1 DESCRIPTION

The RESS-2 renewables support mechanism put in place by the government offers specific pathways and supports for communities to participate in renewable energy projects. The RESS-2 auction process is due to be completed and the auction resulted to be published in June 2022. Based on the consultation responses received, we believe that there is an appetite to pilot flexible connection options for community-led renewables projects seeking to participate in this RESS-2 process. As such, based on the technological capability that will be available in this timeframe, we are introducing a proposal to define a RESS-2 Community pilot. This pilot could offer flexible connections to community-led renewables projects whose connection would otherwise require deep reinforcement works relating to N-1 contingency conditions.

7 PILOT 4B: RESS-2 COMMUNITY

7.1 DESCRIPTION continued

The objective of the RESS-2 Community pilot is to build on the approach introduced in the RESS-1 Early Access pilot. Following the RESS-2 auction process, qualifying RESS-2 Community projects will be invited to participate in the pilot with engagement directly between ESB Networks and the project on the nature of the flexibility required to facilitate their connection. For each RESS-2 Community project, the implementation of the pilot will be subject to developing and agreeing a technical methodology that will maintain network security and suitable contractual arrangements.

Pending its definition phase, engagement with candidate projects could commence in Q4'22 with the potential operational go-live targeted to be mid 2023 (pending projects' readiness for energisation).

7.2 SELECTION CRITERIA

The section criteria for the RESS-2 Community pilot closely aligns to that to be applied in the RESS-1 Early Access pilot. To qualify to participate in this pilot, candidates will be required to demonstrate that:

1. **Their project is supported under qualifying RESS-2 as a Community-Led Project.**
2. **The project is materially progressing towards commercial operation with a connection agreement in place.**
3. **Under the project connection agreement there are deep reinforcement associated with N-1 conditions specified.**

Candidates will also be required to agree that participation in the pilot will not change the nature of their existing connection agreement with regard to the required works and related costs, they will accept at their own expense the cost of participation in the pilot, including but not limited to any foregone revenues as a result of responding to instructions from ESB Networks over the course of their participation in the pilot

7 PILOT 4B: RESS-2 COMMUNITY

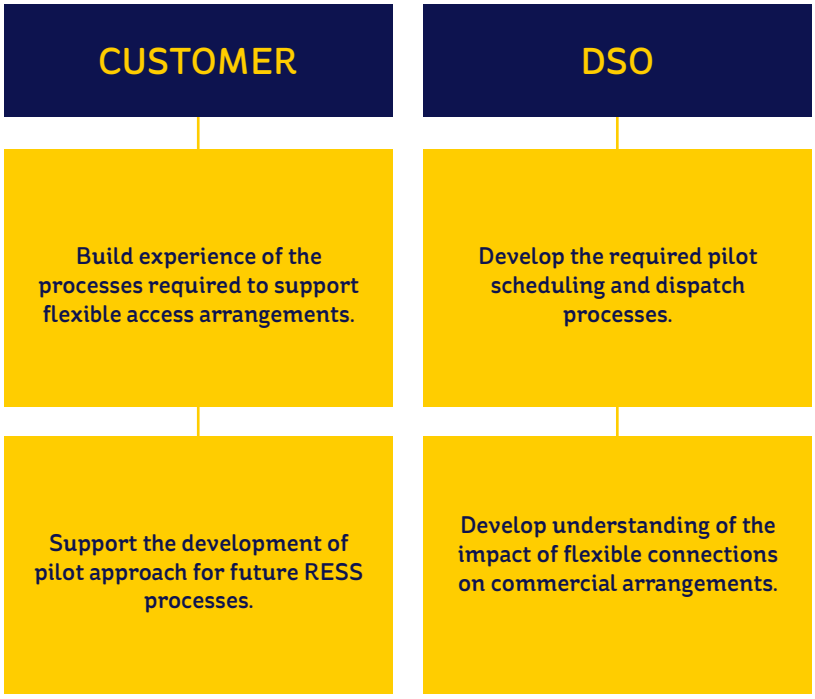
7.3 PILOT IMPLEMENTATION

Similarly, to the RESS-1 Early Access pilot the RESS-2 pilot is intended to allow the connection of renewable generation ahead of the completion of the required N-1 contingency related deep reinforcement works. The secure and safe operation of the network will depend on the ability of the participating project to reliably receive and respond to instructions sent by ESB Networks to modify the project's active power output over the duration of the pilot.

As with the RESS-1 Early Access pilot key aspect of the project implementation will be the development and agreement with participants of the technology, the related processes and testing requirements that will ensure required control of the active power output of participants. Appropriate contractual arrangements and procedural documentation will be developed to capture these requirements.

7 PILOT 4B: RESS-2 COMMUNITY

7.4 LEARNING OBJECTIVES



The initial proposal for the RESS-2 pilot builds on the RESS-1 pilot in that the flexible connection arrangements put in place as part of this pilot, once established and validated during the pilot period, could potentially be retained on an enduring basis. This means that the deep reinforcement works otherwise required for these community projects to connect could be suspended on a long-term basis, to the extent that this delivers an economic outcome for the project and for the electricity customer.

This proposal for flexible connection relates to contingency conditions only, i.e. cases where substantial reinforcement is needed to support a generator's output under abnormal feeding conditions. Pending the successful delivery of the RESS-1 Early Access and RESS-2 Community pilots, and pending progress delivering Release 3 of the programme, future iterations of the National Networks, Local Connection Pilot Roadmap could extend flexible connection solutions further. This could include the solutions developed being made available to broader categories of generation projects, and these solutions being used to manage a broader range of issues driving the deep reinforcement (for example, line uprates associated with forward feeding arrangements).

7.5 ADDITIONAL INFORMATION

To learn more about the customer communications and consultation approach that will be put in place to support this pilot, please see the National Network, Local Connections Programme Consultation Framework.

To learn more about where, when and why flexible connections may be an increasingly important part of how we connect renewable generation on the Irish distribution system, please see the National Network, Local Connections 2030 Power System Requirements.

8

Pilot 5: Future Arrangements TSO Markets

8.1 DESCRIPTION

In their high level design consultation (SEM-21-069), the SEM Committee has proposed that the Future Arrangements for TSO System Services will involve a daily auction for TSO System Services that would take place after the day ahead wholesale energy market (DAM). This post DAM system services market would be introduced to complement the parallel procurement of system services over longer timeframes, where this would help address identified competition and/or locational constraint issues.

8 PILOT 5: FUTURE ARRANGEMENTS TSO MARKETS

8.1 DESCRIPTION continued

In line with the provisions of the Clean Energy Package, the SEM Committee (SEMC) consultation sets out the responsibility of the relevant DSO to develop the modalities enabling distribution system customers' participation and minimise restrictions on their ability to offer system services to the TSOs. The objective of the Future Arrangements TSO Market pilot is to introduce these modalities on an incremental basis, building from the lessons learned through Pilot 2 towards the eventual go-live of fully automated solutions to enabling distribution system users' participation, as part of National Network, Local Programme Release 3.

In approaching the development and implementation of the modalities required to enable distribution system customers to offer system services to the TSOs, ESB Networks' objectives are to:

1. **Provide a level playing field for distribution system users' participation in system services, in a manner that reflects local system security and underlying usage.**
2. **Maximise the role and participation of new and existing technologies in future system services arrangements, so as to deliver the best value for customers.**
3. **Protect all distribution system users, by ensuring its continued safe and reliable operation and deliver the greatest possible level of certainty to distribution connected service providers, by providing for the lowest possible level of constraint.**
4. **Deliver the greatest potential resource, and the greatest level of certainty to the TSO, by allowing for the DSO to redispatch, in coordination with the TSO, if unexpected distribution system conditions arise.**
5. **Provide for transitional arrangements which can be implemented relatively quickly, by leveraging distribution system control capabilities which are available today, and which can be adapted on an incremental basis as new systems capabilities become available.**
6. **Readily provide for progressive increases in the degree of operational accuracy, and risk, that can reasonably be adopted on the distribution system, with a view to further reducing constraint levels over time.**
7. **Readily provide for separate but operationally compatible distribution system services arrangements over the coming years, offering greater potential for efficient system operation and a liquid services market, delivering value both for customers and market participants.**

8 PILOT 5: FUTURE ARRANGEMENTS TSO MARKETS

8.1 DESCRIPTION continued

ESB Networks believes the greater the degree to which the DSO is involved in all stages of the market participation of distribution connected system service providers:

1. **The greater the access which can be provided for system services delivery from the distribution system, and**
2. **The more readily processes for new and emerging technologies can be streamlined and aligned with the processes which will in future apply for the provision of distribution flexibility services.**

DSO involvement will be needed throughout the lifecycle of services participation, from registration through to auction, dispatch and redispatch, to maximise the participation of distribution connected resources. While there will be a direct commercial relationship between the TSO and the system service provider, there will also necessarily be a direct operational relationship between the DSO and the provider.

As the SEM Committee's high level design process draws to a close, we will engage closely with them and with the TSO with regard to the next steps. Significant work will be required in the coming months, with collaboration across all stakeholders to develop detailed design arrangements which meet TSO needs, in a secure, effective and economic manner. As part of this, ESB Networks, as DSO, is responsible for leading the design and delivery of the processes and systems enabling us to support distribution customers' participation in the market for transmission system services. The current arrangements were developed from the perspective of the transmission system (as was appropriate at that time) and thus met the needs of larger, transmission connected service providers. The current model for distribution system users' participation substantially limits the volume of services which could be delivered from the distribution system, and the limitations arising of these arrangements would inevitably grow over time. The new modalities that ESB Networks delivers, introduced through this pilot, will be developed to reflect the needs and capabilities of distribution system users.

8 PILOT 5: FUTURE ARRANGEMENTS TSO MARKETS

8.1 DESCRIPTION continued

Notwithstanding the degree of change involved, this is a positive development for distribution system customers' access to the market. In developing its approach to supporting the System Services Future Arrangements, ESB Networks will be guided by two core principles, namely:

1. **To maximise the participation of new and existing technologies on the distribution system, including citizens, communities, farms and industry, in future system services' arrangements, so as to deliver the best value for customers, in cooperation with the TSO.**
2. **To protect all distribution system users, by ensuring the continued safe and reliable operation of the system in accordance with DSO license duties.**

Enabling a system services market design that serves all stakeholders is paramount. Both local and whole system operations, over the coming decade, will become increasingly complex, and system services will play a central role in a secure and economic system operation. This will be delivered increasingly by providers who are not providers today – distributed demand, generation communities and new technologies. ESB Networks' role as DSO, of coordination and cooperation with the TSO and market participants, will be pivotal to achieving a market design that supports active participation of new technologies, investor certainty and delivering best value for the customer.

ESB Networks' role as DSO in the design and operation of system services arrangements with regard to distribution connected participants will be essential to reducing barriers to entry for smaller and newer technologies, and for distribution customers. It is essential that their participation is built into the design and operation of system services from the earliest possible point. The right level of local management is critical to enabling smaller providers, and new technologies on the distribution system, to participate on a level footing in a market which is not currently designed to account for the local network conditions in which these smaller participants operate.

The processes enabling distribution system users' participation in Future Arrangements will be developed to maximise their participation in system services arrangements based on the above principles. These processes will include:

- **Technical registration**
- **Pre-qualification**
- **Bidding processes**
- **Processes for services where not auctioned**
- **Scheduling, dispatch, redispatch**
- **Monitoring & remedial actions**
- **Information flows and timings**

8 PILOT 5: FUTURE ARRANGEMENTS TSO MARKETS

8.3 SELECTION CRITERIA

This pilot is intended to offer a mechanism to develop and validate the requirements for DSO facilitation of the planned go-live of the System Service Future Arrangement in April 24. As the initial pilot phase from April 2024 onwards is expected to build on the experience of the arrangements put in place in Pilot 2, and to leverage existing technology, it is proposed that the pilot will focus on distribution customers that are currently participating in the TSO system service arrangements.

This position is based on the assumption that those customers that are currently providing system services will, in the first instances be those that look to operate under the future arrangements.

8.4 PILOT IMPLEMENTATION

This pilot will involve ESB Networks coordinating with the TSO in the scheduling and dispatching of flexibility service (DSO) and system services (TSO) respectively. It is expected that this would happen in two phases. The first would commence as of the go-live of the Future Arrangement in Apr 24, and would involve:

1. **Updating the processes introduced in the April 2023 pilot (dynamic instruction sets) to reflect new market operational timeframes and processes.**
2. **Defining processes to be introduced on a phased basis, and thus increasing the ability of distribution system customers to participate.**

The second phase would commence as of the end 2024, when ESB Networks' enhanced operational systems platform would go live and support greater automation of system management and data exchange processes.

8 PILOT 5: FUTURE ARRANGEMENTS TSO MARKETS

8.5 LEARNING OBJECTIVES

CUSTOMER	DSO	LOCAL MARKETS
Develop understanding of the processes to be applied for DSO customers participating in the TSO Future Arrangements markets.	Development of required scheduling processes.	Develop the qualification requirements and processes.
Test and validate the arrangements for DSO customers to provide services to both the DSO and TSO.	Dispatch, re-dispatch and emergency needs and processes.	Bid management needs and processes.
Develop understanding of the capability and appetite of different customer categories to participate in service markets.	Develop the required data exchange and operational protocols.	Impact of connection right policy development or other parameters.

8.6 ADDITIONAL INFORMATION

To learn more about the customer communications and consultation approach that will be put in place to support this pilot, please see the National Network, Local Connections Programme Consultation Framework.

To learn more about the multi-year plan that ESB Networks will deliver in partnership with Eirgrid, to further develop the electricity system and its secure and reliable operation to support the decarbonisation of Irish society, please see the Multi-year DSO/TSO Work Plan Covering 2022 – 2026.

9

Pilot 6: Agile Customer/Community

9.1 DESCRIPTION

The Data Platforms and Dashboards roadmap sets out a blueprint, underpinned by stakeholder engagement, for the development of local and regional dashboards and platforms enabling customers and communities to interact with their local electricity system. These dashboards and platforms will support customer and community engagement, creating tangible insights into the potential for and value of flexibility and participation in their local electricity system.

A high level of feedback was received from energy communities interested in becoming more engaged with the programme. Communities are at the forefront of active customers, and our research throughout 2021 has highlighted the urgency of supporting all of our customers to build an awareness and deeper understanding of the electricity system. As such, we want to work with communities to learn what approaches to sharing and using electricity system information will be most intuitive and support the greatest behavioural impact amongst our customers.

9 PILOT 6: AGILE CUSTOMER/COMMUNITY

9.1 DESCRIPTION continued

In response, this updated proposal for the National Network, Local Connection Programme involves the definition of an Agile Customer/Community Pilot. Pending an initial feasibility assessment, it is proposed that this will involve piloting the dashboards proposed in the Platforms and Dashboards Roadmap in communities across the country who seek to participate. A collaborative and iterative development process could give the customers and communities greater insight to their local energy system, support customers and energy communities monitoring the impact of their activities on the local energy system and provide an opportunity for ESB Networks and our stakeholders to test the effectiveness of a range of measures seeking to engage with customers and energy communities on the path to decarbonisation.

9.2 SELECTION CRITERIA

To gain insight into the type of information that is of most interest and how it can be best presented through data visualisation to customers a number of energy communities that are active in the promotion of energy sustainability in their area such as existing Sustainable Energy Communities (SEC) will be invited to work with us in developing the initial dashboards and platforms.

The input for these communities, in addition to other stakeholders who have an interest in developing customer engagement with their local energy system will be applied to setting out a roadmap for the further development of the dashboard and platforms.

9 PILOT 6: AGILE CUSTOMER/COMMUNITY

9.3 PILOT IMPLEMENTATION

The Agile Customer/Community pilot will first go through an initial feasibility assessment, to identify how the electricity system data currently gathered and used in distribution system operations can be leveraged to provide an initial suite of customer dashboards. An assessment will made of the time and resourcing required to:

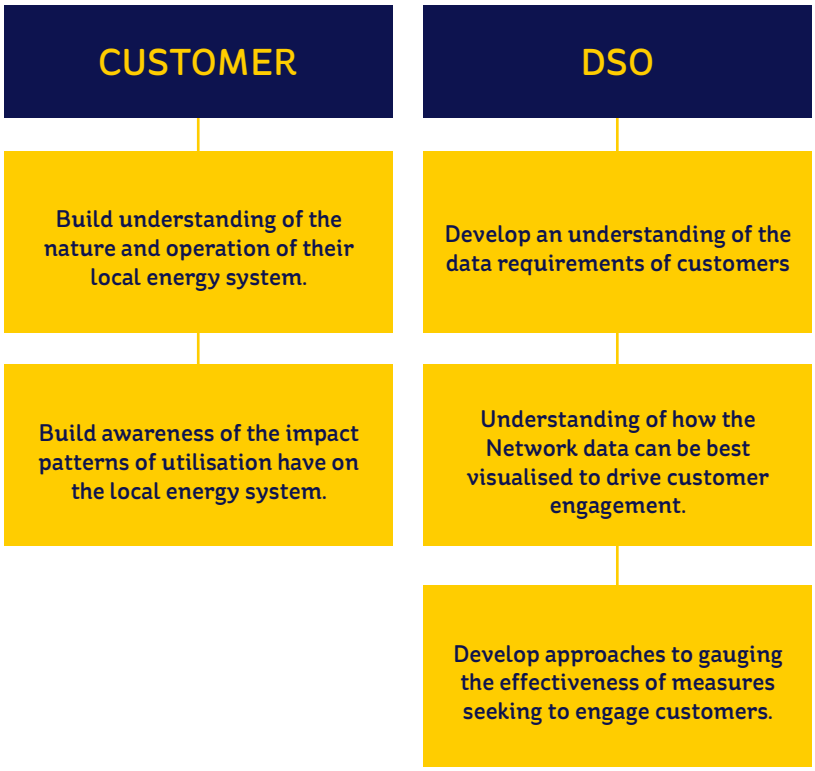
1. **Develop the required platform architecture such that it conforms to the relevant IT and cybersecurity standards.**
2. **Develop and test proposals for intuitive data visualisation approaches.**
3. **Engage with and support prospective users.**

Based on this information, and further consultation with our stakeholders, a decision on the implementation of the pilot will be made by the end of H1'22. Subject to this decision, after an initial development phase, from late 2022 onwards, a number of customer groups/energy communities could be invited to test the initial suite of customer dashboards. These users will be asked for their views on the value of the initial development, and on the next phase of development that could be made to the offering. In this manner, we hope to enter a co-creation process for the ongoing development roadmap for the dashboards.

The improvements agreed will be developed and implemented into the initial suite of customer dashboards and by the end of Q1'23 the dashboards will be made publicly available. The developed roadmap for the pilot dashboard will be developed into an agile framework with regular release of new or enhanced functionality.

9 PILOT 6: AGILE CUSTOMER/COMMUNITY

9.2 LEARNING OBJECTIVES



9.3 ADDITIONAL INFORMATION

To learn more about the customer communications and consultation approach that will be put in place to support this pilot, please see the National Network, Local Connections Programme Consultation Framework.

To learn more about the data platform and dashboards roadmap that has been developed, please see the National Network, Local Connections Programme Data Platforms and Dashboards Roadmap.

10

Pilot 7: Full Solution First Go-live

10.1 DESCRIPTION

To support Ireland's climate action targets for renewable electricity generation, the electrification of heat and transport, and for demand side flexibility by 2030, solutions developed and piloted successfully throughout this roadmap will need to be rolled out at scale across the country. To make this possible, ESB Networks will need to invest in enhanced operational control and flexibility market management systems.

As set out in the out in the Operational Systems Roadmap, available on the National Network, Local Connections Programme website, there are separate workstreams planned to address the development and deployment of technological capability to support the earlier pilots, and a scaled rollout, respectively. As the second of these workstreams progresses towards its go-live, the new technologies involved must be rolled out in a manner that is secure, efficient, and effectively coordinated with demand response providers and distributed renewable generators who are participating in flexibility solutions at that time.

10 PILOT 7: FULL SOLUTION FIRST GO-LIVE

10.1 DESCRIPTION continued

We plan to roll out the end state operational technology (ADMS) leveraging the learnings of the previous years' piloting.

This would involve:

Moving onto a flexible and scalable technology platform, and having new organisational capabilities and resources in place, to roll out flexibility in any customer location on networks covering up to 50% of the country.

The ability to accommodate thousands of participants, heading for hundreds of thousands in early Price Review 6 (PR6) timeframe.

The ability to enable any type of customer – residential, commercial, storage, generation or community – to participate.

A high degree of automation within our organisation, in the field and in customers' premises.

Migrating successful pilots from the programme to BAU within 24 - 30 months.

Initially, we plan to go live on a pilot footprint. Over a period of weeks, the country would be migrated onto a new operational platform, and over a period of months, the new functionality would be "turned on" so that capability to manage the delivery of flexibility services would be enabled. By the end of 2025, we propose to have that capability "turned on" for 50% of customer locations.

10.2 SELECTION CRITERIA

The Full Solution First Go-live pilot would focus on utilising the capability enabled by the deployment of the ADMS. The pilot area would be linked to the areas of the system where there are existing flexible service providers contracted from earlier pilots. This would allow the amended business processes, supported by these systems, to be validated and refined in advance of extending the area of the network under active management. The areas of the network that would be targeted by the pilot would also be linked to the rollout of both the smart metering programme and the LV network visibility workstream subject to access to smart metering data being established. Within the areas of the network under active management, all eligible HV and MV reinforcements schemes would be tested for the application of flexibility services through the application of rolling tenders.

10 PILOT 7: FULL SOLUTION FIRST GO-LIVE

10.3 LEARNING OBJECTIVES

CUSTOMER	DSO	LOCAL MARKETS
Refine the end to end customer journey reflecting the deployed systems.	Refine the scheduling processes to reflect deployed operational technology.	Apply the deployed market management system to the qualification processes.
Develop processes to promote customer engagement in service provision as the rollout extends across the network.	Refine the dispatch, re-dispatch and emergency needs processes to reflect deployed operational technology.	Apply the deployed market management system to bid management processes.
Develop understanding of customer preferences for engagement with flexibility service provision; directly or through intermediaries.	Refine the operational protocols to reflect deployed operational technology.	Refine the flexibility service delivery validation and settlement processes.

10.4 ADDITIONAL INFORMATION

To learn more about the customer communications and consultation approach that will be put in place to support this pilot, please see the National Network, Local Connections Programme Consultation Framework.

To learn more about the products which we are seeking to contract in this pilot, please see the National Network, Local Connections Programme Phased Flexibility Market Development Plan.

To learn more about when and where products like the ones introduced in this pilot are going to be needed over the coming decade, including to support the electrification of heating and transport, please see the National Network, Local Connections Programme 2030 Power System Requirements document.

To learn more about the long-term operational technology deployment plan, please see the National Network, Local Connections Operational Systems Roadmap.