

Ev's Enabling Ireland's Flexibility Market Transformation



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NETWORKS



Open Charge Alliance OCPP Plugfest

How flexibility, smart charging, DER integration, energy management systems and V2G can support network stability, renewable energy integration and the future energy system

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Robert Power,
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About ESB Networks



**Distribution
Asset Owner**



**Distribution
System Operator**



**Transmission
Asset Owner**

**4,000
Employees
nationwide**

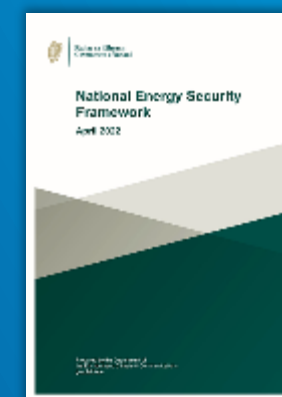
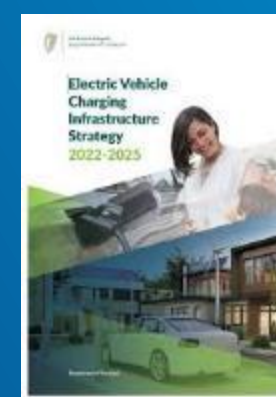
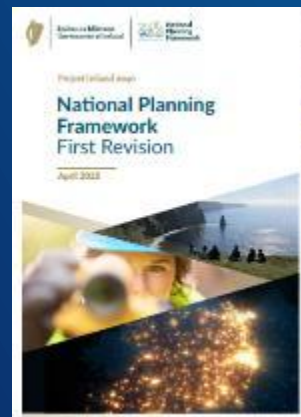
**>1,100
Irish
Suppliers**

**€1.2bn
contribution
to Irish
Economy**

**€1.3bn
Annual
Investment**

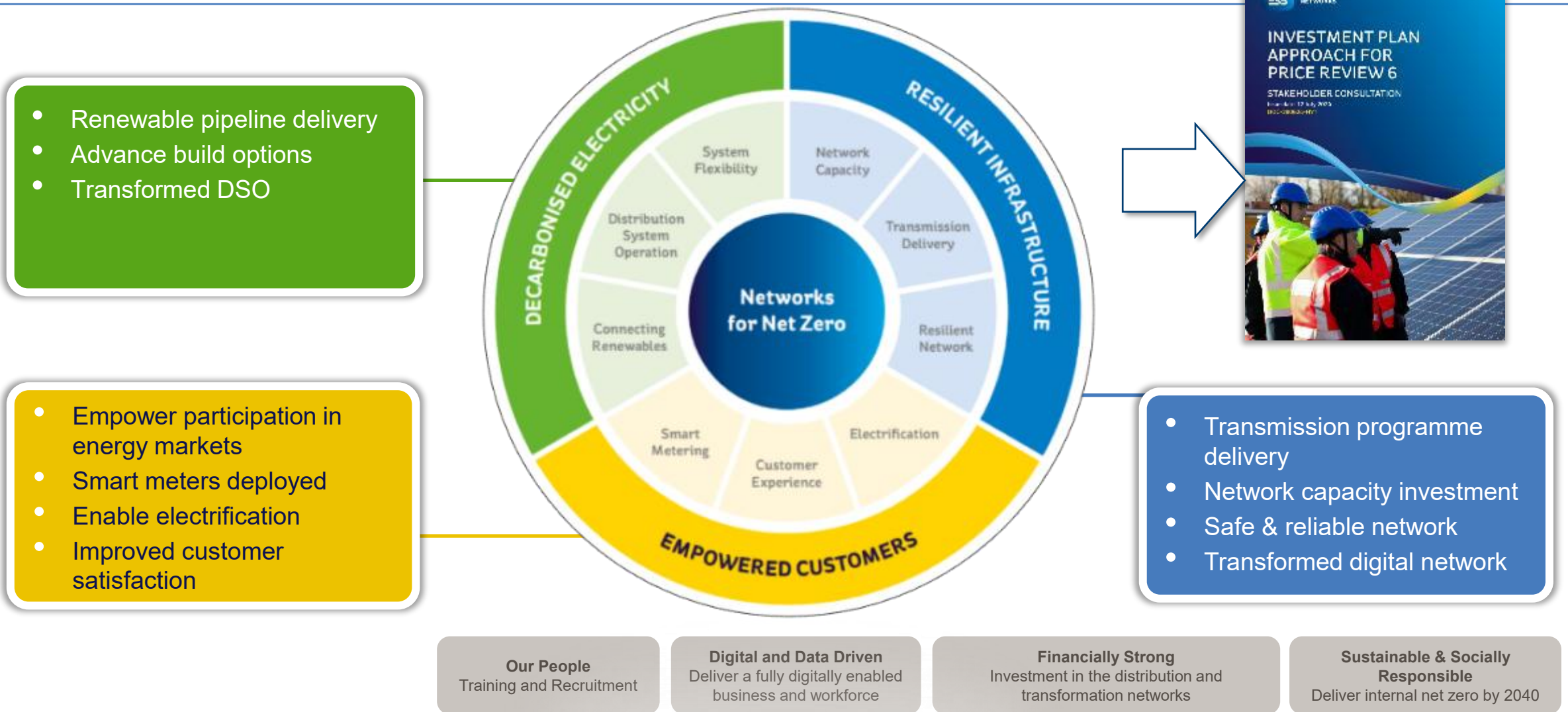
**>€5bn
in Contractor
Frameworks**

Policy objectives place new requirements on the electricity



	Renewable Electricity Share	Onshore Wind	Solar	Offshore Wind	New Flexible Gas Plant
2030	80%	9 GW	8 GW	At Least 5 GW	At Least 5 GW
	Demand Side Flexibility	EVs	Public EV Charging Capacity	Heat Pumps (Home Retrofits)	Housing for All New Homes
2030	20-30%	1 million	800 -1000 MW	680,000 (500,000)	300,000

Networks for Net Zero Strategy & Price Review 6



PR6 Investment Focus

Reliability & Resilience

€1.2bn



Transmission Delivery

€5.9bn



Smart, Flexible System Operation

€1.2bn



Distribution Capacity

€2.6bn



Renewable Connections

€2.4bn

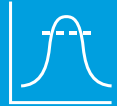


Customer Connections

€1.3bn



The 'Big Ticket' Flex Market Transformation deliverables by 2030



Prepare and submit **Flexibility Needs Assessment** (FNA) to the CRU for publication every 2 years



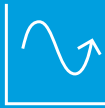
Engage with and activate **customers to participate in providing flexibility services** to meet flexibility targets, ITAGT, EV Flex, V2G....



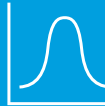
Implement requirements and rules as defined by the **Network Code on Demand Response** (NC,DR)



Initial procurement of the **Demand Flexibility Product** to inform next steps for the delivery of up to 500 MW.



Learn from and evolve **Local Business Flex, SME Flex**



Evolve to an **enduring Flexible Demand Connections** solution



Procure and implement a scalable **Flexibility Market System** (FMS)

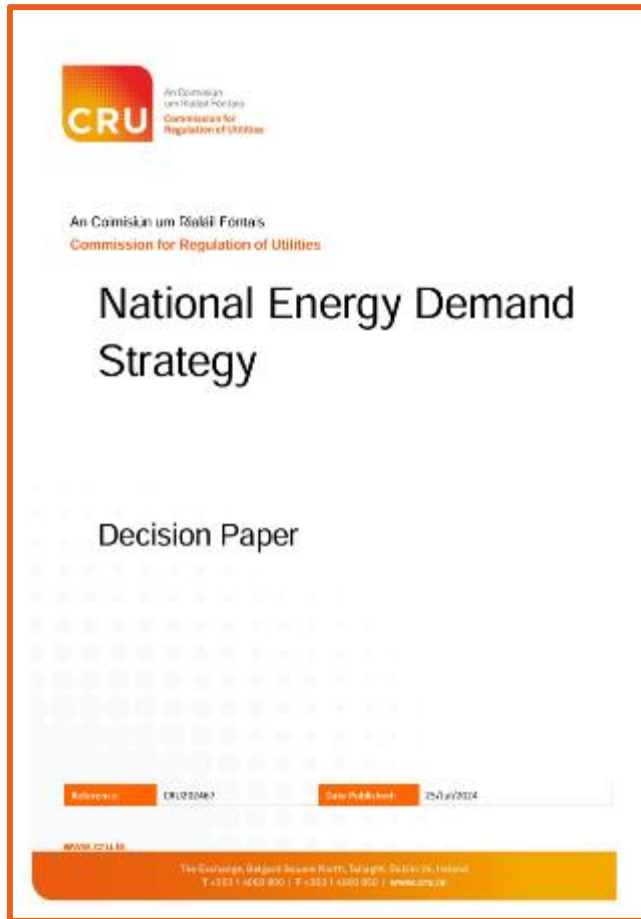


Establish the enduring set of processes and systems to facilitate increased **coordination between TSO and DSO**



Develop, in collaboration with EirGrid, a **Flexibility Information System** (FIS) informed by NC DR

NEDS uses a graduated pathway from price signals to firm obligations

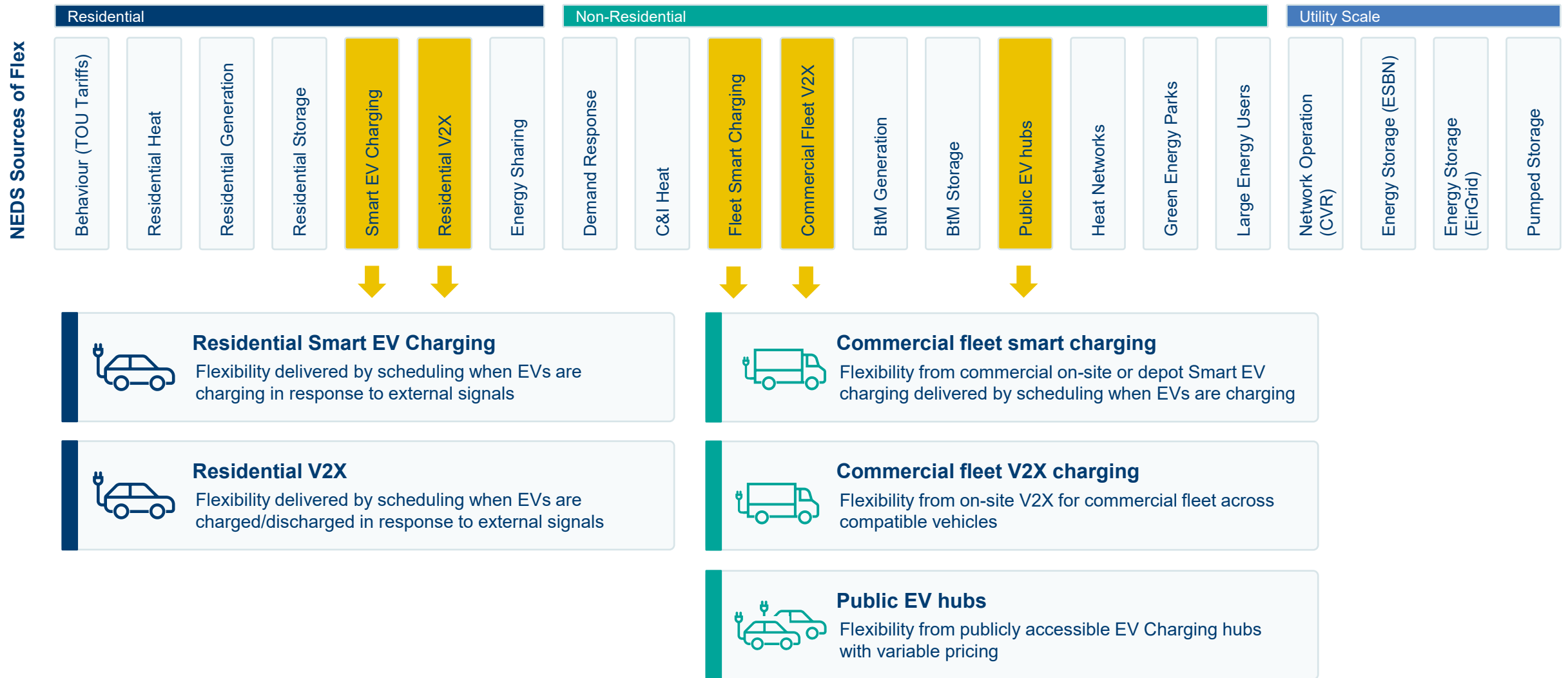


The CRU's National Energy Demand Strategy (NEDS) sets out flexibility across:

- **Implicit:** Customer responds to prices or tariffs, e.g. time-of-use tariffs for EV smart charging.
- **Explicit:** Customer or aggregator commits flexibility, e.g. aggregated EV flexibility.
- **Mandatory:** Rules or connection conditions require a response, e.g. timed EV fleet charging.

It models the potential flexibility from residential V2X and smart charging, commercial fleet V2X charging, and Public EV hubs.

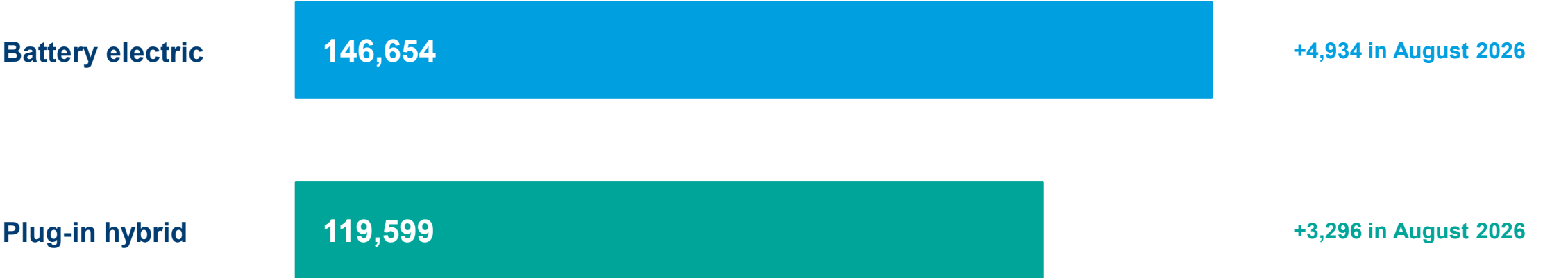
NEDS identifies EV, V2G and smart charging sources of flexibility



ESBN is delivering NEDS actions to enable EV, V2G and smart charging flex

1.3 Smart EV Charging Services	2.13 Smart Charging Flexibility Product	2.16 Optimise EV Fleet Charging	2.17 Smart EV Charging Availability
Action ID	Action	Description	Progress to Date
2.13	Smart Charging Flexibility Product	Develop and launch new smart charging flexibility product and/or service and ensure the delivery is fair and effective in enabling demand flexibility through EVs.	ESB Networks is currently partnering with Ohme to deliver a domestic charging flexibility trial, designed to study how smart EV charging can support the electricity grid.
1.3	Smart EV Charging Services	Engage across relevant parties to develop propositions for smart charging services, including an exploratory investigation of vehicle-to-grid (V2G) services. Establish working group to explore barriers and enablers. Publish programme of work.	Engagement continues between ESBN and the CRU on the establishment of a working group to explore barriers and enablers, after which a programme of work can be published. Following the re-baselining review, the completion date for this action has been updated from Q4 2025 to Q3 2026 to account for the delay arising from external dependencies materially impacting the completion of this action.

Ireland's EV uptake is accelerating, expanding the addressable flexibility pool



266,253

BEVs + PHEVs under current taxation

+74,680

growth from August 2025 to August 2026

252,267

private cars within the total

Each additional connected vehicle increases potential charging load and, when enabled, the pool of flexible capacity.

Flexibility turns electricity demand and distributed assets into system resources

Consuming, generating and storing electricity in different ways and at different times.

Solve local congestion

Shift or reduce demand where LV and MV assets are constrained.

Connect demand sooner

Use flexible or timed operation to support new and increased loads.

Improve reliability

Coordinate controllable loads, storage and DER during network stress.

Connect more generation

Increase demand or storage when renewable output is abundant.

Defer reinforcement

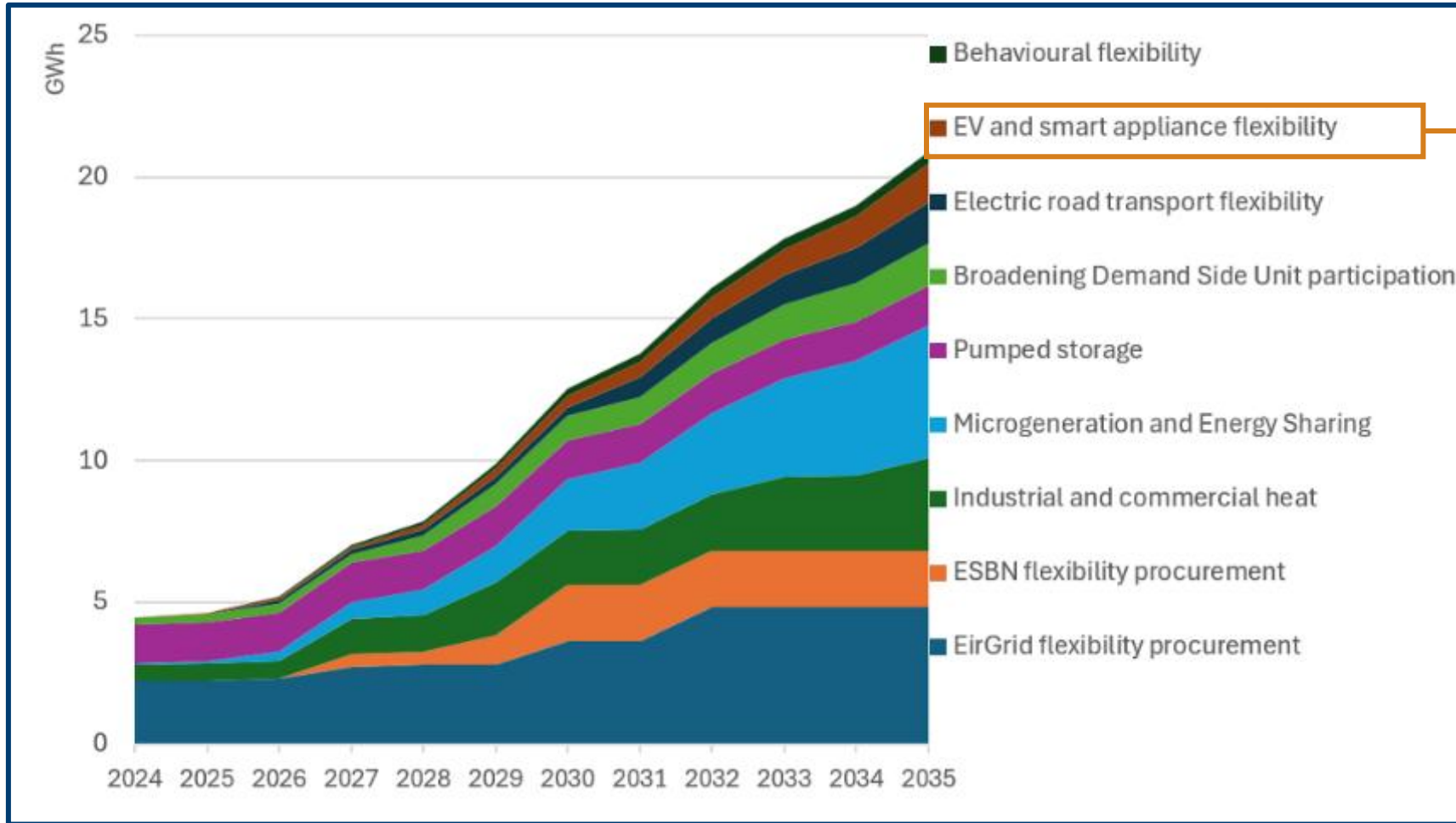
Use non-wire alternatives where they are economic and dependable.

Enable active customers

Turn EVs, batteries and energy management systems into flexible capacity.

System outcome: lower peaks • fewer constraints • better renewable utilisation • more customer choice

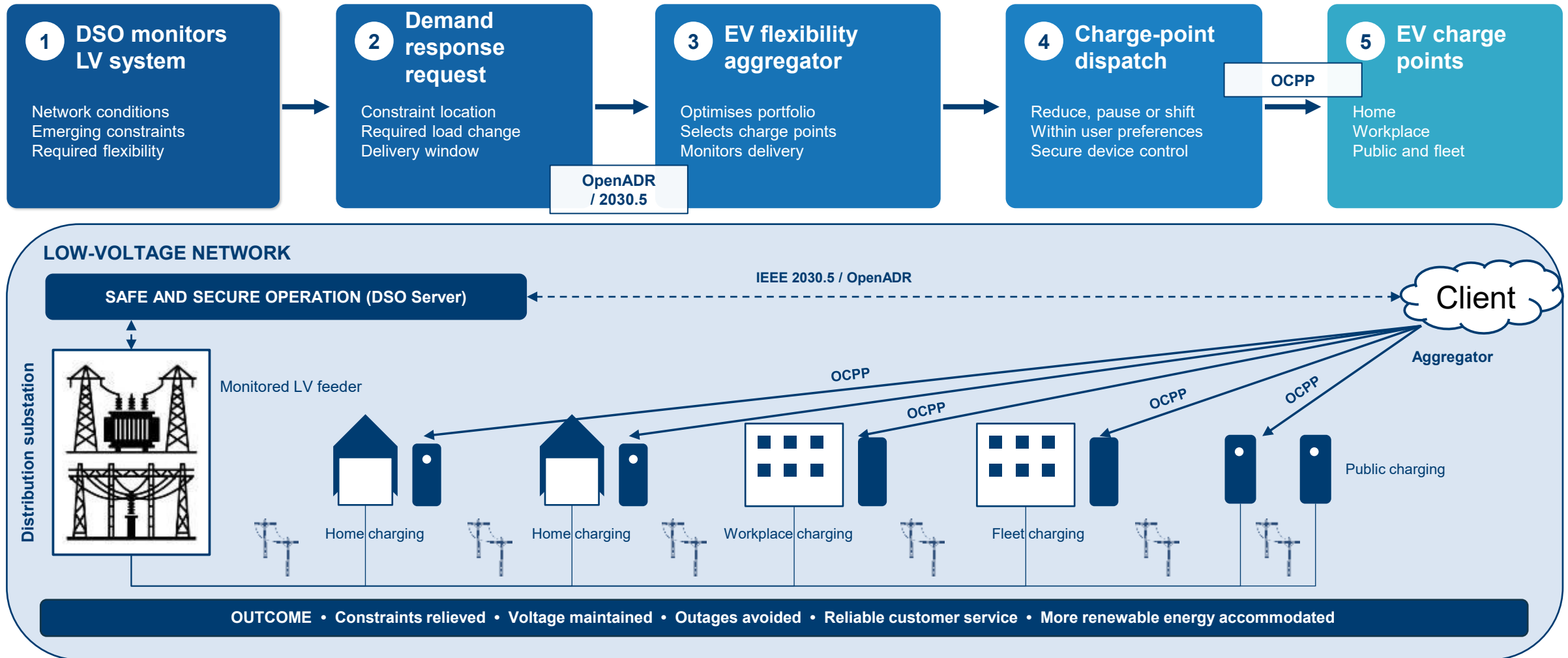
NEDS has projected demand side flex from various sources, including EVs



EV and smart appliance flexibility includes flexibility from residential heat pumps and from residential EV charging, including Vehicle-to-Everything (V2X) capability. The estimation provided in the NEDS decision paper was based on the CAP targets for the uptake of heat pumps and EVs, trajectories for which have subsequently been assessed by the SEAI and deemed to be much lower than the original CAP targets set.

There was also a change in the EV flexibility methodology by shifting the focus from the number of vehicles to the number of compatible chargers that can support smart charging and V2G. In the updated forecast of flexibility, EV and smart appliances are expected to reach 420MWh by 2030 and over 1.3GWh by 2035 for the central “Expected Delivery” scenario.

EV flexibility can support the DSO's safe and secure operation of the LV system



EV flexibility can benefit customers and system operators alike

1

EV demand must be actively managed

Unmanaged charging can amplify local peaks. Smart scheduling aligns charging with network capacity, lower-cost periods and renewable output.

2

Residential smart charging is the scale play

Automated V1G shifts charging without affecting mobility and uses technology already embedded in the emerging charging ecosystem.

3

Fleet charging offers controllable volume

Depot-based eLCVs, eHGVs and buses combine larger batteries, centralised controls and predictable operating windows for aggregated flexibility.

4

V2G adds two-way system support

Compatible EVs can reduce charging or export energy, increasing dispatchability, but value depends on hardware, standards, availability and participation.

5

EMS is the orchestration layer

Energy management systems combine journey needs, state of charge, tariffs, site limits and network signals to optimise charging across homes, depots and hubs.

OCPP - Why it matters?



Built-in Security

Aggregated system Flexibility supporting CAPEX investment.



Protects Customer Data

Ensures privacy and secure access control for customer devices and information.



Interoperability & Confidence

A single, open standard reduces vendor lock-in and gives utilities and customers confidence in secure, multi-vendor solutions



Enables Grid Flexibility at scale

Securely connects multiple 000's devices to support a more reliable, resilient and cost-effective grid.



Supports Clean Energy Goals

Helps integrate more renewables, electrification, and distributed resources safely and efficiently.



Thank you