DSO ENTITY
DSOs FOR EUROPE

LET'S CONNECT
Facts & Figures on DSOs

What are DSOs ?

Regulated entities, responsible for operating and maintaining **medium- and low-voltage networks** *

Due to **decarbonisation and decentralisation** the role of DSOs has evolved from a passive actor into an **active system operator and key enabler of EU objectives**

Fossil | Analogue | Renewable | Digital

Central | Unidirectional | Decentral | Bidirectional

Last 100 years until 1990s
Static 1-way system

As of 2000s
Dynamic 2-way system

What core tasks have DSOs ?

Connect customers (industry and households) to the grid and provide **active system managment** (flexibility)

Neutral market facilitators thereby they **empower customers** (metering, billing, energy sharing)

Integrate **renewables and other decentralised resources (DER)** in the grid

**in some countries DSOs also operate high-voltage networks (>110kv)*

Key figures about DSOs in the EU

>250 Million
connected customers (households and industries).

>2.570
diverse DSOs in the EU.

18 Million kilometres
of cable and infrastructure of the EU's distribution network and 4 million distribution transformers.

835 thousand
direct and indirect jobs in electricity distribution in the EU and **2 million additional** workforce needed if grid investments pair up with demand.

About DSO Entity

DSO Entity is a technical expert body mandated by the Electricity Market Regulation (2019/943/EU) to promote the functioning of the electricity market and to facilitate the energy transition. DSO Entity is representing more than **830 diverse electricity Distribution System Operators (DSOs) connecting 250 million customers** to the electricity grid in 27 Member States. In line with the Regulation on the internal market for gases and hydrogen (EU 2024/1789) DSO Entity is currently **facilitating the integration of gas and hydrogen DSOs** into its structure.

Distribution level is key for achieving energy and climate targets

Connecting renewables

42.5% RES	**target by 2030** – 70% connected to DSO grid.
A 46% to 67% increase	is expected in the share of renewables in the **EU's power generation** mix by 2030.
600 GW	of solar capacity by 2030 (already 338 GW of EU solar PV installed capacity installed in 2024 with 2/3 on rooftops – new annual record, i.e. connected to DSO grid).
3-4-fold increase	**of connection requests for solar PV for DSOs from 2021-22:** (+ 1400% Latvia; 750% Romania, 200% Poland, 160% Italy and Sweden).

Integrating the electrification of transport and heating and cooling systems

30 million EVs	**expected by 2030** (from 10.3 million today), with 85% charging at home, i.e. DSOs.
10 million	**more heat pumps by 2027** (from 19.7 million in 2022), with an estimated deployment of around 60 million heat pumps by 2030, i.e. primarily DSO grid.

Empowering active customers

> 9000	**energy communities** in 2024, involving more than 1.5 million citizens, DSOs as facilitators with IT-/data infrastructure.
> 40 GW	**of self-consumption** i.e. DSO grid.

Figures on the magnitude of the challenges

40%	of the distribution grid in the EU is older than 40 years.
> €400 billion	**investments in 10 years** are needed in distribution grids for expanding, smartening and renewing the network with **an annual average investment challenge of €61 bn between 2030 and 2050**.
3/4	of connections for heat pumps, EVs, RES, and low-carbon industries cannot be facilitated if investment stagnates.
60%	increase in electricity consumption is expected between 2023 and 2030.
30%	flexibility needs would equal 30% of total electrical EU demand in 2050 with already 24% in 2030.

Let's connect: Facts & Figures on DSOs | List of references

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