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EU4ENERGY PHASE II

Ukrainian DSOs Roles under the Clean Energy Package: Lvivoblenergo and Prykarpattyaoblenergo

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ПРИКАРПАТТЯ ОБЛЕНЕРГО

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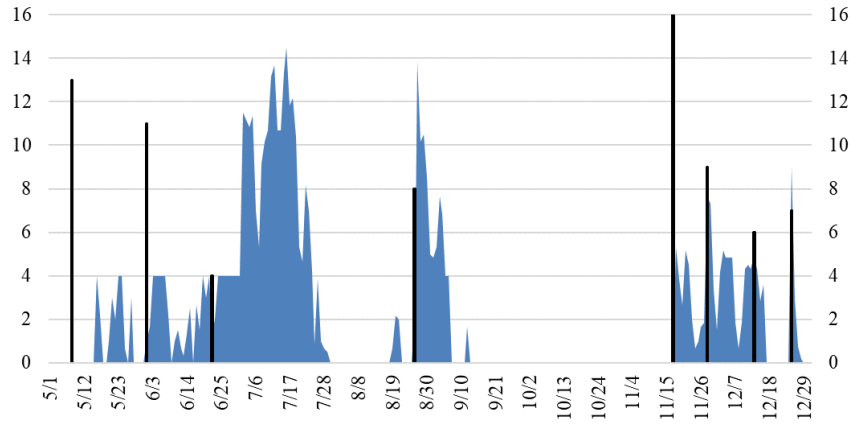
Military attacks on Ukraine's electricity infrastructure



Stabilization outages of residential consumers in hours per day (blue graph) and the **number of cruise missiles** that reached their targets during strikes on critical infrastructure facilities in Ukraine in 2024 (black graph)*.

The attacks - during the most difficult periods for the Ukrainian power system:
- in the spring, when the NPP power units were taken out for repair;
- in the autumn, when electricity consumption began to increase.

The targets:
- at first - TPPs and TSO substations;
- later - HPP, which during the spring flood, ensured the stability of the power system;
- on the eve of the heating season - substations ensuring the output of NPP;
- on December 13 - substations ensuring the import of electricity.

*Modeling the Electric Power System of Ukraine and Assessing its Resilience under Conditions of Systematic Terrorist Attacks, Tekhnichna Elektrodynamika. 2025. №2.

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Impact of attacks on DSOs activities

- **Stabilization outages** of consumers
- **Population growth** in the Western region;
- **Businesses relocation** from Eastern Ukraine;
- Installation of **solar panyls and batteries by households**;
- Installation of m**icro- and mini-power plants** (including RES) by **commercial consumers**;
- Uninterrupted operation of consumers consuming **imported electricity**.

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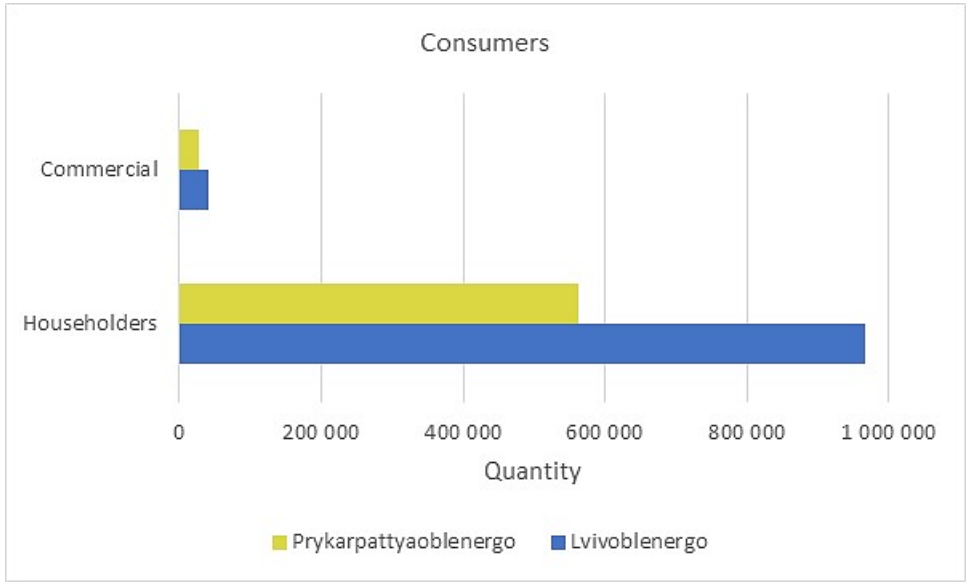
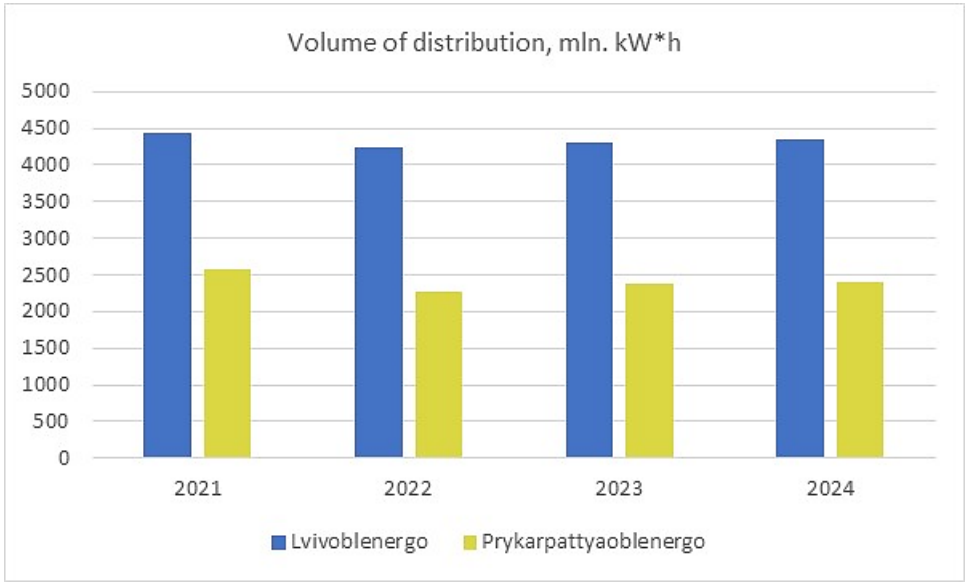
DSO ‘Prykarpattyaoblenergo’ and DSO ‘Lvivoblenergo’

- **Licensed territory**
  - **DSO ‘Prykarpattyaoblenergo’ -** Ivano-Frankivsk region;
  - **DSO ‘Lvivoblenergo’ -** Lviv region (excluding the city of Novy Rozdil, the city of Novoyavorivsk).

- **Consumers and the volumes of distribution**





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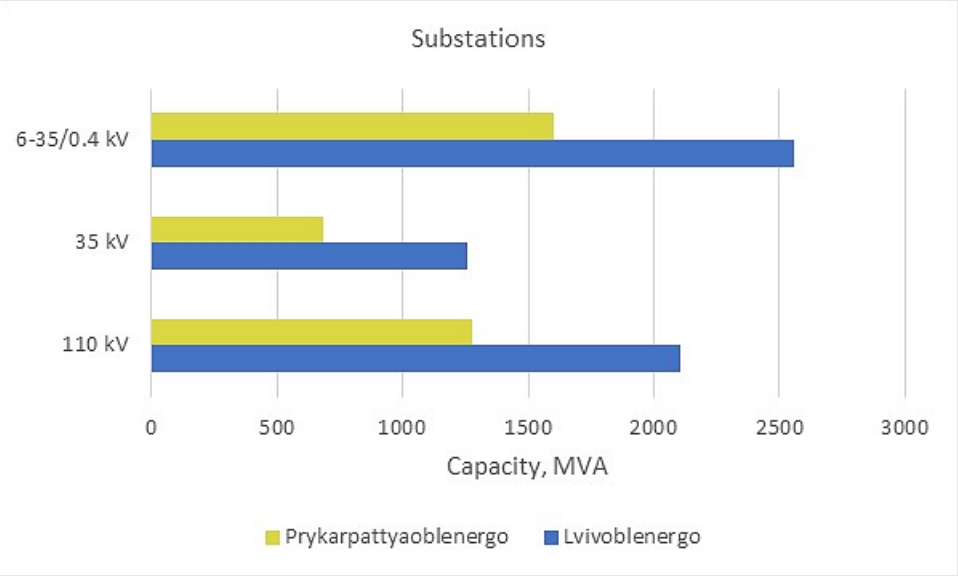
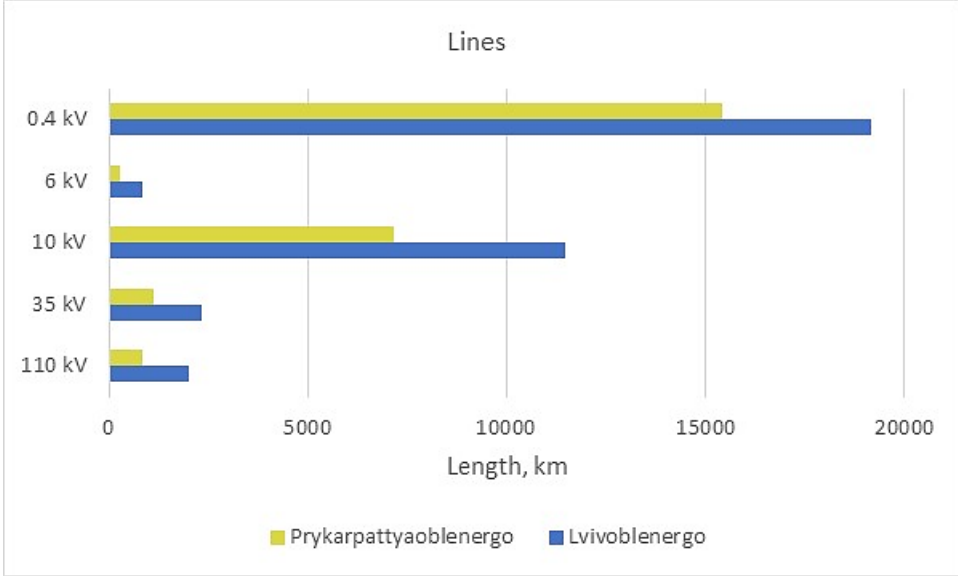
Technical characteristics of the DSOs





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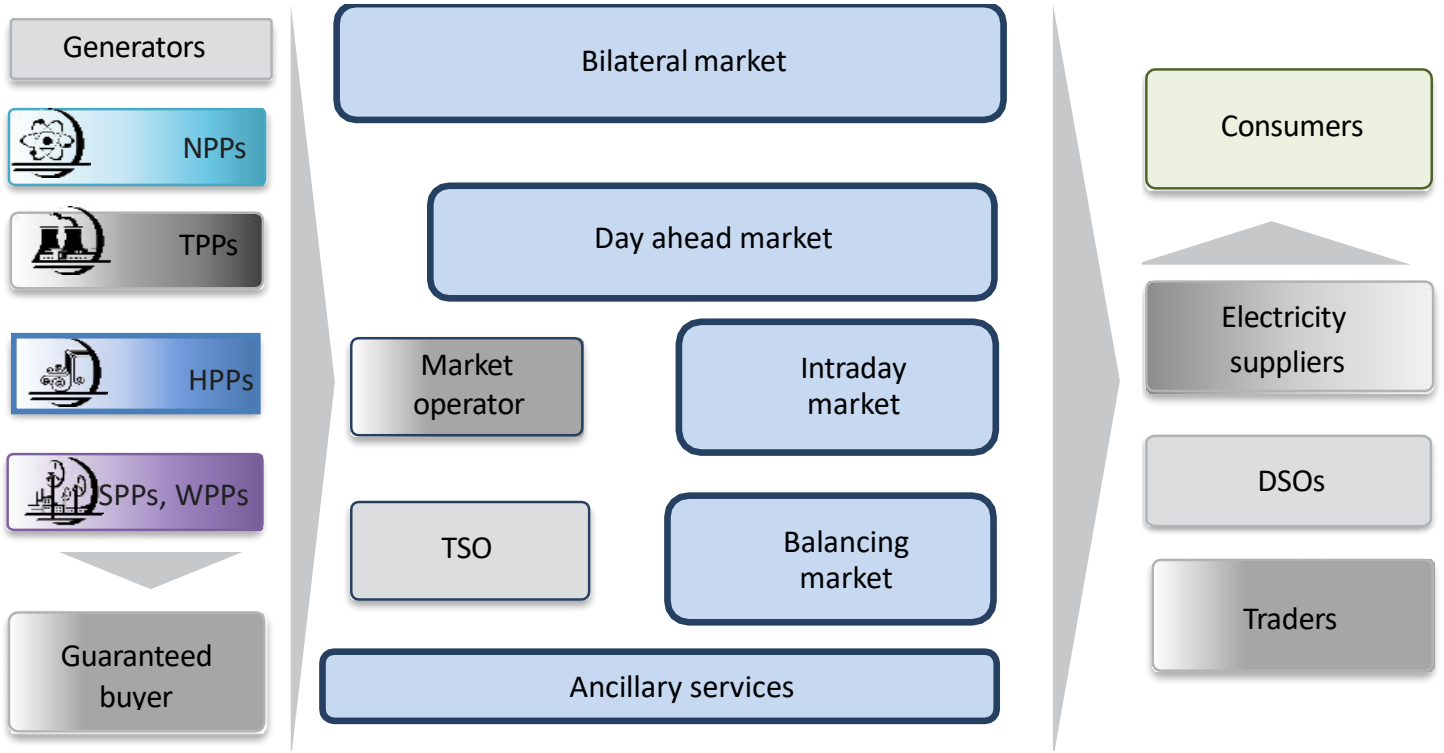
Legal framework

Legal basis:

- Natural Monopolies' Law;
- Electricity Market's Law;
- Renewable Energy Sources' Law;
- Commercial Metering Code;
- Distribution System Code;
- Market rules etc.



Unbundling:

2019 - distribution was separated from supply, storage, and generation activities.

DSOs are allowed to purchase/sale electricity on electricity market only for technological losses procurement and related imbalances settlement.

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Tariff setting

Revenue recovery principles:

Incentive-based regulation:

- **Regulatory period:** the first (transition) - 3 years, the next - 5 years*;
- **Rate of Return:** 16.74 % WACC on new investments**.
- **Performance targets***:**

- **OPEX efficiency: 1% annually;**
- **technological losses reduction**: for the 1st voltage class – 1 % (of total losses amount) annually; for the 2nd voltage class - 3.5 % (of total losses amount) annually.
- **quality of service (SAIDI)** to be achieved in 13 years (with yearly targets): for urban areas - 150 minutes; for rural areas - 300 minutes.
- **no targeted incentives for digitalization and innovations.**

*The first period began in 2021. Extended to 2024-25 due to martial law.
**A rate of 3% was introduced for the period of martial law.
***With the introduction of martial law, the application of established performance indicators was suspended.

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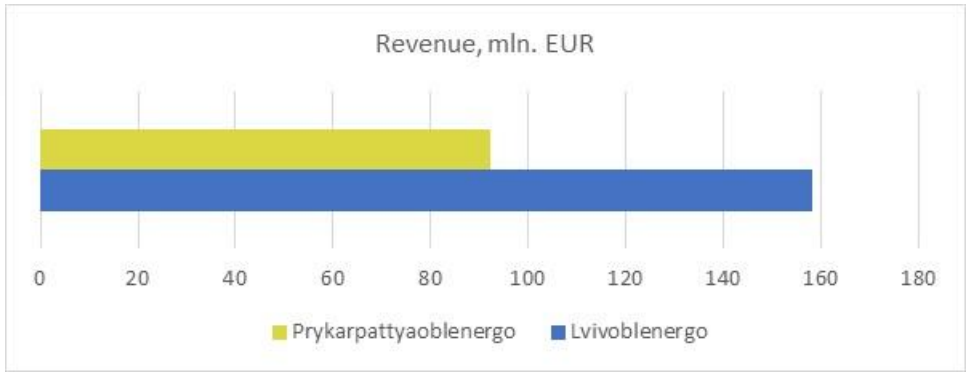
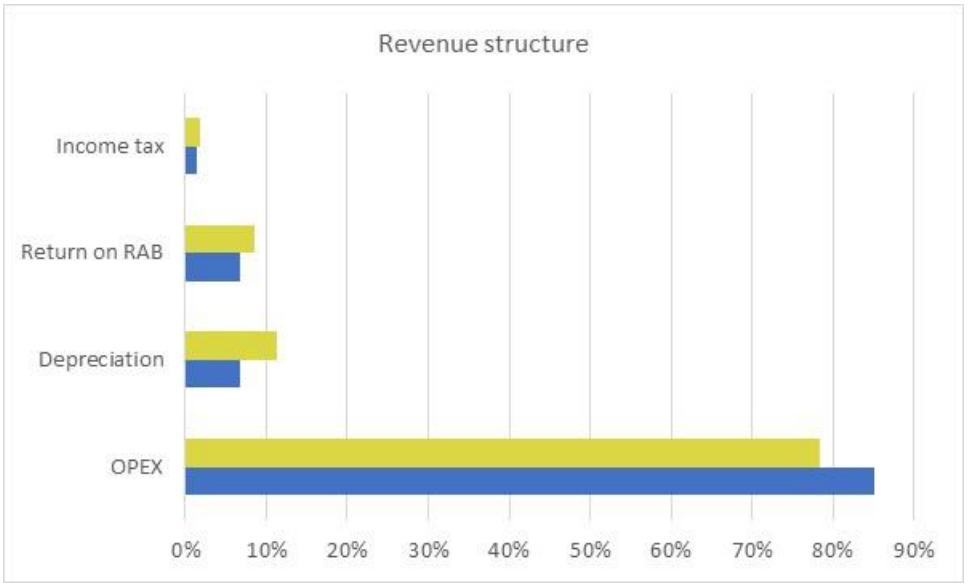
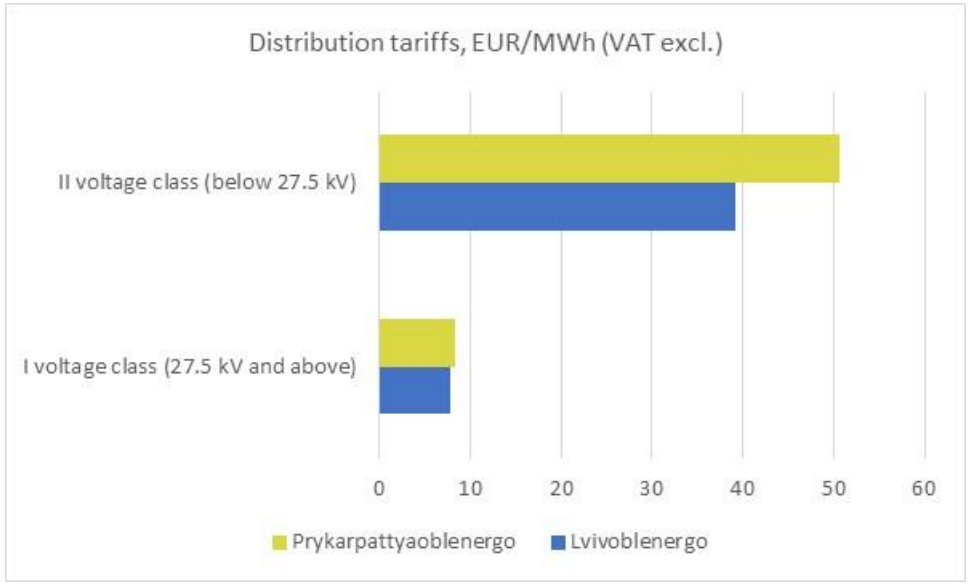
Revenues and Distribution tariffs, 2025







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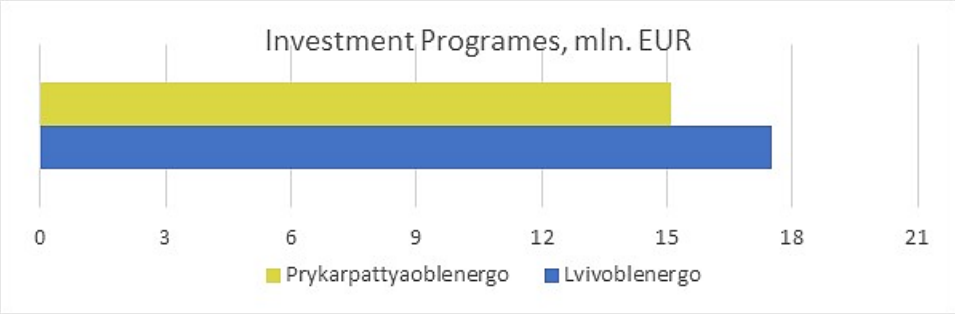
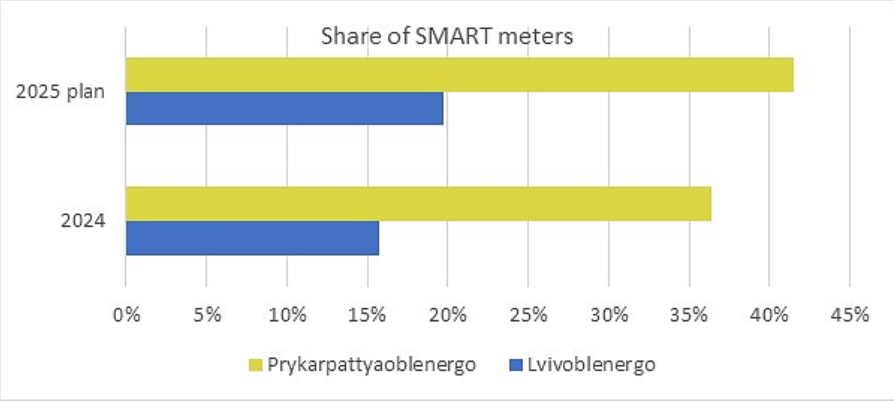
Five-Year Network Development Plan and Investment programs

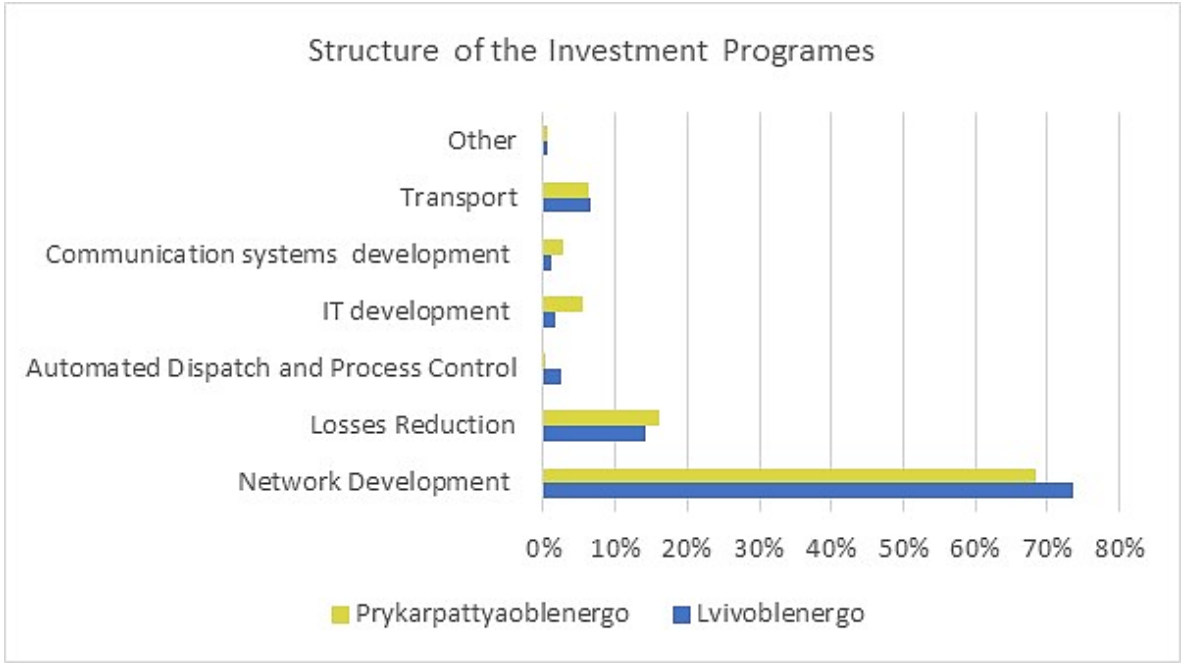
DSOs work out the FYNDP, taking into account energy efficiency measures, demand management and the possibility of using distributed generation and energy storage facilities.

Investment programs

DSOs develop an investment program focusing on the relevant FYNDP where the priorities are set.







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Connections to DSO networks

Standard Connection - up to 50 kW + up to 300m in a direct line to DSO networks.

Terms for connection: - up to 16 kW – 45 days;
- 16 – 50 kW – 60 days.

Non-Standard Connection - all other cases.

Terms for connection ("turn-key" project - by the DSO)**:**

- Up to 160 kW – 120 days (including 30 days for design);
- 160 to 400 kW – 230 days (including 30 days for design);
- 400 to 1000 kW – 280 days (including 45 days for design);
- 1000 to 5000 kW – 350 days (including 60 days for design);
- > 5000 kW – according to the project.

Standard connection, EUR per 1kW (2025)

	Urban areas		Rural areas	
	min	max	min	max
Prykarpattyaoblenergo	73.04	128.67	60.11	105.87
Lvivoblenergo	60.51	106.58	49.80	87.69

Non-Standard connection, EUR per 1kW (2025)

	Demand side		Generation	
	min	max	min	max
Prykarpattyaoblenergo	12.20	66.47	11.62	64.20
Lvivoblenergo	11.84	66.44	11.62	65.62

Connection Fees are calculated and approved by the Regulator annually in accordance with the methodology.

Focus on: administrative region of location, urban or rural locality, voltage level at the connection point and power supply reliability category.

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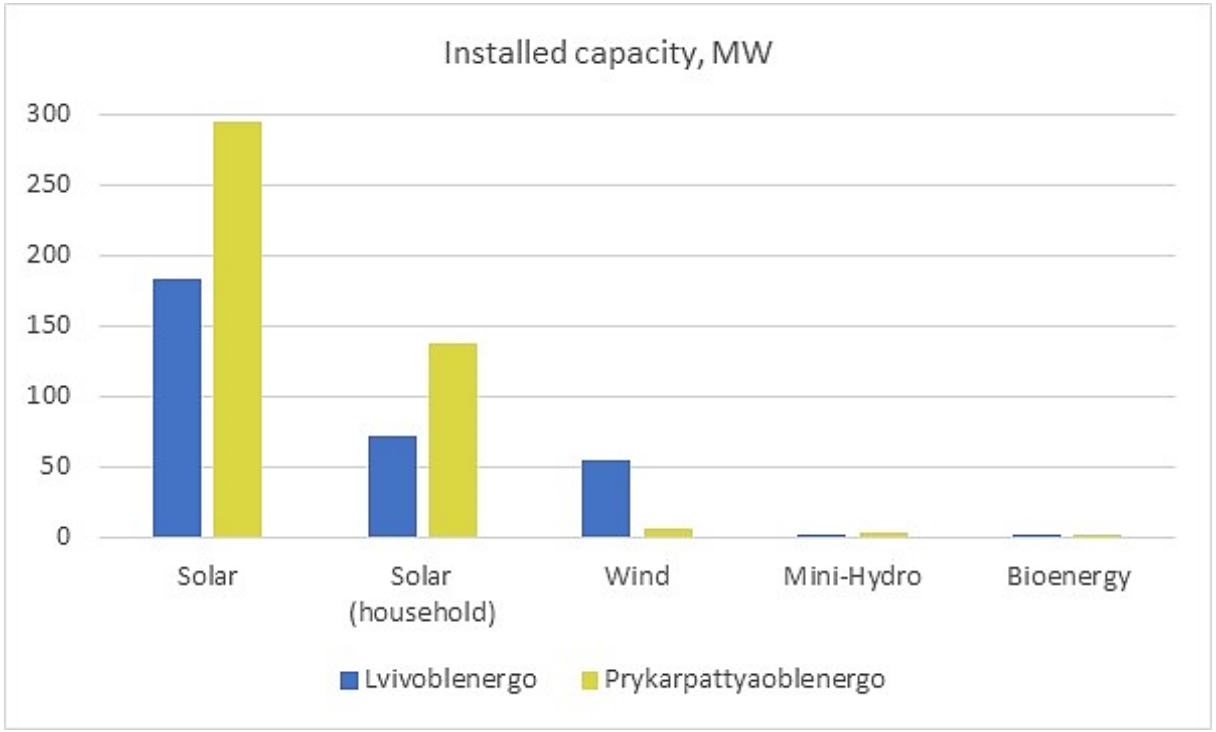
RES development



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Integration example: Skolivska WPP

Installed capacity: 59 MW.

Main technical characteristics:

10 wind turbines of the Nordex N149/5.X type with a nominal capacity of 5.9 MW.

The height of the wind turbine tower is 104.7 m, the blade length is 72.4 m, and the nacelle with the generator weighs about 120 tons.

A 110/35 kV electrical substation with a TDN 62000/110/35 power transformer has been built.

14.8 km of 110 kV cable line and **6 km of 35 kV cable** line have been laid**.**

Annual electricity production: ≈100 mln. kWh.

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Problematic issues

- **Stabilization outages** of consumers due to military attacks on energy infrastructure.
- **Change** in the **structure of consumers and their location** due to the population and businesses relocation from Eastern Ukraine.
- Emergence / Increase in electricity **capacity deficit for new customers**.
- The need for **significant reconstruction of existing networks** due to the connection of new producers and consumers.
- The need for **advanced development of TSO networks**, since many sites for the location of RES are situated in the places where there is no developed electricity network.
- **Insufficient tariffs for standard connection** to cover the costs of connecting householders solar power plants.
- In conditions of military operations, TSOs have **limited access to financial resources**. Lack of conditions for reimbursement of external investments.


Thank you for your attention!
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