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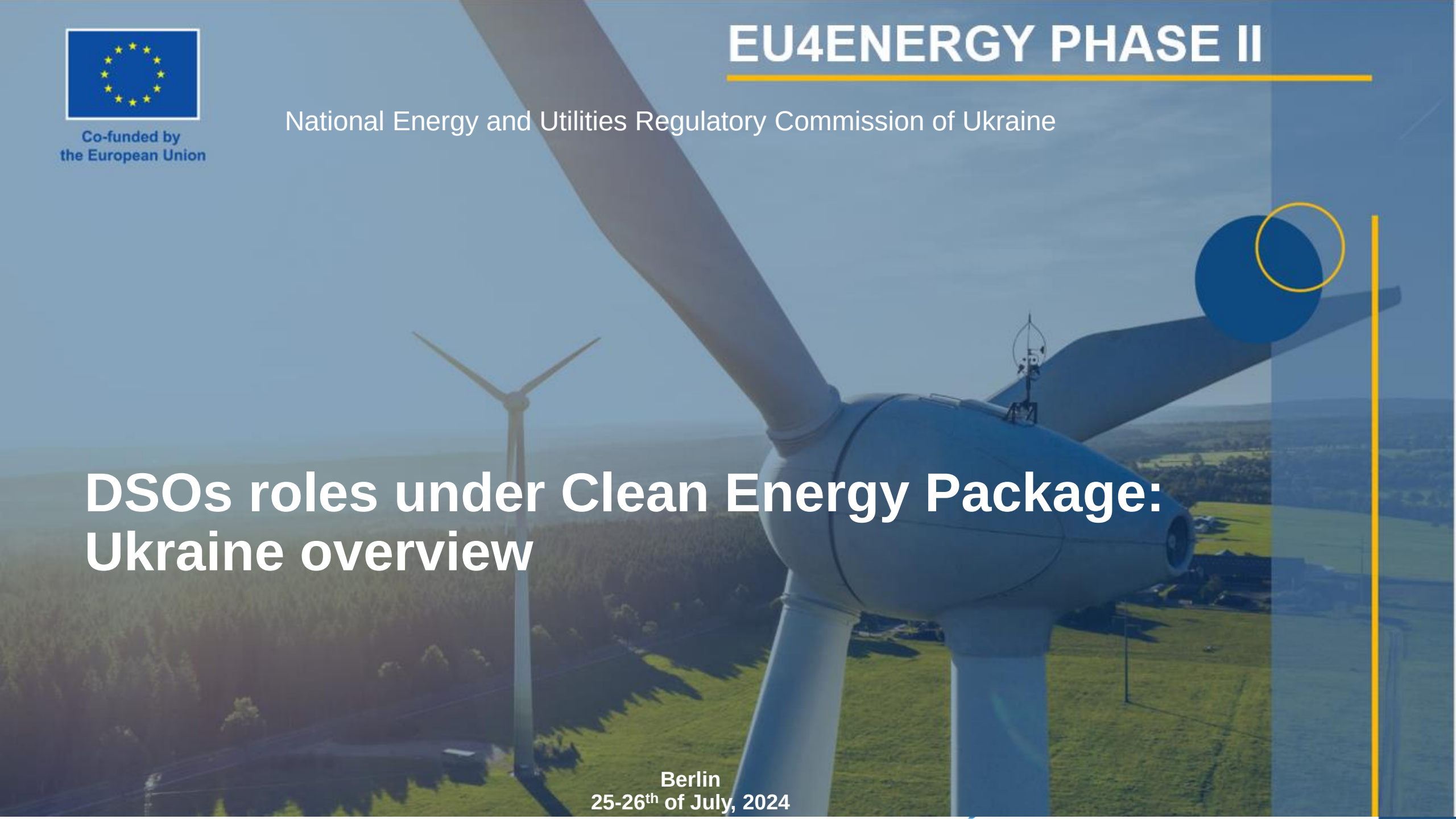
EU4ENERGY PHASE II

National Energy and Utilities Regulatory Commission of Ukraine



DSOs roles under Clean Energy Package: Ukraine overview

Berlin
25-26th of July, 2024

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Ukrainian Context of Clean Energy Package implementation

Factor of the war

884 days

Russian full-scale invasion of Ukraine

every day missile and drone attacks targeting Ukrainian energy infrastructure

- Huge deficit in the Energy System
- Technological failures
- Power outages for consumers

Accelerating Ukraine's accession to the EU

February 28, 2022

- Ukraine submitted its application for EU membership

June 22, 2022

- The European Council granted Ukraine candidate status

June 25, 2024

- Start of negotiations was officially announced

Ukraine's Progress Report under the EU's 2023 Enlargement Package

Energy Chapter assessment: "good level of preparation"

Main goals

- Urgent but fundamental transition from a Centralized Carbon-Intensive System to a Decentralized Sustainable one
- Enhanced Energy Security & Green Transition
- Full compliance with EU legislation

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Clean Energy Package

- **June 25, 2024** **Ukrainian National Energy & Climate Plan 2030 (NECP) is adopted by the Government**

-60% **reducing net greenhouse gas emissions by 2030 (1990 – base year)**

2005 Share of energy from renewable sources	**2020** Target for share of energy from renewable sources (NREAP)	**2030** Target for share of energy from renewable sources (NECP)
5%	11%	27%

- **June 30, 2023** **Law on Green Transformation #3220, which transposes REDII certain provisions**
  - Feed-in-premium
  - NET-billing
  - Active consumers
  - Aggregation
  - Guarantees of origin for electricity from RES

- **Electricity Integration Package**

The draft law is to be developed by the Working Group of the Ministry of Energy and adopted no later than Q2 2025 (as per EU Plan for Ukraine Facility 2024-2027 indicators)

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Legal framework governing the DSOs tasks and duties

32 DSOs operate in Ukraine (as of 01.01.2024)

Legal basis:

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

DSO as a neutral market facilitator

Since 01.01.2019 distribution is separated from supply, storage, and generation activities (Unbundling).

DSO ownership/operation of energy storage is prohibited, except for cases envisaged by Law and approved by the Regulator:

- storages are integrated elements of the grid
- if such storages are needed to ensure reliability, efficiency and safety of distribution AND at the same time based on the results of open competition, no other entity is willing to operate the storages

DSOs are not allowed to purchase/sale electricity on electricity market, except for technological losses procurement and related imbalances settlement. To purchase electricity for own needs DSO acts as a consumer.

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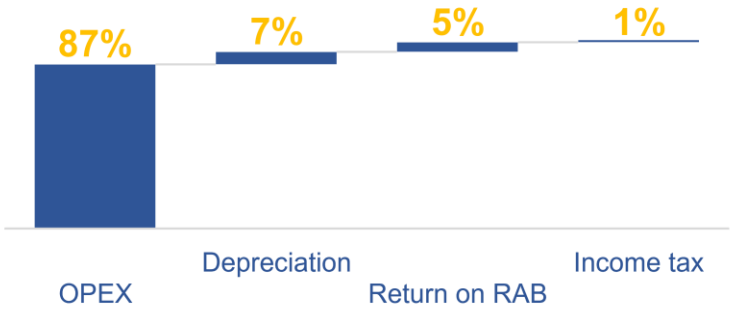
Tariff setting principles and Cost recovery

- **Revenue recovery principles:** Incentive-based regulation (with exemption of 6 small DSOs still using “cost +”)
  - **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**

Required revenues incorporates
(average revenue structure, 2024):



- **Tariff design:**
  - 100% energy-based
  - no time-of-use differentiation
  - only withdrawal charge
  - differentiated between 2 voltage classes

Weighted average level of D-tariffs in 2023 (VAT excl.)

216.69 UAH/MWh **4.74 EUR/MWh**	1283,40 UAH/MWh **28.05 EUR/MWh**
I voltage class (27.5 kV and above)	II voltage class (below 27.5 kV)

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Networks Development Plans

- **Ten-Year Network Development Plan TSO**

  EUR 1,5 bln approved by the Regulator for 2023 – 2032 (VAT excl.)

- **Five-Year Network Development Plan DSO and investment programs**

  The obligation of DSOs to plan the development of the distribution system, taking into account energy efficiency measures, demand management and the possibility of using distributed generation and energy storage facilities. Annual revision of FYNDPs.

  EUR 2,3 bln 32 FYNDPs for 2022-2026

- **Investment Programs**

  DSOs develop an investment program, taking into account the relevant FYNDP where the priorities are set

  IPs for 2023 measures for:

  76% Network Development & Losses Reduction

  7% IT development & Automated Dispatch and Process Control Systems

March 26, 2022 The obligation for the DSOs to submit distribution system development plans for 2023-2027 and IPs was suspended by the NEURC Resolution

Urgent measures to restore the distribution system and electricity supply to settlements could be implemented by the DSOs at the expense of any sources with *ex post approval by NEURC*

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Connections to the grids

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

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

- **Non-Standard Connection**
  all other cases that do not meet Standard Connection Criteria

  Terms for connection
  ("turn-key" project when all works are performed by the DSO):
  - **120 days** (including 30 days for design) – up to 160 kW
  - **230 days** (including 30 days for design) – 160 to 400 kW
  - **280 days** (including 45 days for design) – 400 to 1000 kW
  - **350 days** (including 60 days for design) – 1000 to 5000 kW
  - **over 5000 kW** – according to the project documentation.

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

Average Fees for 2024:

UAH 2 368 per 1kW **EUR 51.70 per 1kW**	UAH 1 948 per 1kW **EUR 42.53 per 1kW**	UAH 1 332 per 1kW **EUR 29.08 per 1kW**	UAH 2 000 per 1kW **EUR 43.67 per 1kW**
urban areas	*rural areas*	*demand side*	*generation*

- **March 26, 2022** Procedure for temporary connection of electrical installations to the distribution system during the period of martial law:
  - shorter terms for connecting generating facilities
  - no connection fee rates, the cost is determined only by actual costs
  - the customer is allowed to construct the linear part of the temporary connection independently or with the involvement of specialized organizations

  Since 2024 the scope of the temporary procedure is limited

- **February 24, 2023** Law on Development of Electric Charging Infrastructure and Electric Vehicles was adopted #2956-IX
  - Simplification for the allocation of land plots for e-charging stations installation
  - Connection to the grid without connecting capacity fee (until January 1, 2025)

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Smart grids & smart meters

- **October 14, 2022** **Concept and Action Plan for "smart grids" implementation in Ukraine until 2035** were adopted (Resolution #908-r):
  - introduction of Automated Distribution Network Management Systems (ADMS)
  - introduction of Outage Management Systems (OMS)
  - self-healing network pilot projects
  - implementation of distributed power generation management system (DERMS), virtual power plants (VPP)
  - other legislative, organizational measures and investment

Investment programs of DSOs for 2023 (VAT excl.):

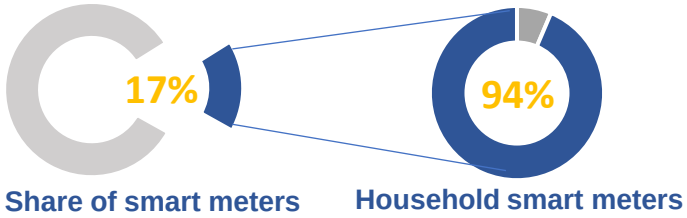
EUR 6,43 mln total investment of 17 DSOs to introduced OMS, ADMS, DigstalTwin

EUR 5,65 mln 154 measures of 10 kV OHL modernisation with the installation of reclosers

- **Smart Metering**

2,81 mln smart meters installed as of 01.01.2024

317 000 smart meters were installed in households in 2023



Primary law amendments on smart grids development passed the 1st reading in the Parliament (draft Law #11083 as of 13.03.2024) (also includes provisions on demand response, demand-side management and micro-grids)

Roadmap for Smart Grids Development adopted by the Ministry of Energy (May, 2024)

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Thank you for your attention

National Energy and Utilities Regulatory Commission of Ukraine