DTEK GROUP

DTEK Group – largest privately owned investor in the Ukrainian energy sector
The holding employs 56,000 employees

DTEK Energy

Established in 2009

Coal mining & thermal power generation

- 13.3 GW installed capacity (8 thermal power plants*)
- 2022 power output of 18 TWh (25 TWh in 2021)
- 9 mines with 420 Mt reserves of steam coal

Electricity generation

DTEK Renewables Ukraine

Established in 2008

Renewable energy development & operation

- Over 1.0 GW installed capacity (7 wind* and solar plants)
- 500 MW under construction incl. 114 MW built amid war
- 2022 power output of 0.9 TWh

Renewable generation

DTEK Oil&Gas

Established in 2014

Natural gas, oil and condensate production

- 2.0 bcm of gas produced in 2022 (2.1 bcm in 2021)
- 36 bcm of 2P reserves (SPE-PRMS classification)
- 12.8 bcm of 2C resources (SPE-PRMS classification)

Natural gas production

DTEK Grids

Established in 2018

Electricity distribution network operation

- 33 TWh electricity distributed in 2022 (50 TWh in 2021)
- 7 distribution companies
- 5.6 mln customers
- 43% market share

Electricity distribution

D.Trading

Established in 2019

Coal, power and gas trading

- 30.3 TWh of electricity, 2.3 Mt of coal, 1.5 bcm of gas were supplied to domestic and international clients in 2022

Commodities trading

D.Solutions

Established in 2018

Power and gas supply & energy services

- 12.8 TWh of electricity supplied in 2022 (16.6 TWh in 2021)
- 3.5 mln of households and industrials consumers
- 33 fast DC chargers 50 kW with public access

Energy supply & services

*as of March 2023, 2 out of 8 thermal power plants and 3 out of 4 wind farms are located at the occupied territories

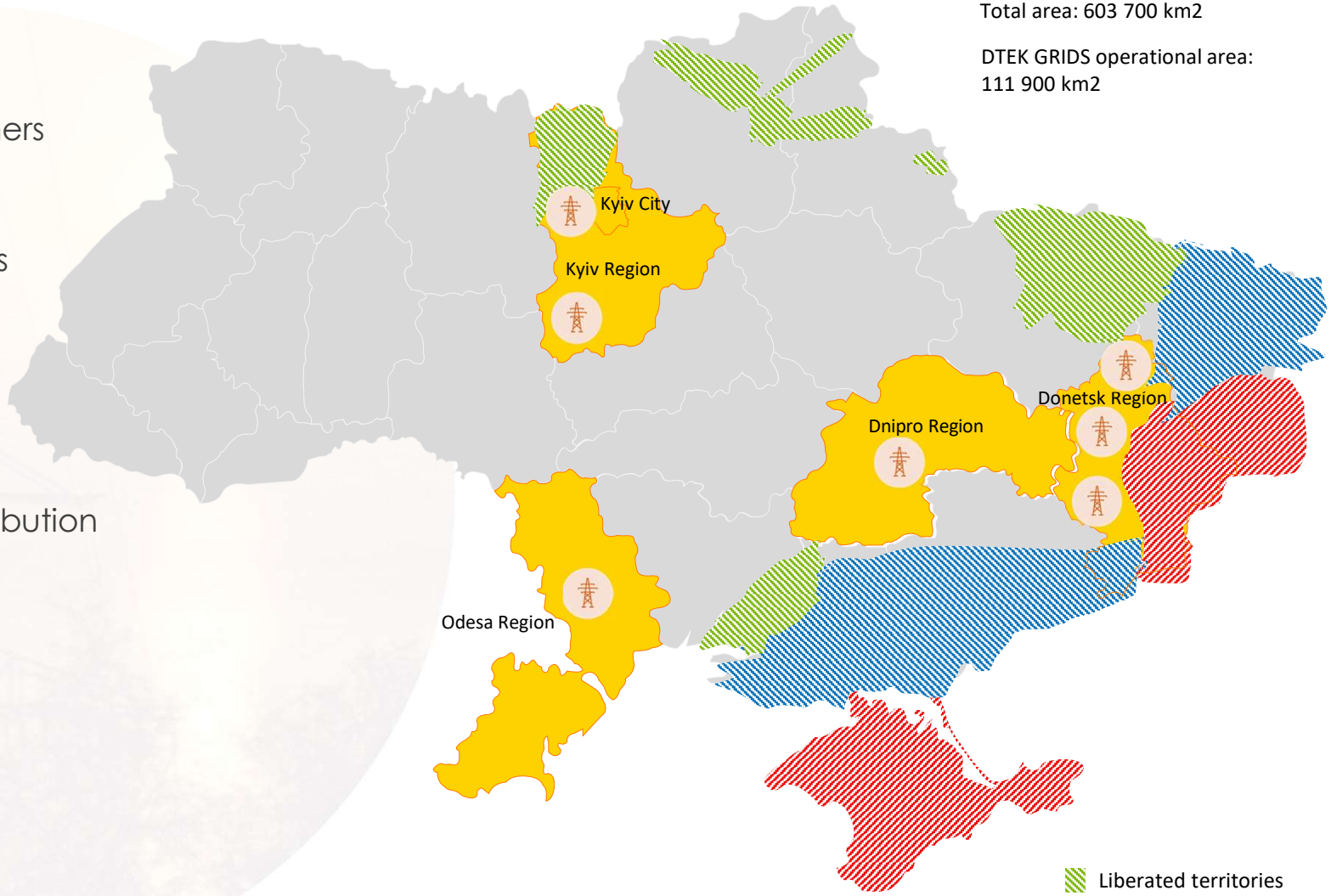
DTEK GRIDS OVERVIEW

- **5 600 000** customers
- **188 000** km of grids
- **14 000** employees
- **50** TWh electricity distribution volume
  (43% of the market)
- **7** DSOs
- **5** regions of operation

Geography of Operations

Total area: 603 700 km2

DTEK GRIDS operational area:
111 900 km2



Data based on 2022

CONSTRUCTION OF SMART 110 KV GRID IN "UKRAINE BESSARABIA" REGION
TECHNICAL SUMMARY OF THE PROJECT

Detailed technological grid development concept and plan created to meet the future challenges in the energy sector

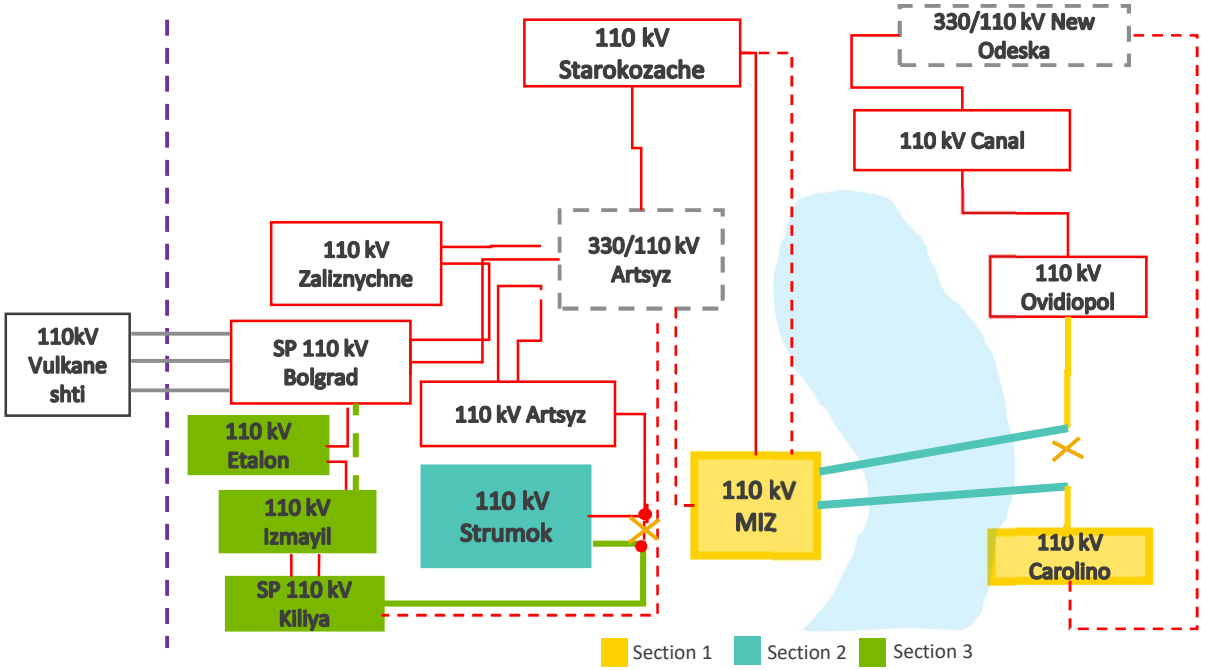
Grid challenges

- Reliability
- Flexibility
- Efficiency
- Enabling Energy Transition
- Sustainability

Project objectives

1. Increasing the reliability of grids in the cross-border node between the energy systems of Ukraine and Moldova
2. Creating a controllable grid
3. Increasing the capacity of interstate transit connections between Ukraine and Moldova
4. Increasing the integration of RES capacity in the "Ukrainian Bessarabia" region

Overview and target approach



1 PROJECT SCOPE

- ❑ The "Ukrainian Bessarabia" region is connected to the UES of Ukraine by one 110 kV transmission line. The reduced reliability of electricity supply in the region also affects the interstate connection between Ukraine and Moldova (Bolgrad - Vulcanesti).
- ❑ The project envisages the modernization of substations and the construction of two new 110 kV power lines (overhead or cable along the bottom of the estuary) to connect the region with the UES of Ukraine and relieve the interstate connections between Ukraine and Moldova.

2 TIMEFRAME

2.1 Stage 1 (2025): Reconstruction of the equipment of the 110 kV "MIZ" and "Carolino" substations. Construction of two sections of fiber-optic communication line
2.2 Stage 2 (2026-2027): Construction of a double-circuit 110 kV substation and fiber-optic lines across the estuary to the existing 110 kV Karolino - Ovidiopol substation with connection to it in a "cut". Reconstruction, teleautomation and cyber protection of RU 110 kV Substation «Strumok».
2.3 Stage 3(2026): Reconstruction of the fiber-optic communication line from the «Strumok» substation to the «Kilia» substation, and from the «Bolgrad» substation to the «Izmail» substation. Reconstruction, telemechanization and cyber protection of «Kilia», «Izmail» and «Etalon» substations.

Corresponding project value

- Number of users involved (producers, consumers and prosumers): 164 668
- Consumption level in the project area (GWh/year): 396

KPI

SAIDI, Transmission connecting interruption

Power availability

Renewable energy integration index, ESG

INVESTMENT PROFILE
PROJECT IMPLEMENTATION

Roadmap / project coverage

Section 1

- Reconstruction of 110 kV substation "MIZ" (replacement of oil switches, VD-KZ, retrofitting of cubicles for new 110 kV substations of relay protection and automation of grid elements, implementation of the remote control).
- Reconstruction of 110 kV substation "Carolino" (replacement of oil switches, switchgear based on separators and short circuities, relay protection and automation of grid elements, reconstruction of TM with implementation of cyber protection).
- Construction of two sections of fiber-optic communication line:
- a) from the «Karolino» substation to the place of cutting the 9 km long power line by replacing the existing lightning rod with a lightning rod with an integrated optical cable.
- b) from the «Ovidiopol» substation to the place of the 7 km long cut by replacing the existing lightning rod with a lightning rod with an integrated optical cable of fibre optic communication lines.

Section 2

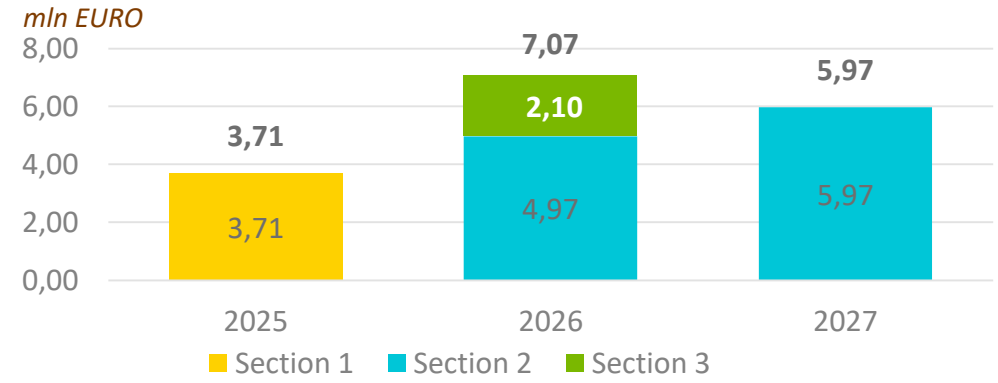
- Construction of a double-circuit 110 kV overhead line across the estuary to the existing 110 kV Karolino - Ovidiopol overhead line with connection to it in a "cut" and formation of new power lines Ovidiopol - MIZ and Karolino - MIZ.
- Construction of a fiber-optic communication line from the MIZ substation to the cut point of the 110 kV Karolino - Ovidiopol power line, to the cut point of the power line through the construction of a lightning conductor with a built-in 8 km long optical cable of fibre optic communication lines.
- Reconstruction of the "Strumok" substation (replacement of oil switches, switchgear based on separators and short circuiters, protective relay, retrofitting of the cell for connecting the 110 kV substation, reconstruction of TM with the implementation of cyber protection).
- Unloading of interstate connection.

Section 3

- Reconstruction of the fiber-optic communication line from the “Strumok” substation to the Kiliya substation.
- Telemechanization and cyber protection of "Kilia", "Izmail", "Etalon“ substations.
- Construction of the fiber-optic communication line from the Bolgrad station to the Izmail station.

2025 **2026** **2026-2027**

Project investment plan



EUR 16.75 mln.

ELIGIBILITY OF THE PROJECT ACCORDING TO TEN-E REGULATION

Smart electricity grids

any equipment or installation, digital systems and components integrating information and communication technologies (ICT), through operational digital platforms, control systems and sensor technologies both at transmission and ***medium and high voltage distribution level, aiming to ensure a more efficient and intelligent*** electricity transmission and ***distribution network, increased capacity to integrate newforms of generation, energy storage and consumption and facilitating new business models and market structures,…,*** to support innovative and other solutions involving at least two Contracting Parties with a significant positive impact on the Energy Community 2030 targets for energy and climate and the 2050 climate neutrality objective, to contribute significantly to the sustainability of the Energy Community

General criteria

the potential overall benefits of the project outweigh its costs

the project located on the territory of one Contracting Party, either inland or offshore, including islands, and has a significant cross-border impact

Specific criteria

(i) ***security of supply, including through efficiency and interoperability of electricity transmission and distribution in day-to-day network operation, avoidance of congestion, and integration and involvement of network users***;
(ii) market integration, including through ***efficient system operation and use of interconnectors***;
(iii) ***network security, flexibility and quality of supply, including through higher uptake of innovation in balancing, flexibility markets, cybersecurity, monitoring, system control and error correction;***
(iv) ***smart sector integration***, either in the energy system through linking various energy carriers and sectors, or in a wider way, favouring synergies and coordination between the energy, transport and telecommunication sectors

Additional criteria

The project satisfies the following criteria (significant cross-border impact):
(i) ***it involves 164 668 users,*** generators, consumers or prosumers of electricity;
(ii) **it captures a consumption area of at least 396.1 GW hours/year**