



DTEK Grids



Grids of the future

DTEK GRIDS

#Rebuild Ukraine together

ENERGY SECTOR OF UKRAINE

Since the onset of the full-scale invasion, the Ukrainian energy system has endured over 180 attacks, with the Russian military targeting critical civil infrastructure including thermal, wind, solar, and hydropower stations, as well as substations, transmission and distribution lines. Since February 24, 2022, more than 80% of Ukraine's energy capacities have been destroyed, leaving energy workers to restore power to nearly 10,000 families daily amidst enemy attacks.

Despite the challenges, the restoration efforts rely on advanced sustainable technologies, emphasizing the importance of rebuilding the energy industry for the nation's economic development and post-war recovery.

OVERVIEW OF DTEK GROUP



DTEK Group is the **largest private investor in the energy sector in Ukraine**, with over **\$11 bln** invested capital since 2005, employing **55,000** people

■ Core countries of renewable operation
■ Secondary and trading markets



largest renewable company in Ukraine with **1.1 GW** onshore wind and solar assets installed



largest private power generator in Ukraine with **19 TWh** of electricity generated in 2022 (27 TWh in 2021)



largest power grid, distributing over **40%** of Ukraine's electricity demand



trusted power and gas supplier with **3.5 mln** customers served through 5.6 mln connections



largest privately owned gas producer in Ukraine, with **2.0 bcm** produced in 2022



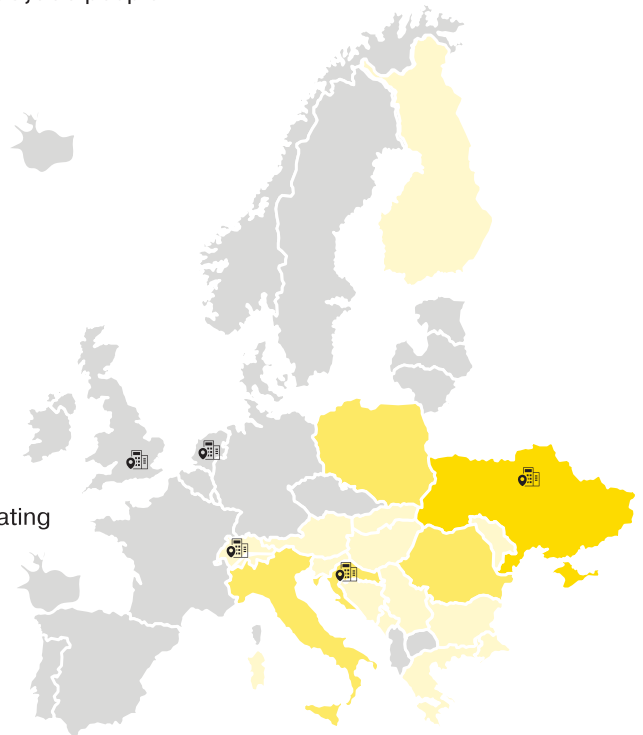
DTEK Group is actively **expanding internationally**, facilitating energy transition in Central, Southern and Eastern Europe



active renewable developer in the EU with a target to operate **5.0 GW** by 2030

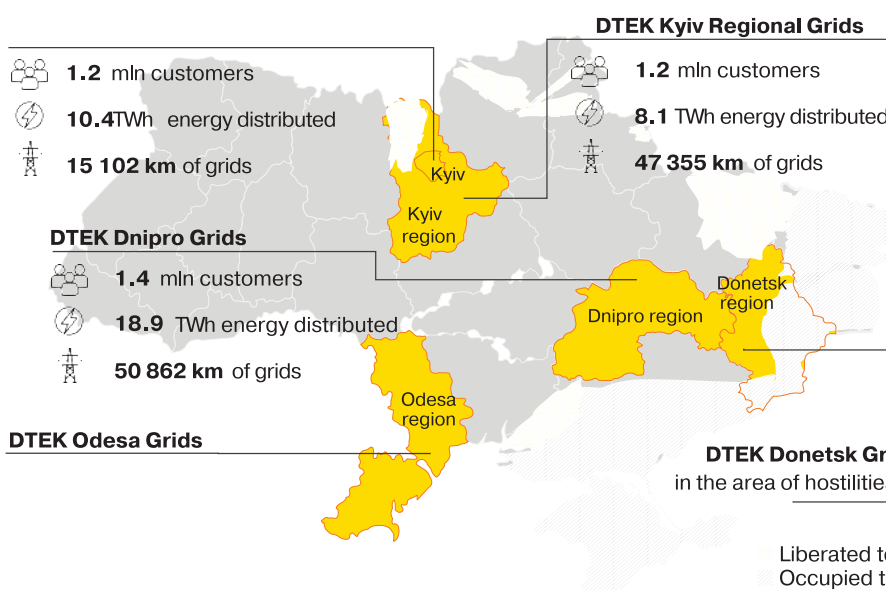


leading asset-backed energy commodities trader with vast EU cross-border trade



DTEK Group is inviting partners to join it in Ukrainian recovery projects and EU expansion

OVERVIEW OF DTEK GRIDS



Largest **power distribution** grid in the country, transmitting c. **40% of Ukrainian demand** to 5.6 mln consumers over 90,000 km of power network

Actively working on reconstruction of damaged grids in Kyiv, Odesa, Dnipro, Donetsk and other regions of Ukraine

ENABLING ENERGY TRANSITION IN UKRAINE: POWER DISTRIBUTION GRID MODERNIZATION IN DTEK GRIDS

1 PROJECT SCOPE

Rebuilding and modernizing the existing power distribution network into an intelligent grid in Kyiv city, Kyiv Region, Dnipro and Odesa regions

2 PROGRESS TO-DATE

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

3 EXPERTISE EMPLOYED

Extensive cooperation with E.DSO and state DSOs on technical requirements and development of the virtual concept



4 TIMEFRAME

10-year investment plan to transform the regional grids, starting with a pilot project in the city of Irpin

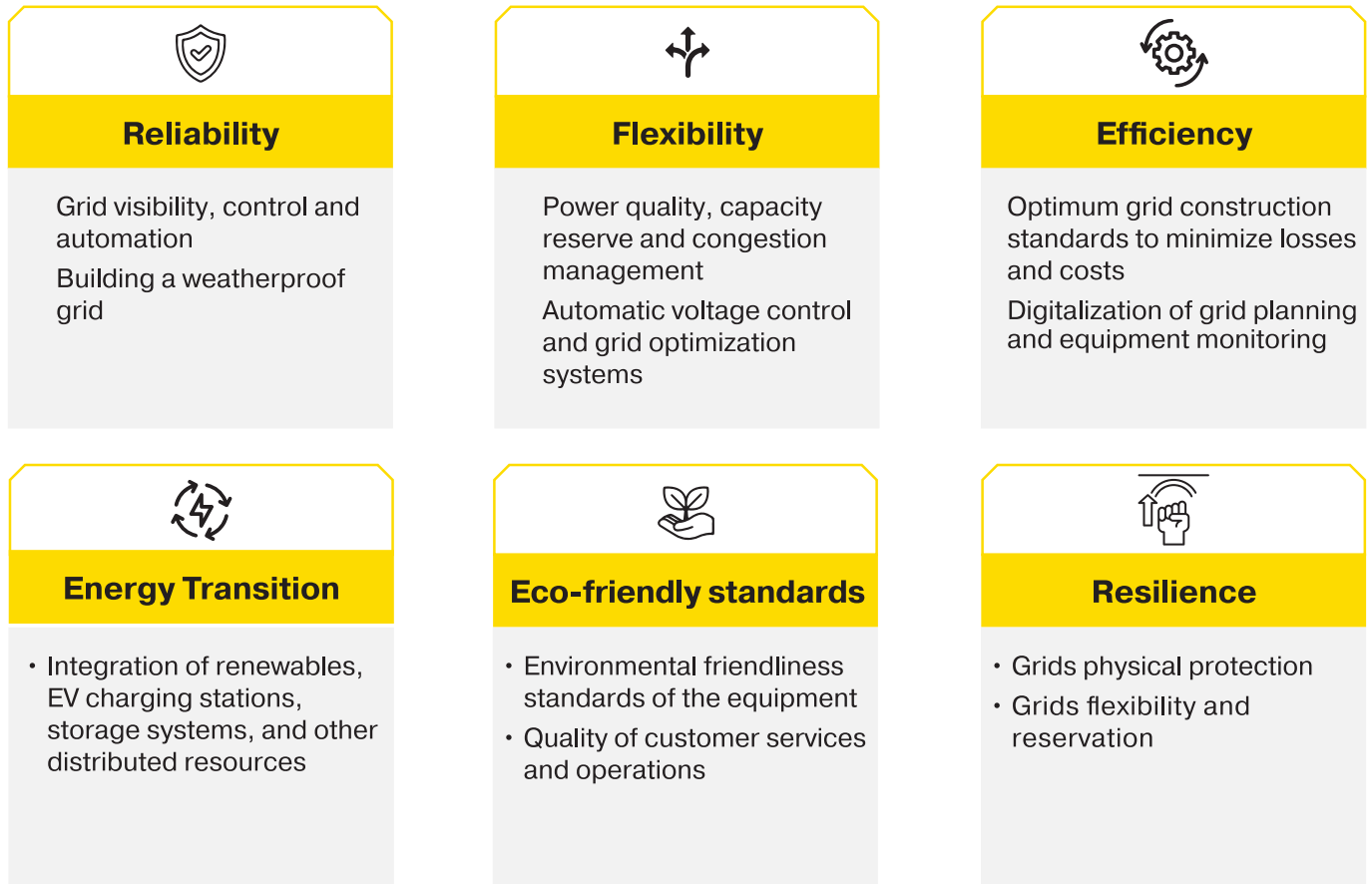
5 STANDARDS

Technological standards for equipment and grid construction principles were reviewed to synchronized with the EU standards



GRID MODERNIZATION

ADDRESSING CURRENT CHALLENGES



10-YEAR MODERNIZATION PLAN

	CURRENT		GOAL
SAIDI, min (Reliability)	714 min	7.8x	92 min
Total capacity	7 303 MW	1.6%	11 812 MW
Losses	8.1%	1.7x	4.8%
Smart meters installed	21%	+79%	100%
Customer Satisfaction Index	82.2%	+2.8%	85%

KEY ELEMENTS OF GRID MODERNIZATION PROJECT



**MONITORING
AND CONTROL**



**DATA &
ANALYTICS**



DER INTEGRATION



**CUSTOMER EMPOWERMENT
& SATISFACTION**

Technology and equipment:

Building a reliable and resilient weatherproof grid:

- Conversion of overhead lines in urban/woodland areas to underground cable and in rural areas to aerial bundled cable
- Replacement of faulty/worn sections of existing underground lines

Grid visibility, control and automation:

- Installation of remotely controlled switchgear of transformer substations in underground cable grids
- Installation of new switchgear

Hosting new capacity:

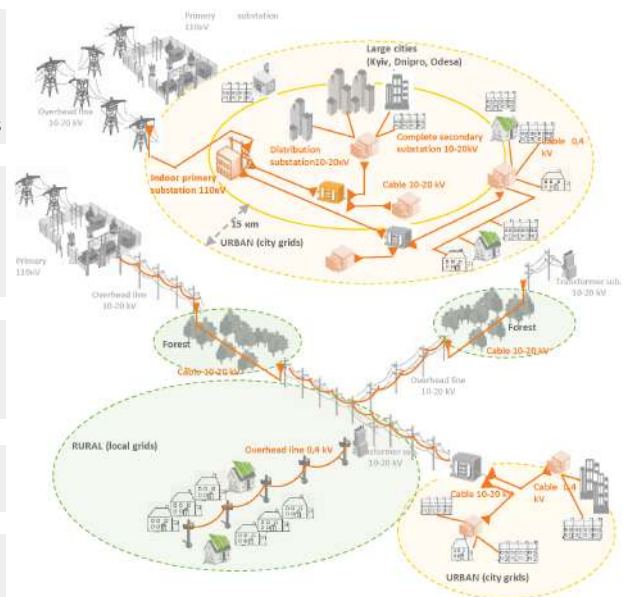
- Construction of new substations for new connections and reconstruction of the connecting grid

Optimization of costs and losses:

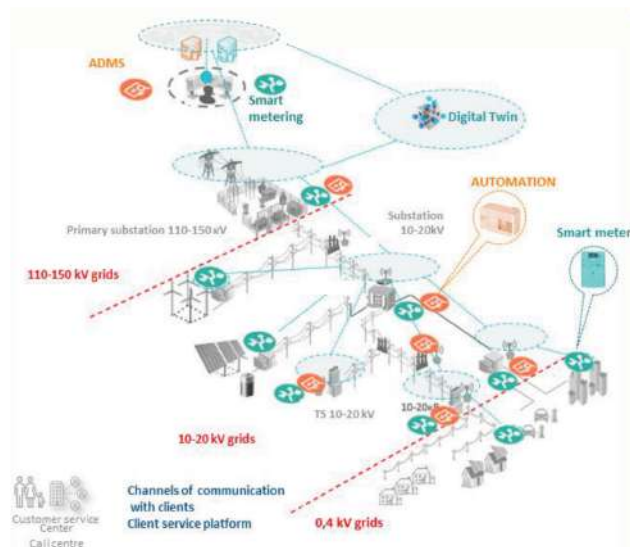
- Modernization of worn-out equipment substations

Ensure quality of supply:

- Reconstruction of unreliable parts of last-mile distribution grids



IT/OT systems:



Grid automation and distributed energy resources integration:

- Implementation of remote monitoring in all substations, remote control of substations and switchgear
- Implementation of advanced distribution management system (ADMS) with modules for grid management, automated grid fault location, calculation of optimum load distribution, distributed generation management

Smart metering:

- Implementation of Smart metering up to 100% coverage

Implementation of modelling and forecasting systems:

- Digital Twin
- Digital monitoring and predictive analytics of equipment condition

Customer empowerment & satisfaction:

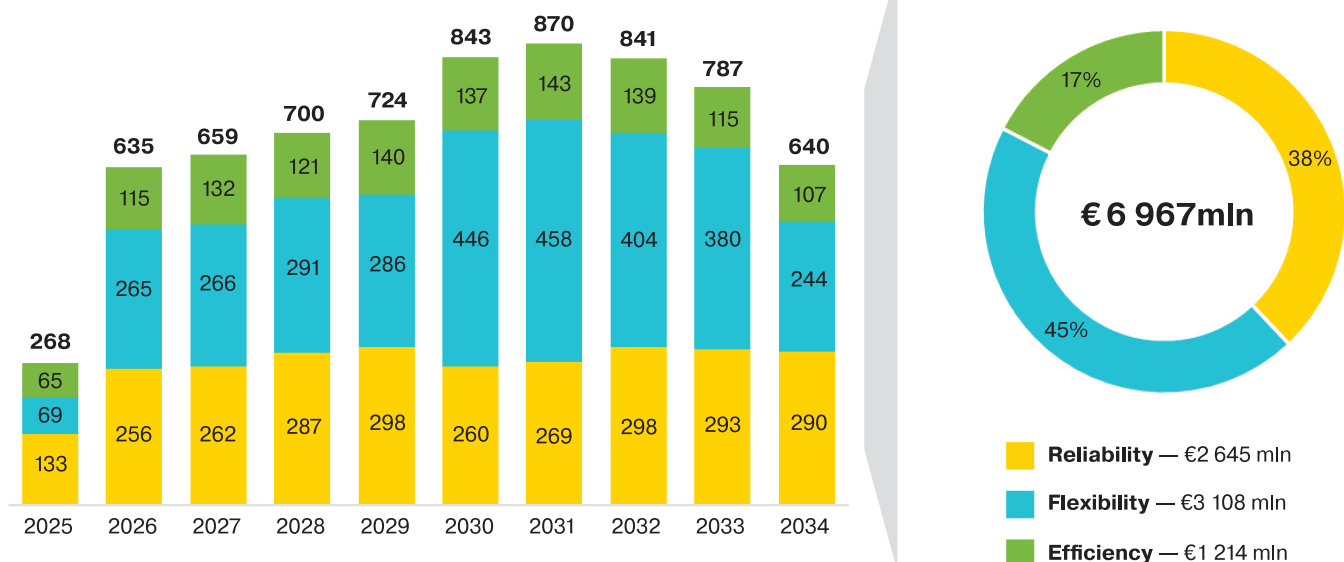
- Implementation of an omnichannel contact center platform
- Client service systems

INVESTMENT PROFILE OF DTEK GRIDS MODERNIZATION PROJECT

10-year investment plan

min EUR

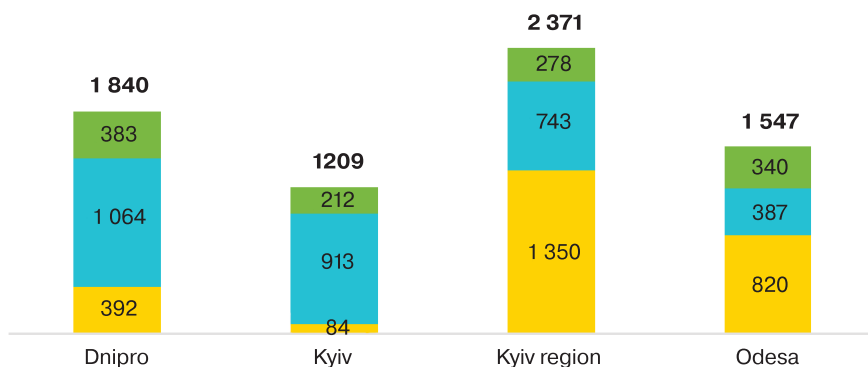
Breakdown by purpose



Breakdown by component



Breakdown by companies



Complete transformation of DTEK Grids would require a
~€7 bln investment with €145 mln investment for Irpin pilot project

917 110 -150 kV substations	579 Power transformers HV/MV	4 234 765 Smart meters	5 796 Automation primary/distribution/ secondary substations
2 556 Reclosers	8 976 Power transformers MV/LV	36 052 km Overhead lines 0.4-20 kV	13 957 km Underground lines 0.4 -20 kV



CONTACTS:

Serhii Zuiev

ZuievSO@dtek.com

Ruslan Volynets

VolynetsRV@dtek.com

Yan Tsymbalyuk

TsymbalyukYP@dtek.com

DTEK GRIDS

Ukraine, Kyiv



<https://grids.dtek.com/en/O@dtek.com>



<https://ua.linkedin.com/company/dtek-grids>

