Ukraine's energy sector

Current situation and urgent needs

ATTACKS ON ENERGY INFRASTRUCTURE AFTER THE ANNOUNCEMENT OF A "CEASEFIRE"

Ministry of Energy of Ukraine

March 25, 2025

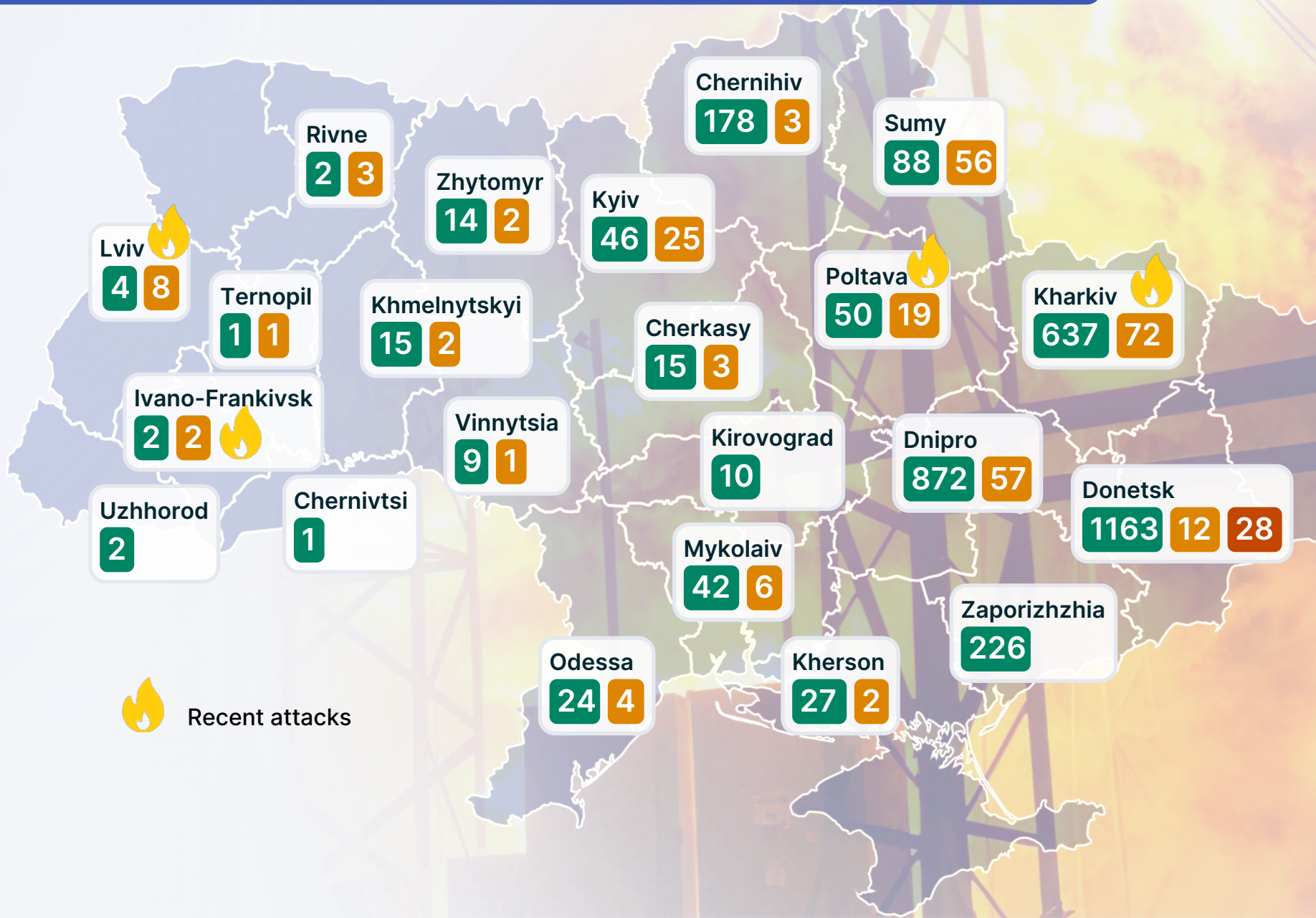
Announcement of energy “ceasefire”

Attacks after March 25, 2025:

3 428 incidents
Electricity sector

278 incidents
Natural gas sector

28 incidents
Coal sector



* As of October 5, 2025

SHIFT IN ATTACK FOCUS

Ministry of Energy of Ukraine

Massive attacks on gas infrastructure

In 2025, there was a clear escalation and a strategic shift in the focus of attacks toward natural gas infrastructure.

The year began with large-scale attacks targeting natural gas production facilities.

In the summer, systematic attacks began on Gas TSO facilities (GTSOU) and compressor stations, with extensive use of drones.

What happened in early October

- October 3: Combined attack with missiles and drones on **gas production facilities in Kharkiv and Poltava regions**
- October 5: Combined attack with missiles and drones **on Underground gas storage infrastructure in the Lviv and Chernihiv regions**

Escalation before the heating season

104 large-scale targeted attacks

have been recorded during August–September 2025

33%	Electricity transmission system operator
26%	Electricity distribution system operators
20%	Ukrainian Railways facilities (typically 110 kV substations)
20%	Electricity producers (TPP/CHP/SPP)

Russia is concentrating its attacks in certain regions - Sumy, Chernihiv, Kharkiv, and Dnipro - in an attempt to provoke local blackouts and isolate them from energy system.

URGENT NEEDS OF ELECTRICITY AND GAS SECTOR

Ministry of Energy of Ukraine

Given the recent attacks on the energy infrastructure, the most urgent needs are as follows:

Emergency and Urgent Needs of the Electricity Sector:

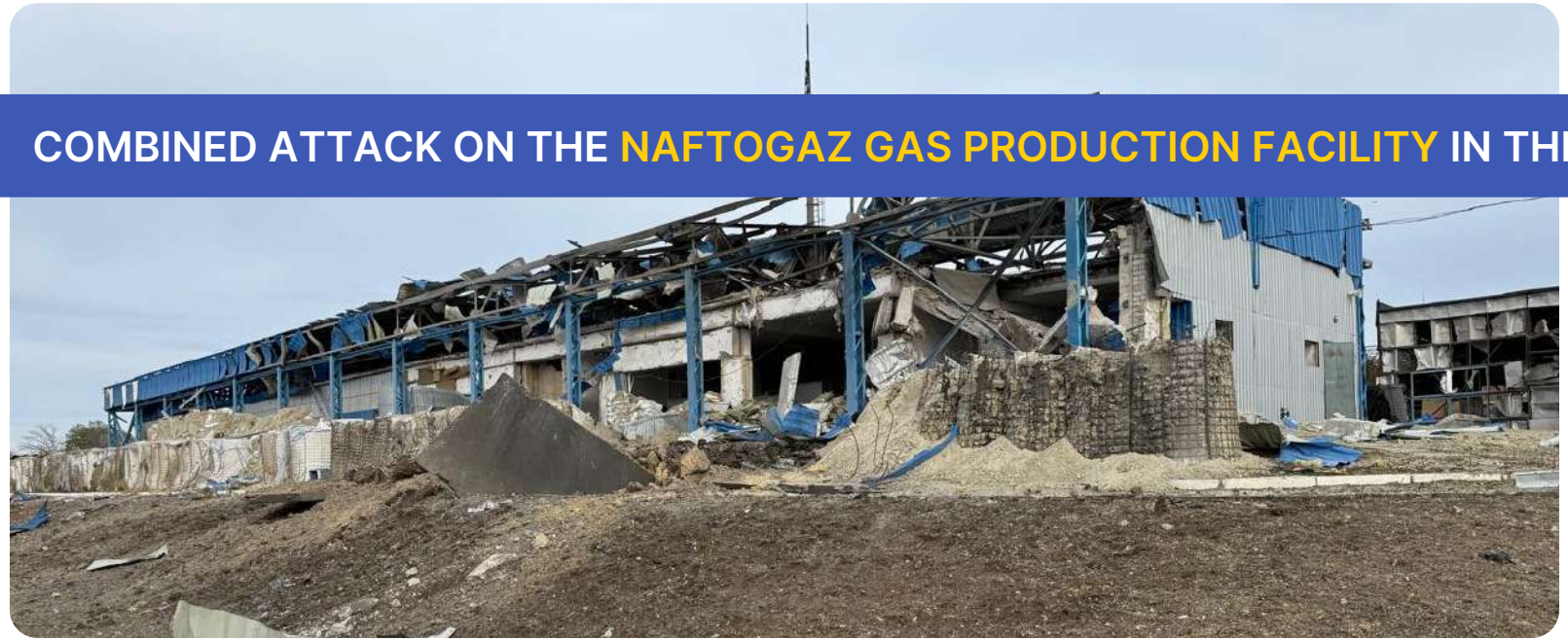
- Power Transformers 330/110(150) kV, 35 kV
- SF_6 Circuit Breakers 330/110(150)/35 kV - LOAD BREAK SWITCHES
- Disconnectors 330, 110(150), 35 kV
- Current and Voltage Transformers 330, 110(150)/35 kV
- Cable Products (0.4–35 kV)
- Control, Relay Protection, and Automation Equipment
- Mobile Substations, Generators, Mobile Repair Units

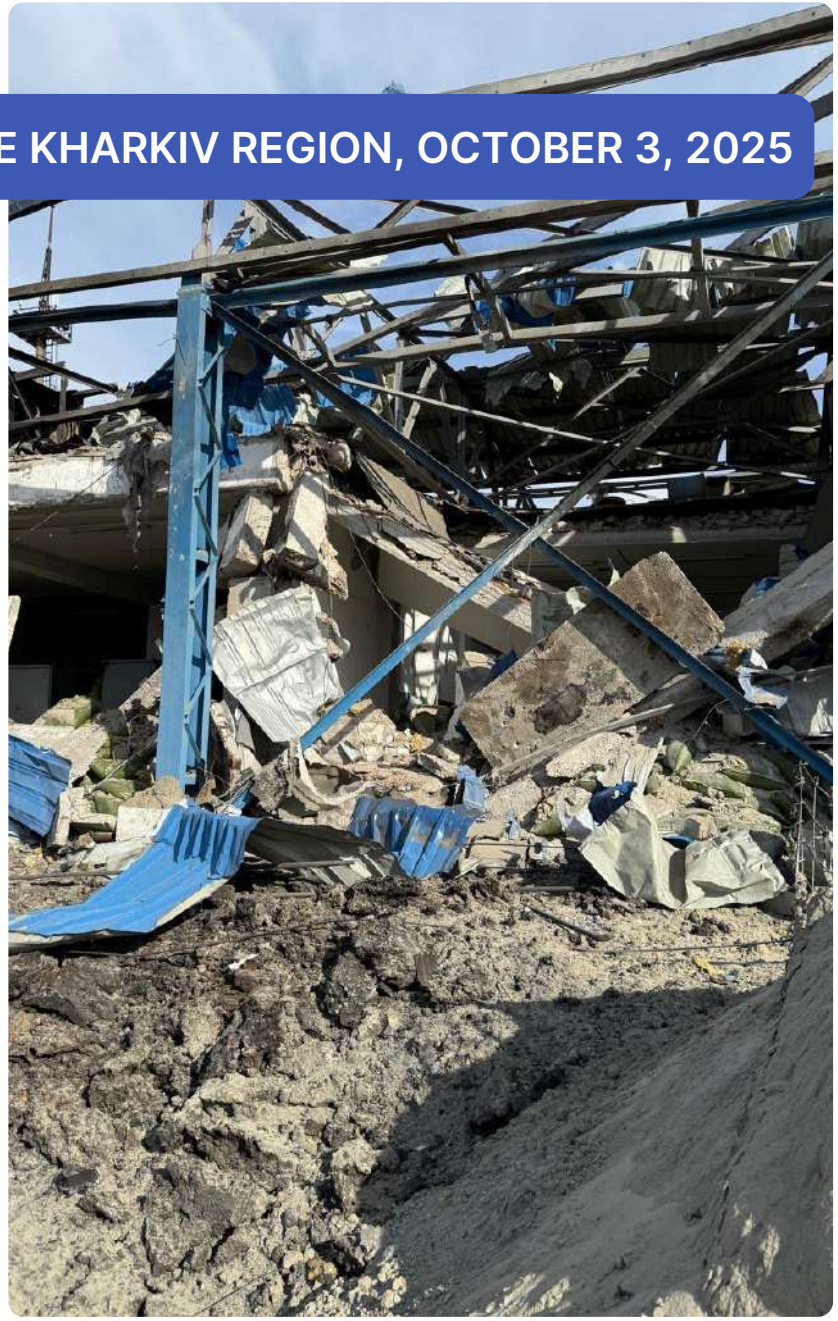
Emergency and Urgent Needs of the Natural Gas Sector:

- Gas Compressor Units (GCU)
- Gas Engine Compressor Stations
- Compressor and Engine Equipment
- Separation, Heat Exchange, and Cooling Units
- Gas Treatment and Filtration Equipment
- Emergency Recovery Kits (welding, compressor, power equipment)

COMBINED ATTACK ON THE NAFTOGAZ GAS PRODUCTION FACILITY IN THE POLTAVA REGION, OCTOBER 3, 2025

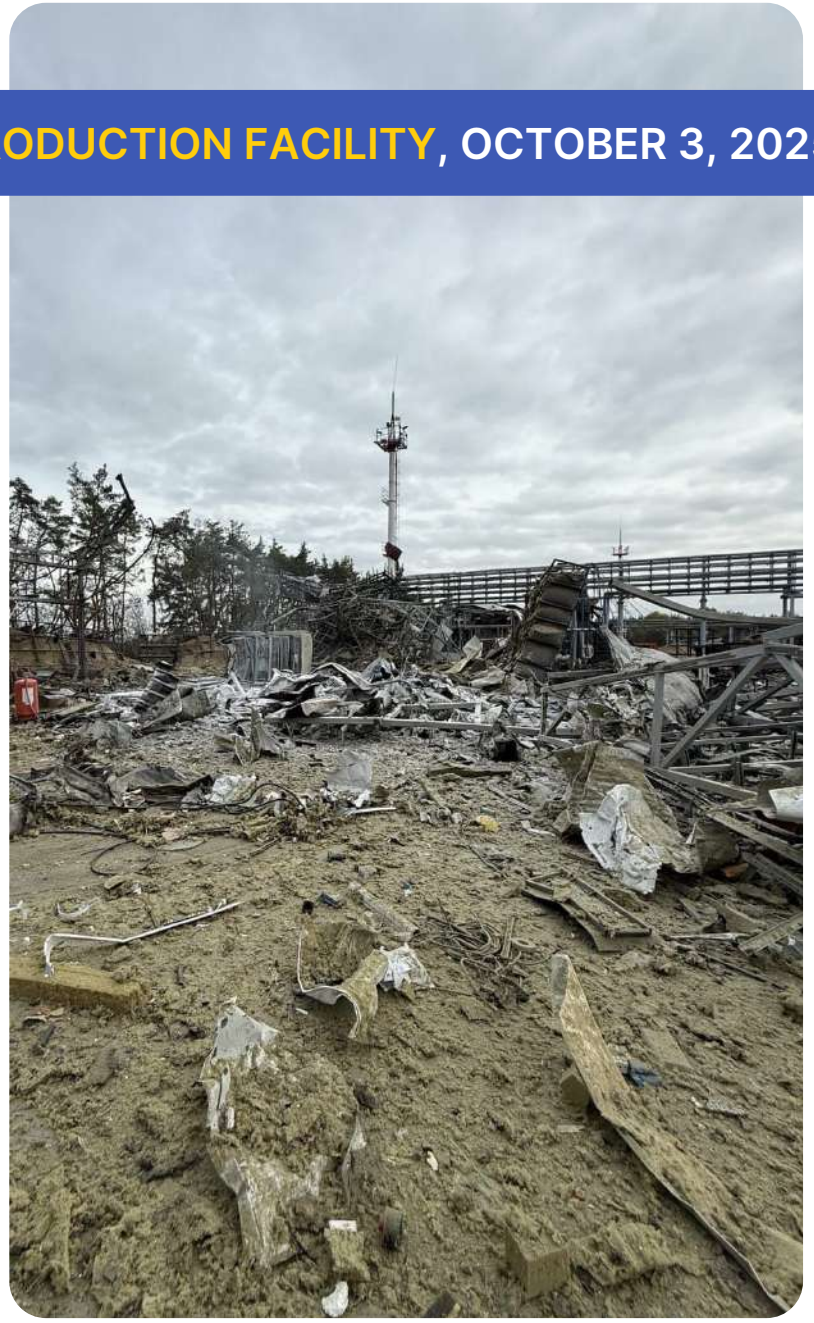
COMBINED ATTACK ON THE NAFTOGAZ GAS PRODUCTION FACILITY IN THE KHARKIV REGION, OCTOBER 3, 2025





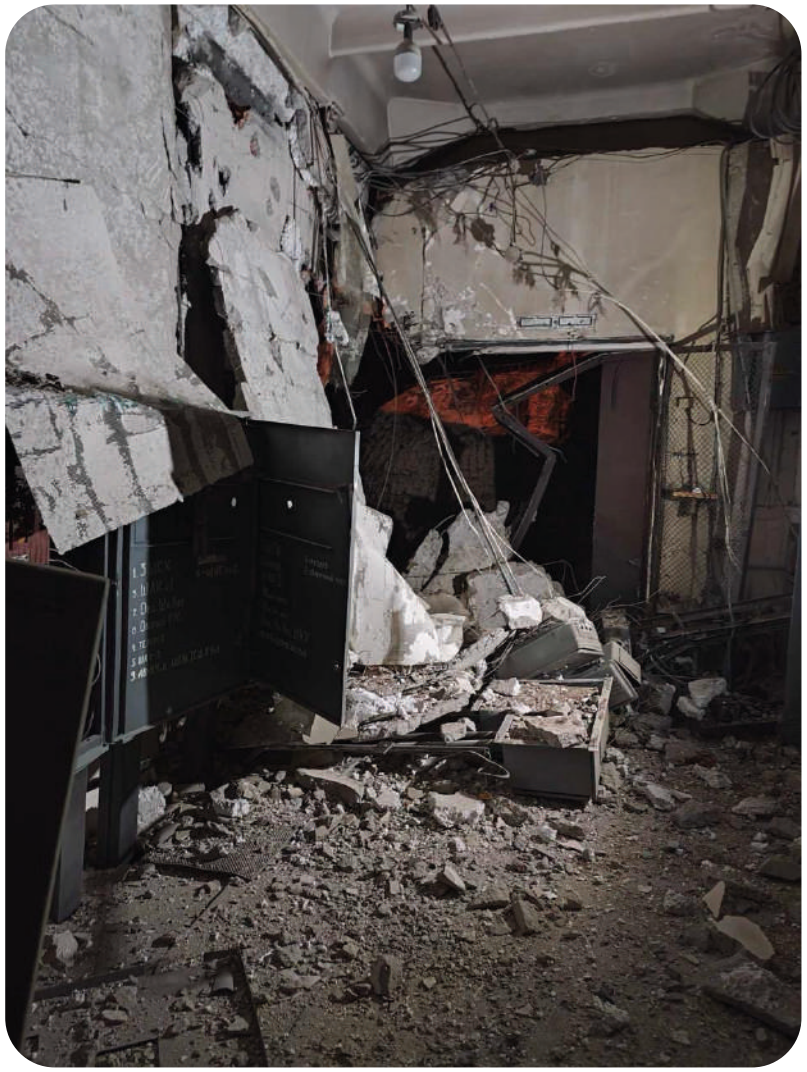
COMBINED ATTACK ON THE GTSOU COMPRESSOR STATION, OCTOBER 3, 2025

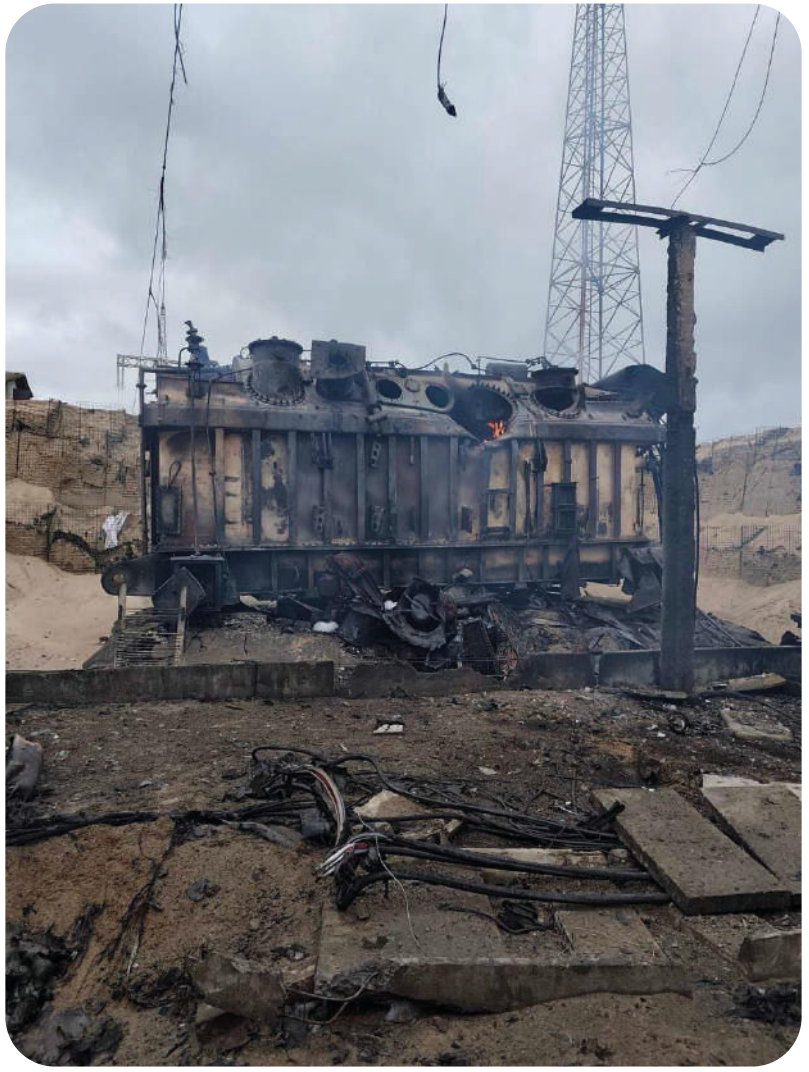
COMBINED ATTACK ON DTEK GAS PRODUCTION FACILITY, OCTOBER 3, 2025



COMBINED ATTACK ON THE KRAMATORSK TPP, OCTOBER 5, 2025

ATTACK ON UKRENERGO SUBSTATION IN SLAVUTYCH THAT CUT OFF POWER TO THE CHORNOBYL NPP, OCTOBER 2025

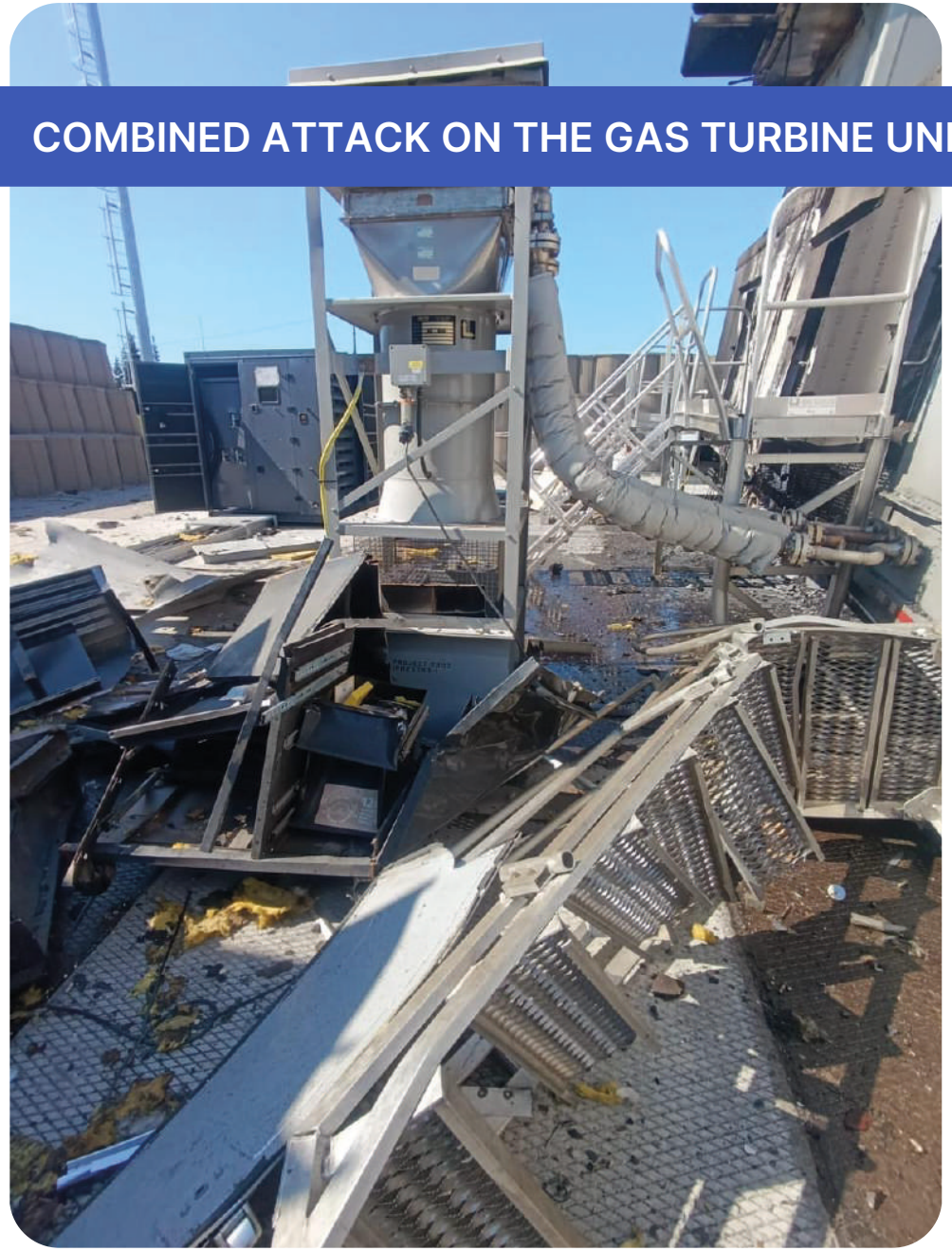




RESULTS OF THE ATTACK ON CHERNIHIVOBLENERGO FACILITIES, SEPTEMBER 2025

RESULTS OF THE TARGETED SHAHED DRONES ATTACK ON THE TRYPILSKA TPP, SEPTEMBER 2025

COMBINED ATTACK ON THE GAS TURBINE UNIT OF THE GTSOU IN PAVLOHRAD, SEPTEMBER 2025



PREPARATION FOR THE HEATING SEASON 2025/2026

Ministry of Energy of Ukraine

Ensuring Power Balance and Repair Campaign

17.6 GW shall be available by beginning of heating season. At present, 2.4 GW have restored

Supply of Natural Gas

13.2 bcm target level of underground gas storage filling by November 1, 2025.

Protecting of Energy Infrastructure

Strengthening air defense and physical protection of facilities

Development of distributed generation

1.8 GW to be launched in 2025 (including 1.2 GW of distributed gas generation and 0.7 GW of RES)

International partners are actively supporting us across all priorities

CURRENT NEEDS OF ELECTRICITY SECTOR

Ministry of Energy of Ukraine

€209 million
Generation

€97 million
Transmission

€87 million
Distribution

MOST CRITICAL EQUIPMENT: TRANSFORMERS, CIRCUIT BREAKERS, CABLE PRODUCTS

POWER TRANSFORMERS

- High voltage (110+ kV) ≈ 123 units
- Medium voltage (10-40 kV) ≈ 1,361 units
- Low voltage (<6 кВ) ≈ 136 units

CURRENT AND VOLTAGE TRANSFORMERS

- High voltage ≈ 640 units
- Low and medium voltage ≈ 5,659 units

OTHER CRITICAL EQUIPMENT AND MATERIALS

- Motor and transformer oils ≈ over 2,911 tones
- Special-purpose vehicles and equipment ≈ 7,730 units
- Fuel (gasoline/diesel) ≈ over 8,974 tones
- Industrial, household heaters (convection, infrared) ≈ 864 units

LOAD BREAK SWITCHES

- High voltage (110–750 kV, SF6-insulated) ≈334 sets
- Medium voltage (10-40 kV) ≈2,119 units
- Low voltage ≈45,661 units
- Package transformer substations, distribution points ≈464+ units

MATERIALS FOR POWER GRID RESTORATION

- Insulators ≈118,000+ units
- Cable products ≈6 527+ km
- Overhead line fittings ≈1.12 million units
- Reinforced concrete poles ≈31,000+ units
- Cable joint kits ≈28,000+ units

CURRENT NEEDS OF OIL AND GAS SECTOR

Ministry of Energy of Ukraine

€298 million

Overall Oil and Gas Sector needs

MOST CRITICAL EQUIPMENT: GAS COMPRESSOR UNITS AND COMPRESSOR EQUIPMENT, RECIPROCATING COMPRESSOR UNITS ARIEL JGD, JGT, JGM OF VARIOUS MODIFICATIONS

CONTROL SYSTEMS AND ELECTRICAL EQUIPMENT

- Gas compressor units with reciprocating compressors and gas-powered piston engines ≈11+ sets
- Control cabinets, controllers, and programmers ≈6+ sets
- Modular operator stations ≈6+ sets

PIPELINE VALVES AND CONNECTING ELEMENTS

- Anti-surge, check, and control valves ≈350+ pcs.
- Above-ground valves ≈6+ pcs.
- Pipes and fittings ≈6+ pcs., 60+ m

EMERGENCY AND RECOVERY EQUIPMENT

- Well repair and cementing units ≈8 pcs.
- Fire trucks and specialized machinery ≈49+ pcs.

GAS TREATMENT AND FILTRATION EQUIPMENT

- Inlet filters and separators ≈5 sets
- Air coolers ≈2 sets
- Condensate tanks ≈2 sets

COMPRESSED AIR & FIRE SAFETY SYSTEMS

- Air compressor (with drying unit) ≈2 sets
- Fire protection equipment ≈9 pcs.
- Cables and wiring ≈40+ km

MECHANISMS FOR SUPPORTING #1: UKRAINE ENERGY SUPPORT FUND

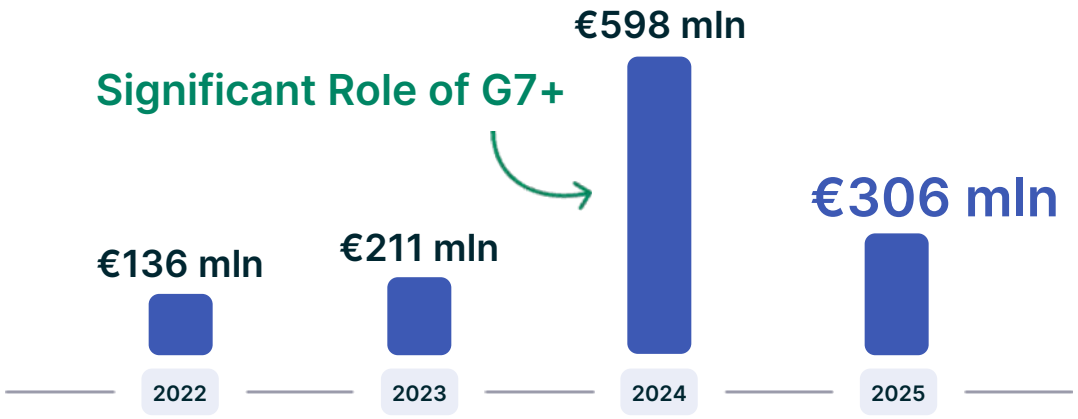
Ministry of Energy of Ukraine

Administered by:
Energy Community Secretariat (EnCS)

€1.251 billion
Total amount of grant contributions

€682 million
Unfunded companies requests

Dynamics of contributions



* As of October 1, 2025

NEEDS AND PRIORITIES ASSESSMENT: MINISTRY OF ENERGY OF UKRAINE

1	**Protection** of energy infrastructure facilities	€4.9 mln €35.3 mln
2	**Repair and restoration** of energy infrastructure facilities	€287.3 mln €162.6 mln
3	**Special vehicles**	€0 mln €33.7 mln
4	**Development of distributed generation**	€14.2 mln €409.1 mln
5	**Modernization to develop new capacities**	€0 mln €2.7 mln

Allocated in 2025 | No funding

MECHANISMS FOR SUPPORTING #2: AIDENERGY EMERGENCY HUB

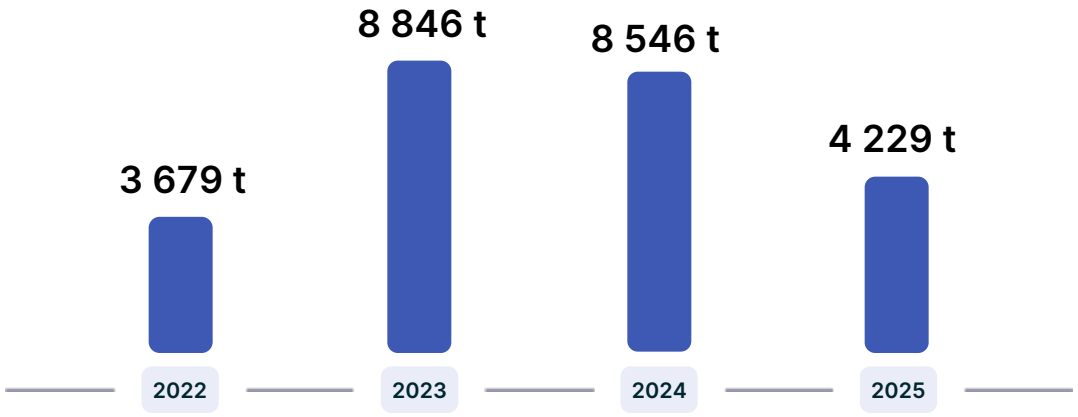
Ministry of Energy of Ukraine

Regulated by:
CMU Resolution No. 824 dated July 22, 2022

1,945 shipments
Received from donors

25,300 tons
Total weight of shipments

Dynamics of emergency assistance



* As of September 18, 2025

2025 in figures

167 proposals
received from donors in 2025

63 donation agreements
signed in 2025

23 countries
provided emergency assistance in 2025

333 shipments
delivered in Ukraine in 2025

Potential recipients of emergency assistance

- Energy companies
- Critical infrastructure facilities
- Military administrations
- Local government bodies

COOPERATION WITH GIZ

Ministry of Energy of Ukraine

Delivered of Emergency Assistance from Germany

133 shipments
of emergency assistance received

1,528.8 tons
total weight

Signed of Donation Agreements with German donors

28 agreements
between GoLocal and AidEnergy Hub (facilitated by GIZ)

32 agreements
between AidEnergy Hub and German donors (via GIZ and GoLocal)

Major Cooperation Projects

Equipment transfers from RWE Power AG power plant

Under the signed donation agreement, dismantled equipment from the RWE power plant is being transferred to Ukraine

Donated Equipment

- Power transformers and substations
- Generators and high-voltage switchgear
- Mobile electrical laboratories and service vehicles
- Conductors, cables, and transformer oil
- Thermal power plant and cogeneration equipment
- Solar panels and lighting systems
- Mechanical, electrical, and relay protection tools
- Pumps, heating equipment, and emergency repair kits
- Personal protective clothing and IT equipment

LESSONS LEARNED

Ministry of Energy of Ukraine

We continue to learn how to overcome the challenges of war and to restore every day

Preparing for the heating season one year in advance

Despite all efforts, procurement approvals, financing, equipment acquisition, and logistics processes still require many months

Applying creative solutions in restoration

We aim to complete repairs as quickly as possible, adapting all available equipment and materials.

Creating a reserve of energy equipment for rapid response

The Ministry has launched the creation of a National Strategic Reserve of power transformers and other equipment.

Developing distributed generation in the regions

This is our response to enemy attacks on the centralized energy system and will strengthen the energy resilience of every region.

STRATEGIC PRIORITIES 2025: THREE PILLARS OF ENERGY RESILIENCE

Ministry of Energy of Ukraine

PILLAR 1: PROTECTION & RESILIENCE

ACTIVE DEFENSE CAPABILITIES

- Strengthen air defense systems
- Bolster electronic defence

PASSIVE INFRASTRUCTURE PROTECTION

- Develop and deploy advanced, cost-effective solutions for safeguarding numerous energy sites

CRITICAL REPAIRS & OPERATIONAL READINESS

- Focus on utilizing available, decommissioned, mothballed and stocked equipment
- Establish strategic reserves of essential equipment for planned maintenance and emergency response
- Address the UESF deficit (approximately EUR 700 million)

PILLAR 2: ENERGY SUPPLY & CONTINUITY

NATURAL GAS

- Secure at least 13.2 bcm in storages by the start of the 2025/2026 heating season (including 5.8 bcm through imports)
- Build 10 bcm of strategic gas reserves for Eastern EU countries (2025–2030) and facilitate the use of Ukrainian storages
- Develop of “joint products” on Transbalkan pipeline to decrease tariffs and involve new gas molecules
- Ensure firm cross-border gas transmission capacities

ELECTRICITY GRID & INTERCONNECTION

- Restore EU → UA electricity transmission capacity to 2.1 GW
- Further increase UA → EU electricity transmission capacity (from 900 MW)

PILLAR 3: DECENTRALIZATIN & MODERNIZATION

RENEWABLE ENERGY AND STORAGE DEVELOPMENT

- Implement key government programs (e.g., rooftop solar soft loans and grants, "Ray of Hope," "5-7-9" support)
- Conduct Renewable Auctions
- Development of Risk Mitigation Mechanisms for RES development
- Long-term ancillary service auctions for storage

DISTRIBUTED GAS GENERATION EXPANSION

- Ensure the integration and dispatchability of gas turbines and gas piston engines
- Expand co-generation facilities in regional areas
- Promote private sector investment in distributed generation.

Ministry of Energy of Ukraine

THANK YOU FOR SUPPORTING UKRAINE!