

UKRAINE ENERGY SECTOR

HOW TO HELP FAST

MARCH 2023

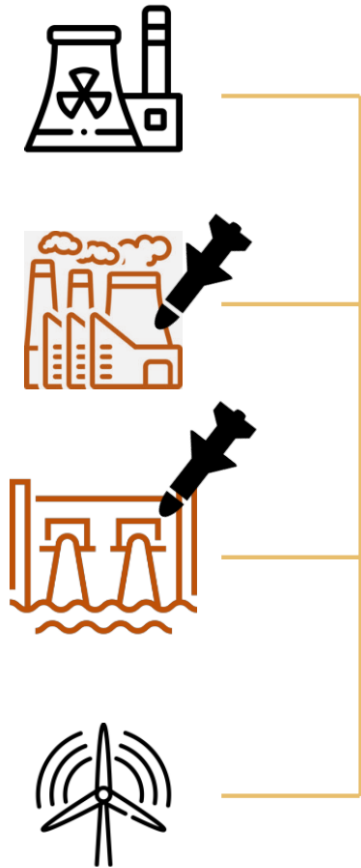
ESCALATION OF TARGETED ATTACKS ON ENERGY



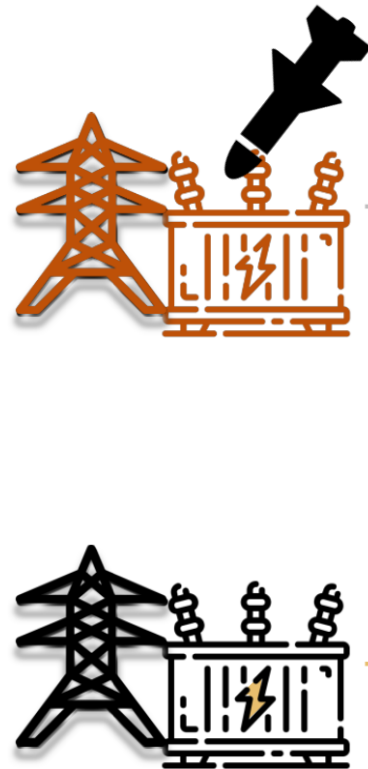
- Ukraine's energy system has endured **15 waves** of massive **missile** attacks and **18 waves** of **drone** attacks on the Ukrainian energy system and heat supply facilities.
- In total, more than 50% of the power system's generation and transmission assets were impacted by Russian attacks.
- Energy companies have a **critical need for equipment and materials to repair** energy facilities and restore sustainable energy supply to consumers.
- The generation facilities were damaged. This led to an increase in the power deficit in the power system. Which forces us to use **planned and emergency shutdowns** every day. More than 16 GW of main installed capacities are not available to Ukrainian grid.

RUSSIA HITS KEY NODES TO INFLICT MAXIMUM PAIN

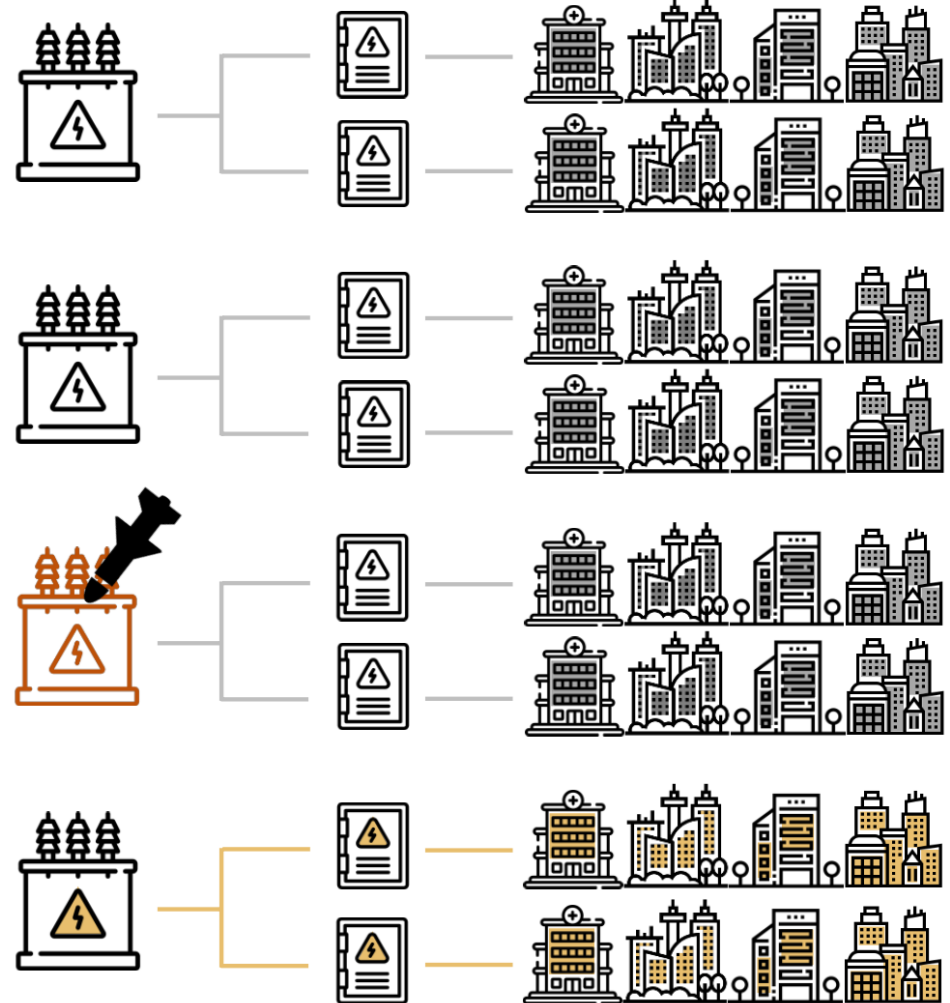
Generation



Ukrenergo (TSO)



Oblenergo (DSOs)



**WHAT WE
DO?**



Image: Ukrenergo

MINISTRY OF ENERGY

Ministry of Energy **forms and updates** the list of the most urgent needs and the complete **list of needs** for Energy companies.

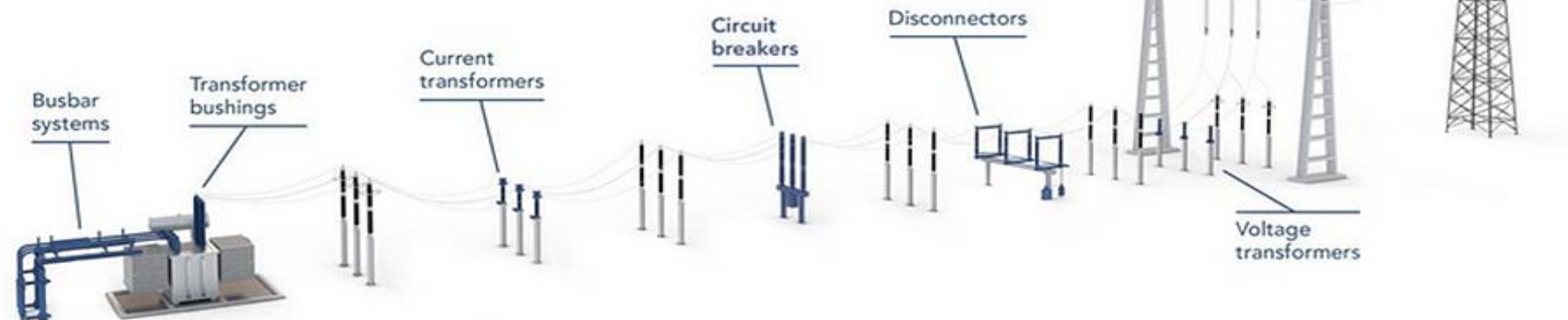
By order of the Ministry of Energy of Ukraine, **the Working Group on the Organization of Energy Humanitarian Aid** was established under the Ministry of Energy of Ukraine.

One of the **main tasks** of the Working Group is to process requests from Fuel and Energy Complex companies regarding the provision of humanitarian aid and its distribution, as well as **the selection of critically needed equipment in accordance with the priority criteria for the procurement procedure.**

At the request of the European Commission and in agreement with the Ministry of Energy of Ukraine, the Energy Community Secretariat created the **Ukraine Energy Support Fund**, which enables governments, international financial institutions and international organizations, as well as private donors to provide emergency financial support to the Ukrainian energy sector.

The Fund is managed by **the Energy Community Secretariat.**

Procurement are performed by the independent purchasing agent **Tetra Tech ES, Inc. USAID** in accordance with the transparent, fast and efficient procedures.



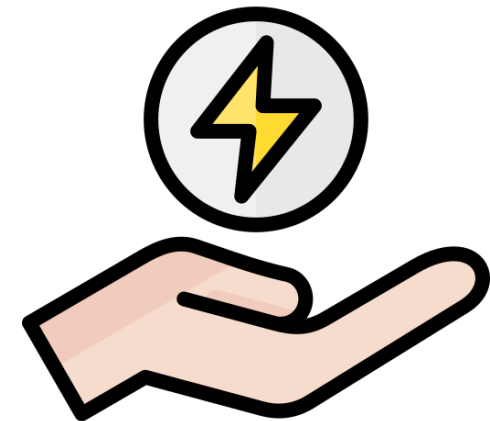
KEY NUMBERS ENERGY HUMANITARIAN AID

30 countries have already provided humanitarian aid for the energy sector. It's **470 cargoes~ 5,994 tons.**

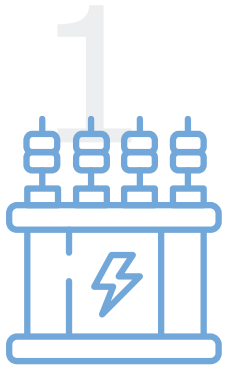
The Ministry of Energy has **already distributed** humanitarian aid **to 111** energy sector companies.

The Ministry of Energy constantly collects and updates the needs of energy sector companies. As of today, the total request of all companies is about 20,000 rows in an Excel table.

We still have a huge need for equipment.



EMERGENCY REPAIR NEEDS



Other equipment

- Substation compressors
- Arc extinguishing chambers
- Disconnecter support columns
- Distributing current retractable equipment
- Insulators, fuses
- Wires, cables



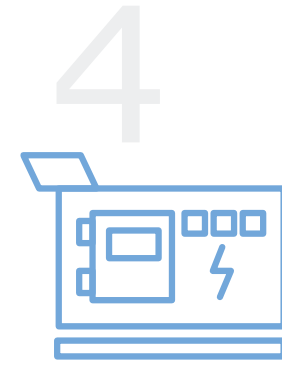
Transport

- Autotowers
- Mini-excavators
- Mobile cranes
- Cargo lifting mechanisms
- Cargo vehicles
- Passenger vehicles



Tools, materials

- Electrical engineering laboratories
- Chainsaws
- Armature, traverses, clamps
- Reinforced concrete supports
- Satellite phones, means of telemechanics and radio communication



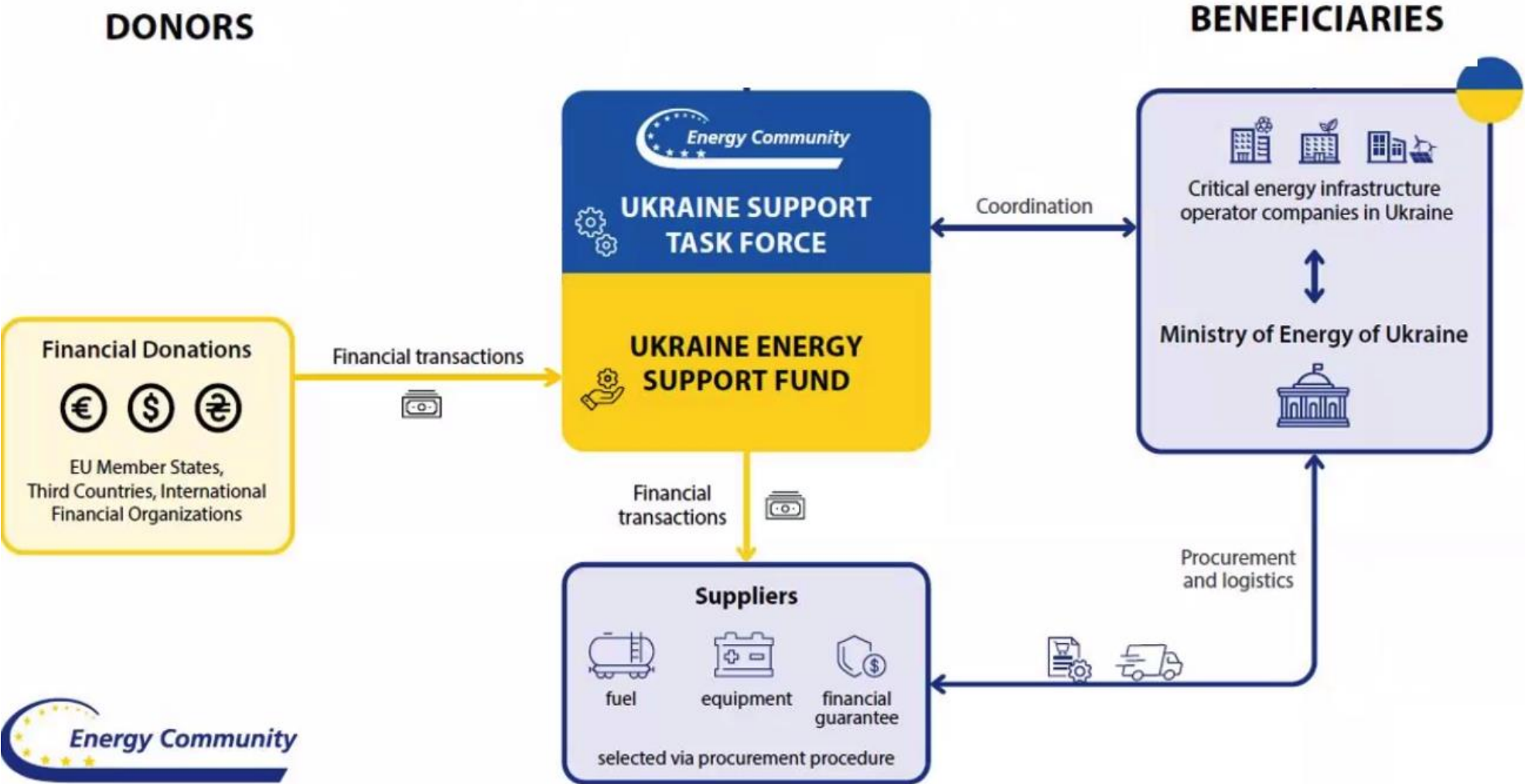
Power backup, fuel

- Batteries and UPS devices
- Diesel generators
- Diesel and gasoline
- Transformer oil

We need equipment

- new
- used/pre-owned
- repairable
- available in warehouses and those that require minimal manufacturing time

UKRAINE ENERGY SUPPORT FUND



UKRAINE ENERGY SUPPORT FUND

As of today more than 151 million euros are on a special account.

The Working Group of the Ministry of Energy **approved** the list of equipment, fuel, and services for supply to Energy companies under the procurement procedure at the expense of the funds received by the Energy Support Fund.

- The chosen equipment at a cost of over **137 million euros** for **41** Energy companies.
- These are Energy companies that provide generation, transmission, distribution of electric energy, storage, distribution and transportation of natural gas, as well as companies in the mining industry.
- These companies operate in the following regions: Kherson, Kharkiv, Mykolaiv, Zaporizhzhia, Chernihiv, Sumy, Kyiv, Donetsk, Luhansk, Dnipropetrovsk, Odesa, Kirovograd, Khmelnytskyi, Lviv, Vinnytsia, Ternopil, Volyn, Cherkasy regions, Kyiv city. The list also includes organizations that carry out their activities throughout the whole country.



SELECTED EQUIPMENT GROUPS



- Transformers
- Accumulator batteries
- Generators
- Switches (vacuum, electric-gas, others)
- Disconnectors
- Special equipment
- Fuel
- Insulators
- Devices and tools
- Shut-off fittings
- Pumps
- Turbines
- Surge limiters
- Pipe equipment
- Motor transport
- Other



AidEnergy

- is a "single window" for receipt, coordination and distribution of humanitarian aid among affected companies in the fuel and energy sectors

The main problem: the team is located in different cities of Ukraine, and tasks are performed with offline tools

Solution: AidEnergy is a single online environment for users

- ✓ Parallel, not sequential work of the entire team - **an opportunity for team expansion**
- ✓ **Reduction of manual operational work** due to the automation of tasks through AidEnergy
- ✓ Significant **acceleration of equipment** movement due to the possibility of increasing the number of warehouses, prompt receipt of information on delivery, automation of distribution processes
- ✓ **Transparency and optimization of communication with Donors:** automatic updating of information on critical needs and aid distribution
- ✓ **Flexible interaction with all affected companies in the fuel and energy sectors:** prompt updating of lists of needs, automated survey, automatic notification of the list of distributed assistance, etc.

Development stages

	Stage 1	Stage 2-3
Built-in data pipeline at all stages of work: promptly collection, verification and data processing	+	
Operational status for received and available equipment in warehouses	+	
Automated survey of fuel and energy companies on equipment during preparation of distribution	+	
Control of the equipment status : identified, distribution process, distributed, shipped	+	
Automatic maintenance of the distributed equipment registry	+	
Automatic notification of warehouse staff and Acquirers regarding the decision of the Working Group on the equipment distribution	+	
Automatic notification of Donors on the critical needs of the fuel and energy complex and the needs in general	+	
Automatic notification of Donors regarding the aid distribution provided by them	+	
Module of interaction with Donors on the offered equipment		+
Individual needs coverage booking by Donors		+
Automated survey of fuel and energy companies on the equipment offered by Donors		+
Module for collecting reports from Acquirers on the use of distributed aid		+
Automated matching of the received equipment with potential Acquirers		+
Analytics module		+

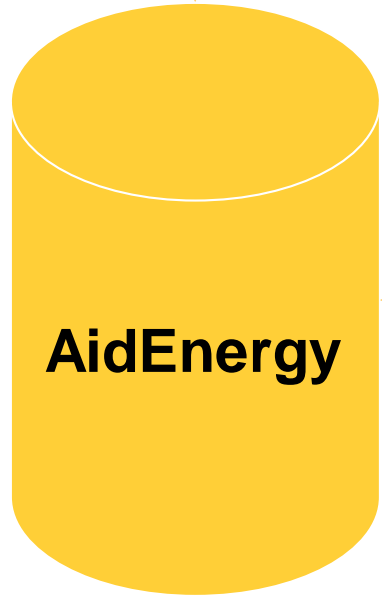
System structure

Energy Company Account

1. Adding new and amending the existing list of needs
2. Equipment survey module while the distribution preparation
3. Notification on the list of distributed aid
- *4. Participation in a survey on the equipment offered by Donors*
- *5. Module for collecting reports on the use of distributed assistance*
- *6. Analytics module*

Donor Account

1. List of critical equipment needs for fuel and energy complex
2. General status of needs
3. Notification on the of the provided aid in the context of the region, acquirer, scope of activity of the acquirer, etc.
- *4. Feedback on the offered equipment*
- *5. Distributed Aid Usage Reports*
- *6. Individual needs booking*
- *7. Analytics module (dashboards)*



Administrator Account (Ministry of Energy of Ukraine)

1. Interaction with the consolidated data at all the stages: operational collection, verification and data processing
2. Operational status for received and available equipment in warehouses
3. Automated survey of fuel and energy companies on equipment during preparation of distribution
4. Equipment status control: identified, distribution process, distributed, shipped
5. Automatic notification of warehouse staff about the decision of the Working Group on the aid distribution
6. Automatic maintenance of the distributed equipment registry
- *7. Module of interaction with Donors on the offered equipment*
- *8. Automated matching of the received equipment with potential acquirers*
- *9. Module for collecting reports on the use of distributed aid*
- *10. Analytics module*

USEFUL CONTACTS



Farid Safarov

Deputy Minister, Ministry of Energy
farid.safarov@mev.gov.ua

Dirk Buschle

Coordination Energy Support Fund, Energy Community
Dirk.Buschle@energy-community.org

Yuliia Kyian

Coordination for humanitarian assistance, Ministry of Energy
yuliia.kyian@gmail.com

Ruslan Slobodyan

clarification of specifications
slobodianR@sies.gov.ua Ruslan.slobodyan@gmail.com

Petro Lutsiv

logistics, management of warehouses
plutsiv@gmail.com

Roman Andarak

coordination with donors, Ministry of Energy
roman.andarak@mev.gov.ua