Critical Infrastructure Protection

ЧЕРКАСИТЕПЛОКОМУНЕНЕРГО

Challenges Related to the War

Черкаси
2025

Multi-Level Protection of Critical Infrastructure Facilities

- Highly effective electronic warfare protection with coordinate and timestamp spoofing (16-channel protection)
- Anti-aircraft defense systems (Gepard)
- Facility protection by mobile fire groups and interceptor drones
  Reflectors against missiles with an inertial guidance system
- Engineering protection – sand gabions, concrete blocks + detonation nets
- Protection against FPV drones – frequency suppression system for control frequencies
- Armed security for facilities

ADDITIONAL PROTECTION AND COMMUNICATION

- Own radio communication network on military frequencies.
- Own IP telephony network;
- Starlink as a backup.
- Placement of all resources on foreign servers.
- Backup Heating and Power Generation
- Reserve boilers with gas ramps for quick installation.
- Multi-fuel mobile boiler house.
- Solid fuel and reserve diesel capacities at critical infrastructure facilities of the city's hospitals.

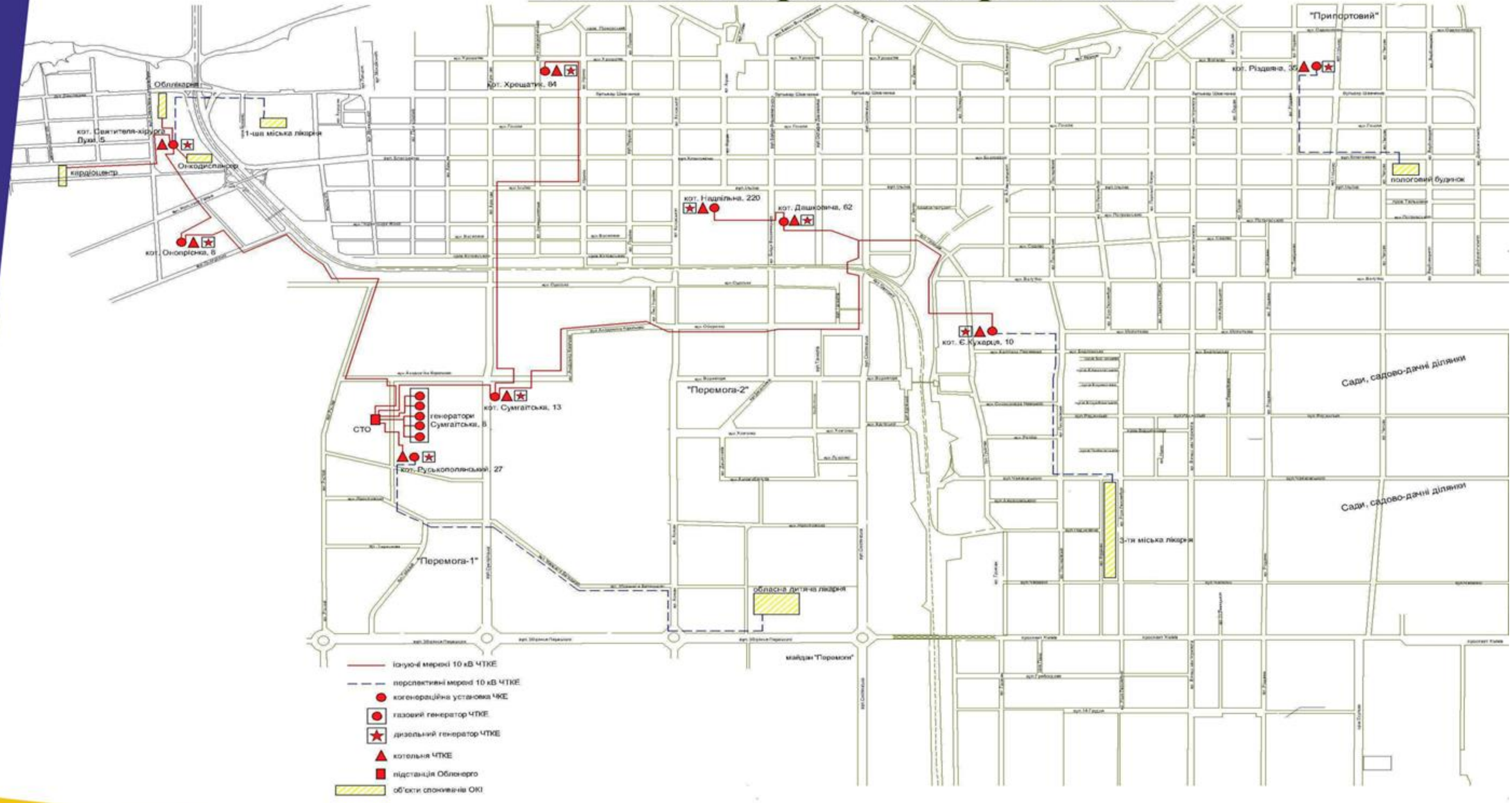
CHALLENGES RELATED TO THE WAR

- 2022 and 2025 – 14 gas cogeneration units and generators with a total capacity of 20MW were installed
- Construction of own power transmission lines between all medium-pressure boiler houses (28 km).
- Connection of the regional hospital, cardiology center, and oncology center to own electrical networks.
- Equipment was replaced to enable operation from own generation (pumps and fans were replaced with new ones with frequency regulation to reduce starting currents)
- A scheme for operating in island mode was developed, with the reconnection of consumers from the Cherkasy Combined Heat and Power Plant (CHP)
- A reserve of diesel fuel, solid fuel, materials, and plywood panels has been formed to cover windows blown out by the shock wave

Six-Level Protection for Medium-Pressure Boiler Houses:

- Two inputs from the electricity distribution system operator;
- Third backup input from own 10 kV network (operating from cogeneration machines in peninsula mode)
- CGUs (Cogeneration Units) at boiler houses that can operate as islands for their own needs.
- Diesel electric generators at all boiler houses.
- Diesel burners at each boiler house for anti-freezing operation in case of a gas blackout.
- Hybrid inverters (DEYE inverters with batteries and solar panels) installed at small boiler houses and Central Heating Points (CHPs) with independent circuits

Схема електричних мереж 10кВ



"острівний" режим роботи