



CHERNIHIV  
Hero City



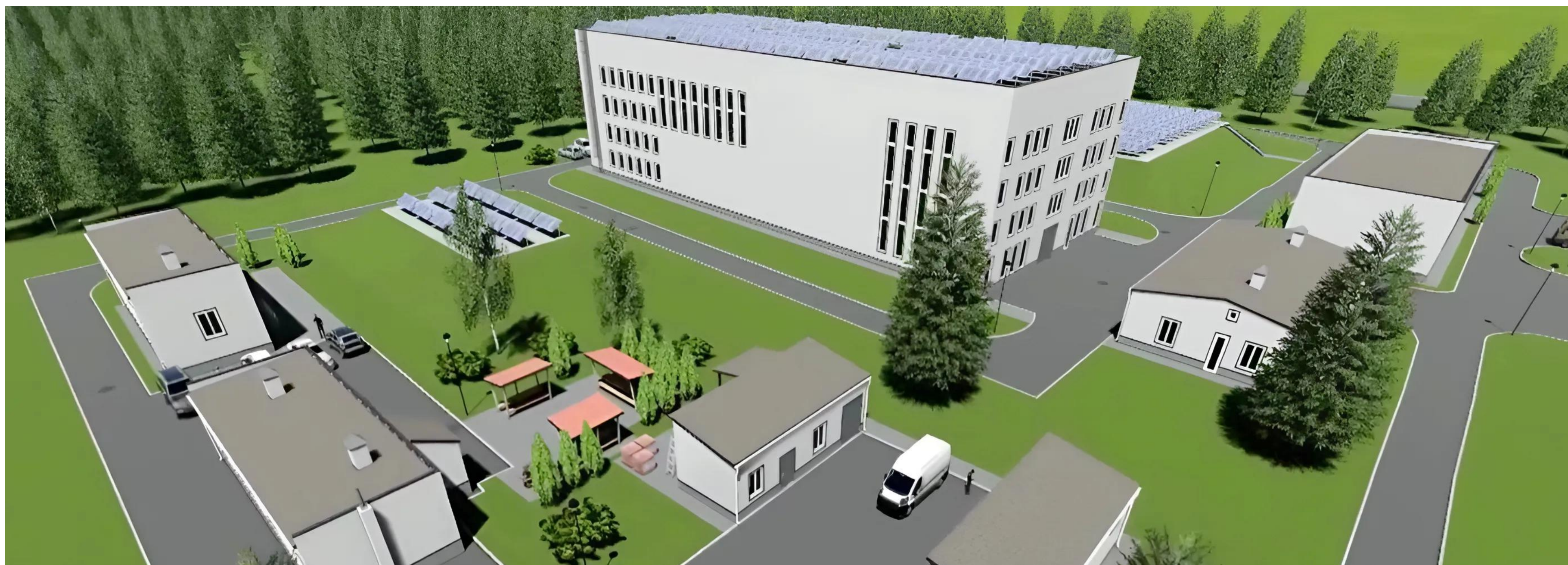
# CHERNIHIV COMMUNITY

Reconstruction and development projects

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# RECONSTRUCTION OF THE WATER PUMPING STATION «PODUSIVKA» OF MUNICIPAL ENTERPRISE «CHERNIHIVVODOKANAL»





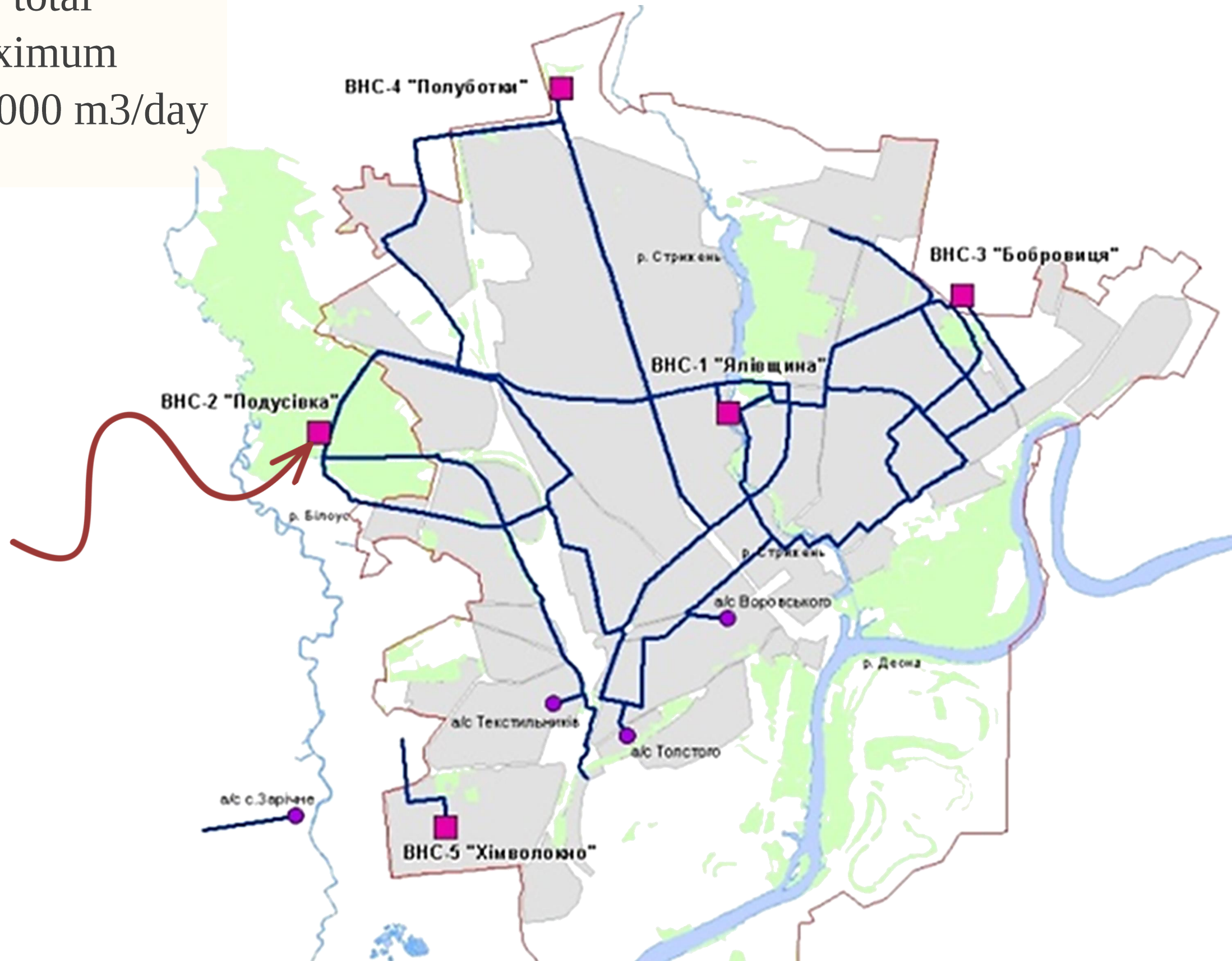
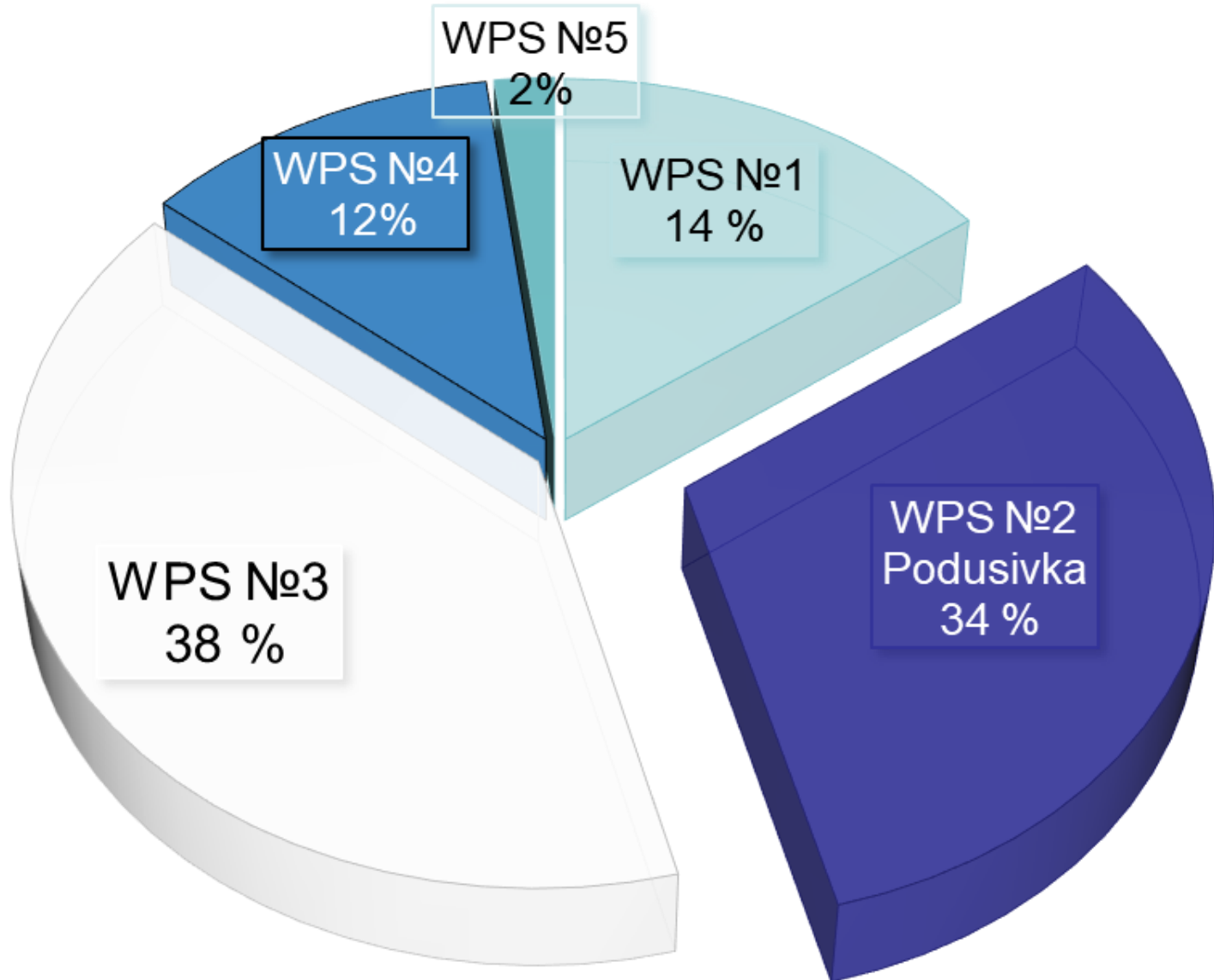


**Water  
pumping  
station was  
significantly  
destroyed as  
a result of  
Russian  
airstrikes**





Previously, it provided 34% of water for the total population of the city of Chernihiv. The maximum productivity of the pumping station was 30,000 m<sup>3</sup>/day





# Total cost of the reconstruction project of the water pumping station «Podusivka»

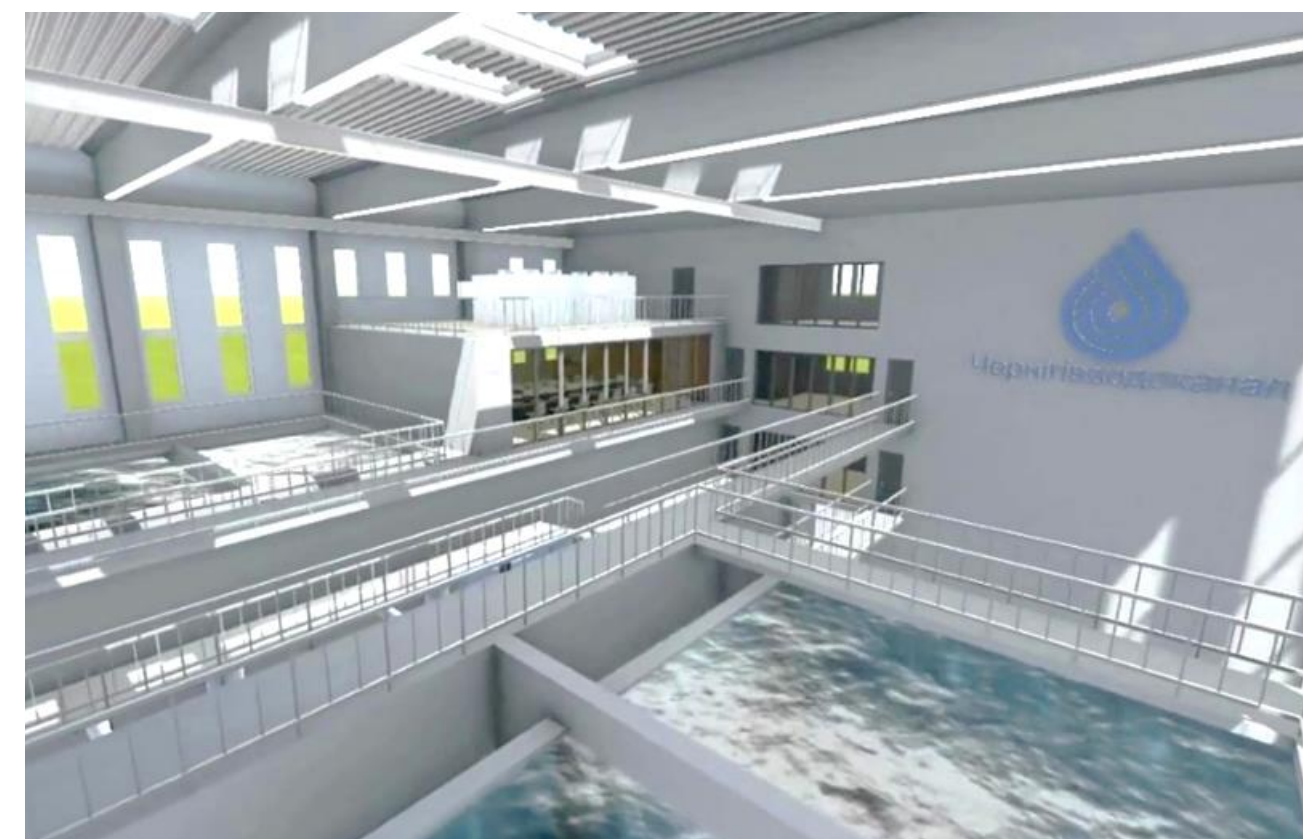
**Stage 1.** Restoration of operation of the water supply pumping station

**The cost:** 12 402 615 EUR



**Stage 2.** Construction of a water treatment plant

**The cost:** 20 023 688 EUR



**TOTAL COST OF PROJECT: 32 426 303 EUR**



# RESTORED

**The engine room building  
was restored**



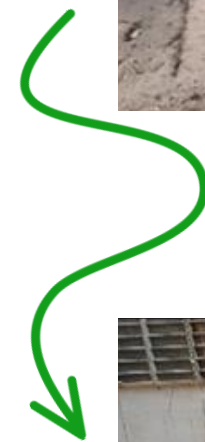
**The automation and control  
system has been restored**





# RESTORED

**Clean water tanks have  
been built**



**New engineering networks  
have been laid**





RESTORED

**Built:**

- 12 chambers and wells of water supply networks
- 18 wells of sewage networks



The station building was constructed and equipment is installed ultraviolet disinfection drinking water





# THE SECOND STAGE OF CONSTRUCTION

## Water treatment station

The main technological facilities and equipment will be located in the building with dimensions of 25x62 meters. In this building will take place the removal of excess iron and manganese.





# THE SECOND STAGE OF CONSTRUCTION

## Energy-efficient technologies

Modern energy-efficient technologies with applying solar power plants and heat pumps are using in the reconstruction of the water supply station



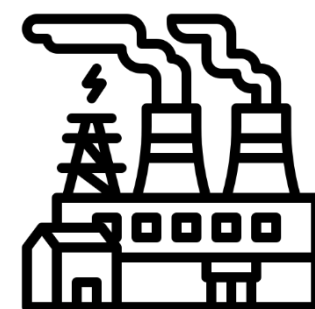


# THE PROJECT OF THE COMMUNAL ENTERPRISE “TEPLOCOMUNENERGO”

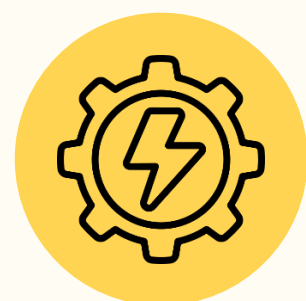
CONSTRUCTION OF HIGHLY MANOEUVRABLE GENERATION  
BASED ON A COMPLEX OF GAS PISTON GENERATORS  
WITH A TOTAL CAPACITY OF 50 MW OR MORE AT CHERNIHIV CHP



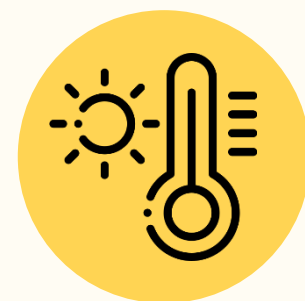




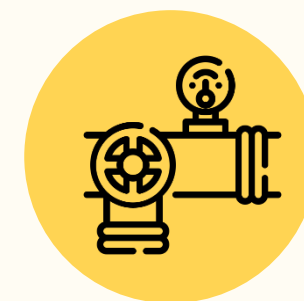
# GENERAL INFORMATION ABOUT CHERNIHIV TPP



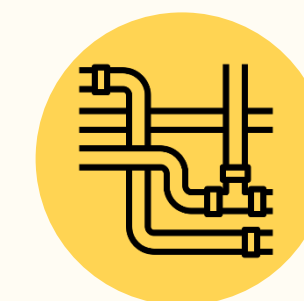
The installed electrical load is 220 MW



The installed heat load is 409 Gcal/h



63 Central heating points



The length of the heating networks is 148.54 km



Release of thermal energy 442,237 Gcal/year



11 schools



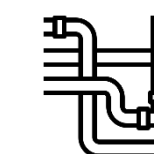
24 kindergartens



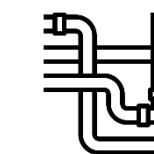
13 hospitals



579 residential buildings



Main heating networks - 38.7 km



Distribution heat networks - 109.8 km







Electricity generated at Chernihiv CHP is fully supplied to the Unified Energy System of Ukraine.

Chernihiv CHP is one of the key energy facilities of Chernihiv city and Chernihiv region. Due to the absence of large energy-generating enterprises in the area, it plays a significant role in supplying both electricity and thermal energy to the city of Chernihiv and the region.





- In spring of 2022, Chernihiv CHP sustained significantly damaged due to missile shellings and as a result, had to suspend its operations.
  - In autumn of 2023, thanks to the cooperation with international partners and authorities, the plant managed to resume electricity generation and heat supply to consumers.
  - The power system of Chernihiv and Chernihiv region is still at risk due to the threat of repeated shelling and destruction.
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## The key goal of the project:

construction of a new mini-CHP plant (starting from 50 MW), on the basis of Chernihiv CHP

## Project aim

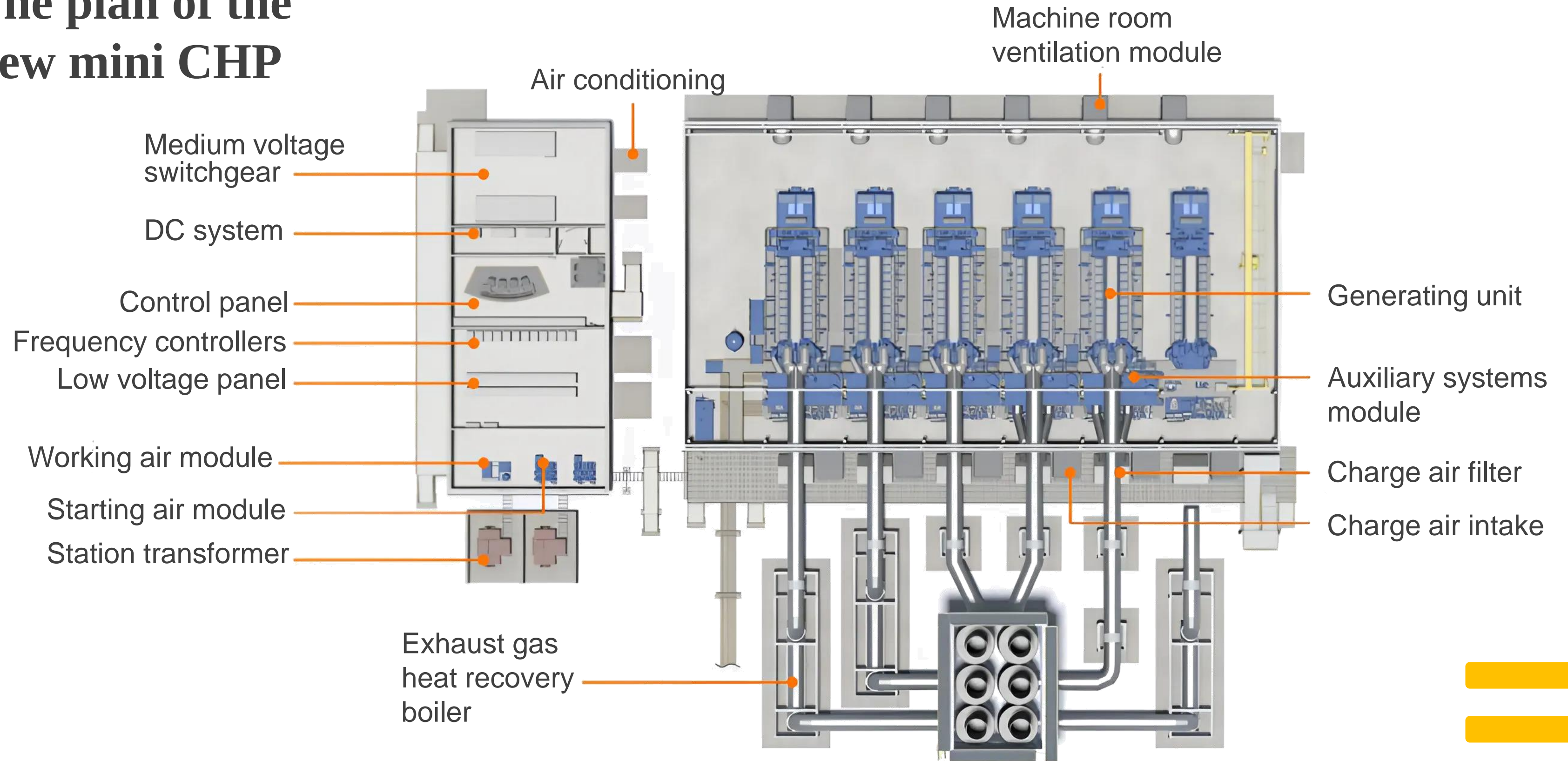
covering morning and evening peak loads in the power grid within its capacity at a high price position in the balancing market. It is able to change quickly the load within 10-15 min



To increase the shunting generating capacity, these units are planned to be located at a distance of about 200 m from the main equipment. It will ensure the production of electricity and heat in case of a blackout or a missile hit to the main generating equipment.



# The plan of the new mini CHP

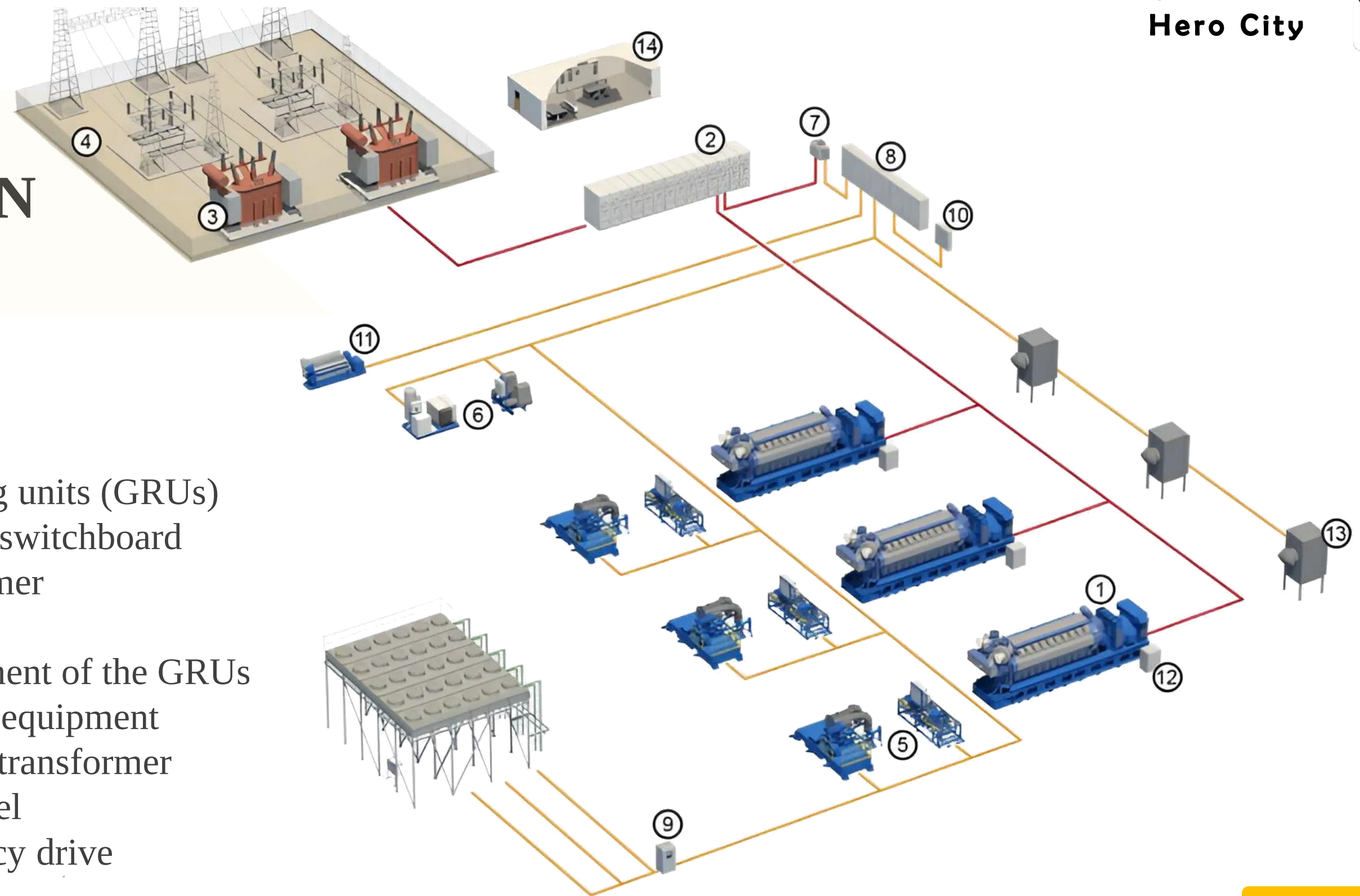






# THE COMPOSITION OF MINI-CHP EQUIPMENT

1. Gas reciprocating units (GRUs)
2. Medium voltage switchboard
3. Step-up transformer
4. Switchgear
5. Auxiliary equipment of the GRUs
6. Station auxiliary equipment
7. Auxiliary power transformer
8. Low voltage panel
9. Variable frequency drive
10. DC system
11. Black start module
12. Generator neutral shield
13. Ventilation module
14. Control panel







# FULL AUTOMATION OF MANAGEMENT

## Network Support Functionality:

- Primary frequency control (PFC)
- Secondary frequency control (aSFC, rSFC)
- Fast start balancing
- Reactive power support
- Tertiary control

## Dynamic Modes:

### Fast start and loading

- High ramp rate
- High response speed and precise power regulation
- Rapid unloading

## Readiness for Dispatcher Control:

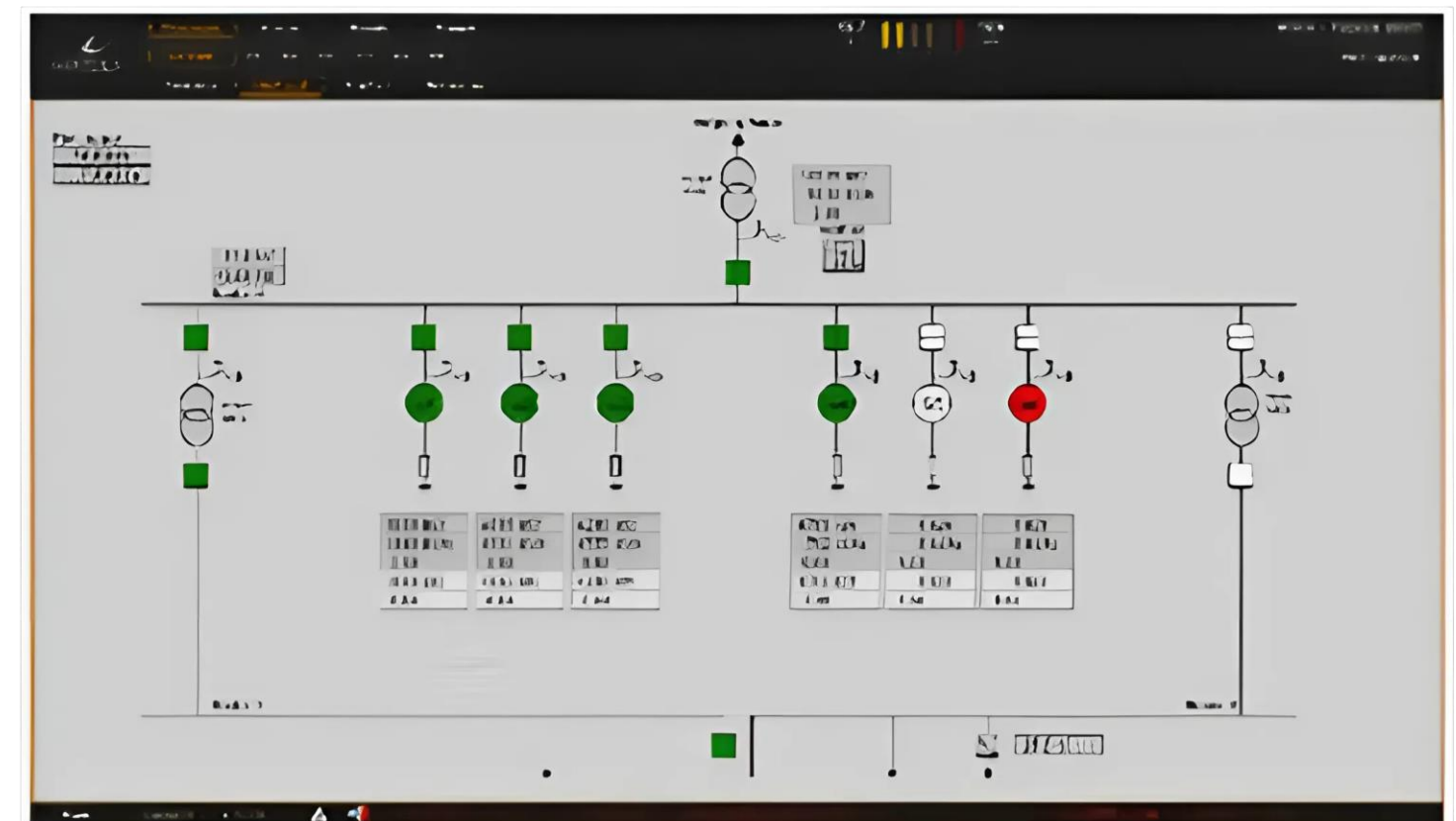
- Remote and automatic commands

## Network Restoration Function:

- Power supply for the station and the grid

## Station Management:

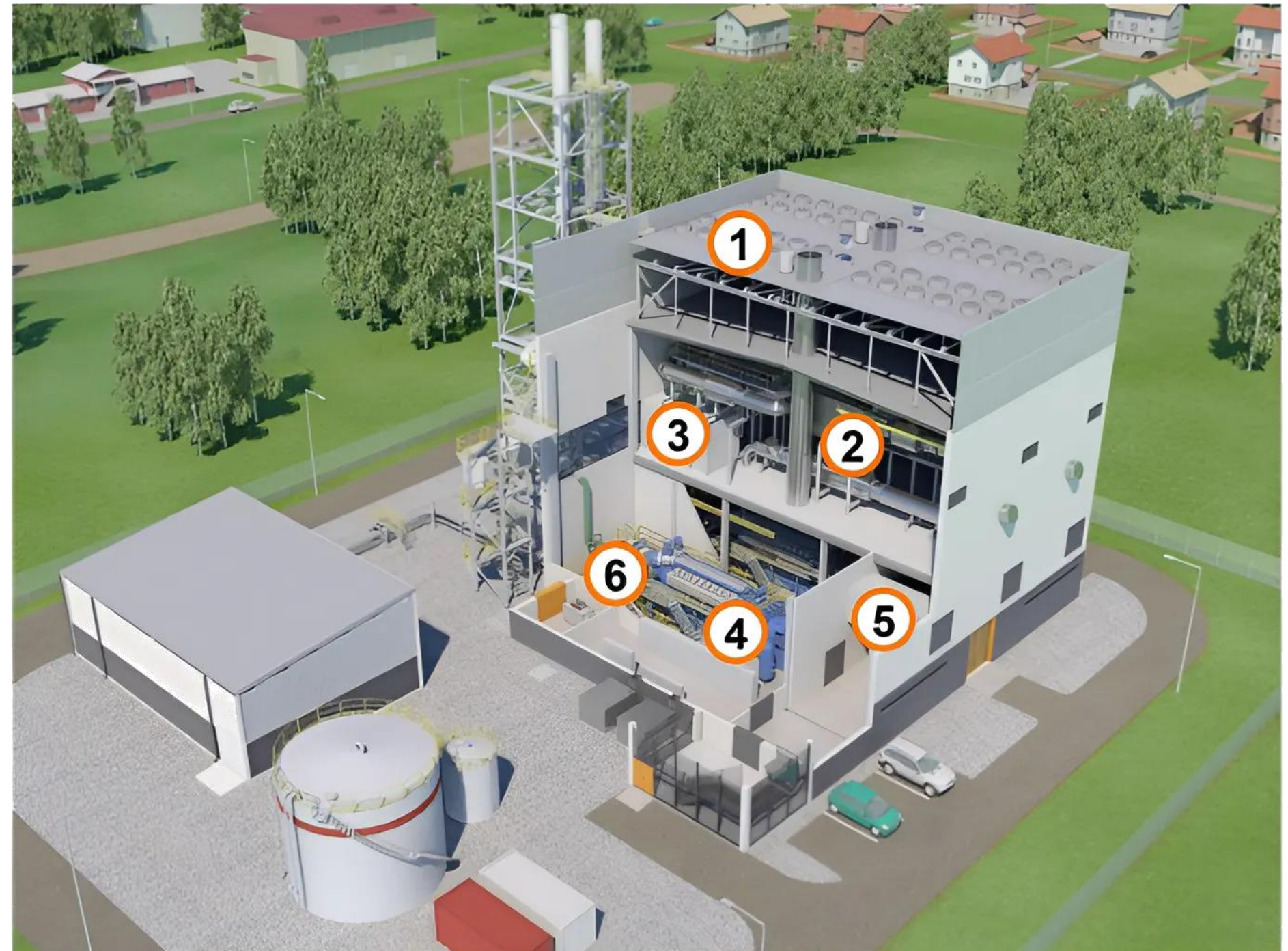
- Remote monitoring and diagnostics





# CHP plant based on GRUs (gas reciprocating units)

- Compact design for urban environments
- Easy to maintain
- All modules are factory-built
- Phased investment with capacity expansion



**1** Radiators

**2** Waste heat boiler

**3** Catalyst

**4** GRUs

**5** Air filter

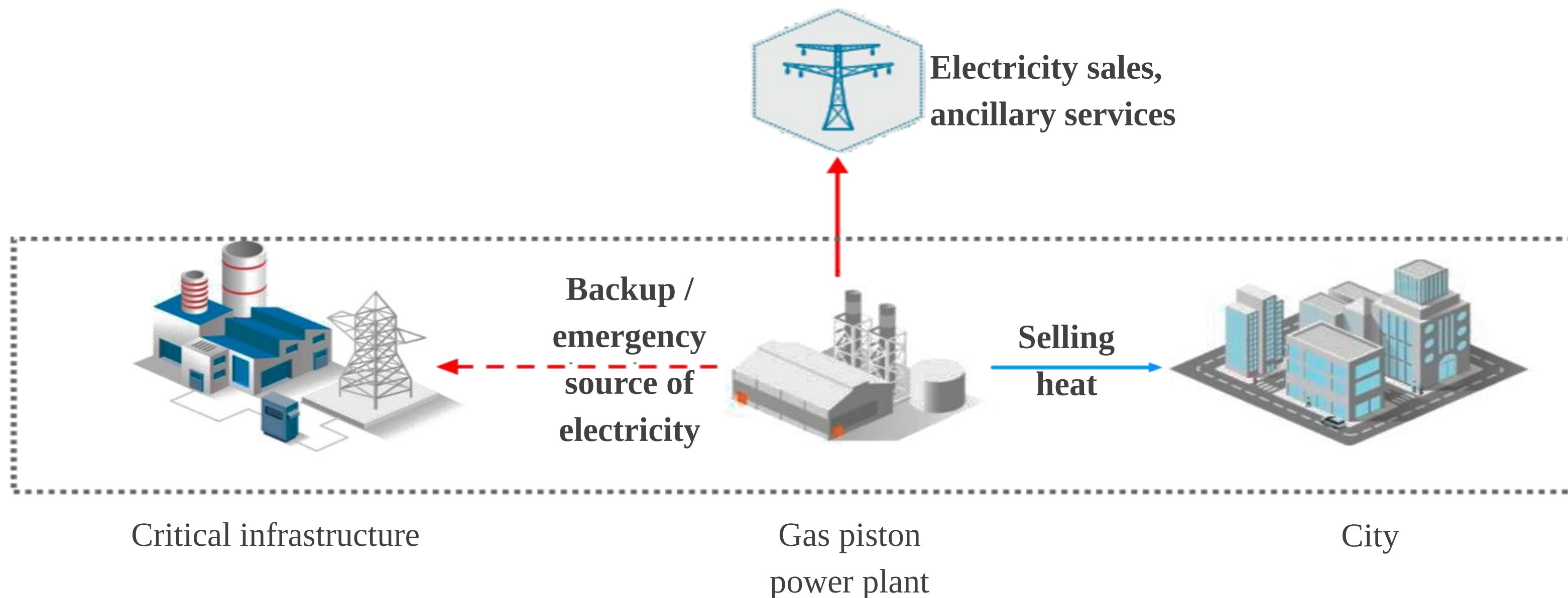
**6** Auxiliary module





# BUSINESS MODEL

HEAT SUPPLY + ELECTRICITY GENERATION + PARTICIPATION IN THE  
ELECTRICITY MARKET + EMERGENCY CAPACITY





## Estimated revenues

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≈ €5.0 million per year -  
provision of reserves  
≈ €10.0 million per year  
- electricity sales on the  
market

## ESTIMATED COST OF PROJECT

**50 000 000**  
**EUR**

## Estimated expenses

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≈ €1.5 million per year  
for maintenance and  
repairs  
≈ €3.0 million per year  
- fuel (natural gas)

P&L: +€ 10,5 million per year



# MORE PROJECTS

## Chernihiv restoration and development plan



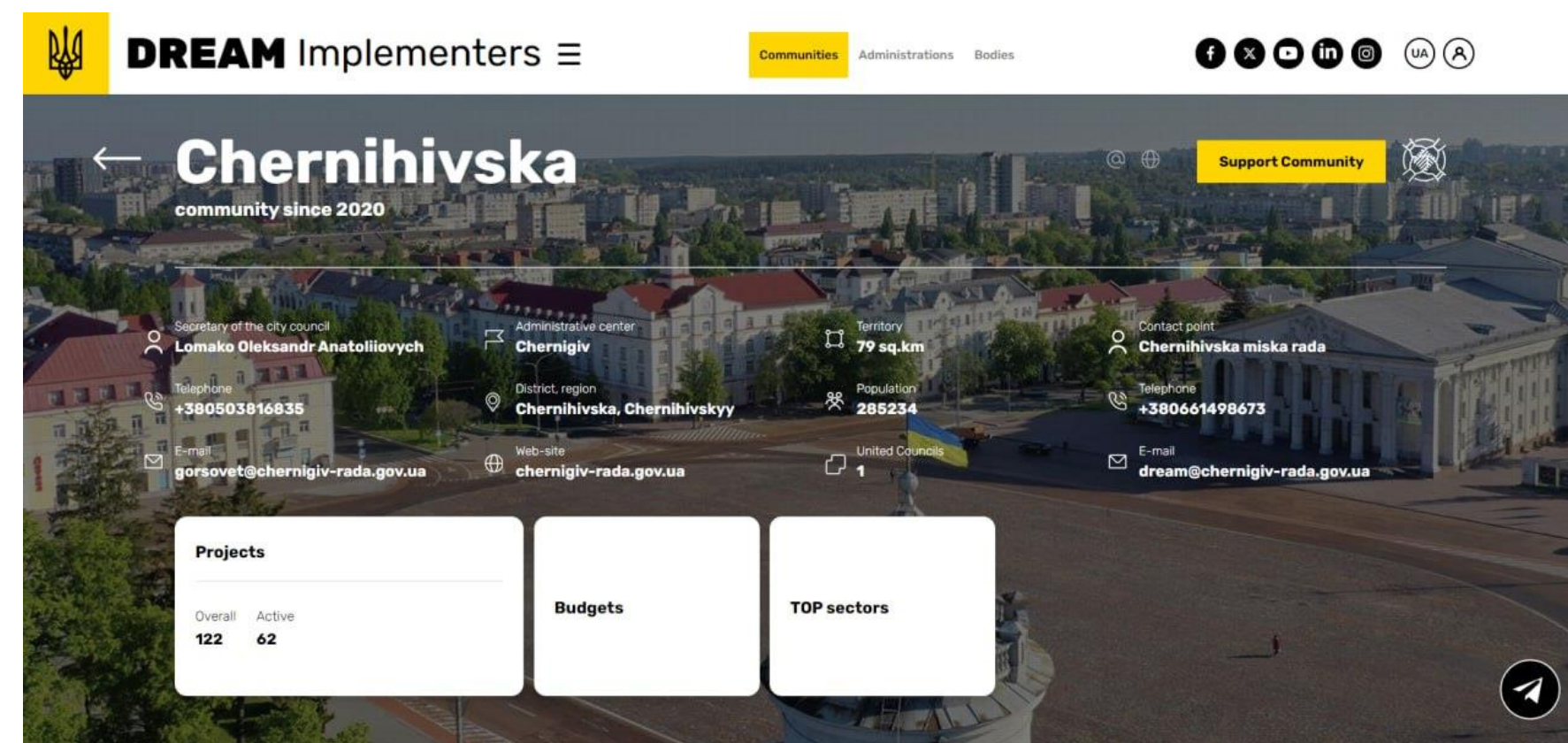
### THE RESTORATION AND DEVELOPMENT PLAN

OF THE CHERNIHIV CITY  
TERRITORIAL COMMUNITY

PREPARED BY:  
the working group established by order of the Mayor dated June 09, 2023, № 70-p, with the assistance of the "Transparent and Effective Recovery Process of Ukraine at the Local Level" project implemented by the NGO Agency for Recovery and Development with the support of the EU Anti-Corruption Initiative.



## Chernihiv projects on DREAM platform



**DREAM** Implementers

Chernihivska  
community since 2020

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**Lomako Oleksandr Anatoliiovych**

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**gorsovet@chernigiv-rada.gov.ua**

Administrative center  
**Chernigiv**

District, region  
**Chernihivska, Chernihivskyy**

Web-site  
**chernigiv-rada.gov.ua**

Territory  
**79 sq.km**

Population  
**285234**

United Councils  
**1**

Contact point  
**Chernihivska miska rada**

Telephone  
**+380661498673**

E-mail  
**dream@chernigiv-rada.gov.ua**

**Projects**

Overall	Active
122	62

**Budgets**

**TOP sectors**





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