# List of priorities for winterization of Ukraine

### Replenishment of autotransformers fleet:

- AT 750 kV eleven phases;
- AT 330 kV sixteen units;
- AT 220 kV six units.

# Primary equipment: high voltage circuit breakers, disconnectors, surge arresters, measurement transformers, and shunt reactors:

- current transformers 750 kV 21 phases;
- circuit breakers 330 kV 15 units in 3-phase set;
- circuit breakers 110 kV 25 units in 3-phase set;
- disconnectors 110 kV with one earthing switch 33 units in 3-phase set;
- voltage transformers 220 kV 15 phases, etc.

### Relay protection and automation devices:

- 13 sets of distance and overcurrent protection;
- 20 sets of circuit breaker control automatics;
- 6 sets of differential busbar protection;
- 10 sets of command transmission equipment.



#### Thermal power plants:

- circuit breakers 110 kV 6 units in 3-phase set;
- circuit breakers 330 kV 3 units in 3-phase set;
- disconnectors 110 kV with one earthing switch 9 units in 3-phase set;
- current transformers 110 kV 6 phases;
- voltage transformers 110 kV 3 phases, etc.

## Hydropower system: replenishment of emergency stock:

- autotransformers 330 kV (7 units)
- power transformers 330 kV (4 units)
- 110 kV (7 units).

#### **Civil protection needs:**

- modular houses 6500 units (for 20 people with an internal lighting system);
- residential modules 820 units;
- sanitary modules 164 units;
- bedroom sets 130,000 units;
- electric generators 6,828 units (with the capacity >10 kW 6500 units, >100 kW – 164 units, >400 kW –
- 164 units);
- heat guns of indirect heating on liquid fuel or on electricity, with a thermostat and air distribution sleeves -
- 13,000 units;
- mobile drinking water purification stations 164 units. (at least 1.5 cubic meters per hour);
- tank trucks for the delivery of drinking water 164 pcs. (at least 8 cubic meters).