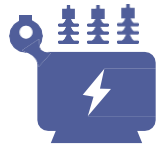


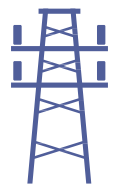
2017/2018 AUTUMN-WINTER PERIOD
PASSING OF THE IPS OF UKRAINE OUTLOOK



MAP OF INTERCONNECTED POWER SYSTEM OF UKRAINE

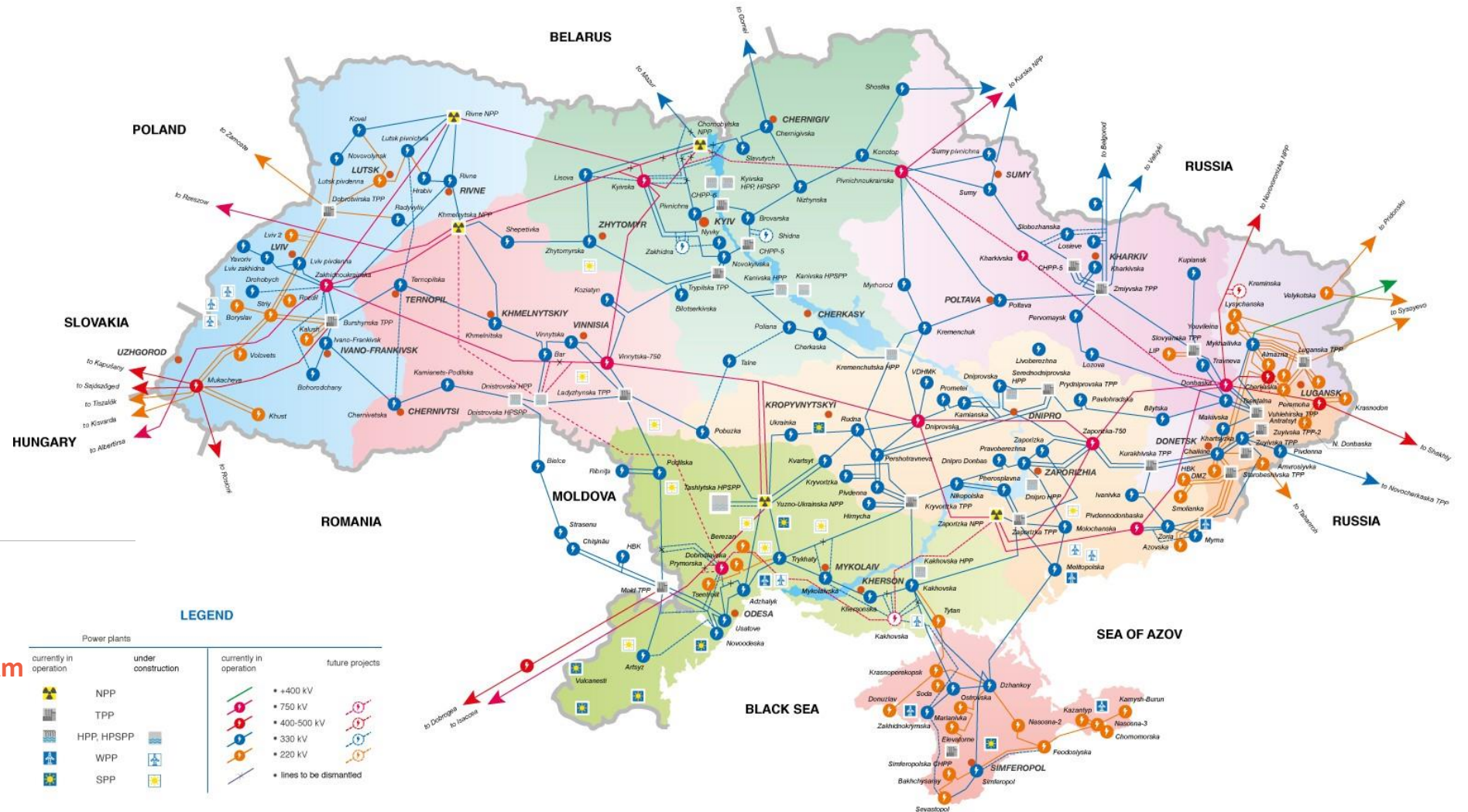


SUBSTATIONS – 137
220-750 kВ



HV LINES – 23000 km

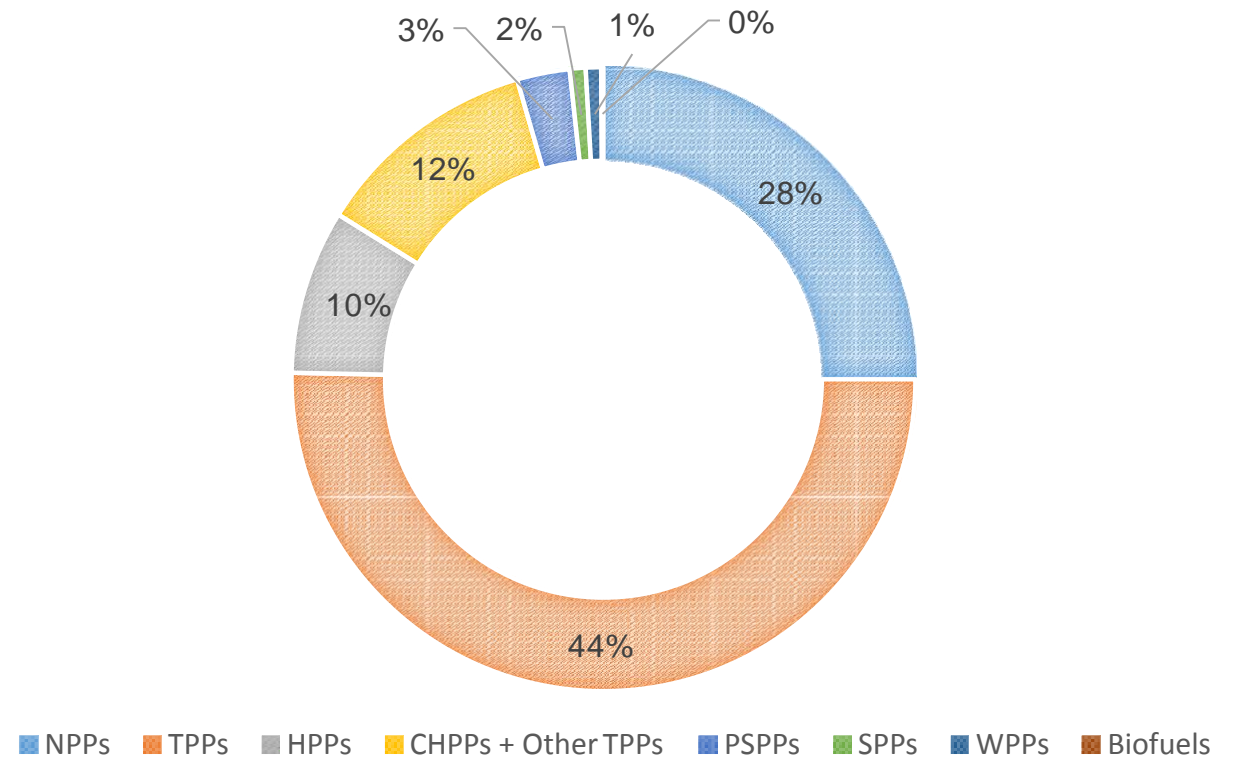
750 kV – 4200 km
330-500 kV – 14100 km
220 kV – 4700 km



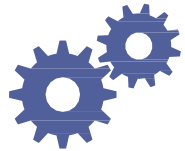
- **Installed capacity 49,45 GW**
 - TPPs – **21,84 GW**
 - CHPPs and other TPPs – **6,01 GW**
 - NPPs – **13,84 GW**
 - HPPs – **4,73 GW**
 - PSPPs – **1,51 GW**
 - WPPs – **0,38 GW**
 - Solar PPs – **1,04 GW**
 - Biofuel PPs – **0,095 GW**

Maximum
expected consumption:
25000 MW at -15°C

PRODUCTION OF ELECTRICITY



Technical specifications:



Installed capacity
2,5 GW



Population
3 Mln



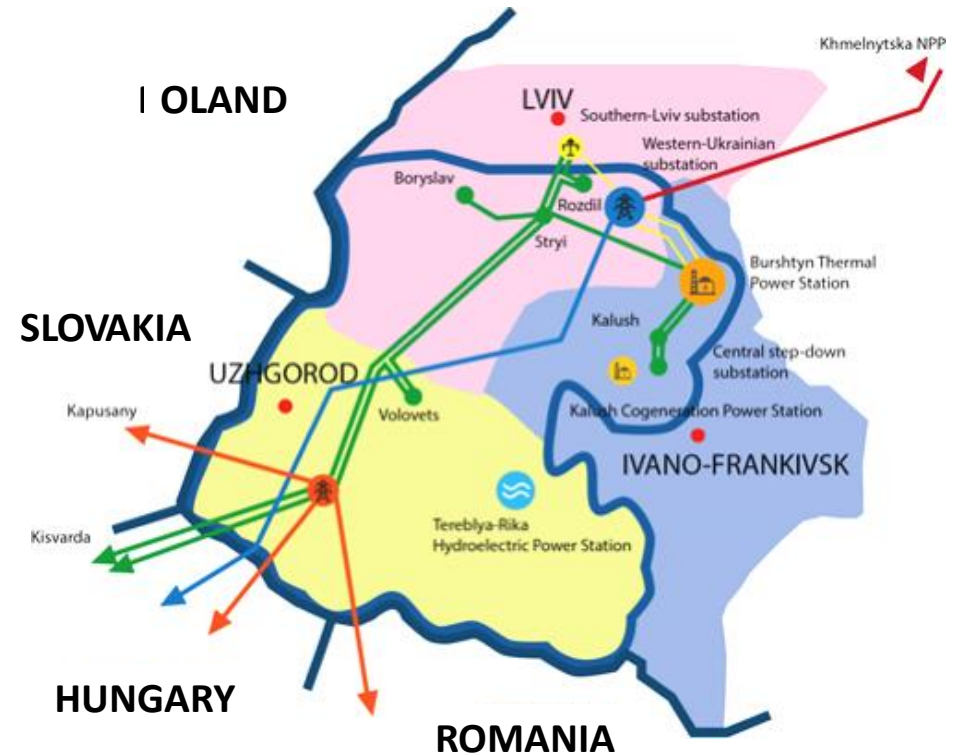
Export possibility
650 MW

Burshtyn TPP
2351 MW

Kaluska CHPP
200 MW

Tereblia-Rikaska HPP
27 MW

"Burshtyn Thermal Power Plant Island" was created due to the separation of the South-Western part of the IPS of Ukraine. It was put into parallel operation with the ENTSO-E (UCTE) in 2002 (the 1st of July)



Preparation of the fuel and energy complex of Ukraine for the autumn-winter period of 2018/2019 and its passage is performed based on Order of the Cabinet of Ministers of Ukraine No. 532-r dated 26 July 2017.

SE NPC Ukrenergo developed and approved the following measures aimed at preparing for the passing of AWP:

“On measures aimed to increase the level of operation of trunk power grids and emergency response,” approving primary emergency measures;

“On measures aimed to ensure the reliable operation of trunk and interstate power grids in 2018,” approving scopes and schedules for repair works as well as equipment and materials for emergency reserves;

“On preparation for operation during the autumn-winter period of 2018/2019”;

“On implementation of the Plan of actions on preparation for operation during the autumn-winter period of 2018/2019;

“On measures aimed to increase the level of operation of trunk power grids and emergency response,” approving primary emergency measures;

“On verifying the readiness of power systems for operation during the autumn-winter period of 2018/2019,” specifying the programs of inspections and defining the composition of commissions and the schedule of work of these commissions

LIQUIDATION OF A SPECIAL SYSTEM BLACKOUT IN THE IPS OF UKRAINE

SE NPC Ukrenergo developed plans for restoration of the IPS of Ukraine after a special system blackout, providing for several options of voltage delivery from external power systems (IPS of Belarus, UPS of Russia and ENTSO-E)



Each regional dispatching center (RDC) of Ukrenergo also developed plans for restoration of operation of each regional power system, providing for the involvement of primarily internal sources to “start from scratch” – HPP or HPSPP that managed to keep operating on the neighboring balanced load district by means of special automatic emergency response systems



Regional plans for restoration of power systems and a plan of voltage delivery from external power systems are mutually reconciled in part of the equipment of power plants and substations with possible asynchronous voltages, as well as possible points of synchronization

MAIN STAGES OF IMPLEMENTING THE PLAN FOR RESTORATION OF THE IPS OF UKRAINE



Voltage delivery from external sources to power own needs of all NPP of Ukraine during a time period of less than 30 minutes



Synchronization with a network of 750 kV - 330 kV provided by voltage supply from external sources, primarily hydropower plants (DsHPP, KremHPP, DnHPP-1 and DnHPP-2), as well as TPP with the units defined by the automated islanding



Dosed load connection, with simultaneous loading of units that were synchronized with the prepared network, is performed in accordance with the schemes, procedures and priority of connected consumers, preliminary developed by RDC and power supply companies

PLAN OF MEASURES FOR PREPARATIONS TO AUTUMN-WINTER PERIOD 2017-2018



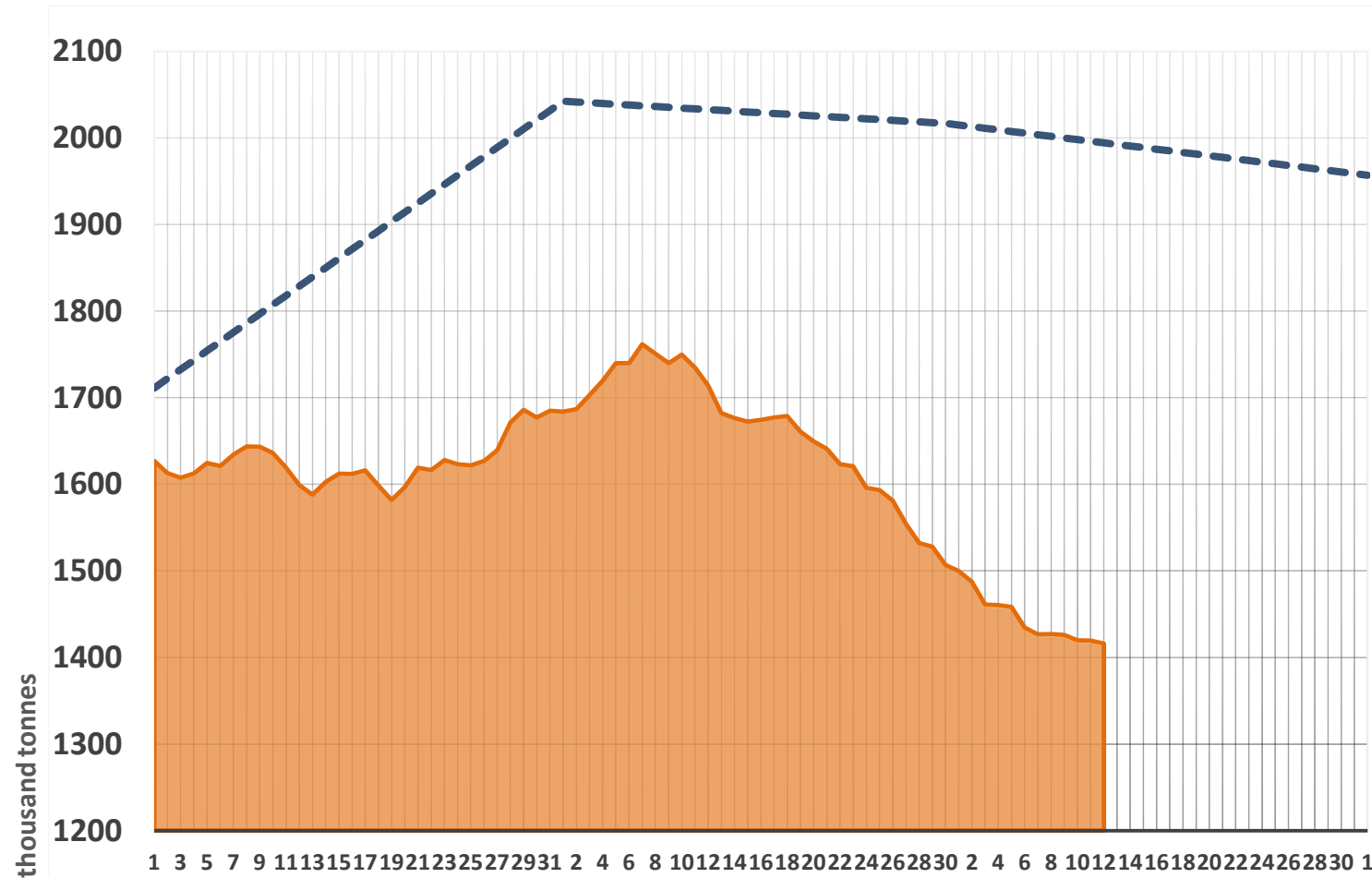
Emergency training of operational personnel of SE NPC Ukrenergo, power generation and power supply companies, aimed at preventing a special system blackout in the IPS of Ukraine in case of an emergency failure of power transmission lines and generating equipment were held planned repairs of power installations of trunk and interstate power grids were performed

technical re-equipment of trunk and interstate power grids was performed. The existing equipment was replaced with more reliable and costly efficient in operation. emergency reserve of equipment and materials was formed.

6 power units of the anthracite group were reequipped for combusting coal of the gas group, with a total installed capacity of **1115 MW**, namely Zmiivska TPP units Nos. 2, 5 (175 and 185 MW), Prydniprovskya TPP units Nos. 7, 8, 9 (150, 150 and 150 MW) and Trypilska TPP unit No. 4 (300 MW).

3 power units with total installed capacity of 635 MW are under reconstruction and reconstruction of additional 3 power units with total installed capacity of 925 MW is planned in 2019

DYNAMICS OF COAL RESERVES AT THE STORAGES OF TPPs DURING 2018 - 2019 AWP



THANK YOU
FOR YOUR ATTENTION!

