

Weekly Alert

**Russian War Against
Ukraine: Energy Dimension**

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February 19-25**Summary**

- The tactics of shelling energy infrastructure is changing, the enemy's attacks are aimed primarily at frontline generation facilities and substations of industrial areas - the Minister of Energy Herman Halushchenko.
- As of February 26, 364 settlements are disconnected from electricity supply due to hostilities and technological disruptions.
- The 330 kV high-voltage power line was disconnected due to hostilities. Consequently, the only source of electricity for Zaporizhzhia NPP was a single 750 kV line. IAEA experts reported hearing powerful explosions around and at the ZNPP site.
- Electricity exports increased by 29% to 21.2 GWh, while imports dropped by 29% to 8 GWh. On February 22, joint auctions for the cross-border capacity allocation between Ukraine and Hungary on the JAO platform were launched, allowing for commercial electricity exchanges between the countries for the first time in two years.
- Gas Transmission System Operator of Ukraine (GTSOU) and Ukrtransgaz are preparing to conduct stress test to confirm the sufficient capacity and reliability of the gas infrastructure in conditions of shelling and termination of transit of Russian gas.
- Naftogaz and GTSOU concluded a number of arrangements with Japanese companies. Sumitomo Corporation will help in conducting feasibility studies for modernization of heating supply systems in Ukraine and in deploying mobile gas turbines. This company, together with Kawasaki Heavy Industries, will also help to modernize gas compressor stations.
- The average retail price of LPG increased by 1.12 UAH/l to 27.87 UAH/l due to blockade of the Ukraine-Poland border.

- The Verkhovna Rada adopted the law on corporate management of state-owned enterprises, empowering supervisory boards to approve strategic, financial and investment plans of companies, appoint and dismiss management. The law additionally strengthens the accountability of supervisory boards, and regulates the issue of dividend payments.
- The Ministry of Environmental Protection and Natural Resources has begun work on developing a methodology for calculating greenhouse gas emissions from military operations.
- On February 22, the two-year term of office of Kostiantyn Ushchapovskyi, the head of the NEURC, expired. The new chairman will be elected by anonymous voting.
- The Urgent Technology Catalogue for the Ukrainian Power Sector has been developed within the framework of the Ukraine-Danmark Energy Partnership. This Catalogue is a list of 20 technological solutions that can be rapidly implemented to support distributed generation and enhance the security of electricity supply.
- Ukraine has received the first tranche of aid from the United Arab Emirates, which consists of 7 shipments totaling approximately 100 tons.
- Ukraine has signed several security agreements containing elements related to support of the energy sector, namely with Germany, Denmark, Italy and Canada.

Impact of the War

Attacks

The Russians have changed their tactics of shelling energy infrastructure and focused their attacks on energy facilities in Ukraine's industrial regions. The Minister of Energy Herman Galushchenko [noted](#) that this winter the enemy is shelling frontline generation facilities and substations in industrial regions. [According to](#) Deputy Energy Minister Svitlana Hrynychuk, Russia is trying to damage energy facilities in industrial regions with a significant industrial load and output in order to reduce the opportunities for industrial development in these regions.

[According](#) to Ukrenergo, as of February 26, 364 settlements in Ukraine remained without electricity due to hostilities and technological disruptions. Hostile attacks and, accordingly, the interruption of electricity and gas supply, took place:

Donetsk region. On [February 19](#), 442 consumers in 5 settlements were cut off from power supply; on [February 21](#), 2,100 consumers in 2 settlements were disconnected. On [February 22](#), due to shelling, 8,100 consumers in 6 settlements were left without electricity and 34 consumers - without gas. On [February 23](#), 8,100 customers in 5 settlements were cut off from power supply; on [February 24](#), 2,400 customers in 5 settlements were left without electricity. On [February 25](#), a 110 kV overhead line was disconnected as a result of shelling, 14,200 household consumers were cut off from electricity supply and one of the 330 kV substations stopped being supplied electricity for its own needs.

Kharkiv region. On [February 19](#), the building of the district power grids in Kupyansk district was damaged by shelling. A 110 kV overhead line, a substation, and more than 9,500 consumers in 34 settlements were cut off from electricity supply. An employee of the local electricity DSO was killed in the shelling. On [February 20](#), a gas pipeline was hit in Bohodukhiv district, leaving a multi-apartment building without gas supply. On [February 23](#), 3 settlements were shelled, and 1,600 consumers were disconnected.

Dnipropetrovsk region. On [February 19](#), overhead power lines were damaged, and 84 consumers lost power supply. On [February 20](#), power lines and 12 settlements were disconnected. In the city of Nikopol, a low-pressure gas distribution pipeline was [damaged](#), causing outages. On [February 25](#), 1,207 consumers were left without electricity.

Kherson region. On [February 21](#), 3,406 metering points were disconnected in Kherson; on [February 22](#), 58 consumers lost power supply. On [February 24](#), the city of Kherson came under another shelling, resulting in the disconnection of a 150 kV line, a substation and about 9,500 consumers.

Zaporizhzhia region. On [February 20](#), more than 1,200 consumers in 6 settlements were left without electricity. Also, as a result of the hostilities, a 330 kV high-voltage power line was [disconnected](#), consequently, Zaporizhzhia NPP was supplied by a single 750 kV line. On [February 23](#), a 330 kV high-voltage line was disconnected; 3,800 consumers in Zaporizhzhia were left without electricity due to damage to cable power lines. On [February 25](#), 392 consumers were cut off from electricity supply.

Mykolaiv region. On [February 22](#), as a result of shelling in one of the settlements, shrapnel damaged overhead lines, disconnecting 39 household consumers, and leaving 700 consumers without [gas supply](#). On [February 25](#), 405 households and 41 non-household consumers in 5 settlements were cut off from electricity supply due to the fall of fragments of an enemy UAV on an overhead power line.

Sumy region. On [February 19](#), 2,465 consumers in 16 settlements were disconnected. Due to shelling from the Russian territory, overhead lines were damaged on [February 21](#), and 1,200 consumers in 5 settlements were cut off from power supply; on [February 22](#), almost 1,000 consumers in 4 settlements were disconnected; on [February 23](#), 1,200 customers in 5 settlements were left without electricity; on [February 24](#), 400 consumers in 2 settlements were cut off from electricity supply; and on [February 25](#), 1,229 consumers in 6 settlements were disconnected.

Chernihiv region. On [February 21](#), an overhead power line was damaged, disconnecting about 200 consumers in two settlements.

Nuclear and Radiation Safety

The IAEA team of experts at the occupied Zaporizhzhia NPP [informed](#) that the 330 kV line was disconnected at 14:04 local time on February 20 due to a problem which occurred on the other side of the Dnipro River, in government-controlled territory. ZNPP is still receiving the electricity it needs from its single 750 kV line, but the loss of the 330 kV line means that the plant currently has no backup option available for off-site power. The Ministry of Energy [reports](#) that as of February 25, due to the difficult security situation and the lack of stable admission of power engineers from the military, the line remains disconnected.

During the week, IAEA experts [heard](#) powerful explosions around and at the ZNPP site. The occupiers also informed the IAEA of "field training" with no shelling of the plant or causing any damage. In addition, according to them, a mine exploded outside the ZNPP site.

On February 19, the IAEA team [inspected](#) all six main control rooms in the reactors. The team was able to collect safety parameters in reactor units 2, 3 and 4, and had the opportunity to view the regulatory authority of the staff. The occupiers reported that many of the operating personnel present were in the process of transitioning from their Ukrainian licenses to "authorizations" issued by the Russian nuclear regulator. The experts also met with ZNPP's electrical department to discuss repair plans for the year, and visited the electrical control room to observe the state of the on-site and off-site power systems.

Countermeasures

On the second anniversary of the disconnection of Ukraine's IPS from the power systems of Russia and Belarus, the Minister of Energy Herman Galushchenko [said](#) that synchronization with the European grid helped Ukraine to keep the power system operational during Russian attacks.

On February 21, the National Securities and Stock Market Commission approved the issue of common registered shares of Energoatom. It is [noted](#) that this process finalizes the transformation of the state-owned enterprise into a joint-stock company for more effective management.

At the initiative of the Ministry of Communities, Territories and Infrastructure Development of Ukraine, the government [approved](#) the allocation of a subvention of 2.3 billion UAH in 2024 for the implementation of projects under the Ukraine Early Recovery Programme.

In turn, the Ministry of Environmental Protection and Natural Resources has [begun](#) work on developing a methodology for calculating greenhouse gas emissions from military operations. It is noted that the government expects the document to be recognized internationally in order to draw the world's attention to the current problems and consequences of the war for the climate and the environment.

The Verkhovna Rada [adopted](#) the law on corporate management of state-owned enterprises (draft law #5593-d). The law, among other things, defines the mechanism for selecting members of supervisory boards, the procedure for independent assessment of the work of supervisory boards, empowers supervisory boards to approve strategic, financial and investment plans of companies, appoint and dismiss management, strengthens the accountability of supervisory boards, and regulates the issue of dividend payments.

Market Pulse

► *Electricity sector*

Power system operation

According to [Ukrenergo](#) and the [Ministry of Energy](#), electricity consumption was covered by domestic production, as well as by imports from Romania, Slovakia, Poland, and Moldova. On February 22, Ukraine's power system experienced a surplus of electricity due to an increase in solar power generation. At the request of Ukrenergo, from 11:00 to 16:00, the surplus was transferred to Poland in the total amount of 1.44 GWh.

On February 19, due to **technological disruptions**, 110 kV and 10 kV overhead lines, a substation and 42 consumers in the Sumy region were disconnected, 381 consumers in the Zaporizhzhia region were offline. On February 20, a substation in the Mykolaiv region was disconnected, which resulted in a short-term power outage for about 11,000 household and business consumers and the administrative building of the Mykolaiv Grid Service Center. On February 21, 110 kV overhead lines were offline in the Dnipropetrovsk region, leaving 9,500 consumers without power supply. On February 23, equipment at Ukrenergo's 330 kV substation in the Mykolaiv region was disconnected; 4,900 consumers in the Dnipropetrovsk region were offline. On February 24, 84 consumers in the Dnipropetrovsk region and 16 consumers in the Kyiv region lost electricity supply. On February 25, two 10 kV overhead lines in the Kyiv and one in the Odesa regions were disconnected, cutting off power supply to more than 5,400 consumers. In addition, 8,156

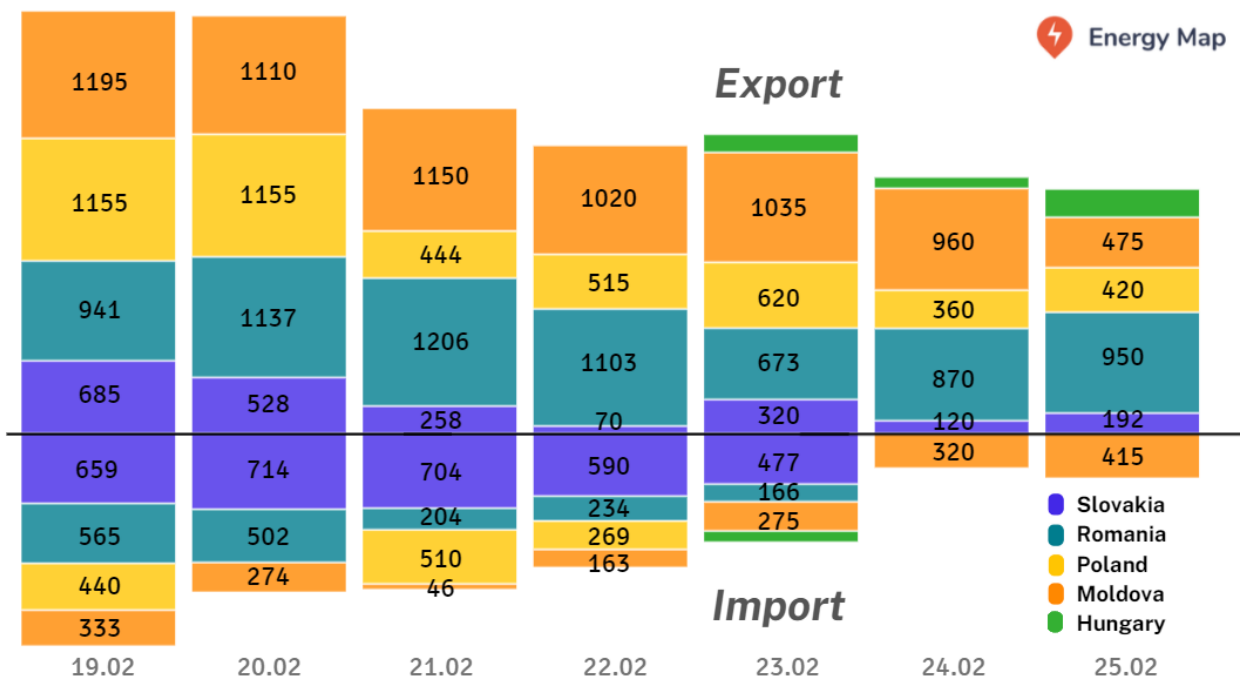
consumers in the Dnipropetrovsk region, 899 in the Sumy region and 597 in the Zaporizhzhia region were left without electricity.

According to the [NEURC](#) and [ENTSO-E](#), during the week, commercial exports and imports of electricity were performed to 5 countries: Moldova, Romania, Poland, Slovakia and Hungary. Exports increased by 29% to 21.2 GWh; imports decreased by 29% to 8 GWh. Thus, weekly exports exceeded imports by 2.7 times. On February 22, joint auctions for the cross-border capacity allocation between Ukraine and Hungary on the European universal distribution platform JAO were launched, allowing for the resumption of commercial electricity exchanges between the countries.

Commercial exports to Moldova [amounted](#) to 6.9 GWh (+42%), with capacity ranging from 5 to 100 MW at certain hours. Deliveries to Romania amounted to 6.9 GWh (+30%), with a capacity range from 18 to 100 MW. A total of 4.7 GWh (+59%) was supplied to Poland, with a capacity range of 34-100 MW. Exports to Slovakia amounted to 2.2 GWh (-35%) with a capacity of 1-100 MW at certain hours. Deliveries to Hungary were performed for the first time in 2 years on February 23-25 with a total volume of 0.5 GWh, with a capacity range of 20-60 MW.

Commercial imports from Slovakia were performed on February 19-23 and amounted to 3.1 GWh (-39%), with capacity ranging from 2 to 170 MW at certain hours. Electricity supplies from Moldova amounted to 1.8 GWh (+68%), with capacity ranging from 1 to 79 MW. Imports from Romania were performed on February 19-23 and amounted to 1.7 GWh (-62%), with a capacity ranging from 4 to 170 MW. Deliveries from Poland were performed on February 19-23, with a total volume of 1.2 GWh (+101%) and capacity range of 1-170 MW. Imports from Hungary were performed only on February 23, with a capacity ranging from 1 to 94 MW, the total volume amounted to 0.1 GWh (last performed on January 2, 2022).

Electricity import and export, MWh February 19-25, 2024



Source: [EnergyMap](#)

Import capacity in the Slovakia-Ukraine direction [was booked](#) by 1 to 17 companies, with the largest volumes distributed among Energy Exchange Solutions, Naftogaz of Ukraine, Electrotrading Group, and Trade Energy Solution. The marginal price was set on February 19-23 and ranged from 1.1 to 333 UAH/MWh, and Ukrenergo's revenue

amounted to 162,300 UAH. Access to the Moldova-Ukraine capacity was booked by 8-9 companies, the most active ones being Synapse Electric, Artlex Group, CPG Energy, and Dniprostal-Energo. The marginal price ranged from 0.01 to 201.11 UAH/MWh, and Ukrenergo's total revenue amounted to 284,600 UAH. Capacity from Romania was booked on February 19-23 at daily auctions by 7 to 11 companies, including Energy Company of Ukraine, Synapse Electric, Dniprostal-Energo, CPG Energy, and others. The marginal price ranged from 0.01 to 15.53 EUR/MWh, and Ukrenergo's total revenue amounted to 25,600 EUR (about 1.06 million UAH). On February 19 and 21-23, 1-3 companies competed for the Poland-Ukraine direction, the capacity was distributed between 1-2 companies. The marginal price was set on February 22 at 0.01-0.49 EUR/MWh, with total revenues amounting to 111 EUR, Ukrenergo received 50% of this amount (about 2,300 UAH). On February 23, 5 companies competed for access to the Hungary-Ukraine direction, the capacity was distributed among 2-3 companies, the marginal price was set at 0.1 EUR/MWh, with total revenues amounting to 10.7 EUR (about 450 UAH).

Export capacity in the Ukraine-Moldova direction was booked by Ukrhydroenergo, with no marginal price set. Export capacity in the Ukraine-Romania direction was booked by 2 companies: Ukrhydroenergo and DTEK Zakhidenergo, the marginal price was set at 0.5 to 1 EUR/MWh, and Ukrenergo's total revenue amounted to 2,700 EUR (about 111,600 UAH). 1 company booked access to the capacity in the Ukraine-Poland direction, with no marginal price set. Capacity in the Ukraine-Slovakia direction was booked by 1-2 companies: DTEK Zakhidenergo and ERU Trading, with no marginal price set. On February 23-25, 3-4 companies competed for access to the Ukraine-Hungary direction, with the capacity distributed among 2-4 companies, no marginal price was set.

Market performance

Bilateral contracts market (BCM): After last week's intensification, trading dynamics on the Ukrainian Energy Exchange (UEEX) declined. Between February 19 and February 25, UEEX [held](#) 15 auctions for the purchase/sale of electricity (4 in commercial and 11 in specialized sections). Among the initiators of trades were Energoatom-Trading, Guaranteed Buyer, Ukrhydroenergo, Centrenergo, universal service suppliers, distribution system operators, etc. In total, 195.8 GWh were sold at UEEX (3.5 times less week-on-week). The monthly Base BCM index for February remained at 3,107.6 UAH/MWh.

Energoatom-Trading sold 14.9 GWh of base load at a weighted average price of 2,701 UAH/MWh with delivery in March. Ukrhydroenergo sold block positions: 0.4 GWh (8-15) at a weighted average price of 3,000 UAH/MWh, 3.1 GWh (16-23) at a price of 3,417.55 UAH/MWh and 4.5 GWh (24-7) at a price of 2,056.86 UAH/MWh with delivery at the end of February. Block positions were also sold with a delivery in March: 19.8 GWh (16-23) at prices in the range of 3,409.38-3,454.69 UAH/MWh, 44.2 GWh (24-7) at prices of 1,906.44-1,933.26 UAH/MWh and 0.2 GWh (8-15) at a weighted average price of 3,000 UAH/MWh. Guaranteed Buyer sold 0.1 GWh of block positions at a weighted average price of 2,750 UAH/MWh for delivery at the end of February and 16 GWh of block positions at prices in the range of 2,530 - 2,790 UAH/MWh for delivery in March. Centrenergo failed to sell electricity at the auctions. In the commercial sections, companies purchased/sold electricity under individual load profiles.

Day-ahead market (DAM): According to the [Energy Map](#) service, on February 19-25, DAM prices generally demonstrated [volatility](#): the deviation of hourly prices from price caps ranged from 1.9% to 84.8%, with an average of 41.1%. The number of cases of significant price deviations (over 50%) from the upper price caps increased and was

observed in 42.9% of the settlement periods (hours of the week). At the same time, no hours were recorded when prices were close (with a deviation under 1%) or at the level of price caps.

The average hourly electricity price (Base DAM index) decreased moderately to 2,931.2 UAH/MWh (-7.4%), while the weighted average daily price [ranged](#) in a relatively narrow range from 2,734.3 to 3,445.3 UAH/MWh. At the same time, the ratio between the Base DAM indices in the markets of Eastern European countries (Poland, Hungary, Romania, Slovakia) and Ukraine [ranged](#) from 0.81 to 1.1.

The total volume of electricity sales on the DAM of Ukraine increased moderately and [amounted](#) to 421.2 GWh (+0.9% week-on-week). The daily trading volume varied in the range of 57.1-63.9 GWh. The DAM remained in surplus: the ratio between the total daily volume of sale and purchase bids ranged from 1.6 to 1.99. At the same time, both total supply (734.5 GWh; +1.1%) and demand (421.6 GWh; +0.7%) increased over the week, and no deficit hours were observed during the week. Suppliers [prevailed](#) in the purchase structure (88.5-93.3%), the share of system operators was 5.7-10.6%, and producers and traders accounted for the rest (about 1%).

Policy and regulation

On February 20, the NEURC [approved](#) the Report on the assessment of the sufficiency (adequacy) of generating capacities to cover the forecasted demand for electricity and ensure the necessary reserve in 2023. The document was developed by Ukrenergo and covers a scenario assessment of the forecast power and electricity balances of the IPS of Ukraine, taking into account structural, economic, market, environmental conditions, demand response and energy efficiency measures as well as compliance with operational safety standards.

In course of report preparation in 2023, the methodological framework for its development was improved, in particular in terms of:

- forecasting the volumes and curves of electricity consumption/demand, in particular, in terms of taking into account the installation of solar power plants by private households;
- taking into account the impact of the increase in the fleet of electric vehicles, in particular, the possibility of their interaction with the power system in two directions - electricity consumption and supply;
- taking into account the principles of the Energy Strategy of Ukraine for the period up to 2050, approved by the Resolution of the Cabinet of Ministers of Ukraine No. 373-r dated April 21, 2023.

The NEURC recommends that Ukrenergo publish the approved report on its website within 5 business days after the last day of the month following the month of termination or cancellation of martial law in Ukraine.

Other

On February 22, the two-year term of office of Kostiantyn Ushchapovskyi, the head of the NEURC, expired. The new chairman will be elected by anonymous voting. According to [Ushchapovskyi](#), the industry is currently facing a critical issue – resolving the debt crisis in the energy market. The Regulator and the Ministry of Energy have already developed a list of necessary regulations and measures to be implemented in the near future.

Gas system operation

On February 18-24, the volume of gas transit through the territory of Ukraine amounted to 40.8-42.6 mcm per day, i.e. 37-39% of the capacity contracted by Gazprom (109 mcm per day). In the reporting week the average daily transit was 42.1 mcm (corresponds to the indicator of the previous week).

At the same time, gas exports from Ukraine continued. In the circumstances of the ban on the exports of Ukrainian-produced gas, exports are the gas volumes withdrawn from the storage facilities by non-residents, who previously injected it for storage in the "customs warehouse" mode. The volume of such exports on February 18-24 was 14 mcm (almost corresponds to the previous week), which were transported through the Drozdowicze/Hermanowice interconnection point with Poland.

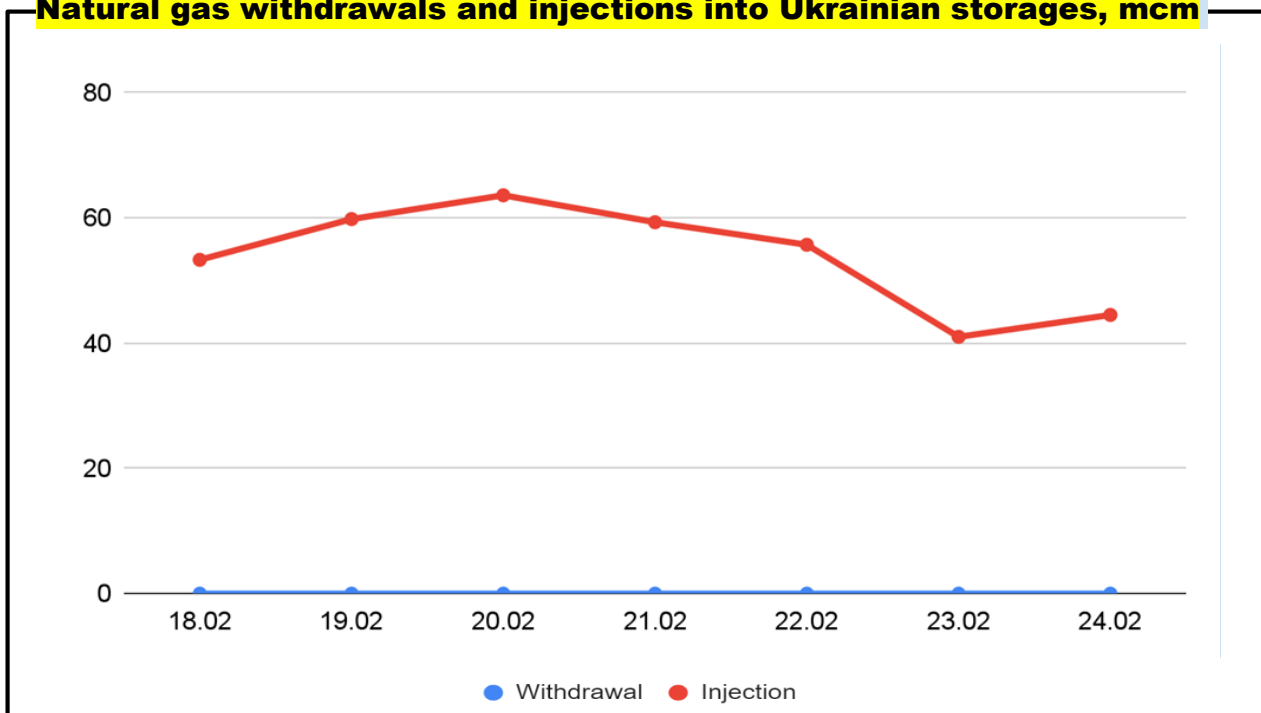
Commercial exports through the VIP Ukraine-Poland were performed at 15.9 mcm (close to physical volumes). Another 1.4 mcm was exported through the Bereg VIP to Hungary. It is also likely that part of the volumes exiting the Ukrainian system to Moldova is the transmission of gas stored by foreign companies in Ukrainian storages. This assumption is due to the fact that the volumes of gas transported from the system in the "customs warehouse" mode exceeded the indicators of commercial exports to Poland and amounted to 69.6 mcm (+15% WoW).

On the initiative of the Ministry of Energy, Gas Transmission System Operator of Ukraine LLC (GTSOU) and Ukrtransgaz are [preparing](#) to conduct a stress test in order to confirm the sufficient capacity and reliability of the gas transmission system and UGSs in conditions of shelling and termination of transit of Russian gas. The CEO of Naftogaz Oleksii Chernyshov announced that preparations for the stress test have already begun. The 2024 stress test will be modeled and carried out by a working group consisting of and with the assistance of the USAID Energy Security Project, the Energy Community Secretariat, the General Directorate of the Joint Research Center of the European Commission, international technical experts, and GTSOU, Naftogaz, and Ukrtransgaz. [According to](#) Dmytro Lyppa, General Director of GTSOU, the study will give a clear signal to European gas traders that, like last year, they can book the capacities of the Ukrainian gas transmission and storage infrastructure.

Underground storage facilities

According to the [AGSI platform](#), as of February 24, 4.55 bcm of gas was accumulated in the Ukrainian storage facilities (-1.23% as compared to February 17). It corresponds to 15.07% of the total working capacity, i.e. without 4.662 bcm of "long-term storage" buffer gas. Withdrawals from storage in the reporting week amounted to 377 mcm; the average daily withdrawal amounted to 53.9 mcm (+15%).

Natural gas withdrawals and injections into Ukrainian storages, mcm



Source: [AGSI](#) (all indicators calculated by dividing the primary indicators in MWh by the conversion factor of 10.595 kWh/cm)

Gas market performance

In the [trading sessions](#) of February 19-23, four companies (two buyers and two sellers) submitted bids for purchasing gas at the Ukrainian Energy Exchange (UEEX). In the reporting period, UEEX received bids for 201.7 mcm of gas (+21.3% WoW) with a total starting cost of 2.34 billion UAH (+19.4%). The weighted average starting price of bids was 11.6 UAH/cm (excluding VAT, -15%).

In the monitoring period, 28.2 mcm (-16% WoW) at a weighted average price of 11.6 UAH/cm (without VAT) (-1.5%) were purchased. 98.5% of the resource was sold to GSC Naftogaz Trading LLC on the terms of transfer in storage with delivery in February 2024. 1.5% of gas was purchased by PJSC "AK Kyivvodokanal" on the terms of delivery to the commercial metering point of the buyer in March 2024.

Policy and regulations

The NEURC has [published](#) a draft resolution amending the Gas Storage Code and the Model Contract for Natural Gas Storage (injection, withdrawal). The amendments include, among other things:

- expansion of storage capacity allocation periods, in particular providing the opportunity to book gas storage capacity for the base injection season and the base withdrawal season separately, as well as for several months in given year;
- introduction of the European practice of providing access to gas storage facilities through capacity allocation with the right to store/inject/withdraw the same volume of natural gas during each gas day for the corresponding capacity allocation period;
- optimization of the gas storage capacity allocation procedure by using the information platform by the gas storage operator;

- provision of natural gas storage (injection, withdrawal) services mainly under the conditions of using guaranteed and conditionally-guaranteed capacity (which shall constitute minimum 90% of technical capacity)
- determination of the deadlines for submitting applications for gas storage capacity allocation, which will coincide with the capacity allocation deadlines at gas interconnectors and internal entry/exit points of the gas transportation system.

The Regulator also [published](#) a draft resolution that supplements the Gas Storages and Gas Transmission System Codes, as well as the Market Rules. The new provisions provide for the obligation of the TSO to check the presence of the service customer in the register of wholesale energy market participants when concluding a transmission contract and during the collection of trade notices. In the case of discovering the fact that the customer is not in the register, the TSO/storage operator must notify the Regulator. Changes to the market rules establish the gas consumer's obligation to register as a participant in the wholesale energy market, if the total nominal capacity of his gas equipment ensures the technical capacity of natural gas consumption in the amount of 600 GWh (56,391 cm) per year and above.

The NEURC also [amended](#) the GTS Code and other acts (in particular, the Methodology for calculating the tariff for natural gas transportation). The new provisions oblige the TSO to publish information on the parameters for calculating tariffs for natural gas transmission services and on interconnectors, which is provided for in Articles 29-30 of Commission Regulation (EU) 2017/460 establishing a network code on harmonised transmission tariff structures for gas. At the same time, the new provisions do not apply during martial law in Ukraine. In addition, the changes establish a separate procedure for conducting open discussions to establish a tariff for natural gas transmission, which takes into account the requirements of EU Regulation 2017/460.

Other

As [reported](#) by the press service of LLC “Gas Distribution Networks of Ukraine” (a company of the Naftogaz Group, the largest operator of gas distribution systems), on February 26, the company received a license to distribute gas in the entire Chernivtsi region, as well as in Tysmenytsia district of the Ivano-Frankivsk region and the Korostyshiv district in the Zhytomyr region (270,000 consumers in total).

Naftogaz also [signed memoranda](#) of cooperation with two Japanese companies to modernize CHPs and develop a joint project in the field of wind energy. The signing took place on the occasion of the Conference for Promotion of Economic Growth and Reconstruction in Tokyo. The Japanese corporation Sumitomo Corporation (SC) will help to conduct feasibility studies of the modernization of heat supply systems in Ukraine with the support of the Japanese government. SC will also facilitate the fund raising from Japanese public financial institutions. The installation of wind turbines with a capacity of 1 MW is provided for in the second memorandum that the Naftogaz Group signed with the Japanese company Komaihaltec. The turbines are to be installed at one of the facilities of the Naftogaz.

Also, Gas Transmission System Operator of Ukraine LLC (GTSOU) [concluded](#) two memoranda with Japanese companies. The first document is a tripartite memorandum between GTSOU, Sumitomo Corporation and Kawasaki Heavy Industries, which provides for the modernization of gas compressor stations. The second one is a bilateral memorandum of understanding with Sumitomo Corporation, which provides for cooperation in the implementation of mobile gas turbines using the most modern technologies to strengthen the stability and flexibility of the energy system of Ukraine. The companies will begin the necessary research and feasibility studies for the earliest possible implementation of the projects.

► **Oil and Motor Fuels**

As reported by specialized media ([1,2](#)), between February 16 and 26, the average retail price of LPG increased by 1.12 UAH/l to 27.87 UAH/l. The wholesale price of LPG also [increased](#): at the UEEX auction on February 21, the value of individual lots reached 50,000 UAH/ton, although the starting prices were at 41,700 UAH/t. Market participants cited among the reasons for the increase the difficult situation on the western border of Ukraine and the need to minimize the risks of shortages or price increases in the future. As of the morning of February 23, more than 2,400 cargo vehicles were [waiting](#) in queue to cross the Poland-Ukraine border. Most of them are located at the Krakovets, Rava-Ruska and Yahodyn crossing points.

International Cooperation

The Urgent Technology [Catalogue](#) for the Ukrainian Power Sector [has been developed](#) at the initiative of the Ministry of Energy of Ukraine within the framework of the Ukraine-Danmark Energy Partnership. This Catalogue is a list of 20 technological solutions that can be rapidly implemented in Ukraine to support distributed generation and enhance the security of electricity supply, including gas turbines, PVs combined with lithium-ion batteries, wind generation, grid-scale batteries, electricity generation on biogas, and biomass cogeneration plants. This Catalogue will be continuously updated, supplemented, and expanded depending on the situation and specific needs of Ukraine.

Under the coordination of the Ministry of Energy, Ukraine [has received](#) the first tranche of aid from the United Arab Emirates. This aid consists of 7 shipments totaling approximately 100 tons, including 1,640 portable power generators with capacities ranging from 2.8 kW to 8 kW. It is expected that a total of 2,000 generators will be delivered from UAE partners. Some of the equipment has already been distributed to 38 energy sector companies. These include companies operating in electricity generation, distribution, and transmission, as well as gas production and supply, mainly in the regions most affected by the aggressor's actions.

The Ministry of Energy of Ukraine [continues](#) active cooperation with the Nuclear Energy Agency. In course of negotiations in Paris, the Minister of Energy of Ukraine Herman Halushchenko, along with the President of Energoatom Petro Kotin and the Head of the State Nuclear Regulatory Inspectorate of Ukraine Oleh Korikov, held an online meeting with the Director-General of the Nuclear Energy Agency William Magwood. The parties discussed the development of cooperation to strengthen the institutional capacity of the national nuclear regulator of Ukraine. They also discussed the development of nuclear energy in Ukraine, namely the importance of building new power units at Khmelnytsky NPP. Special attention was paid to the situation at the Zaporizhzhya NPP, which is occupied by Russian forces.

Україною підписано ряд безпекових угод з елементами підтримки енергосектору:

Ukraine has signed several security agreements containing elements related to support of the energy sector. Among them:

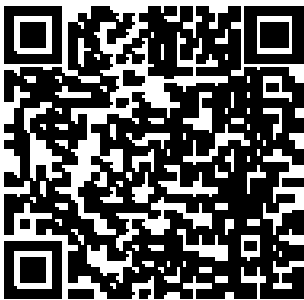
- [The Agreement](#) on security cooperation and long-term support between Ukraine and Denmark includes matters related to ensuring the security of energy supply and protection of critical infrastructure. Denmark has committed to continue providing long-term support to Ukraine's energy sector, with special emphasis on the transition to green energy. Denmark will also provide technical support to strategic sectoral partnerships, such as the energy program, UDEPP, the decentralization program, and ULEAD. The support will be exercised through knowledge exchange and capacity-building for government authorities and civil society organizations;

- [The Agreement](#) on security cooperation between Ukraine and Italy stipulates that the parties will continue to develop mutually beneficial cooperation, particularly in the energy sector and the transition to renewable energy sources and environmental protection. Italy will support the development of opportunities for protecting Ukraine's critical infrastructure, including through the G7+ Energy Coordination Group, as well as facilitate the access of Ukrainian specialists to relevant international programs. The countries will cooperate to identify sources of funding resilience and recovery of critical infrastructure in various sectors, including energy;

[The Agreement](#) on security cooperation between Ukraine and Canada defines that Canada will continue to support Ukraine's overall energy sector, with particular emphasis on nuclear safety and security, as well as the development of renewable energy. Additionally, Canada will explore opportunities to support Ukraine in enhancing the resilience of its critical infrastructure.

For subscriptions, comments and other questions, please email to: author@dixigroup.org

SUPPORT UKRAINIAN ENERGY SECTOR



Ukraine urgently needs emergency equipment to restore energy supply in the regions affected by war. More than 12,000 items are on the list. If your company, association, or country is ready to help, please [contact the Energy Community Secretariat's Ukraine Support Task Force](#).

[Energy Community Homepage](#)

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To financially support the Armed Forces of Ukraine, please follow the [link](#) (the National Bank of Ukraine special account).