

## Weekly Alert

**Russian War Against  
Ukraine: Energy Dimension**

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**Russian War Against Ukraine: Energy Dimension**  
**DiXi Group weekly review**

(December 23 – January 7)

**#StopRussianAggression**  
**#StandWithUkraine****Summary**

- On December 29, massive shelling damaged the high-voltage lines and equipment of the TPP in the Donetsk region. On January 2, nearly 260,000 consumers in several districts in Kyiv were temporarily disconnected. During the December 29 attack, cruise missiles and drones flew near or over the Rivne and South Ukrainian NPPs.
- Yet, the consequences of the strikes have not yet significantly affected the operation of the power system. As of January 8, 463 settlements remained without power due to hostilities and technological violations.
- IAEA experts are still unable to access to all parts of the occupied Zaporizhzhia NPP site. The occupation administration also did not provide the 2024 maintenance schedule for the ZNPP – SNRIU.
- During the season's holiday period, trade volume on the organized electricity markets decreased due to consumption decline; a significant surplus was recorded on the DAM. To balance the system, surpluses were transferred to Poland as emergency support, and minor exports also took place.

- At the same time, according to the results of operational monitoring, there are signs of manipulation on the DAM. The Regulator is preparing a decision on the initiation of investigations.
- The Regulator approved the Procedure for forming and maintaining a register of electricity facilities and electrical installations of consumers (including active ones) using RES and the Procedure for selling and metering electricity produced by active consumers and providing corresponding settlements.
- The Regulator also published a draft Law to implement the EU legislative package Clean Energy for all Europeans.
- Compared to 2022, in 2023, the transit of Russian gas decreased by 28.4% to 14.65 bcm. According to the media, gas production in Ukraine increased by 0.9% to 18.7 bcm; in particular, Ukgazvydobuvannya JSC increased it by 5%, and private companies reduced it by 14%.
- During 2023, over 2 GW of generation capacity damaged last winter will be restored – Minister of Energy Herman Galushchenko. Meanwhile, the Ministry of Reconstruction, together with USAID ESP, is implementing a program to deploy small and medium power cogeneration: one of those plants was launched in Starokostyantiv, Khmelnytskyi region.
- The government approved the 2050 Strategy for Thermal Modernization of Buildings in Ukraine, extended until April 15 the PSO scheme for the preferential gas supply to heat producers and public institutions, and approved zero quotas for exporting domestic natural gas and coal.
- The government created NNEGC Energoatom JSC, completing its corporatization, and elected one more state member of the supervisory board of Naftogaz (Kostyantyn Mar'evich). The State Energy Inspectorate was authorized to supervise the gas sector.
- The Japanese government will hand over 7 high-voltage autotransformers and 5 gas turbines to Ukraine, ensuring an uninterrupted energy supply to over 6 million Ukrainians. In particular, autotransformers were purchased with EBRD funds and will be delivered due to Japan and UNDP's efforts.

## IMPACT OF THE WAR

### Attacks

[According to](#) Ukrenergo, as of January 8, 463 settlements in Ukraine remained without electricity due to hostilities and technological disruptions. Hostile attacks and, consequently, the interruption of electricity and gas supply took place:

**Donetsk region.** On [December 23](#), the enemy attacked a thermal power plant, one of the power units experienced an emergency shutdown due to damage to a pipeline; three employees were injured, and household consumers were also cut off from electricity supply. On [December 25](#), 31,000 customers in 8 settlements, a 110 kV [line](#) and 2 mines were disconnected from the grid. On [December 26](#), a mine and a satellite town were shelled. On [December 27](#), 45,400 consumers in 74 settlements lost power supply; 110 kV overhead line and 2 mines were [disconnected](#). A thermal power plant and power grids were also shelled. On [December 29](#), 3,300 consumers in 4 settlements were cut off from power supply, high-voltage lines and [TPP's](#) equipment were damaged by massive shelling, and power units were shut down. On [December 30](#), 110 kV overhead lines and substations were disconnected, and 6,863 customers in 8 settlements lost power supply. On [December 31](#), the enemy attacked a TPP near the frontline, and the plant stopped electricity generation; 16 35 kV substations and consumers were disconnected. In addition, a team of power engineers repairing the plant came under fire, but no one was injured. On [January 1](#), 5,800 customers were left without electricity and 100 without gas. As a result of the [shelling](#), 110 kV overhead lines were cut off, leaving the thermal power plant, household consumers and a mine disconnected. On [January 3](#), 25 settlements were left without electricity supply. On [January 4](#), a mine was shelled; low-pressure gas pipelines were damaged; almost 20,000

customers lost power supply. On [January 5](#), the enemy shelled a thermal power plant, resulting in the shutdown of a unit; a substation was [destroyed](#) in one of the towns and another one was damaged; 13,800 consumers were cut off from electricity supply. On [January 6](#), 17 settlements lost power supply. On [January 7](#), almost 26,000 metering points and [2 mines](#) were disconnected; TPP's equipment was also damaged.

**Kharkiv region.** On [December 27](#), a low-pressure gas pipeline was damaged in one of the communities. On [December 29](#), 605 metering points and a 110 kV line were disconnected; power grids in 5 communities were damaged. On [December 31](#), substation equipment was damaged, a 110 kV overhead line was disconnected, and 11,281 customers in 20 settlements were cut off from the electricity supply. In Kharkiv, the gas supply to a rooftop boiler house and 292 consumers was cut off; a low-pressure gas pipeline was damaged in a settlement in the Kupiansk district, and 70 consumers were left without a gas supply. On [January 1](#), about 500 consumers and 14 municipal facilities were disconnected from the gas supply in Kharkiv; a low-pressure gas distribution pipeline was damaged in one of the communities; 1,600 customers were also cut off from the electricity supply. On [January 2](#), 11,281 consumers were left without electricity. On [January 3](#), the equipment of a gas distribution system operator (DSO) was damaged, resulting in gas supply interruptions in 4 streets of Kharkiv. On [January 6](#), a 110 kV overhead line was disconnected, and household consumers and Ukrzaliznytsia facilities were cut off from the electricity supply. On [January 7](#), 4 settlements lost power supply, and a 110 kV line was disconnected.

**Kherson region.** On [December 25](#), 216 consumers were left without electricity in Kherson; on [December 26](#), almost 500 consumers were cut off from power supply. On [December 27](#), 93,700 consumers in Kherson were disconnected as a result of massive shelling; a neighboring settlement was also affected, with 1,700 customers without electricity. Two 35 kV overhead lines were also [disconnected](#), which hampered the operation of the Kherson CHP plant. On [December 30](#), a 35 kV overhead line was disconnected in Kherson, causing disruptions to the CHPP's operations; equipment at a 150 kV substation was damaged in the region. On [January 1](#), 9,300 customers in one of Kherson's districts lost power supply. On [January 6](#), almost 400 consumers were left without electricity. On [January 7](#), about 7,000 customers in Kherson were cut off from power supply.

**Zaporizhzhya region.** On [December 30](#), one settlement (125 metering points) was disconnected due to a damaged power line pole. As of [January 1](#), 76 settlements (6,800 customers) were without electricity. On [January 3](#), 7 150kV overhead lines were disconnected.

**Mykolaiv region.** On [December 25](#), more than 100 customers were left without electricity. On [January 1](#), a 10 kV line was disconnected. On [January 3](#), an explosion near a substation disconnected a 150 kV line, which led to power outages for household consumers and a reduction in generation of 6 wind farms. On [January 4](#), artillery shelling damaged an overhead line resulting in the disconnection of 17,400 households and more than 300 non-household consumers. On [January 6](#), 4,400 consumers were cut off from electricity supply.

**Dnipropetrovsk region.** On [December 25](#), 4,600 metering points were disconnected. On [December 29](#), a 150 kV overhead line was damaged, and 3,300 consumers lost power supply. On [December 30](#), 152 household consumers and 4 private houses were cut off from gas supply in the city of Dnipro as a result of a missile strike. In addition, 2 settlements (834 customers) were partially left without electricity. On the same day, a 150 kV overhead line connected to a thermal power plant and a 150 kV substation were [disconnected](#). On [December 31](#), 1,443 customers were cut off from power supply. On [January 2](#), a 150 kV overhead line was disconnected, and 728 consumers were cut off from electricity.

**Sumy region.** On [December 28](#), a mid-pressure gas pipeline was damaged by shelling, leaving 185 customers without gas. On [December 31](#), a 10 kV overhead line was disconnected, leaving 502 consumers in 3 settlements without a power supply. On [January 1](#), 404 consumers in one settlement were cut off from electricity supply. On [2 January](#), a gas pipeline was damaged in Okhtyrka district.

**Chernihiv region.** On [December 25](#), 16 settlements (1,100 metering points) were without power supply. On [December 26](#), 22 settlements (almost 2,000 consumers) were left without electricity, and 10 kV overhead lines were damaged. On [December 28](#), electricity distribution networks were damaged, resulting in the disconnection of more than 2,000 household consumers. On [December](#)



[31](#), a shelling damaged the gas pipelines of private houses in Semenivka, resulting in disconnections. In addition, 10 kV distribution lines were [damaged](#) in the region; consequently, 3,800 consumers in 9 settlements were cut off from electricity supply. On [January 1](#), a 0.4 kV line was disconnected, leaving 96 consumers without a power supply. On [January 4](#), 1,314 consumers were left without electricity. On [January 5](#), the overhead line was disconnected as a result of shelling, and the border community was cut off from the electricity supply.

**Kyiv region and the city of Kyiv.** On [December 29](#), 10 kV overhead lines were damaged as a result of the fall of drone fragments, and 843 consumers in 2 communities were left without power supply. On [December 30](#), one of the 330 kV overhead lines were put back into operation following emergency repairs after hostile shelling. On [January 2](#), a power line was damaged in Kyiv, a number of substations were disconnected, hydroelectric power plants were disrupted, and almost 260,000 customers in several districts of the city were left without electricity; power outages were also reported in 110 kV networks in Bucha and Vyshhorod districts of the region.

## Nuclear and Radiation Safety

IAEA [experts](#) are still unable to access all parts of the occupied Zaporizhzhia NPP site and have not been allowed to access the reactor halls of units 1, 2, and 6 for the past two weeks. This is the first time that IAEA experts have been denied access to the unit's reactor hall, which was in a cold shutdown, where the reactor core and spent fuel are located.

In addition, over the past week, access to some parts of the ZNPP turbine halls, in particular to zones 3, 4, and 6, has remained limited. IAEA experts are also still waiting for the access to the reactor roofs scheduled for December 19, which was not carried out due to stated safety concerns.

The SNRIU [states](#) that the occupation administration has also not provided a maintenance schedule for ZNPP for 2024, which was requested by experts of the IAEA permanent monitoring mission. The Agency emphasizes that the lack of proper maintenance and repairs has led to the degradation of nuclear and radiation safety at ZNPP. In particular, this has already been reflected in two operational events last year with the leakage of potentially radioactive water from the first circuit to the second.

In addition, during the [inspection](#) of the Unit 6 safety system premises on December 22, the IAEA experts observed boric acid deposits on valves, a pump and on the floor of several containment rooms. The occupiers informed the team that the source of the leak was one of the boric acid storage tanks and that, given the small volume of the leak, it was not planned to be addressed immediately but as part of the scheduled maintenance of the affected system.

IAEA experts at Rivne NPP were [told](#) that a cruise missile flew near the plant on December 29 during a combined Russian attack, and their colleagues at South Ukraine NPP were told that missiles and drones had crossed the plant's territory.

Five of six ZNPP reactors [remain](#) in cold shutdown mode, while Unit 4 is in hot shutdown mode to generate steam and heat, including for the satellite city of Enerhodar.

Energoatom has [completed](#) preparations for the full conversion of Ukrainian NPPs to Westinghouse fuel. A number of measures were taken to ensure the operation of all domestic power units with VVER-1000 and VVER-440 reactors using US fuel, in particular:

- software for monitoring reactor cores was purchased and relevant training was conducted for Energoatom specialists;
- all justifications for the use of Westinghouse fuel were completed;
- the necessary equipment for transporting and technological operations was purchased, including a cantilever for unloading nuclear fuel and fuel assembly simulators.

## Countermeasures

On December 25, the Ministry of Energy [presented](#) a document developed by Abt Global and KPMG that sets out guidelines and recommendations for attracting sustainable financing to rebuild and develop Ukraine's energy sector. The document outlines key principles, types, and instruments of financing, a taxonomy of economic activities to check projects for their sustainability, and contains a set of requirements and recommendations from leading IFIs, development agencies, and foundations for allocating sustainable financing to Ukraine's energy sector.

On December 29, the Cabinet of Ministers [adopted](#) a decision on the establishment of the joint-stock company National Nuclear Energy Generating Company Energoatom, 100% of which will be owned by the state, through the transformation of the state-owned enterprise National Nuclear Energy Generating Company Energoatom. The company's charter, regulations on the supervisory board, and regulations on the principles of formation of the supervisory board were also [approved](#). Thus, the corporatization of the strategic national enterprise was [completed](#).

The government also [approved](#) a list of energy facilities that are not subject to minimum requirements for energy efficiency of buildings and energy efficiency certification. The list includes

- power plant facilities and equipment for electricity generation, including thermal, nuclear, hydro, wind, and other power plants;
- nuclear enrichment and reprocessing facilities;
- dams and similar water retention structures for any purpose: hydropower, irrigation, flow control, flood protection.

On January 3, 2024, Energy Minister Herman Halushchenko [noted](#) that over 2 GW of generation capacity damaged last winter was restored in 2023. He also added that for increasing Ukraine's generation capacity in 2024, the deployment of distributed generation, particularly gas turbine and gas piston installations, and solar and wind generation will be crucial.

On January 5, the government [approved](#) the 2050 Strategy for Thermal Modernisation of Buildings in Ukraine, which includes a long-term plan for the gradual renovation of the building stock using energy-saving technologies. In addition to the Strategy, the government also approved the concept of the 2030 State Economic Programme for Supporting Thermal Modernisation of Buildings and the 2024-2026 Action Plan.

## MARKETS PULSE

### Electricity Sector

#### *Power system operation*

According to [Ukrenergo](#) and the [Ministry of Energy](#), from December 23 to January 7, electricity consumption was covered by domestic production, as well as by imports from Romania, Slovakia, Poland, and Moldova.

On December 25, at the request of the Polish operator PSE, emergency support was activated for the Polish power system in the total amount of 3,050 MWh to absorb the electricity surplus. On the contrary, on some days, a surplus of electricity was recorded in Ukraine, which was transferred to Poland to balance the system: December 27 from 13:00 to 16:00 (600 MWh); December 31 from 11:00 to 13:00 (600 MWh); January 1 from 12:00 to 16:00 (1,200 MWh). Also, on December 27, January 1 and 2, RES curtailments generation were imposed.

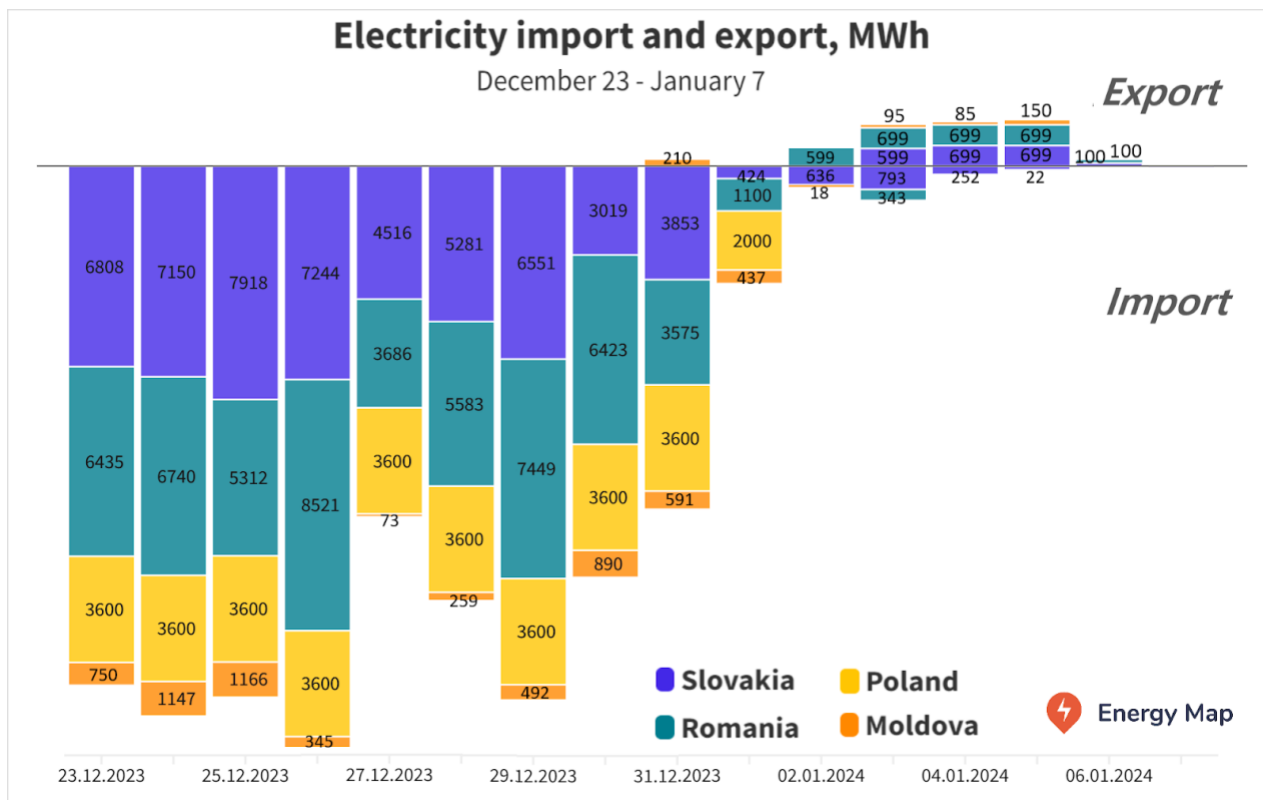
**Repairs continued** at the generation facilities. On December 26, two TPP units were put under short-term emergency repair; on December 27, three TPP units were put under emergency repair; at the same time, one TPP unit was put back into operation. On December 28, two TPP units were put out for emergency repairs; one power unit was put on standby. On December 29, two TPP units were taken out for emergency repairs. On December 30, two TPP units were taken out for emergency repairs, one of which has already been returned to operation. On January 1, a TPP unit

was taken out for short-term repairs. On January 2, a TPP unit was taken out for emergency short-term repairs; at the same time, another TPP unit was put back into operation. On January 3, five CHP units were taken out for emergency repairs. On January 4, five TPP units and a CHP unit were put back online; four CHP units were put out of operation for short-term emergency repairs. On January 5, two TPP units were taken out of service for emergency repairs and one unit was put back into operation. On January 6, a TPP unit was shut down and a CHP unit was brought back online. On January 7, a TPP unit was taken out of emergency repair.

One of the reasons for the power outages was **adverse weather conditions**. Thus, on December 25, 72 settlements in 4 regions lost power supply. On December 26, 52 settlements were disconnected, most of them in the Donetsk, Ternopil, and Khmelnytsky regions; on December 27 – 20 settlements in 4 regions; on December 28 – 52 settlements in 4 regions; on December 29 – 12 settlements. On January 1, 10 settlements in the Donetsk region and 2 in the Kharkiv region lost power supply. On January 2, 15 settlements in the Khmelnytskyi region and 14 in the Donetsk region were offline. On January 4, almost 95 settlements were without electricity, most of them in the Volyn region; on January 5, 48 settlements were disconnected. On January 8, almost 400 settlements in Ukraine lost power supply due to deteriorating weather conditions.

Another reason for the outages was **technological disruptions**. On December 23, a 35 kV line in the Donetsk region was disconnected, and Ukrenergo's 330 kV line in the Dnipropetrovsk region was also disconnected. On December 27, 13,500 consumers in the Dnipropetrovsk region were cut off from electricity, and a 110 kV line in the Donetsk region was also disconnected, which led to power outages for household consumers and the railway. On December 28, two 10 kV lines in the Dnipropetrovsk region were partially de-energized; 880 consumers in the Zaporizhzhia region were cut off. On December 29, 634 consumers in four settlements of the Chernihiv region were offline; two 750 kV and 330 kV lines in the Kyiv region and 330 kV overhead line in the Dnipropetrovsk region were disconnected. On December 30, 690 consumers in the city of Dnipro, 829 household consumers and 115 legal entities in the region were left without electricity. It is reported that due to the erroneous actions of the personnel at the 330 kV substation, equipment was disconnected, which led to the disconnection of the 150 kV substation, which is connected to local industry and solar power plants. In the Odesa region, two 10 kV lines went out of service on the same day. On December 31, 4,226 consumers were cut off in the Dnipropetrovsk region and 213 consumers in Kyiv. On January 2, 2,167 customers in 16 settlements of the Chernihiv region were disconnected. On January 3, 9 settlements in the Chernihiv region lost power supply; on January 4, almost 1,900 consumers in the Kyiv region, 1,300 in the Odesa region, and 453 in the Sumy region lost power. On January 5, overhead power lines in the Dnipropetrovsk and Kyiv regions were disconnected, and almost 7,000 consumers in the Zaporizhzhia region were disconnected. On January 6, a 110 kV line in the Vinnytsia region was disconnected, which resulted in a power outage for household consumers and an industrial facility. In addition, 1,400 consumers in the Zaporizhzhia and 800 in Kirovohrad regions lost power.

According to the [NEURC](#) and [ENTSO-E](#), between December 23 and January 3, commercial electricity imports from Romania [amounted](#) to 55.2 GWh, with capacity ranging from 5 MW to 500 MW. Deliveries from Slovakia were carried out on all days except January 6 and amounted to 54.5 GWh, with a capacity range of 1-350 MW. Imports from Poland were carried out on December 23 - January 1, with a total volume of 34.4 GWh, with a capacity range of 50-300 MW. Imports from Moldova were carried out on December 23 - January 2 in small volumes (from 3 to 90 MW), the total volume was 6.2 GWh. Commercial electricity exports to Romania were carried out on January 2-6 and amounted to 2.8 GWh, with a capacity range of 100-133 MW. Deliveries to Slovakia were carried out on January 3-6 in the amount of 2.1 GWh, with a capacity ranging from 100 to 133 MW. Small volumes of exports to Moldova (0.5 GWh) were supplied on December 31 and January 3-5, with a capacity range of 5-50 MW.



Source: [Energy Map](#)

Access to the import capacity in the Slovakia-Ukraine direction [was booked](#) by 10-21 companies, with the largest volumes distributed among D.Trading, ERU Trading, Energy Company of Ukraine, Trade Energy Solution, and Tviy Energopostachalnyk. The marginal price was set on December 24, 29, 30, and January 5-7 in the range from 0.16 to 31 UAH/MWh, and the revenue of Ukrenergo amounted to UAH 72,600. The capacity from Romania was booked at daily auctions by 5-11 companies, in particular D.Trading, CPG Energy, Energy Company of Ukraine, Energy Access Solutions, Energo Resource Ri Group, etc. The marginal price was set every day except January 2 and 3 and ranged from 0.01 to 24.5 EUR/MWh, with total revenue of Ukrenergo amounting to EUR 253,800 or about UAH 10.6 million. The capacity from Poland in the Rzeszów-NPP direction was booked by Euromin Energy on December 23-31 and by D.Trading on January 1, the marginal price was not set. In the Moldova-Ukraine direction, capacity was booked by 2-7 companies: CPG Energy, Solipower, Energo Resource Ri Group, D.Trading, Artlex Group, and others. The marginal price was set on December 23-25 and December 26 - January 1 in the amount of 0.03-80 UAH/MWh, and the total revenue of Ukrenergo amounted to UAH 484,700.

For exports, access to the Ukraine-Slovakia interconnector was booked by DTEK Zakhidenergo, D.Trading, and ERU Trading between December 30 and January 5 without marginal price being set. The capacity at Ukraine-Romania direction was booked by D.Trading on January 2-5, with a zero marginal price. The capacity in the Moldova-Ukraine direction was booked on December 30-31 and January 3-5 by Ukrhydroenergo and CPG Energy, with no marginal price.

## Market performance

**Bilateral contracts market (BCM):** The dynamics of trading on the Ukrainian Energy Exchange (UEEX) were generally downward for three weeks. In total, 60 auctions for the purchase/sale of electricity were held at the UEEX (15 in commercial and 45 in specialized sections). Among the initiators of the auctions were Energoatom-Trading, Guaranteed Buyer, Ukrhydroenergo, Centrenergo, DTEK Group companies, Donbasenergo, Cherkasykhimvolokno, Euro-Reconstruction, Akvaresurs, universal service suppliers, distribution system operators, and others. The total trade volume from December 18, 2023, to January 7, 2024, amounted to 6,747.8 GWh (respectively, [3,329.7 GWh](#), [1,663.7 GWh](#), and [1,754.4 GWh](#) on a weekly basis). The monthly Base DAM index for December remained at 3,871.5 UAH/MWh, while the current index for January is 3,752.3 UAH/MWh (-3.1% compared to December).



In particular, during the last week (January 1-7), Ukrhydroenergo sold 6.4 GWh of baseload at prices of 3,250.0-3,550.0 UAH/MWh with delivery in January, 62.0 GWh of baseload at a weighted average price of 3,256.3 UAH/MWh with delivery in the first quarter of 2024. The company also sold 14.2 GWh of block positions (08-23) at prices of 3,900.0-4,100.0 UAH/MWh with delivery in January and 59.6 GWh of block positions (08-23) at prices of 4,013.3-4,308.3 UAH/MWh with delivery in the first quarter. Donbasenergo sold 168.0 GWh of baseload at a weighted average price of 3,552.8 UAH/MWh. DTEK Kurakhovska TPP, DTEK Dniproenergo, and DTEK Zakhidenergo sold a total of 1,369.6 GWh in block positions at prices ranging from 1,370.0 to 4,030.0 UAH/MWh with the delivery period for the 2nd and 3d decades of January. Euro-Reconstruction sold 53.6 GWh of baseload at a weighted average price of 3,750.0 UAH/MWh. Guaranteed Buyer offered block positions for daytime hours with delivery in January but failed to sell electricity. In the commercial sections, the companies purchased/sold electricity by individual load profiles.

**Day-ahead market (DAM):** According to the [Energy Map](#) service, during three weeks (December 18, 2023 - January 7, 2024), DAM prices showed high [volatility](#): deviations of hourly prices from price caps varied in a wide range - from 0 to 99.7% and averaged 51.4%. The number of cases of significant price deviations (over 50%) from the price caps was observed in 51.2% of the settlement periods (hours of the week). At the same time, the number of hours when prices were close (with a deviation under 1%) or at the level of price caps fell sharply and amounted to only 0.4% (at 09:00-10:00 and 16:00-17:00 on December 22, 2023).

The average hourly price of electricity (Base DAM index) showed a significant downward trend for three weeks and amounted to 3,693.4 UAH/MWh, 2,691.9 UAH/MWh, and 1,630.8 UAH/MWh, respectively. The weighted average daily price for three weeks [varied](#) in a wide range from 307.3 to 4,796.1 UAH/MWh. At the same time, taking into account the holiday periods in the EU, the ratio between the Base DAM indices of Eastern European countries (Poland, Hungary, Romania, and Slovakia) and Ukraine was highly variable and generally [ranged](#) from 0.18 to 2.27 (excluding abnormal ratios: on December 25, 2023, when they were extremely low - 0.01 (Poland and Slovakia), and January 1 and 6, 2024, when they were abnormally high - 11.72 and 2.92 (Poland), respectively).

The total volume of electricity sales on the Ukrainian DAM for three weeks had a distinct downward trend and [amounted](#) to 1,304.9 GWh (respectively, weekly - 543.9 GWh, 484.3 GWh, and 276.7 GWh). The daily trading volume varied in the range of 22.0-80.3 GWh. In general, the DAM was in surplus: the ratio between the total daily volume of sell and buy bids ranged from 1.25 to 4.28. At the same time, only in 0.2% of the settlement periods (at 09:00-10:00 on December 22, 2023), there was a slight deficit on the DAM. The purchase composition was [dominated](#) by suppliers (61.9-91.7%), the share of network operators was 8.3-37.8%, and the rest (up to 0.3%) belonged to producers and traders.

Meanwhile, the NEURC [informs](#) that, based on the results of operational market monitoring and data provided by the Market Operator and Ukrenergo, there have been signs of manipulation at the DAM recently. The regulator is preparing a decision to initiate related investigations.

## ***Policy and regulation***

As part of the implementation of Law No. 3220, "On Amendments to Certain Laws of Ukraine on Recovery and Green Transformation of the Energy System of Ukraine," the Regulator has [amended](#) the Transmission System Code to regulate technical aspects of supporting the production of electricity from alternative energy sources by consumer generating units and the introduction of energy storage facilities. In particular, the amendments define

- peculiarities of connection/installation of consumer generating facilities in their own power grids;
- technical requirements for the operation of a new type of electricity market participant – an aggregator;



- the procedure for connection/installation of energy storage facilities in the user's own power grids;
- settlement procedure for dispatching and electricity transmission services by users, regulation of relevant contractual relations in accordance with Law No. 3220, etc.

Also, the Regulator [approved](#) the 2024-2033 Transmission System Development Plan (the Plan is not publicly available due to restrictions on information disclosure during martial law). In addition, the Regulator [approved](#) the 2024 investment programs for 6 DSOs and [approved](#) the 2024-2028 Distribution System Development Plans for 3 DSOs.

The Regulator [decided](#) to resume the provision of standard and non-standard connections to power grids from January 1, 2024, in accordance with the Distribution Systems Code, the relevant provisions of which were suspended by Resolution No. 352 of 26.03.2022 due to the full-scale aggression of the RF. The resumption of services was carried out due to numerous customer requests and the settlement of most of the factors that made it impossible to provide such services by DSOs at the beginning of martial law. The decision will help to ensure easy and non-burdensome conditions for connecting new users to the power grids and greater predictability of connection costs. In addition, the Regulator [approved](#) the rates for standard connection of electrical installations (with a capacity of up to 50 kW for urban and rural areas) for DSOs for 2024.

In addition, to create conditions for the introduction of a self-production mechanism, the Regulator [approved](#) the Procedure for the Sale and Metering of Electricity Generated by Active Consumers and corresponding Settlements. The document, in particular, regulates the actions of market participants and commercial metering service providers while selling and metering electricity generated by active consumers and related settlements.

To implement the guarantees of origin for renewable electricity, the Regulator [approved](#) the Procedure for Forming and Maintaining a Register of Electricity Facilities and Electrical Installations of Consumers (including Active Consumers) Using Alternative Energy Sources for Electricity Generation. In particular, the Procedure defines the list of data to be included in the Registry.

The Regulator has also [approved](#) the Procedure for Disclosure of Information to Consumers on the Electricity Mix Purchased and/or Autogenerated by a Supplier. In particular, the supplier shall form its electricity mix by energy sources and fuel types:

- carbon-free and carbon-neutral sources: nuclear fuel, renewable energy sources;
- carbon sources: coal, natural gas, fuel oil;
- other sources used for electricity generation.

As of December 31, 2023, the NEURC [registered](#) 1303 participants in the wholesale energy markets. At the same time, according to the NEURC, more than 2,500 participants intended to register as wholesale energy market participants. However, starting from February 1, 2024, operations with wholesale energy products may be carried out only by actors registered in the relevant registry.

To ensure proper security of electricity supply and maintain the operability of TPPs and CHPs, the Regulator [amended](#) the Temporary Procedure for the Purchase of Ancillary Services to Ensure Frequency and Active Power Regulation in the IPS of Ukraine, namely the provision of replacement reserves (tertiary regulation). The amendments, in particular, provide for an increase in fixed costs; a differentiated approach to determining the price depending on the cases of providing ancillary services to resolve network constraints or ensure the balance reliability of the IPS of Ukraine; compensation for excise tax expenses; adjusting the annual ordered capacity of the natural gas distribution service, etc.

The Regulator has [approved](#) the Procedure for Acquiring, Suspending, and Terminating the Status of a Data Transmission Administrator (DTA). The Procedure, in particular, defines technical and organizational requirements for the submission of information by DTA to the Regulator and provides for the possibility of operation of several DTAs at once.

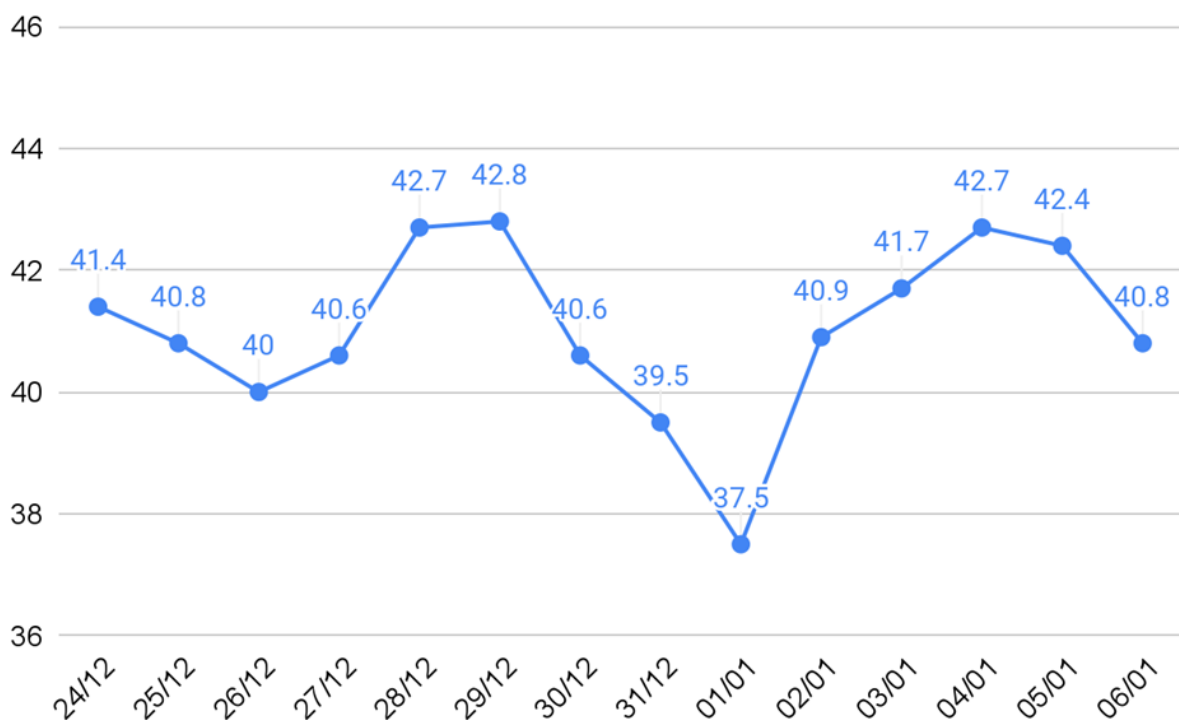
To implement the EU Clean Energy for All Europeans Package, the Regulator has [published](#) the Draft Law On Amendments to Certain Laws of Ukraine on Transposition of Energy Community Acts. The document was developed by the NEURC in cooperation with the Energy Community Secretariat and takes into account the provisions of key EU Directives and Regulations regarding the integration and functioning of the common electricity market.

## Gas

### Gas system operation

On December 24, 2023 - January 6, 2024, the volume of gas transit through the territory of Ukraine amounted to 37.5-42.8 mcm per day, i.e. 34-39% of the capacity contracted by Gazprom (109 mcm per day). In the two reporting weeks, the average daily transit was 41 mcm (-0.7 mcm compared to the week of December 17-23). There were no transit flows via the Sokhranivka interconnection point. The total transit through the Ukrainian gas transmission system in 2023 reduced by 28.4% (5.81 bcm) year-on-year to 14.65 bcm.

**Transit of Russian gas through the territory of Ukraine, mcm**



Source: [Gas Transmission System Operator of Ukraine LLC](#)

The physical imports from EU countries during the reporting period were minimal. 12.9 mcm of gas arrived from Moldova through the Căușeni interconnection point, but it was probably a transit of gas, which later returned to Moldova through the "Consumers of Moldova" virtual interconnection point (VIP). Another 8.3 mcm were delivered through "Bereg" VIP from Hungary.

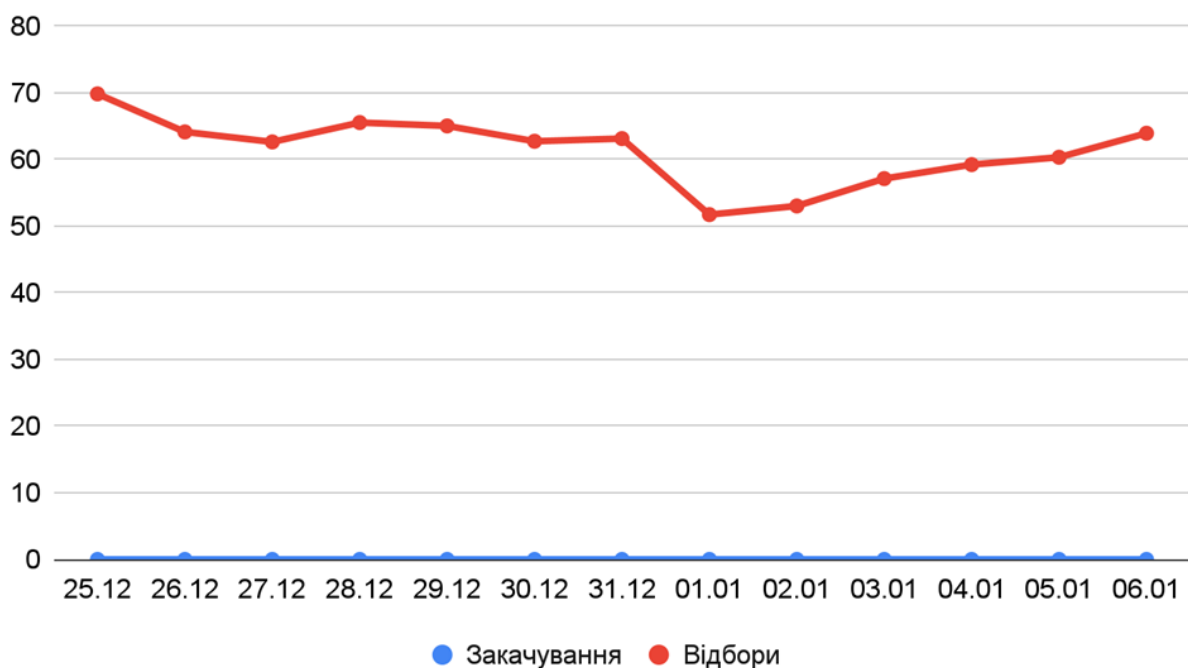
At the same time, gas exports from Ukraine continued. In the circumstances of the ban on the exports of Ukrainian-produced gas, exports are the gas volumes withdrawn from the storage facilities by non-residents, who previously injected it for storage in the "customs warehouse" mode. The volume of such exports from December 24 to January 6 was 119.6 mcm (-32% compared to the previous two weeks), which were transported through the Drozdowicze/Hermanowice interconnection point with Poland.

Commercial imports through the VIP Ukraine-Poland were performed at 118.5 mcm (actually corresponding to physical volumes). 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 250.1 mcm (-26% compared to the previous two weeks).

### Underground storage facilities

According to the [AGSI platform](#), as of January 6, 7.96 bcm of gas was accumulated in the Ukrainian storage facilities (-2.86% as compared to December 23). It corresponds to 26.3% of the total working capacity, i.e. without 4.662 bcm of "long-term storage" buffer gas. Withdrawals from storage in the monitoring period (December 24 - January 6) decreased by 23% and totaled 870.7 mcm; the average daily withdrawal amounted to 62.2 mcm (-19.6 mcm).

#### Natural gas withdrawals and injections into/from Ukrainian storage facilities, 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 December 25-January 5, four companies (two buyers and two sellers) submitted bids for purchasing gas at the Ukrainian Energy Exchange (UEEX). In the reporting period, UEEX received purchase bids for 189.7 mcm of gas (-39% as compared to the previous two weeks) with a total starting cost of 2.35 billion UAH (-41%). The weighted average starting price of bids was 12.37 UAH/cm (excluding VAT).

During the monitoring period, 12.85 mcm (-81%) of gas at a weighted average price of 12.45 UAH/cm (without VAT) (-2%) were purchased. 96.5% of the resource was procured by GSC Naftogaz Trading LLC (12.4 mcm), 3.5% - by PJSC "AK Kyivvodokanal" (0.45 mcm). 96.5% of gas was purchased on the terms of transfer in the underground storages, and 3.5% - at a virtual trading point (i.e. in the gas transportation system). 23.3% of gas was sold with delivery in December 2023, and 76.7% - in January 2024.

## ***Policy and regulation***

On December 27, the Cabinet of Ministers [amended](#) the PSO regime for the preferential supply of natural gas to heat energy producers and budget institutions, extending its validity until April 15, 2024.

The government also [approved](#) the list of goods whose exports and imports are subject to licensing and quotas for 2024. The list includes Ukrainian-produced natural gas with an export quota of 0 cm.

The Cabinet of Ministers [appointed](#) one more state representative as a member of the supervisory board of Naftogaz. It is Kostyantyn Maryevuch, who also holds the position of first deputy state secretary of the Cabinet of Ministers.

The government [amended](#) the List of underground structures not related to the extraction of minerals. In particular, the item "Well for pumping quarry and mine water in order to prevent the flooding of quarries and mines during the extraction of minerals and wells for the return of interlayer waters of oil and gas fields to underground horizons" was replaced by "Underground structure (underground storage) for the disposal of waste from the oil and gas industry and associated waters".

In addition, the Cabinet of Ministers [amended a number](#) of resolutions, by which the State Inspectorate for Energy Supervision was entrusted with the functions of supervision (control) in the gas sector. In particular, the amendments provide that the State Inspectorate for Energy Supervision will carry out technical investigations into the causes of accidents related to the use of natural gas in households and will keep records of them. Also, this body will monitor compliance by natural gas market participants with the requirements of regulatory acts on the technical operation of the gas infrastructure and will regulate relationships related to the maintenance of in-house gas supply systems. To ensure the fulfillment of these powers, the State Inspectorate for Energy Supervision will be able to issue binding regulatory documents to market participants, fine them, and stop the operation of gas equipment. Prior to this decision, the State Inspectorate for Energy Supervision had such powers only in the electricity and heat supply sector.

NEURC [approved](#) and published the draft resolution amending the Methodology for determining costs and losses of fuel and energy resources to be considered when calculating heating tariffs. It provides that costs and losses of fuel and energy resources resulting from transportation, production, and supply of heat are determined by taking into account the main features of the technological processes of specific facilities and the planned effects of the implementation of energy-saving measures.

Also, the Regulator [plans](#) to amend the Methodology for determining and calculating tariffs for natural gas transportation services for entry and exit points, as well as other related acts. The amendments will involve the implementation of certain provisions of Regulation (EU) 2017/460, in particular regarding:

- carrying out an assessment of cost distribution when setting tariffs for gas transportation for entry/exit points;
- clarification of the requirements for the justification of the application of coefficients that take into account the period of capacity booking and the calculation of coefficients that take into account the season of booking the GTS capacity;
- implementation of the requirement to publish data on parameters for calculating gas transportation tariffs;
- implementation of the requirement regarding the procedure for conducting public consultations related to the approval of tariffs for gas transportation.

The Regulator also [published](#) a draft resolution on the approval of the Gas Storage Development Plan for 2024-2033. For 2024, financing of activities in the amount of 998 million UAH is provided, the main sources of which are depreciation and capital investments.

## **Other**

The NEURC [adopted](#) a resolution providing that from January 1, 2024, LLC "Gas Distribution Networks of Ukraine", which is a part of the Naftogaz Group, obtained the right to carry out functions of natural gas distribution in Zakarpattia and Rivne regions.



[According to](#) industry media, natural gas production in Ukraine increased by 0.9% to 18.7 bcm in 2023. State-owned JSC "Ukrgezvydobuvannya" (the country's largest gas production company) produced more than 13.9 bcm of gross natural gas (+5%). PJSC "Ukrnafta" increased production by 6% to 1.1 bcm, but private companies, on the contrary, reduced production by 14% to 3.7 bcm.

In 2023, state-owned Naftogaz group companies [purchased](#) 962 mcm of natural gas from private companies at the Ukrainian Energy Exchange.

## Oil and Motor Fuels

On December 22, the government [approved](#) the financial plan of Ukrtransnafta (main oil pipeline operator) for 2023. Also, on December 27, the Cabinet of Ministers [amended the financial](#) plan of Ukrnafta JSC.

Ukrnafta [has extended](#) the deadline for the application process for the joint development of oil and gas fields until March 1, 2024, since not all companies had time to familiarize themselves with the opportunities of the proposed fields. Also, on December 25, the company's management [announced](#) the commissioning of a well in eastern Ukraine. The initial production of the well is 51.4 tons per day of practically anhydrous oil (water content of 2-3%).

On December 20, the Commercial Court of the city of Kyiv [adopted](#) a court decision that recognized the legality of the actions of the Asset Recovery and Management Agency (ARMA) regarding the unilateral termination of the contract for the management of gas filling stations of the "Glusko" chain with LLC "Naftogaz Oil Trading". According to ARMA, the reason for terminating the contract was improper management of the provided assets by the company of Naftogaz Group.

## International Cooperation

Summing up the results of 2023, the Ministry of Energy of Ukraine, in cooperation with the United States Agency for International Development (USAID) through the Energy Security Project (ESP), reported on the [implemented](#) projects to reform the energy sector, integrate Ukrainian energy markets into European ones, and strengthen Ukraine's energy security. Since April 2022, USAID ESP has been acting as an independent procurement agent for the Ukraine Energy Support Fund, helping to purchase critical equipment to meet the urgent needs of Ukraine's energy sector. Between 1 January and 30 November 2023, USAID ESP concluded more than 130 procurement contracts valued at more than 100 million EUR and provided equipment to 20 Ukrainian companies. USAID has also become a sponsor of the Fund, formalizing a commitment to a grant contribution of 25 million USD.

The Ministry of Communities, Territorial Development and Infrastructure of Ukraine, together with USAID ESP, is [implementing](#) a programme to deploy small and medium-sized cogeneration facilities and assist in reforms aimed at technical optimization, energy efficiency, and environmental sustainability of local district heating systems. As part of this project, the district heating company in Starokostiantyniv, Khmelnytska oblast, has completed the installation and connection of a cogeneration unit (CGU) purchased with USAID funds. The unit is equipped with a gas piston engine and generates both heat and electricity to meet the electricity needs of the city's boiler houses. This ensures uninterrupted heat supply to critical and social infrastructure facilities, as well as to residents of apartment buildings.

On 28 December, during a [meeting](#) between the Minister of Energy of Ukraine Herman Halushchenko and the U.S. Chargé d'Affaires in Ukraine Robert Needham, with the participation of Acting Chief of Mission of USAID in Ukraine Theodora Dell, Head of the USAID Office of Critical Infrastructure in Ukraine Ryan Knight, as well as Deputy Energy Ministers Yaroslav Demchenkov and Mykola Kolisnyk, discussed the continuation of cooperation in the nuclear industry, the creation of distributed generation, and the implementation of joint projects to localize the production of power equipment to strengthen the resilience of the energy system. In particular, the US side

demonstrated its readiness to continue its comprehensive support for Ukraine in strengthening energy security.

In close coordination with the Ministry of Energy, the Government of Japan will [transfer](#) seven high-voltage autotransformers and five gas turbines to Ukraine. In particular, the autotransformers were purchased with funds from the EBRD, and thanks to the efforts of Japan and the United Nations Development Programme (UNDP), this large-sized energy equipment will be delivered to Ukraine. Ukraine will receive the gas turbines purchased by Japan through the mediation and assistance of the UNDP and the Japan International Cooperation Agency (JICA). As noted, the equipment provided by Japan will ensure uninterrupted power supply to more than 6 million Ukrainians, in particular in areas affected by targeted Russian attacks on energy infrastructure.

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### **SUPPORT UKRAINIAN ENERGY SECTOR**



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

*[Energy Community Homepage \(energy-community.org\)](http://energy-community.org)*

### **SUPPORT UKRAINIAN ARMY**

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