

## Daily Alert

# Russian War Against Ukraine: Energy Dimension

(status as of 12:00, March 13)

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

## Summary

- **On March 11, the Russian military attacked (presumably, with modified S-300 missiles) a life support facility in the city of Zaporizhzhia.** As of March 13, enemy's artillery shelling damaged power grids in the areas close to combat in the Kharkiv and Kherson regions.
- The Acting Head of the State Nuclear Regulatory Inspectorate Oleh Korikov said that **unauthorized changes to the design of nuclear facilities are taking place at the occupied Zaporizhzhia NPP.** This includes interference with heat and power supply systems, building unknown structures near the backup power plant of unit 6. The internal crisis center at the ZNPP site has been dismantled and has no connection with the external one in Zaporizhzhia.
- **Power system operates with no deficit.** Due to equipment overload, emergency outages are in effect in some districts of Kyiv and the Kyiv region. In the Zhytomyr and Kharkiv regions, hourly outage schedules can be applied in peak hours. In the Mykolaiv region, reconnection of all households who were left offline to hostilities was completed.
- **Naftogaz provided bondholders with a new proposal (revised working scenario) on restructuring payments for Eurobonds maturing in 2022 and 2026.** In a presentation, it also outlined main sources of gas supply during the 2022/2023 heating season (13.9 bcm): 1 bcm is covered by imports, 5.3 bcm - taken from storage, and 7.6 bcm - production of Ukrgezvydobuvannia.
- **Naftogaz imports were financed** by the EBRD (225 million EUR loan), Canada (323 million EUR aid), and Norway (189 million EUR grant). The company also provided information on its market share (81%).

- **Ukrainians have already received 12 million LED lamps in exchange for old incandescent ones**, which saves up to 600 MW of energy - the President Volodymyr Zelenskyi.
- **The government allocated 5 million UAH from the State Budget (reserve fund) on a pilot project for the construction and repair of energy infrastructure.** The funds are received by the State Agency for Reconstruction and Development, which will work in coordination with the Ministry of Energy, the State Emergency Service, the General Staff of the Armed Forces and critical infrastructure operators.
- **The Cabinet of Ministers has improved the procedure for compiling a list of territories with military operations underway or temporarily occupied.**
- **The NEURC postponed consideration of decisions to increase tariffs for electricity distribution**, yet plans to consider raising tariffs for centralized water supply and sewerage in March.

## Attacks

On March 11, the Russian military attacked a life support facility in the city of Zaporizhzhia – according to preliminary information, using modified S-300 missiles, against which Ukraine has no defense capabilities, as the Zaporizhzhia Regional Military Administration [reported](#).

[According to](#) Ukrenergo, on March 13, enemy's artillery shelling damaged power grids in the areas close to combat in the Kharkiv and Kherson regions. Repairs are underway where the security situation allows.

In its [presentation](#) to bondholders, Naftogaz indicated the losses caused by the war. In total, during the full-scale invasion, the Russian army destroyed 870 tangible assets, including 609 assets of Ukrgazvydobuvannia. Most assets were destroyed in the Kharkiv and Poltava regions - 670 and 51 items, respectively.

## Nuclear Safety

The Acting Head of the State Nuclear Regulatory Inspectorate of Ukraine Oleh Korikov [said](#) that unauthorized changes to the design of nuclear facilities are taking place at the occupied Zaporizhzhia NPP. The occupiers are interfering with the plant's heat and power supply, building unknown structures near the backup power plant of unit 6. The internal crisis center at the site has been dismantled and has no connection with the external crisis center in Zaporizhzhia, and the Russian military is permanently stationed there.

The EU, together with Ukraine, Moldova, Georgia, North Macedonia, Montenegro, Albania, Bosnia and Herzegovina, Iceland, Liechtenstein and Norway, issued a joint [statement](#) to the IAEA regarding the ZNPP occupation by Russia. In the statement, the parties draw attention to the enormous risks to nuclear safety due to the occupation, pressure on personnel, shelling of infrastructure; and call for the withdrawal of troops from the site and the transfer of its management to the Ukrainian government.

# Electricity Sector

## Power system operation

[According](#) to the Minister of Energy Herman Haluschenko, after the last massive shelling, the situation in the power system has been stabilized, with generation operating with a capacity reserve. However, due to grid restoration works, some regions may still have restrictions.

[According](#) to Ukrenergo, electricity consumption increased on March 13, which is typical for a working day. The amount of generated electricity available in the system is sufficient to cover the demand of all consumers. Due to equipment overload, emergency outages are in effect in some districts of Kyiv and the Kyiv region. In the Zhytomyr and Kharkiv regions, when consumption increases during peak hours, hourly outage schedules can be applied. The reconnection of consumers that were offline due to weather conditions continues in the Zhytomyr and Sumy regions. In addition, as a result of enemy's shelling, there is damage to networks in the front-line areas of the Kharkiv and Kherson regions. In other regions, consumption restrictions were not applied, limits were not set.

[According](#) to ENTSO-E, as of March 13, minimal commercial imports of electricity were performed from Slovakia (2-7 MW) and Moldova (0-5 MW) (for different hours during the day). Access to the Slovakia->Ukraine cross-border capacity (500 MW) was [booked](#) by two companies: D.Trading (55 MW) and ERU Trading (10 MW), both on flat schedule; in the direction Moldova->Ukraine - by D.Trading (100 MW) and Artlex Group (1 MW). In both auctions, the marginal price was "zero". Capacity in other directions was not offered.

## Electricity market performance (March 6-10):

**Bilateral contracts market (BCM):** On the [Ukrainian Energy Exchange](#) (UEEX), the intensity of trading decreased as compared to the previous week. 16 auctions for the purchase/sale of electricity were held at UEEX in a one-way auctioning regime (6 in commercial sections, 10 in specialized ones). The bidders included Energoatom-Trading, Ukrhydroenergo, Centrenergo, Guaranteed Buyer, universal service suppliers, and distribution system operators. In total, 230,354.7 MWh (10.5 times less as compared to the same period previous week) was sold at UEEX with delivery in March. The monthly Base index for March amounted to 2,773.9 UAH/MWh, which is 14.8% less than the February index.

In particular, Energoatom-Trading sold 106.5 GWh of base load at 2,700-2,704.6 UAH/MWh. Guaranteed Buyer sold 4.2 GWh in block positions of daytime hours at 2,969.07-3,054.25 UAH/MWh. Ukrhydroenergo offered base load and block positions, but failed to sell. Centrenergo sold 56.19 GWh in block positions at 1,400-3,370 UAH/MWh. In the commercial sections, the companies purchased electricity under the load of individual profiles.

**Day-ahead market (DAM):** According to the [Energy Map service](#), hourly prices at DAM were close to the price caps for day and night hours (4,000 and 2,000 UAH/MWh, respectively). [The weighted average market price](#) during the review period was in a narrow range 3,116.46-3,429.07 UAH/MWh, with a deviation of  $\pm 5\%$ . At the same time, as of March 6-10, the Base DAM indices in the Eastern European countries (Poland, Hungary, Romania, and Slovakia) [exceeded](#) the similar index of Ukraine 1.24-1.86 times.

The daily volume of sales on DAM had the highest figures at the beginning of the week (80,052 MWh), in the middle of the week there was a decline to 60,852.6 MWh and a subsequent slight increase to 63,096.2 MWh. As a result, the total volume of electricity sold was 346,079.8 MWh (-5.4% as compared to the same period previous week). The market remained in surplus, no deficit hours were observed. [The purchase structure](#) was dominated by suppliers (79.5-84.1%), the share of system operators was 15.8-20.3%, the rest (about 0.1-0.2%) belonged to producers and traders.

## ***Disruption and resumption of supply***

[According](#) to the President Volodymyr Zelenskyi, as of March 12, all cities and communities that had problems with electricity supply after the March 9 massive enemy's attack on the energy infrastructure, have been reconnected.

[According](#) to the Ministry of Energy, as of the morning on March 13, specialists restored power supply in all regions affected by the March 9 strike. In the most problematic areas of the Kharkiv region, all consumers have been reconnected, electricity supply has been fully restored in the Mykolaiv region. However, there are still restrictions for some categories of consumers in the Zhytomyr region.

Large-scale power supply disruptions and, consequently, active recovery works were taking place:

- in the **Zhytomyr region**, [according](#) to the Regional Military Administration, as of March 12, most consumers are provided with electricity supply. In the morning and evening hours of peak load, restriction schedules are applied, but their duration has been significantly reduced, restoration works are ongoing;
- in the **Kharkiv region**, [according](#) to Ukrenergo, on March 11, after emergency repairs, one of the thermal power plants was partially returned to operation, and one of the main grids facilities is working again. Kharkiv's critical infrastructure has been fully reconnected, and as of 14:00 electricity supply to households has been restored. [On March 12](#), due to equipment overload, emergency outages were applied in the city of Kharkiv. On the same day, the operation of subway [resumed](#), the city also developed a new scheme for the operation of municipal buses, which will be active during the operation of subway and if on-ground electric transport is offline
- in the **city of Kyiv**, [according](#) to DTEK, on March 11, in parts of the Holiivskyi, Shevchenkivskyi, Svyatoshynskyi and Solomyanskyi districts, electricity was supplied under stabilization schedules. The reason was the repeated damage to energy facilities, which cannot transmit 100% of electricity to all residents of the specified areas. Similar restrictions were put into effect on the morning of [March 13](#). On March 12, [district heating](#) was fully restored, after it was disrupted after the March 9 enemy's attack;
- in **Odesa region**, [according](#) to Ukrenergo, on March 11, electricity supply was fully restored, however, with an increase in load during peak hours, hourly outages are possible. [On the night of March 12](#), specialists completed the reconnection of high-voltage equipment, which will increase reliability and ensure uninterrupted power supply to the region;
- in the **Dnipropetrovsk region**, [according](#) to Ukrenergo, on March 11, as a result of enemy's shelling, network restrictions were still applicable in some areas. [According](#) to the local DSO, on the same day, specialists restored electricity supply to 3,400 households in 7 settlements that were completely or partially offline due to hostilities;
- in **Zaporizhzhia region**, [according](#) to the local DSO, as of March 13, 24,261 consumers in 74 settlements remained without electricity supply (excluding the temporarily uncontrolled territory). During March 10-12, specialists reconnected 9,331 consumers of the Orikhiv, 1,425 of the Zaporizhzhia, and 1,015 of the Vilniansk power grids, which were offline due to enemy's shelling and technological violations;
- in the **Kherson region**, [according](#) to the Regional Military Administration, as of March 11, 45 crews (231 specialists and 78 units of equipment) were working to restore electricity supply. Specialists performed works on the damaged lines



supplying the city of Kherson, the towns and villages of Trudoliubivka, Biliayivka, Kalynivske, Borozenske, Tokareve, Starosillia, Novovoznesenske, Bilozerka, Pravdyne, Kirove and Nova Zorya. On March [10-11](#), specialists restored power supply to 681 consumers in the village of Inhulets, 135 in the town of Kalynivske, 52 in the village of Zarichne, 37 in the village of Novovoskresenske, and 27 in the village of Yasna Poliana;

- in the **Mykolaiv region**, [according](#) to the Regional Military Administration, as of March 13, 1,083 electricity supply facilities were partially or completely damaged (+6 as compared to March 10). However, the reconnection of all household consumers who were left without electricity due to hostilities was completed. Among other consumers (legal entities), 52 metering points in the territory of the Bashtanka district remained disconnected. Over the weekend, due to enemy's shelling, network restrictions still [applied](#) in some areas;
- in the **Sumy region**, [according](#) to the Regional Military Administration, on March 10, the Russians shelled 7 border communities, as a result a power transmission line was damaged in the Shalyhyn community;
- in the **Donetsk region**, according to the local DSO [[1,2,3](#)], on March 9-11, specialists managed to reach a number of sites with damaged networks and equipment and repair them, which made it possible to restore electricity supply to 19,311 households in 23 settlements. As a result of hostilities, 113 settlements remained offline, as there was no access to works there. On March 11, the enemy shelled the [city of Kurakhove](#), causing damage to a power transmission line, on March 12 - the [city of Slovyansk](#), with contact electricity network damaged;
- in the **Luhansk region**, [according](#) to the Regional Military Administration, during the winter, the occupiers hastily tried to restore electricity supply in the city of Severodonetsk, yet without installing new transformers. Currently, such a scheme cannot withstand the load, so several thousand residents, i.e. more than a third of those remaining in the city, have been left offline.

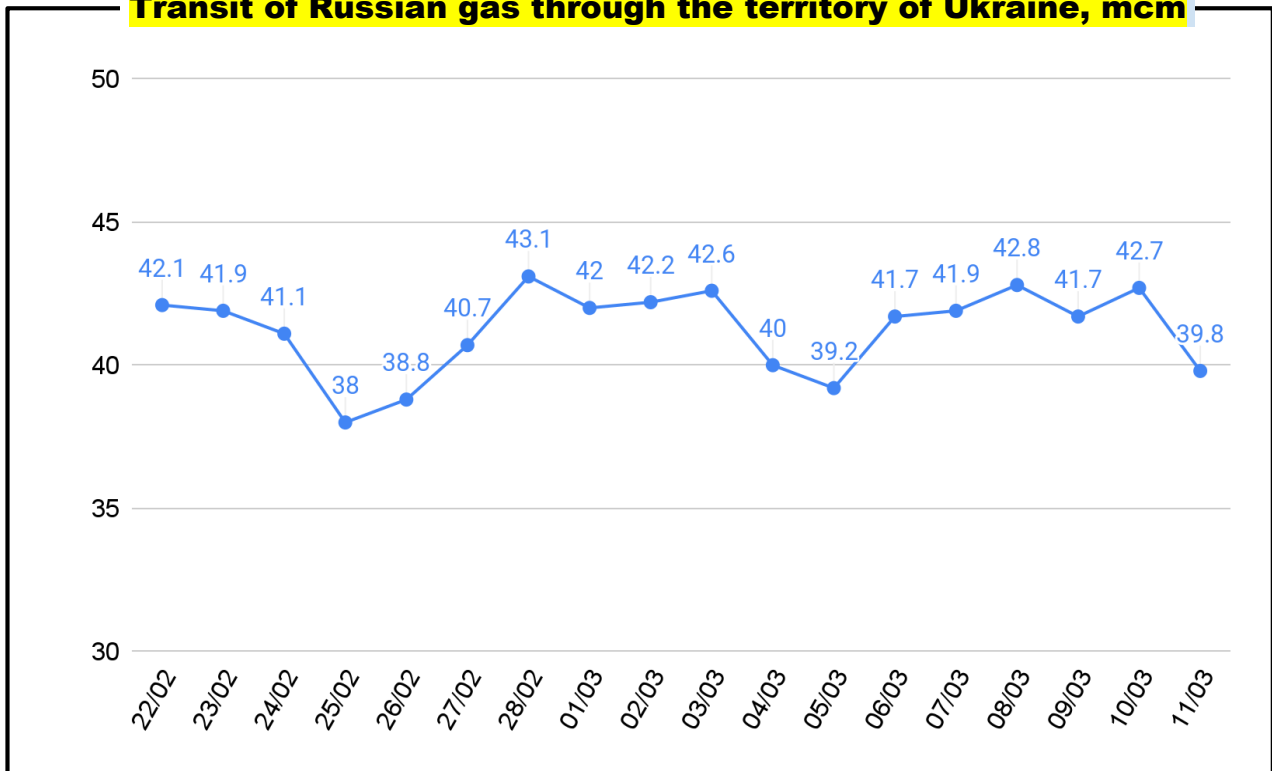
## Oil & Gas Sector

### *Gas system performance*

On March 9-11, the volume of daily gas transit through the territory of Ukraine ranged 39.8-42.7 mcm, i.e. only 36-39% of the capacity contracted by Gazprom (109 mcm per day). There were no transit flows via the Sokhranivka interconnection point.

The physical imports from EU countries were reported at 40.8 mcm (on average – 13.6 mcm/day) and performed via the Beregdaroc interconnection point (VIP Bereg) at 22 mcm, via the Hermanowice interconnection point (VIP Ukraine-Poland) at 7.5 mcm, via the Budince interconnection point at 9.5 mcm and via the Căușeni interconnection point (Ukraine-Moldova) at 1.8 mcm. On March 9-11, on Ukraine's gas system exit, except for transit flows, no gas was transmitted.

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

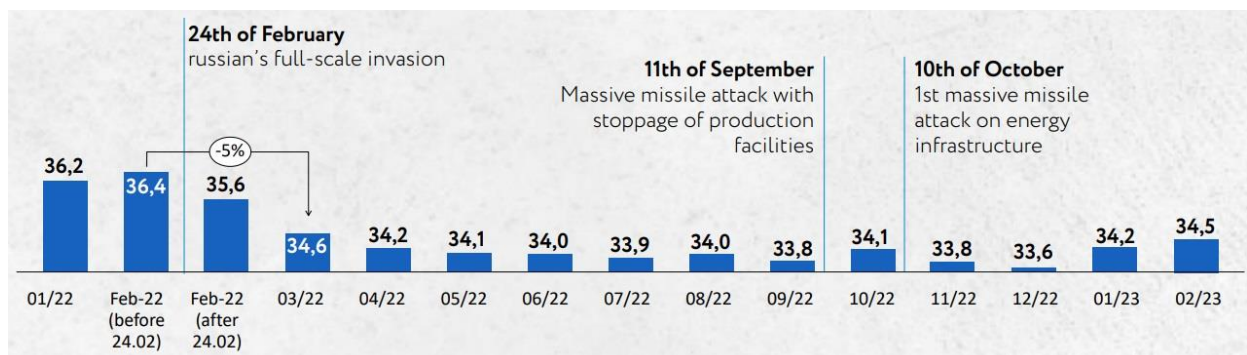


Source: [GTSOU](#)

## Functioning of the natural gas market

In a [presentation](#) to Eurobonds holders, Naftogaz outlined the main sources of gas supply during the 2022/2023 heating season. Total consumption during the heating period is estimated at 13.9 bcm, of which 1 bcm is covered by imports, 5.3 bcm - taken from storage, and 7.6 bcm - production of Ukgazvydobuvannya. The 13.9 bcm number includes the estimated consumption of households (6.6 bcm), district heating companies (5.1 bcm), electricity producers (0.8 bcm), and others (1.4 bcm). Naftogaz notes that 3 bcm are needed for the rest of the heating season (March-April). The company's demand forecast for the next heating period is 14 bcm. Naftogaz also provided information on its share in the Ukrainian gas market - 81% (however, it is unclear which market segment this indicator refers to).

The presentation also shows the average daily production of gas by Ukgazvydobuvannya during the year of the war (see graph). The corresponding indicator dropped from 36.4 mcm/day in February 2022 to 33.6 mcm/day in December 2022. In January and February 2023, the average daily production increased slightly and amounted to 34.2 and 34.5 mcm/day, respectively.



Source: Naftogaz of Ukraine

As stems from the presentation, Naftogaz imports were financed by international aid from the EBRD (225 million EUR [loan](#)), Canada (323 million EUR [aid](#)), and Norway (189 million EUR as [non-refundable grant](#)). Thus, from October 2022 until February 2023, the company managed to purchase 923 mcm of gas on external markets for 737 million EUR.

According to our calculations, the weighted average price was 798 EUR/tcm. In October, the average purchase price by Naftogaz was 1,203 EUR/tcm (as it purchased 187 mcm with EBRD funds). In December, when Naftogaz bought 414 mcm for 323 million EUR, its price fell to 780 EUR/tcm. In February, Naftogaz purchased 322 mcm for 189 million EUR, i.e. at an average price of 587 EUR/tcm.

At the same time, Naftogaz provided bondholders with a new proposal (revised working scenario) on restructuring payments for Eurobonds maturing in 2022 and 2026. For the 2022 notes, it is proposed to defer the payment of principal until July 19, 2024 (50%) and July 19, 2025 (50%). Also, payments of interest due in January and July 2023, and in January 2024, are proposed to be deferred until July 19, 2024; the July 2022 payment is proposed to be paid immediately upon reaching an agreement. For the 2026 notes, the payment of principal is proposed to be postponed to November 8, 2027 (50%) and November 8, 2028 (50%). The four planned payments of interest due in November 2022, May and November 2023, and May 2024 are proposed by Naftogaz to be deferred until November 8, 2024. In addition to these conditions, interest rates on the 2022 notes are proposed to increase from 7.375% to 7.65% from the date of approval of the consent solicitation.

## ***Disruption and resumption of supply***

In the presentation, Naftogaz [reported](#) about 240,000 consumers remaining with no gas supply.

The **Dnipropetrovsk, Donetsk, Luhansk, Zaporizhzhia, Kherson, Mykolaiv, and Kharkiv regions** had the most challenging situation.

In the **Donetsk region**, gas infrastructure in the city of Kostyantynivka [was damaged](#) twice in the last three days due to enemy's shelling.

In the **Zaporizhzhia region**, as of March 12, 14,576 households in 37 settlements remained [without gas supply](#) in the controlled territories. On March 11, a high-pressure gas pipeline was damaged due to shelling in the city of Zaporizhzhia. Consequently, gas supply was cut off to 10 enterprises, institutions, and organizations.

In the **Kherson region**, the local DSO [continued](#) gas supply restoration in 4 settlements of the Velyka Oleksandrivka community. Due to the extensive mining of territories and damage to infrastructure, it takes longer than planned. For the duration of the works, no gas distribution fee shall be charged.

In the **Mykolaiv region**, according to the Regional Military Administration, as of March 13, 1,386 gas infrastructure facilities (no change as compared to March 10) were damaged during the war, as a result, 5,213 consumers (-8) [remained with no gas supply](#).

In the **Kharkiv region**, the local DSO [continued](#) restoration works in the Kupyansk district. During the weekend, the emergency dispatch service eliminated leaks on low-pressure gas pipelines of six residential buildings, which emerged due to enemy's shelling.

Operational information on gas supply in other affected regions was not available at the time of the review preparation.

# Countermeasures of Ukrainian Companies and Public Authorities

The President Volodymyr Zelenskyi [noted](#) that Ukrainians have already received 12 million LED lamps in exchange for old incandescent lamps, which saves up to 600 MW of energy. He urged Ukrainians to use the lamps exchange program.

Zelenskyi also [enacted](#) the National Security and Defense Council decisions on the sanctions on 120 individuals and 287 legal entities. Among the sanctioned companies are a number of Russia-linked betting ones - Sportloto, SportBet, Bet.ru, KredytServis, Fortuna, First International Betting Company, Parimatch, and others.

Following the G7+ ministerial meeting, the Minister of Foreign Affairs Dmytro Kuleba [announced](#) the readiness of "energy coalition" to help prepare for the coming winter and invest in Ukraine's long-term energy modernization. Also, the Italian Foreign Minister Antonio Tajani [announced](#) that his government is organizing a conference on April 26 on Ukraine's reconstruction with the participation of Italian companies.

The government of Ukraine has allocated 5 million UAH from the State Budget (reserve fund) to implement a pilot project for the construction and repair of energy infrastructure. "The funds will be allocated to the State Agency for Reconstruction and Development, which will work in coordination with the Ministry of Energy, the State Emergency Service, the General Staff of the Armed Forces and critical infrastructure operators," [said](#) the Prime Minister Denys Shmyhal. The project's goal is to restore energy facilities so that they meet wartime security requirements.

Shmyhal also [announced](#) the allocation of over 10.2 billion UAH in subsidies to regions and communities to exercise their powers, finance salaries and pay for utilities. "Today we have approved the first stage of distribution of additional subsidies from the state budget, the second stage will be carried out on a quarterly basis." The funds shall help communities balance the financial situation of local budgets, taking into account the number of internally displaced persons, and support communities that have been negatively affected by the Russian invasion.

The Cabinet of Ministers has improved the procedure for compiling a list of territories with military operations are underway or temporarily occupied by the aggressor, the Prime Minister Denys Shmyhal [reported](#). From now on, the list is formed in the following way: regional military administrations propose the inclusion of certain territories in the list through an information system; the Ministry of Defense approves or reasonably rejects them; the Ministry for Reintegration of Temporarily Occupied Territories approves the proposals or gives its arguments for rejection. The list will include not only the communities where the fighting is taking place, but also those bordering them or communities bordering Russia or close to the occupied territories.

[According](#) to the Prime Minister, one of the priorities of the Innovations Development Fund (Ukrainian Startup Fund) will be to support products, projects and services aimed at strengthening the Ukrainian army and homeland security. Grant funding and support will now be available to developers of drones and other technologies needed to strengthen Ukraine.

The Cabinet of Ministers has dismissed Valerii Bezus from the position of the Head of the State Agency on Energy Efficiency and Energy Saving of Ukraine. The Head of the Mykolaiv Regional Council Hanna Zamazeyeva was [appointed](#). The reasons for the decision were not disclosed.



At its meeting on March 10, the NEURC [decided](#) to postpone consideration of both issues:

- a draft decision on setting [tariffs](#) for electricity distribution (both RAB and cost+ methodology) for 6 DSOs operating in the combat zones;
- a draft decision to [increase](#) tariffs for electricity distribution services (RAB methodology) for the following stages (i.e. from April 1 and July 1) for 26 DSOs: for the first voltage class - by an average of 20% and 19%; for the second voltage class - by an average of 17% and 16%, respectively.

At the same time, the NEURC stated it [plans](#) to consider raising tariffs for centralized water supply and centralized sewerage in March. As noted, the Regulator is considering tariffs review in two stages: from April 1 and July 1, 2023. [According](#) to the NEURC materials, the increase was planned to be implemented once, from July 1. E.g., the water supply tariff of Kyivvodokanal was proposed to be increased from 15.68 to 18.77 UAH per cubic meter, and for sewerage - from 13.92 to 14.95 UAH per cubic meter. Dnirovodokanal's water supply tariff should have been increased from 16.24 UAH/cm to 19.18 UAH/cm, and sewerage tariff - from 11.74 UAH/cm to 13.15 UAH/cm.

A 1.2 billion UAH subsidy from the State Budget will be allocated to restore the water supply system in Mykolaiv, as the [city council](#) reported. The project to reconstruct the networks will be implemented by Mykolaiv Regional Military Administration, while Mykolaivvodokanal utility will provide technical supervision over the quality and timing of works, and compliance with building codes.

The Ministry of Energy of Ukraine [handed](#) over another supply of humanitarian aid to Ukrhydroenergo (power equipment weighing about 10 tons). The donation includes generators and disconnectors sent to Ukraine by Japan, the Netherlands and the Republic of Korea.

For subscriptions, comments and other questions, please email to: [author@dixigroup.org](mailto:author@dixigroup.org)

### **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).*