



# Russian War Against Ukraine: Energy Dimension

DiXi Group alert

(status as of 12:00, May 20)

**Stop russian nuclear terrorism!**

**Stop the atrocities!**

**Introduce full embargo on russian oil and gas imports now!**

#StopRussianAggression

#StandWithUkraine

## Summary

- **App. 641,100 consumers did not have electricity supply all over Ukraine, while over 184,000 consumers remained without gas supply.**
- The intensity of fighting is illustrated by the fact that, **in the Donetsk region, instantaneous gas consumption increased sharply at several distribution stations** (almost 50 times in some places). Due to numerous damages and heavy shelling, valves were closed on several facilities.
- In Energodar, the satellite city of the Zaporizhzhia NPP, **the occupiers continued to terrorize civilians**. The commander of fire brigade Vitalii Troyan was abducted, and firefighters who went out to protest were beaten and the rescue equipment was damaged.
- **Fires in the Exclusion Zone would not have a significant impact on the radiation background and would not endanger lives and public health - the IAEA.**
- The Minister of Foreign Affairs of Ukraine Dmytro Kuleba believes **the EU will impose an oil embargo on Russia** and its parameters are defined.
- Given the current surplus in coal reserves, **DTEK made a trial export delivery of 50,000 tons of coal to Poland**. The supply of larger amounts is limited by logistical challenges.

# Attacks:

## Donetsk region

In the last 24 hours, 13 settlements of the Donetsk region, including Bakhmut, Siversk, Avdiivka and Lyman, were shelled from aircraft, multiple launch rocket systems "Grad", tanks and heavy artillery, killing 5 civilians and injuring 5, as the National Police [reported](#). The shelling damaged at least 38 residential facilities, including 19 homes, medical and health facilities, a sports complex, a shopping mall, and critical infrastructure facilities. Due to numerous damage to the infrastructure, [valves have been closed](#) at gas control points (distribution points and cabinet control points), gas distribution stations and some 500+ mm gas pipelines.

The city of Mariupol, which was almost destroyed by the Russians, is on the brink of environmental and humanitarian disaster, [reported](#) the Mariupol City Council member Maksym Borodin. Among the main threats were the lack of drinking and technical water, sewage, hospitals, medical staff and medicines, famine, burial of the dead and the organization of landfills near residential buildings, water supply and sewerage facilities. In addition, the occupiers fired at metallurgical plants (Azovstal Iron & Steel Works, Ilyich Iron and Steel Works) for a long time, which could provoke contamination of soil and water basins. At the moment, [the Ministry of Environmental Protection and Natural Resources](#) cannot confirm or deny the fact of pollution of the Azov Sea with chemicals - to assess the situation and the level of environmental damage, experts must reach the area.

## Luhansk region

The Russian troops were conducting offensive operation to the cities of Lysychansk and Severodonetsk, trying to restrict the Luhansk region from connecting with other regions by capturing the Lysychansk-Bakhmut road, [reported](#) the Luhansk Regional Military Administration Head Serhii Haidai. As a result of the shelling in Severodonetsk, 12 civilians were killed and more than 40 were injured, 70% of multi-apartment buildings were [destroyed](#) or damaged. The situation was not the best in the nearby settlements: 17 houses were destroyed in [Pryvillia](#), 14 in Novodruzhesk, 12 in Lysychansk, 6 in [Zolote](#), 11 more in Nyrkove, Vrubivka and Rubizhne. It was impossible to count the damage in the town of Toshkivka, where fighting continued.

## Kharkiv region

During the day, the Russian occupiers fired from multiple rocket launch systems "Grad", "Smerch", and "Uragan" on the Kyivskiy district of Kharkiv, and the settlements of Saltivka and Oleksiivka, [reported](#) the Kharkiv Regional Military Administration Head Oleh Syniehubov. In the city of Derhachi, a shell hit and destroyed a private house, as a result of the shelling a garage and a car caught fire in the village of Mala Danylivka, and 3 people were injured in the town of Shevchenkove. Fighting continued close to the settlements of Ternova and Vesele, and enemy shelling was recorded near the village of Ruski Tyshky. [According to](#) Deputy Chief of the Main Operations Department of the General Staff of the Armed Forces of Ukraine Oleksiy Hromov, since May 5, units of the Armed Forces of Ukraine had liberated 23 settlements in the Kharkiv region from Russian occupation.

## Sumy region

[According to](#) the General Staff of the Armed Forces of Ukraine, during the day, the Russian military carried out artillery and mortar shelling on 6

settlements of the region ([Esman](#), Sopych, Seredyna-Buda, Boyaro-Lezhachi, Brusky and Stari Vyrky).

### **Chernihiv region**

During the day, the enemy fired on the village of Hremyach in the Chernihiv region from artillery and mortars, as the General Staff of the Armed Forces of Ukraine [reported](#). Besides, the enemy was building fortifications of its positions around the settlement of Azarovka (Bryansk region, Russian Federation) close to the border. [According to](#) the Chernihiv Regional Military Administration Head Vyacheslav Chaus, more than 900 power supply facilities were damaged during the active fighting in the region, however, Chernihivoblenergo specialists had already managed to carry out priority restoration works and reconnect over 95% of settlements to power supply.

### **Mykolaiv region**

The Russian occupiers continued to fire on the territory of the Mykolaiv region with multiple rocket launch systems "Smerch", purposefully destroying residential quarters, infrastructure and production capacities of the region, as the Operational Command "South" [reported](#). [According to](#) the Mykolaiv Regional Military Administration, as of May 20, since the beginning of the Russian invasion 3,557 residential facilities were partially or completely damaged in the region, in particular 2,529 facilities of housing stock (+26 houses), 283 electricity, 145 gas, 53 heat and 16 water supply facilities.

### **Kherson region**

In the Kherson region, the enemy continued to carry out provocative shelling of occupied settlements: in particular, using air defense equipment, shooting down its own missiles and pretending the residents were shelled by the Ukrainian military, as the Operational Command "South" [reported](#). The Russian military shelled the town of [Chornobaivka](#) and tried to present it as the actions of the Armed Forces of Ukraine. Due to the critical situation in the occupied settlements, destroyed houses, mined roads, bridges and fields, the residents were trying to leave the region, but the occupiers blocked entrances and exits and fired on evacuation columns. The representative of the occupying authority of Crimea Vladimir Konstantinov [stated](#) that, using the Kherson railway branch, the economy of the annexed Crimea and the south of Russia will be developed.

### **Zaporizhzhia region**

[According to](#) the Zaporizhzhia Regional Military Administration, in the last 24 hours, as a result of hostilities, electricity supply was disrupted to 290 consumers in 2 settlements of the Polohy district, and resumption of supply was scheduled for May 20. In addition, a low-pressure inlet gas pipeline in the city of Orikhiv was damaged. In the city of [Vasylivka](#), in front of the occupiers' checkpoint, more than 1,000 cars were waiting in line as the Russian military did not allow them neither enter the territory controlled by Ukraine, nor return in the opposite direction.

### **Dnipropetrovsk region**

On the night of May 20, the Russian troops fired on the village of Velyka Kostromka, located on the border with the Kherson region, and broken windows in residential houses, but no one was injured, [reported](#) the Dnipropetrovsk Regional Military Administration Head Valentyn Reznichenko.

# Nuclear and Radiation Safety:

As of 08:00 on May 20, all operating NPPs of Ukraine operated stably, and the radiation, fire and environmental conditions at the station sites and adjacent territories were within the standards. 8 of 15 operating nuclear units were in [operation](#) (3 at the Rivne NPP, 2 each at the Zaporizhzhia and South Ukraine NPPs, and 1 at the Khmelnytskyi NPP), the other 7 were under maintenance or put in reserve. All operating NPPs regularly transmit data from station monitoring systems to the IAEA.

## **Chornobyl NPP Exclusion Zone**

Given the intensification of seasonal forest fires in the Exclusion Zone, the IAEA Director General Rafael Grossi [said](#) that, given previous experience, such fires will not have a significant impact on the radiation background. Grossi also agreed with the relevant radiological assessments of the State Nuclear Regulatory Inspectorate (SNRI) and the State Agency for Exclusion Zone Management (SAEZM) that the fires would not endanger lives and public health.

To remind, SAEZM reported a significant increase in the level of fire danger in the Exclusion Zone due to dry and windy weather, as well as the large number of mines and flares left by the occupiers, which became additional sources of ignition. In addition, the IAEA plans to [send](#) another technical mission to the Chornobyl NPP site in the coming weeks to help with radiation protection, safety of radioactive waste management, and nuclear safety issues.

## **Zaporizhzhia NPP**

For 78 days in a row, the Zaporizhzhia NPP and the satellite city of Energodar have been under the control of Russian terrorists, who are constantly exerting physical, psychological and informational pressure on the station's employees and residents. ZNPP power units are serviced by Ukrainian personnel with proper rotation, but the plant's nuclear and radiation safety are under constant threat.

As of 08:00 on May 20, the radiation background on the territory of the ZNPP industrial site and the sanitary protection zone of the station (8-12  $\mu\text{R/h}$ ) remained [within the standards](#); gamma background in the Zaporizhzhia region was also [stable](#) (6-12  $\mu\text{R/h}$ ) and did not pose a threat to life and public health.

The occupiers continued to terrorize Energodar and kidnap people. In particular, on May 18, the occupiers [abducted](#) the commander of the fire department Vitalii Troyan. The Ukrainian firefighters, which took part in the protests, were subjected to [force](#) by the Russian military, including beatings and damage to fire and rescue equipment; the deputy commander of the fire brigade was also [captured](#).

**The presence of Russian terrorists at nuclear facilities poses extremely high threats to nuclear and radiation safety on a global scale! Ukraine demands that the actions of Russia and Rosatom be recognized as nuclear terrorism, which aims to intentionally violate the security of nuclear power plants, international law and basic human rights through the use of genocide, ecocide and encroachment on the country's sovereignty.**

**We call on international partners to increase pressure on the IAEA, whose actions may prevent acts of nuclear terrorism by Russia. At the same time, it is critical to minimize Russia's influence on IAEA policies and activities, in particular by removing all Russians from key positions in the Agency's Secretariat, limiting their access to information about Ukraine's nuclear power plants.**

**We also emphasize the need to impose tough sanctions on the management, staff, products, international projects of Rosatom and in general, the nuclear industry of the aggressor country!**

## Electricity Sector:

### ***Power system operation***

For over 2 months, Ukraine's power system has been stably operating in trial synchronous mode with the Continental Europe network (ENTSO-E). Commercial exports of electricity to Poland via the Dobrotvirskaya TPP - Zamosc transmission line [remained](#) at the stable schedule with a maximum level of 210 MW during the day. Exports to Moldova [fluctuated](#) during the day and were performed at an average level of about 150 MW.

In addition, there are technical [cross-border](#) flows between the energy systems of Ukraine and Eastern European countries (Romania, Hungary and Moldova). The current cross-border capacity between the power system of Ukraine and ENTSO-E is about 2 GW, and potentially can be increased to 4-5 GW. However, the trial mode of synchronous operation does not provide for full-fledged commercial exports/imports of electricity.

Ukrenergo [continued](#) to restore the damaged energy infrastructure. Particularly, in the central region of Ukraine, assembling and preparation for the installation of new metal supports are being completed on a 750 kV line, with cables being repaired in the damaged areas. At the same time, cables were being repaired and pulled on six more sections of a 330 kV line. At a 750 kV substation, the installation of new equipment at one of the cells was underway, adjusting the equipment at the other cell after live tests were underway. In the southern region, the installation of equipment at a 330 kV substation was underway. In the eastern region, the inspection of two 330 kV lines continued, which is hampered by demining of entrances to the lines and their routes.

### ***Electricity market performance***

**Day-ahead market (DAM):** As of May 20, the DAM weighted average settlement price has virtually [not changed](#) and amounted to 2,308.91 UAH/MWh (-0.8% vs the previous trading day). In general, on May 16-20, the price remained relatively stable and fluctuated between 2309-2373 UAH/MWh. At the same time, the dynamics of exchange prices in the Eastern European markets was diverse, which had some influence on the gap with Ukraine. The prices in Slovakia, Hungary and Romania were almost equal and 2.9 times [higher](#) than the DAM Base price index of Ukraine, while the spread to Poland was narrower at app. 2 times.

The total volume of trading on DAM slightly [decreased](#) to 15,259.3 MWh (-5.2% vs the previous day), although it still remained relatively low. At the same time, the insignificant decrease in supply to 83,648.7 MWh (-0.7% vs the previous day) led to an increase in DAM surplus - for the fourth day in a row, the gap with the volume of purchase bids remained relatively stable at about 5.5 times. [The structure of electricity](#) purchase on DAM has changed slightly: 79.2% belonged to suppliers, 20.5% to system operators, 0.3% to traders and producers.

**Intraday market (IDM):** On May 19, the weighted average price of electricity on IDM [decreased](#) slightly and amounted to 2,500.58 UAH/MWh (-8.7% vs the previous day). At the same time, the total volume of trading increased significantly to 363.2 MWh (+19.1% vs the previous day). At the same time, after several days of declining dynamics, the volume of supply increased to 32,820.4 MWh (+10.4%), which, however, contributed to a certain reduction in the surplus on IDM. The gap with the volume of purchase bids decreased from 99 to 91 times. In the [purchasing structure](#), the dominant part (96.1%) was occupied by suppliers, 3.7% by system operators, 0.1% by producers.

## Disruption and resumption of supply

[According](#) to the Ministry of Energy, as of May 19, 696 settlements were disconnected from electricity, a total of app. 641,100 consumers. During the day, electricity supply was resumed to app. 50,800 consumers (including about 37,700 disconnected due to technological disruptions).

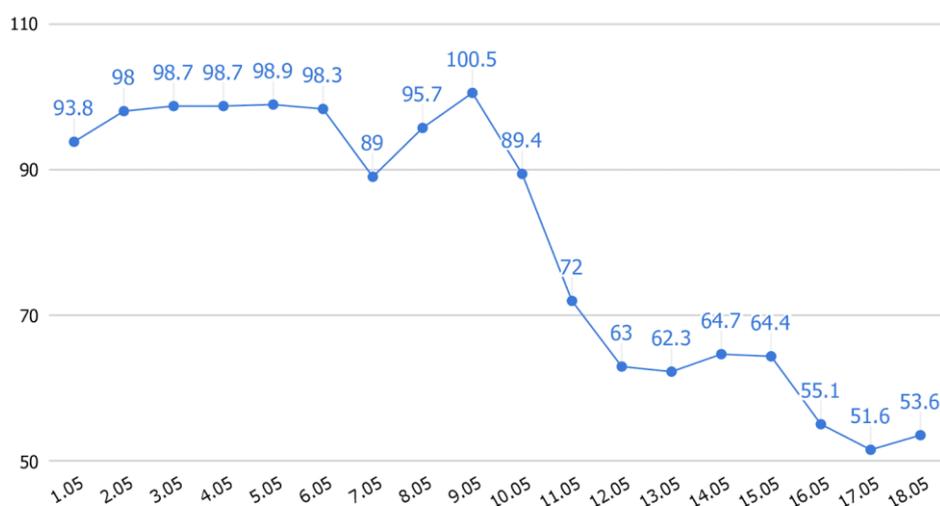
Large-scale power supply disruptions and, consequently, active recovery works were taking place:

- in the **Donetsk region**, according to DTEK, supply to 1,943 consumers in 8 settlements was resumed during the day; 277 settlements ([according](#) to the Cabinet of Ministers, 331,900 consumers in total) were left without electricity supply;
- in the **Luhansk region**, [according](#) to the Cabinet of Ministers, 128,300 consumers were left without electricity supply;
- in the **Kharkiv region**, [according](#) to the Cabinet of Ministers, 91 000 consumers were still with no electricity supply; supply to 4,000 consumers was resumed during the day;
- in the **Kyiv region**, [according](#) to the Cabinet of Ministers, supply to 12,500 consumers (incl. 300 consumers disconnected as a result of hostilities) was resumed during the day;
- in the **Zaporizhzhia region**, as of 07:00 on May 20, 22,463 consumers in 77 settlements were [left without electricity supply](#);
- in the **Mykolaiv region**, [according](#) to the Cabinet of Ministers, supply to 200 consumers was resumed during the day;
- in the **Chernihiv region**, [according](#) to the Cabinet of Ministers , supply to 200 consumers was resumed during the day;
- there was no up-to-date consolidated information on power supply in the **Dnipropetrovsk, Odesa, Kherson and Sumy regions** at the time of the review preparation.

## Gas Sector:

As of May 118, the transit of Russian gas through the territory of Ukraine increased by 2 mcm compared to the previous day and amounted to 53.6 mcm. These volumes are more than twice less than the capacity contracted by Gazprom (109 mcm per day). There were no transit flows via the Sokhranivka interconnection point. Physical imports of gas from the EU were reported from the Hermanowice interconnection point (virtual interconnection point "Ukraine-Poland") at 0.22 mcm.

### Gas transit through Ukraine (at Sokhranivka and Sudzha interconnection points), mcm



Source: [GTSOU](#)

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

The **Donetsk, Luhansk, Zaporizhia, Chernihiv, Kharkiv and Mykolaiv regions** had the most challenging situation in gas supply. [According](#) to the Cabinet of Ministers, as of May 19, over 184,000 consumers were left with no gas supply. Gas supply to more than 2,500 consumers was restored during the day.

In the **Donetsk region**, on [May 19](#), instantaneous gas consumption increased sharply at several distribution stations (almost 50 times in some places). Due to numerous damages and heavy shelling, valves were closed on several facilities, including one of the 500 mm pipelines. Almost 8,000 consumers were left without gas supply in a day.

In the **Luhansk region**, from 12:00 on May 20, after welding works on the sections of a gas pipeline damaged by the Russian shelling, it is planned to restore gas supply in [Severodonetsk](#).

In the **Zaporizhzhia region**, there were no significant changes: 69,982 consumers in 88 settlements [remained](#) without gas supply. Last night, a low-pressure gas pipeline in the city of Orikhiv was damaged. At the same time, in the cities of Orikhiv and Huliaipole, the previously caused damage to low-pressure gas distribution pipelines was eliminated.

In the **Kherson region**, as of 14:00 on May 19, the Vysokopillia community, partially the Velyka Oleksandrivka, Novovorontsovka and Stanislav communities [remained](#) without gas supply. LPG reserves were running out in the Hornostavivka, Velyka Lepetykha and Rubanivka communities; in Novoraysk, Novotroitske and Dolmativka communities, LPG supply has run out.

In the **Mykolaiv region**, as of May 20, 145 gas infrastructure facilities were [damaged](#) due to Russian aggression, and 3,254 consumers were left without gas supply.

In the **Sumy region**, [renovation works](#) and restoration of gas networks damaged by the Russian aggressor continued.

In the **Chernihiv region**, 1,700 consumers in 37 settlements [were left without](#) gas supply.

Operational information on gas supply in the **Kharkiv region** was not available at the time of the review preparation.

## Countermeasures of Ukrainian Companies and Public Authorities

The Minister of Foreign Affairs of Ukraine Dmytro Kuleba is [confident](#) the EU will impose an oil embargo on Russia and its parameters are defined. Although Hungary continues to block the embargo, Kuleba is sure the decision will be made.

The Executive Director of DTEK Dmytro Sakharuk [reported](#) the company had exported 50,000 tons of coal to Poland as a trial supply and was considering regular exports. However, there were serious problems with logistics. Sakharuk noted that, during the seasonal surplus, DTEK could export 100-150,000 tons of coal each month, which would help Poland replace the blocked supplies from Russia.

The Cabinet of Ministers published the Resolution No. [594](#) of May 17, 2022, which suspended government regulation of fuel prices. In particular, the maximum trading margins on retail fuel prices, at 7 UAH/liter for diesel fuel and 6.5 UAH/liter for petroleum, were abolished.

**Sources:**

*The alerts are developed based on collected, verified, and analyzed information reports of over 100 official sources: ministries, state agencies, network operators, and energy companies. Information was collected only from official websites and official social media accounts.*

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