Russian War Against Ukraine: Energy Dimension

DiXi Group alert

(status as of 12:00, May 9)

Stop russian nuclear terrorism!
Set A2/AD and no-fly zones over Ukraine’s nuclear facilities,
impose sanctions on Rosatom!
Stop the atrocities!
Introduce full embargo on russian oil and gas imports!

#StopRussianAggression
#StandWithUkraine

Summary

- The enemy continued to intensify atrocities in the Luhansk region of fighting. Several energy infrastructure facilities were damaged, including repetitive shelling of the refinery in Lysychansk.

- Almost 707,000 consumers did not have access to electricity supply, over 216,600 consumers did not have gas supply in Ukraine.

- The total volume of electricity trading on the intra-day market (IDM) reached the historically lowest level (since its introduction on July 1, 2019), and the surplus on IDM raised abnormally.

- The President of Ukraine Zelenskyi called the G7 countries to find options for influencing the companies and politicians that help Russia bypass international sanctions.

- Gas production in Ukraine decreased by 3.7% per month, according to the Prime Minister Denys Shmyhal.
Attacks:

**Donetsk region**
In the last 24 hours, 15 settlements of the Donetsk region, including Mariupol, Avdiivka, Toretsk and Vuhledar were shelled from aircraft, missiles, tanks and heavy artillery, with 4 civilians killed and 7 injured, as the National Police reported. The shelling damaged at least 31 residential facilities, homes, a medical facility, industrial enterprises and utilities. In addition, the Russian invaders bombed the St. George’s Hermitage of the Holy Dormition Sviatohirsk Lavra of the Moscow Patriarchate in the city of Donetsk.

The situation in the blocked city of Mariupol remained extremely difficult. For more than two weeks, the Ukrainian military had been holding the circular defense of the Azovstal Iron & Steel Works, and heavy bloody fighting was going on inside the facility. To storm the enemy used all kinds of heavy weapons, including naval artillery, aircraft, tanks and multiple rocket launch systems. The evacuation of injured soldiers and medics had not completed.

**Luhansk region**
During the day, the Russian troops opened fire 24 times on residential facilities in the region, and killed civilians, reported the Luhansk Regional Military Administration Head Serhii Haidai. The enemy managed to gain a foothold in positions from which it is convenient to conduct targeted shelling of many infrastructure and transport facilities in the Luhansk region. The latest cases of destruction were in the equipment of the Popasna district water supply system and a high-voltage 200 kV power line near the city of Lysychansk, as a result of which almost 130,000 consumers were left without electricity and about 1 million people without water supply in the territories controlled by Ukraine and occupied since 2014. The accident site was constantly under fire, it was impossible to carry out inspections and repairs.

In the evening of May 8, the Russians again fired on the refinery in the city of Lysychansk, the plant's production facilities - a sulfur production plant and a mixing station - caught fire, and there was a threat of an explosion of a neighboring group of tanks. Extinguishing the fire was impossible due to constant artillery shelling.

According to Haidai, May 9 will be a decisive day for the Luhansk region, because on this day there would be a battle for the main road for evacuation - the route Lysychansk-Bakhmut (the so-called "road of life"). The capture of this road by the enemy would mean the loss of the only connection of the Luhansk region with other regions.

**Kharkiv region**
The situation in the city of Kharkiv and the region remained uneasy, with the Russian troops continuing shelling homes and killing civilians. On May 8, due to the shelling the settlements of Bohodukhiv and Kalynove 5 people were killed, and 5 were injured, as the Kharkiv Regional Military Administration reported.

**Chernihiv region**
On May 8, the Russian troops fired mortars at the outskirts of a village in the Gorodnyansky district of the Chernihiv region, and no one was injured, as the State Border Guard Service of Ukraine reported.

**Sumy region**
In the evening of May 8, the Russian invaders fired twice on the Shostka district of the Sumy region, as the State Border Guard Service of Ukraine
reporte. Border guards recorded 10 bursts of missiles fired from volley fire systems from the territory of Russia. As a result of the shelling, the Jewish cemetery in the city of Hlukhiv was damaged.

**Odesa region**

During May 8, the enemy carried out 9 missile attacks on the Odesa region, and 6 missiles were shot down by the Ukrainian air defense forces, as the Operational Command “South” reported. The attacks damaged a power substation and 6 settlements were left without electricity supply. In addition, a gas pipeline, residential facilities and recreation area were destroyed, and there were victims reported. On May 9, 4 Oniks missiles from the Bastion missile complex from the territory of the annexed Crimea were fired on the Odesa region.

**Mykolaiv region**

According to the Mykolaiv Regional Military Administration, as of May 9, since the beginning of the Russian invasion, 3,185 residential facilities were partially or completely damaged in the region, in particular 2,251 facilities of housing stock, 261 electricity, 132 gas, 53 heat and 10 water supply facilities.

**Zaporizhzhia region**

According to the Zaporizhzhia Regional Military Administration, the enemy continued to fire on the settlements in the region, including Polohy, Orikhiv and Huliaipole. As a result of the shelling, more than 1,000 consumers in 6 settlements of the Polohy district and 465 consumers of the Orikhiv power grids were left without electricity supply. In addition, low-pressure gas pipelines in the city of Orikhiv were damaged.

On May 9, the Russian occupying troops were holding an action "Immortal Regiment" in the temporarily occupied territories of the Zaporizhzhia and Kherson regions, and possible provocations were reported. Russian servicemen continued to commit crimes and atrocities against civilians in the temporarily occupied territories of the Zaporizhzhia region. E.g., in Melitopol, the occupiers were actively taking away business from local entrepreneurs who refused to cooperate. In the city of Polohy, sunflower oil was being stolen and taken out of the oil extraction plant, intended for shipment to foreign partners.

**Dnipropetrovsk region**

On the night of May 9, the Russian troops once again fired on the Zelenodolsk community, reported the Dnipropetrovsk Regional Military Administration Head Valentyn Reznichenko. Attack was made on the outskirts of the village of Velyka Kostromka, leaving several streets without electricity, but without injuring people. On the same day, a child died in the Synelnykove district of the region from the detonation of munitions it found.

**Nuclear and Radiation Safety:**

As of 09:00 on May 9, all operating NPPs of Ukraine were operating normally; radiation, fire and environmental conditions at station sites and adjacent areas were within standards.

It is noteworthy that, after May 6, the IAEA stopped issuing daily news reports on the state of nuclear and radiation safety in Ukraine.
The Ministry of Environmental Protection and Natural Resources has set the State Agency for Exclusion Zone Management a number of restoration tasks, including: creating a concept for transforming the Zone into a modern science hub; develop safety measures for employees; continue communication with international partners on the restoration of the Zone; complete the assessment and inventory of losses due to Russian aggression; restore the operation of the radiation monitoring and communication system; set up access mode; implement measures to restore and preserve the natural environment of the Zone.

Meanwhile, the Chornobyl NPP has resumed operation for charging, testing and maintenance of fire extinguishers, which is an important element of the facility’s safety.

For more than two months, The Zaporizhzhia NPP and the satellite city of Energodar have been under the control of Russian terrorists, who were putting constant physical, psychological and informational pressure on the station’s employees and residents. The ZNPP power units are serviced by Ukrainian personnel with proper rotation, but the nuclear and radiation safety of the plant is under constant threat.

As of May 9, the radiation background on the territory of the ZNPP industrial site and the sanitary protection zone of the station (8-12 μR/h) remains within the standards, the gamma background in the Zaporizhzhia region is also stable at 5-11 μR/h.

According to operative information, the occupiers planned a "holiday parade" in Energodar on May 9, at which a number of provocations were possible to shoot fake videos about the alleged attack of "Ukrainian Nazis" on civilians. The Zaporizhzhia Regional Military Administration also warned that Russian agents disguised as the Armed Forces of Ukraine may attack people who will take part in mass events.

The presence of Russian terrorists at nuclear facilities poses extremely high threats to nuclear and radiation safety on a global scale! Ukraine demands to recognize the actions of Russia and Rosatom as nuclear terrorism, which aims to intentionally violate the security of nuclear power plants, international law and basic human rights with the aim 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 and restricting 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 almost 8 weeks, 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 Dobrotvirksa TPP - Zamosc transmission line remained at the maximum level (210 MW) during the day.

Ukrenergo continued to rebuild damaged energy infrastructure. On May 8, repair crews completed the restoration of one of the 330 kV lines, an essential element in the reliability of electricity supply in Kyiv and the region. The works continued on about 10 sections of the line; gaps were eliminated, cables, lightning protection cables, and other elements of equipment were replaced.

Active work continued on 5 more lines and 3 substations (220-750 kV) in different regions. Open switchgear was repaired at one of the substations in the Kyiv region. The equipment was prepared for installation at another 750 kV substation. At a substation in western Ukraine, the restoration of damaged technical buildings has begun. On the 750-330 kV overhead lines of Kyiv and north-eastern regions, replacing 14 broken supports (10 metal and 4 reinforced concrete) continued.

**Electricity market performance**

**Bilateral contracts market (BCM):** On May 2-6, the Ukrainian Energy Exchange (UEEX) held 14 auctions for the purchase and sale of electricity with delivery in May (5 in specialized sessions, and 9 in commercial ones). Ukrhydroenergo, Guaranteed Buyer, Centrenergo, Donbasenergo, Poltavavodokanal, companies of DTEK Group, several distribution system operators and universal service suppliers initiated trading.

Ukrhydroenergo initiated 5 auctions and sold 193.33 thousand MWh, including 133.61 thousand MWh of base load at prices in the range of 1,906.8-1,920 UAH/MWh and 58.72 thousand MWh in block positions of different supply hours at the weighted average price in the range of 2350.7-2391.9 UAH/MWh. Guaranteed Buyer sold 53.3 thousand MWh of block positions of daylight hours at the weighted average price of 2,165 UAH/MWh. In addition, the auctions for the purchase of the distribution system operators and universal service suppliers, which purchased electricity by individual load profiles, were successful. In total, on May 2-6, 269.55 thousand MWh of electricity was sold in the United Power System of Ukraine zone.

**Day-ahead market (DAM):** As of May 9, after a two-day decline the DAM weighted average settlement price has slightly increased to 2,196.42 UAH/MWh (+2% vs the previous trading day). At the same time, significant increase of exchange prices in the Eastern European markets led to widening of the gap with Ukraine. Prices in the markets of Romania, Slovakia and Hungary were app. 3-3.3 times higher than the Base DAM price index of Ukraine, while the price spread with the Polish market has increased to 1.9 times.

After a significant decline last week, the total volume of trading on DAM stabilized at 17,915.8 MWh (+3.6% vs the previous day). At the same time, for more than 2 weeks, there is a clear trend of supply reduction. As of May 9, the volume of sale bids amounted to 79,779.3 MWh (-2.6% vs the previous day), and market surplus - the gap with the volume of purchase bids - slightly decreased to 4.5 times. At the same time, the structure of electricity purchase on DAM practically has not changed: 83.2% belonged to suppliers, 16.6% to system operators, 0.2% to traders and producers.

**Intraday market (IDM):** On May 8, the weighted average price of electricity on IDM slightly increased and amounted to 2,755.55 UAH/MWh (+1% vs the previous day). At the same time, the total volume of trading dropped to the lowest level in IDM history (i.e. from July 1, 2019) - 35 MWh (-83.5% vs the previous day). At the same time, the relatively high supply at 38,983 MWh (+11.4%) maintained a significant market surplus - the gap with the volume of purchase bids reached an abnormal level of 1114 times. The structure of purchase on IDM has undergone significant changes: 80% was occupied by suppliers, 20% by network operators.
**Disruption and resumption of supply**

According to the Cabinet of Ministers, as of 20:00 on May 8, 811 settlements were disconnected from electricity, a total of almost 707,000 consumers. During the day, electricity supply was resumed to app. 9,600 consumers.

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

- in the **Donetsk region**, according to the Cabinet of Ministers, supplies to 2,800 consumers were resumed during the day; 328,000 consumers remained without electricity supply;
- in the **Luhansk region**, according to the Regional Military Administration, 43 settlements (128,273 consumers) were left without electricity supply;
- in the **Kharkiv region**, according to the Cabinet of Ministers, supply was resumed to 1,500 consumers during the day; 171,000 consumers were still with no electricity supply;
- in the **Kyiv region**, according to the Cabinet of Ministers, supply to 4,000 consumers was resumed during the day;
- in the **Zaporizhzhia region**, as of 07:00 on May 9, 23,008 consumers in 82 settlements were left without electricity supply;
- in the **Kherson region**, according to the Cabinet of Ministers, supply to 800 consumers was resumed during the day;
- in the **Mykolaiv region**, according to the Cabinet of Ministers, supply to 200 consumers was resumed during the day;
- in the **Kirovohrad region**, according to the Cabinet of Ministers, supply to 300 consumers was resumed during the day;
- there was no up-to-date information on power supply in the **Sumy, Chernihiv and Dnipropetrovsk regions** at the time of the review preparation.

**Gas Sector:**

As of May 7, the transit of Russian gas through the territory of Ukraine decreased by 9 mcm as compared to the previous day and amounted to 89 mcm. These volumes account for less than the capacity contracted by Gazprom (109 mcm per day). Physical imports of gas from the EU were reported from the Beregdaroc interconnection point (virtual interconnection point “Bereg”) at 0.21 mcm.

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

![Graph showing gas transit through Ukraine](source: GTSOU)
Disruption and resumption of supply

The Donetsk, Luhansk, Zaporizhzhia, Kharkiv, Kyiv, Kherson, and Mykolaiv regions had the most challenging situation in gas supply. According to the Cabinet of Ministers, as of 20:00 on May 8, gas supply was restored to 1,380 consumers; over 216,600 consumers were left with no gas supply.

In the Kyiv region, the local DSO continued to work on intensively restoring the natural gas distribution service. In 119 settlements (117 completely and 2 partially), gas supply was restored to 134,550 consumer facilities. In the city of Irpin, gas supply was restored by 66%. Restoration works continued in the village of Moshchun. At the same time, 15 consumer facilities in the village of Pochepyn (Bucha district), where de-mining work continued, remained without gas supply.

In the Donetsk region, one of the gas distribution stations was shut down by GTSOU, leaving more than 1,500 consumers without supply. The local DSO managed to save gas supply to 164 households due to fast repairs (installation of bandages).

In the Luhansk region, the situation with gas supply remained difficult: only 6 settlements had gas supply (3 completely and 3 partially; 45,375 consumers).

The Mykolaiv Regional Military Administration reported that, as of May 9, the situation remained unchanged: the number of damaged infrastructure facilities amounted to 132, and 2,217 consumers remained without gas supply. Restoration works were underway.

The Kharkiv Regional Military Administration Head Oleh Syniehubov reported that in the village of Tsyrkuny, liberated from the occupiers, the restoration of critical infrastructure will take place only after demining of the territory.

In the Kherson region, as of May 8, the Vysokopillia, Mylove, Novovorontsovka, Nova Oleksandrivka, Novoraysk, and Nova Oleksandrivka communities remained without gas supply. The Hola Prystan, Nova Oleksandrivka, and Stanislav communities partially remained without gas supply.

Operational information on gas supply in the Zaporizhzhia, Chernihiv and Sumy regions was not available at the time of the review preparation.

Countermeasures of Ukrainian Companies and Public Authorities

The President of Ukraine Volodymyr Zelenskyi at the G7 online meeting urged the member states to find ways to influence the companies and politicians, who help Russia bypass international sanctions. In particular, he mentioned Hungary, which receives oil through pipelines in Ukraine, while the country's politicians not only block the supply of fuel to Ukraine via its territory, but also try to slow down every sanction against Russia, including the oil embargo.

At the online meeting, Zelenskyi also named five tools to support Ukraine: new steps in Ukraine's defense support; new sanctions against Russia; financial support; partnership in the reconstruction of cities, regions and industries; and ensuring the stability of the global food market. In the context of the new sanctions, the President noted that all Russian officials, law enforcement officers and judges working for tyranny should be on the sanctions list. According to him, visa restrictions are also needed for Russian citizens so that they "do not use the free world for entertainment and shopping". At the meeting with the Croatian Prime Minister Andrej Plenković, Zelenskyi also urged for an increase of sanctions on Russia until it ends the war and respects freedom in Europe.

The Minister of Foreign Affairs Dmytro Kuleba stated that, in a telephone conversation with the US Secretary of State Anthony Blinken, he coordinated further steps on new tough US sanctions against Russia. It was noted the parties also discussed ways to unblock Ukrainian food exports.
The Head of the Presidential Office Andrii Yermak stated that Ukraine would suggest to its allies to block Russia's attempts to bypass sanctions with the help of third countries. In particular, he referred to an order of the Russian Ministry of Industry and Trade, which aims to ignore the ban on rights holders on re-exports of goods.

The Prime Minister of Ukraine Denys Shmyhal stated that, until the next heating season, Ukraine considers "capacity to inject gas through pipelines from Europe" as sufficient. At the same time, the government is working with the European partners to increase the capacity to get gas from Europe, LNG terminals, and Turkey. According to Shmyhal, domestic gas production, due to hostilities in the eastern regions and in the south of Ukraine, decreased by 3.7% per month. Also, gas consumption by industry decreased due to the economic decline and suspension of operations by large chemical and steelmaking companies in Ukraine. According to him, it is still unknown what will happen to gas prices after September, but the government will do everything to make them "relatively comfortable" for households.

He also predicted an increase of fuel prices by several UAH per liter in the near future. Shmyhal noted that, due to the destruction of infrastructure, the logistics of fuel supply has changed and become more expensive. "The logistics chain is now formed on the western border, where oil products arrive from European ports, in fact supplying the entire territory of Ukraine", the Prime Minister said.

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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