Russian War Against Ukraine: Energy Dimension

DiXi Group alert
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#StopRussianAggression
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Summary

• According to Energoatom, the occupiers are preparing a serious provocation at the Zaporizhzhia NPP - plan to accuse the Ukrainian personnel of storing munitions on the station site and, under the guise of "inspection", drain the cooling pools and stop the pumps supplying water to the safety systems. These actions could threaten nuclear safety and increase the risk of a global disaster.

There is a probability, that under the guise of "inspection" the occupants can place explosives, unexploded ordnance, other munitions into concrete pools, accuse the ZNPP workers and make it a formal reason to invite the IAEA representatives to present these "facts" and use in propaganda.

• The Russian military launched an artillery strike on the territory of the Kryvyi Rih TPP, the consequences are being clarified. At the same time, on June 27, the Russian Ministry of Defense "announced" the strike, accusing Ukraine of intending to blow up the facility.

• Following the ENTSO-E decision to resume electricity exports from Ukraine (with a limited pilot capacity of 100 MW), the first daily capacity auction was held on June 28 (Romania direction) with the delivery on June 30. The capacity was booked by 5 companies; due to significant competition, the marginal prices for different hours of the day ranged from 1,471 to 6,050 UAH/MWh.
• The Minister of Foreign Affairs Dmytro Kuleba called to exclude Gazprombank from SWIFT, as - according to a media investigation - it is used to both receive European payments for oil&gas and pay salaries to the Russian military.

• The Ministry of Energy canceled its Order No.187, under which all electricity suppliers were to be obliged purchasing at least 10% of the consumption portfolio (every 10 days) on the DAM. The relevant clause should come into force on July 1.

Attacks

In the afternoon of June 28, the Russian military launched an artillery strike on the territory of the Kryvyi Rih TPP, the consequences are being clarified, reported the Dnipropetrovsk Regional Council Chair Mykola Lukashuk. At the same time, on June 27, the Russian Ministry of Defense "announced" a strike on the TPP, accusing Ukraine of intending to blow up the facility. Representatives of the operating company DTEK have denied this fake as justifying the future attack by the Russian occupation forces.

Nuclear and Radiation Safety

Zaporizhzhia NPP

According to Energoatom, the occupiers are preparing a serious provocation at the Zaporizhzhia NPP. In particular, they plan to accuse Ukrainian operating personnel of storing munitions on the station site. To this end, the occupiers detained several workers and tortured them to demand a "confession" that they allegedly dropped weapons / ammunition in the concrete cooling pools in March.

Under this contrived pretext, the occupiers were insisting on draining the cooling pools for "inspection" and stopping the pumps supplying water to the safety systems of power units. Thus, the ZNPP safety systems may be left without cooling, which is a serious violation and may threaten nuclear safety. In addition, such work should not be carried out in the warm season due to the risks of overheating and equipment failure.

At the same time, the issue of controlling the occupiers' actions remains problematic, as under the guise of "inspection" they can place explosives, unexploded ordnance, other munitions into concrete pools, accuse the ZNPP workers and make it a formal reason to invite the IAEA representatives to present them these "facts" and use in propaganda. On its part, Energoatom emphasized any weapon found on the ZNPP territory is the weapon of the occupiers, which they use to commit nuclear terrorism, which threatens a global nuclear and radiation disaster.

Electricity Sector:

Power system operation

Ukraine continued commercial exports of electricity to Poland via the Dobrotvirsk TPP - Zamosc transmission line at the stable schedule of 210 MW hourly. Exports to Moldova were at 142 MW. At the same time, at daily auctions, Energoatom continued to book 150 MW of export capacity to Moldova, and DTEK Zakhidenergo - 69 MW to Poland (both on flat schedules). Technical cross-border flows continued between the energy systems of Ukraine and other Eastern European countries (Slovakia, Hungary, Poland, Romania, and Moldova).

As a result of the ENTSO-E decision to resume electricity exports from Ukraine to the EU (with a limited pilot capacity of 100 MW, Romania direction), the first capacity auction was held on June 28
with the delivery on June 30. The capacity for each hour of the day was booked by 5 companies with different ratios - DTEK Zakhidenergo (0-56 MW), LE TRADING UKRAINE (20-30 MW), ERU TRADING (5-15 MW), ARTLEX ENERGY (0-45 MW), NEXTTRADE (7-10 MW). At the same time, due to significant competition, which consisted of 7-8 companies, the marginal prices for different hours of the day ranged from 1,471 UAH/MWh (at 03:00) to 6,050 UAH/MWh (at 23:00). To compare, such destinations as Poland and Moldova, due to the lack of competition, are traditionally distributed at “zero” price. Ukrenergo’s revenue from the auction amounted to over 10 million UAH. The auction also offered capacity for the imports of electricity from Romania, which, due to the lack of demand, was not booked. Further auctions will be held daily according to the schedule of Ukrenergo.

Ukrenergo continued repairing damaged network infrastructure. In the eastern region, a 330 kV overhead line was put into operation and the repair of another 330 kV line was being completed. In the central region, several stages of restoration works on various types of equipment have been completed. In the northern region, restoration of the relay protection system at a 330 kV substation was underway.

**Electricity market performance**

**Bilateral contracts market (BCM):** Since the start of trading on the Ukrainian Energy Exchange in 2020, Guaranteed Buyer has held 100 auctions for the sale of electricity produced from RES. In particular, in 2021, Guaranteed Buyer held 41 auctions and sold app. 5.04 million MWh. At the same time, in January-May 2022, the company held 51 auctions, selling 2.04 million MWh. For comparison, for the same period in 2021, 1.69 million MWh were sold.

According to the National Energy and Utilities Regulatory Commission Chair Kostiantyn Ushchapovskyi, possible ways to repay debts to RES electricity producers could include loans and provision of sovereign guarantees, donor funds, soft loans and other borrowings. Additionally, Guaranteed Buyer may allow producers to leave the balancing group and sell electricity in the market (Feed-in-Premium model); introduce a system of issuing guarantees of origin and "green" certificates. In addition, Guaranteed Buyer may be provided an opportunity to export electricity.

**Day-ahead market (DAM):** As of June 29, the weighted average settlement price almost did not change at 2,344.64 UAH/MWh (-0.5% vs the previous day). At the same time, exchange prices in the Eastern European markets have shown diverse dynamics. The Base DAM indices of Romania, Slovakia and Hungary were 4.2-4.6 times higher than the Base DAM index of Ukraine; while the price spread with Poland was 3.8 times.

The total volume of trading somewhat decreased to 13,873.1 MWh (-12.6% vs the previous day). At the same time, the supply almost did not change at 75,375.9 MWh (+0.8%). The combination of these factors contributed to the slow growth in market surplus: the gap with the volume of purchase bids increased from 4.7 to 4.5 times. In the structure of purchase, 67.4% was occupied by suppliers, 32.5% by system operators and 0.1% by producers.

**Intraday market (IDM):** On June 29, the weighted average price did not change at 2,480.56 UAH/MWh (-0.3% vs the previous day). At the same time, the total volume of trading showed a significant increase up to 460 MWh (+187.7% vs the previous day), and the supply continued the downward trend - up to 32,356.9 MWh (-24.7%). In combination with the dynamics of trading this led to a significant decrease in the market surplus - the gap with the volume of purchase bids dropped from 268 to 70 times. In the structure of purchase, the dominant part (87.6%) was occupied by suppliers, 11.47% by system operators, 0.7% by producers.

**Disruption and resumption of supply**

According to the Ministry of Energy, as of June 28, due to the damage caused by hostilities, a total of app. 604,100 consumers in 770 settlements were disconnected from electricity supply. During the day, electricity supply was resumed to app. 35,670 consumers.

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

- in the Donetsk region, according to the local DSO, electricity supply was resumed to 9,285 households in 8 settlements of the Toretsk, Slovyansk and Bakhmut districts. Residents of
318 settlements were still offline (according to the Ministry of Energy - about 348,000 consumers);

- in the Luhansk region, according to the Ministry of Energy, more than 128,200 consumers were left without electricity supply;

- in the Kharkiv region, according to the Ministry of Energy, app. 35,300 consumers remained without electricity and supply to 19,000 consumers was resumed during the day. In particular, in the city of Chuhuiv, power lines interrupted by fragments of munitions and damaged pylons were replaced, and power supply to app. 800 households was restored. The DSO specialists managed to reconnect 3,000 consumers in the town of Pechenihy, villages of Zarozhne and Tetleha;

- in the Zaporizhzhia region, according to the local DSO, as of 07:00 on June 29, 21,157 consumers in 79 settlements were left without electricity supply. During the day, the DSO specialists resumed supplies to 2,641 consumers in the Orkhiv district and eliminated 4 single disconnections in the city of Zaporizhzhia. At the same time, on the morning of June 29, new damages were identified in the Vasylivka and Tokmak power networks, with 152 consumers offline;

- in the Mykolaiv region, according to the Regional Military Administration, as of June 29, 476 power supply facilities were partially or completely damaged, including 24 on the last day. 95 settlements (6 of them partially) of the Bashtanka and Mykolaiv districts were disconnected. According to the Ministry of Energy, supplies to 270 consumers were restored during the day;

- in the Kherson region, according to the Regional Military Administration, as of 12:00 on June 28, among the communities with connection established, the Vysokopillia community (22 settlements) was completely without electricity supply and the Novovorontsovka and Muzykivka communities (at least 7 settlements) - partially;

- in the Dnipropetrovsk region, according to the Regional Military Administration, on the night of June 29, the enemy fired on the territory of the Zelenodolsk community, damaging power lines in one of the settlements;

- in Odesa region, according to the local DSO, emergency crews have completed work to restore supply to 643 consumers, which were disconnected due the missile attack on June 27;

- in the Chernihiv region, according to the Regional Military Administration, as of 06:00 on June 29, power supply was not provided to 6,313 consumers in 18 settlements;

- there was no up-to-date consolidated information on power supply in the Sumy region at the time of the review preparation.

Gas Sector:

Gas system performance

As of June 27, the gas transit through the territory of Ukraine decreased by 0.6 mcm as compared to the previous day and amounted to 41.9 mcm. These volumes were only 38% of 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 1 mcm. At the same time, during the reporting
period, on Ukraine’s gas system exit via the Berehove interconnection point (virtual interconnection point “Bereg”) 2.1 mcm of gas was shipped.

**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, Kherson, Mykolaiv, Chernihiv and Kharkiv regions had the most challenging situation in gas supply. According to the Cabinet of Ministers, as of June 28, over 181,300 consumers were left with no gas supply.

In the Donetsk region, the situation didn’t change: almost the whole region remained without gas supply due to the main gas pipeline damage. As of June 16, only 1,900 consumers in 2 settlements had supply.

In the Luhansk region, there were no changes in gas supply: it was completely suspended due to hostilities which were deeply destroying the region’s critical infrastructure. According to the Regional Military Administration Head Serhii Haidai, in the city of Lysychansk, which is constantly shelled by the occupiers, all utilities, including gas supply systems, are not operational.

In the Kherson region, as of 11:00 on June 29, there was no information regarding any significant change as compared to the previous day: 1 community (Vysokopillia) has completely remained without gas supply and 3 communities (Velyka Oleksandrivka, Novovorontsovka, Stanislav) partially. However, there was no mobile connection in some of these communities, so there was no up-to-date information on gas supply. Problems of LPG supply were reported in the Kochubeivka community.

In the Zaporizhzhia region, as of the morning of June 29, 81,011 consumers in 109 settlements remained without gas supply. In the previous day, low- and medium-pressure gas pipelines were damaged in the village of Solovyivka.

In the Mykolaiv region, as of the morning on June 29, 671 gas infrastructure facilities were damaged for the whole period of war (no change as compared to June 28). As a result, 7,259 consumers (no change) were left without gas supply.
According to the Chernihiv Regional Military Administration, as of the morning on June 29, about 700 consumers in 22 settlements have not received gas supply service.

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 Dmytro Kuleba called on the international partners to exclude Gazprombank from SWIFT, as the bank is used to both receive European payments for oil&gas and pay salaries to the Russian military. He referred to an investigation by the Ukrainian journalists, who found that Gazprombank was being used to pay salaries to the Russian troops waging war against Ukraine.

At a meeting on Ukraine’s next steps for EU membership chaired by the President, the Prime Minister Denys Shmyhal reported that the candidate status allowed Ukraine to prepare for the start of sectoral negotiations, and the government works on eight areas. In particular, in the field of energy, the integration of Ukraine’s power system with the network of continental Europe is a priority, especially in the context of expanding electricity exports. Ukraine’s integration into the EU digital market and joining all initiatives of the European Green Deal are also important.

The Ministry of Energy canceled its Order No.187 of May 26, 2022, under which all electricity suppliers were to be obliged to purchase at least 10% of the consumption portfolio (every 10 days) on the DAM. The relevant Order No.205 of June 15, 2022, which repeals this rule, should come into force on July 1 (according to Liga 360).

At a meeting on June 28, the National Energy and Utilities Regulatory Commission (NEURC) adopted a number of decisions, including:

- **set** the planned level of the regulatory fee for 2023 (at 0.09%) to cover planned funding needs of the NEURC at 861 million UAH, **set** the regulatory fee for Q3 2022 at 0.074% (with the planned funding needs at 198 million UAH);
- postponed the consideration of the issue of **setting** from July 1 of the tariffs for gas storage (0.45 UAH/tcm), injection (243.36 UAH/tcm) and withdrawal (252.86 UAH/tcm) at underground storage facilities of Ukrtransgaz;
- postponed the **approval** of the 2022-2031 Gas Storage Development Plan with the planned financing at 14.4 billion UAH, including 500 million UAH for the 2022 investment program;
- **adjusted** the marginal price for the ancillary service of providing Substitution Reserve (tertiary regulation) to 5,674 UAH/MW (excluding VAT);
- **clarified** the maximum volumes of electricity sales and amended the principles of calculating the financial guarantee;
- **set an obligation** for the period of martial law for gas DSOs, TSO and storage system operator not to include in the development plans measures on the territory of military (combat) operations or in the temporary occupation.
- **clarified** the grounds for refusal to issue a license due to the location in the temporarily occupied territory;
- approved and published for comments **amendments** to the Distribution Systems Code regarding planning, connection, accounting of energy storage facilities;
approved and publishing for comments amendments to the procedure for calculating the rate of return on the regulatory assets base (under tariff regulation for DSOs in electricity).

The NEURC Chair Kostiantyn Ushchapovskyi announced the possibility of creating a reserve fund with the financial support of partners. This issue was discussed with representatives of the Energy Community Secretariat and the USAID Energy Security Project. The fund’s purpose, in the NEURC vision, is to ensure the electricity market liquidity, the formation of strategic reserves for the 2022-2023 autumn-winter period (repairs and provision of necessary fuel reserves), the formation of an investment fund to restore networks, gas transmission system and other energy facilities after the end of hostilities.

The Deputy Mayor of Chernihiv Viktor Gerashchenko stated that the Chernihiv CHP will run the heating season on natural gas due to the lack of coal and damage to coal supply systems. According to experts, a total of about 803 million UAH is required for the CHP restoration, while - according to Gerashchenko - the Cabinet of Ministers still plans to allocate 100 million UAH for the urgent repairs of the transformer and preparations for the heating season. The post-war plans of the local authorities include the construction of a unit on alternative fuels.

The Chairman of the Verkhovna Rada Committee on Energy and Utilities Andrii Herus announced limits on the retail sales of fuel could be lifted next month. According to him, in June, over 600,000 tons of oil products were imported from European markets: 400,000 tons of diesel and 200,000 tons of petroleum and LPG. Herus added that Ukraine has a plan for supplies and logistics from various European countries.

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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