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# UKRAINE'S ENERGY SECTOR IN JUNE 2024

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# UKRAINE'S ENERGY SECTOR IN JUNE 2024

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**The first day of June saw another massive attack on Ukraine's critical infrastructure. On 20 and 22 June, some energy facilities were damaged in four regions. As a result, the total losses to Ukraine's Integrated Power System (IPS) exceeded 9 GW. 90% of TPPs and 40% of HPPs were out of action. As a result, only two days in June were without any power restrictions. Schedules of emergency and/or stabilisation shutdowns were in effect for 44% of hours the month. The capacity of interconnectors was used close to the maximum (1.6-1.7 GW) ten times.**

**Due to the serious damage to all major power plants, power engineers are unable to use the fuel reserved for the summer consumption peaks. As a result, coal stocks at TPPs and CHPPs increased to 2.6 Mt (+0.4 Mt compared to the last day of May), and gas stocks in underground storage facilities to 5.2 bcm (excluding 4.7 bcm of long-term storage and 0.5 bcm owned by non-residents).**

Although the government has raised electricity prices for households and state-financed institutions, allocated around UAH 11 billion to rebuild the power system and, together with the Energy Community, accumulated another UAH 26 billion in the Energy Support Fund of Ukraine, these funds and, most importantly, time are not nearly enough to make it through the heating season of 2024-2025. To restore what has been lost, it will take a cessation of hostilities, several years and more than UAH 40 billion.

Everyone should be clear that Russian attacks will continue, and it is impossible to guarantee protection of energy facilities from further attacks due to the lack of multi-level air defence and missile defence systems, including automated ones.

To reduce the likelihood and possible negative consequences of destabilisation of energy grids and systems, Ukraine needs to quickly rebuild its energy system's architecture of. The 15-20 large TPPs and CHPPs should be replaced by some 300 power

stations with a capacity of 5-30 MW, scattered across the country and fuelled by local fuel, as well as up to 2 GW of energy storage systems.

To implement this task, the Cabinet of Ministers should develop, approve and implement the following pursuant to the [decision](#) of the Supreme Commander-in-Chief's Staff held on 20 June 2024:

- ✓ plans for preparing for the heating season and completing protective structures for the fuel and energy sector infrastructure;
- ✓ a strategy and plan for the development of distributed generation;
- ✓ a plan for the construction of at least 1 GW of manoeuvrable capacity, including gas piston, gas turbine and cogeneration units;
- ✓ a programme to encourage the installation of photovoltaic systems and energy storage devices in households;

- ✓ a decision on the mandatory installation of photovoltaic systems and energy storage devices in all public and administrative buildings, including health and educational institutions;
- ✓ a decision on the mandatory provision of critical infrastructure facilities with backup electricity and heat sources.

At the same time, the General Staff of the Armed Forces of Ukraine was tasked to take measures to bolster air defence of energy infrastructure facilities that may be subject to repair and restoration work.

## ENERGY BALANCE

Due to the disruption of **40% of hydro-** and **90% of thermal** generation, imbalances in Ukraine's energy system were recorded every day.

The baseload capacity of Ukraine's IPS was provided by six NPP units generating about 3.8 GW of power. Three units remained under maintenance. 4-6 power units of TPPs and CHPPs, as well as HPPs and PSPs, which together generated about 2.7 GW, were the source of manoeuvrable capacity.

Following significant precipitation on 3-6, 11-13, 21 and 24 June, generation at Ukrhydroenergo facilities has slightly increased to 1.3 GW. The levels in the Dnipro and Dniester reservoirs were in line with the decision of the Interagency Commission with the State Agency of Water Resources of Ukraine establishing their operating modes.

In June, generation at SPPs and WPPs was seasonally high, exceeding the input of TPPs and CHPPs combined, which partially offset the daily deficit.

During the reporting period, Ukraine generated 8.0-8.5 GW of electricity every hour (-1 GW from May; for comparison, generation in 2021 was 18 GW). NPPs accounted for most generation (48%), followed by renewables (18%), HPPs (17%), CHPPs (10%), and TPPs (8%).

Electricity shortages were predicted 29 times a month, while surpluses were recorded only twice. Emergency assistance from Poland, Romania, and Slovakia was called

in five times to balance the system. The Polish operator received similar assistance from Ukrenergo three times.

An average of 460 settlements in Ukraine were cut off from power due to the hostilities (+40 compared to the previous month); additionally, up to 237 settlements were without power due to bad weather (12 June). About two hundred of them remained without power supply for more than one day.

There were no commercial exports of electricity in June, as **confirmed** by the NEURC operational monitoring data. At night and in the morning, electricity was **transited** through the Ukrainian grid from Hungary to Romania. Imports of 1.2-1.7 GW came from Moldova, Poland, Slovakia, Romania and Hungary. On 14 June, Ukraine received a record 31.9 GWh of energy from them.

There was no shortage of natural gas. Its consumption in June was 6% higher year-on-year, but 28% down compared to June 2021. For the second time since January, production was 1% lower year-on-year, although Naftogaz Ukraine expects to **increase** its annual figure to 15 bcm and **claims** that «our production in the first five months of 2024 was up by 10%».

As an average of 21 mcm of gas was pumped daily to underground storage facilities in June out of 45-47 mcm produced, the level of reserves was 10% lower than in 2015-2018, including gas owned by non-residents. However, «this volume **is in line** with the plan to prepare natural gas reserves for the next heating season», and the injection rate is «390 mcm **higher** than in the same period in 2023».

Daily commercial exports of gas stored by non-residents in Ukrainian underground storage facilities in the customs warehouse regime did not exceed 2.3 mcm (Drozdovychi UGSF). In the short-hold mode, 7.2 mcm of gas were transported to the outlet of the Ukrainian GTS per day.

Despite the damage to the surface infrastructure of several storage facilities, the gas transmission system has been operating properly. Nominations of storage customers and capacity reservations have been fulfilled in full. However, the increased intensity of

russian attacks may well limit the availability of Ukrainian underground storage, changing the UAVTP pricing model from HUB- to HUB+ and reducing gas purchases for industrial needs.

In June, the domestic supply of petroleum products was sufficient to meet the growing demand due to an increase in road transport and the start of the summer holiday season. There is a surplus of diesel fuel. LPG car fuel, on the other hand, may face a shortage due to the expected restriction of supply by the Polish concern Orlen in July.

## SECTOR'S FINANCIAL SITUATION

Thanks to May decisions by the Cabinet of Ministers and the NEURC and a significant reduction in energy consumption, the **debt** to energy producers in June decreased significantly to UAH 17.9 billion (down UAH 8.6 billion compared to May). The **debt** to universal service providers dropped to UAH 15.5 billion (-UAH 8.8 billion).

Ukrenergo's debt to renewables continues to reduce, dropping to UAH 22.6 billion **owed** in June. Although it is scheduled to be **fully repaid** by the end of the year, The reduction is faultily done by transferring hryvnia overdue short-term liabilities to renewable energy generation into foreign currency long-term Ukrenergo's liabilities to international credit institutions.

At the same time, market participants' **debts** to Ukrenergo reach UAH 32 billion for electricity transmission and dispatching services. These debts emerged as a result of the suspension of the accrual and collection of **penalties** under the contracts concluded in line with the Law of Ukraine «On the Electricity Market», as well as due to postponement of repayment of debts of universal service providers following the NEURC inspections.

Mutual debts continue to accumulate on the balancing market, reaching UAH 31 billion. The debt can only be reduced by revising the current tariffs in the producer-supplier-protected consumer chain to ensure the solvency of each of them.

Meanwhile, the **debts** of district heating companies for gas consumption, although decreasing, still exceed UAH 70 billion.

The National Security and Defence Council (NSDC) has **instructed** the Cabinet of Ministers to pass decisions on regulating these and other debts, but the government-backed **bill** «will significantly improve the situation in the electricity market and address debts» is yet to be submitted to the parliament.

## TRANSIT

In the reporting period, Gas Transmission System Operator of Ukraine LLC transited on average 42 mcm of russian gas per day (39% of volume under the contract with Gazprom). About 89% was sent to Slovakia, and 11% – to Cuciurgan (Moldavian) power station in Transnistria. Transportation was carried out through the Sudzha gas metering station. Additionally, Ukraine ensured the daily transit of 1-3 mcm of gas from Hungary to Moldova.

Ukrtransnafta transited 30-35 thousand tonnes of russian oil per day to refineries in Slovakia, Czechia and Hungary (owned by the Hungarian MOL). Transportation was carried out via the southern branch of the Druzhba pipeline.

## PRICE SITUATION

In June 2024, the **price index** for base-load electricity (BASE) on the day-ahead market (DAM) was UAH 4,982/MWh, and at the peak (PEAK) it was UAH 4,094/MWh (+26.4 and +10.9% compared to May). Off-peak (OFFPEAK) load was UAH 5,870/MWh (+40.0%). The sharp increase in the indices by 60-80% since April, the abnormal value distribution, and the high volatility of 98% indicate a significant supply shortage caused by damage to energy infrastructure as a result of russian attacks and limited import opportunities.

The **weighted average price** on the intraday market (IDM) amounted to UAH 5,622/MWh, and on the Ukraine IPS DAM – UAH 5,403/MWh (+13.0 and +28.0 compared to May, respectively).

The **weighted average price** of July natural gas in Ukraine based on electronic trading on the UEEX in June increased to UAH 12,624/tcm (€291/tcm; +3.9% compared to May). This increase was due to predicted rise



in gas price on the European TTF hub in the first half of June.

Despite the dubious expediency of linking domestic prices to European quotations, the government is still delaying the development of standardised trading products and the introduction of mandatory sale of at least 15% of domestically produced gas on the Ukrainian Energy Exchange.

As LNG supplies to European terminals resumed, the cost of natural gas on the TTF hub brought to the domestic border, **decreased** to UAH 21,985/tcm, including VAT (-3.8% compared to May), although in mid-June it exceeded UAH 23,000/tcm.

As a result, the **Naftogaz Ukraine gas tariffs** for non-household consumers increased to UAH 15,900/tcm from 1 July 2024, while in June they were UAH 15,400/tcm, including VAT.

Meanwhile, all 18 EU member states owing underground storage facilities have already started replenishing their gas reserves. That is why the already record **reserves** (+18% of the last 5-year average) increased to 82.1 bcm in June (+10.3% for the month). The balance between supply and demand, which was temporarily established in early summer, contributed to the relative stability of spot prices at the TTF hub, ranging between \$375 and \$395/ tcm during the month. However, they remain inflated due to intense competition with Asian markets for LNG and repairs at US and Norwegian LNG terminals.

In June, Coal (API2) CIF ARA (ARGUS-McCloskey) steam coal **futures** quotes ranged from \$108 to 110/t. One year ago, quotes were \$116/t. Coal stocks at ARA (Amsterdam-Rotterdam-Antwerp) terminals amount to 4.9 Mt (-22% compared to the annual average).

In June, Brent crude oil **futures** quotes stabilised after falling to a 4-month minimum (\$77/bbl on 4 June 2024), ranging from \$84 to 86/bbl (\$85/bbl on 1 July 2024). The main reason for the decline was bidders' **disappointment** with additional voluntary production cuts by OPEC+ member states.

Given the next downward **revision** in oil consumption, it is unlikely that prices will rise

in July. If current trends continue, oil supply in 2024 will reach 102.9 million barrels per day, while demand will increase to 103.1 million barrels. As a result, prices for futures with near-term delivery dates are again lower than those for longer-dated positions.

Motor petrol prices in Ukraine have risen slightly by 0.9% compared to May, while diesel fuel price did not change. This difference in trends can be explained by the unexpected increase in petrol prices at Ukrnafta's stations, which was quickly responded to by discounters.

As of 1 July 2024, the **indicative prices** for Euro5 A-95 petrol and Euro5 diesel fuel were UAH 60.13 and 52.66 per litre, respectively.

In July, despite the hryvnia's **strengthening** against the US dollar and the euro on the interbank market, the rise in European prices will inevitably be passed on to retailers. The rise in prices will also be driven by uncertainty over excise tax rates, which could be raised by 7-28% depending on the type of oil product, if the **bill** No.11256-2 of 13 May 2024 is passed.

At the end of June, LPG **was** UAH 26.60 per litre (-0.3% compared to the previous month). The ratio of LPG retail prices to high-octane petrol (45%), which was formed in May, will continue to drive demand for propane-butane and discourage consumers from buying much more expensive petrol.

## CHANGES IN THE REGULATORY FRAMEWORK

The President of Ukraine has signed a **law** on the mandatory use of liquid biofuels (biocomponents) in the transport sector, which provides for the content of biocomponents in the amount of «not less than 5% by volume, with an absolute determination error of ±1%» in motor petrol sold from wholesale and retail outlets (except for those with an octane number of 98 and above or supplied for the needs of the Ministry of Defence, the State Reserve and the creation of minimum stocks of petroleum products) from 1 May 2025. Moreover, «business entities engaged in the production and/or import of fuel and/or wholesale trade in fuel» are granted the right to independently and de facto uncontrollably «add liquid biofuels (bio-

components) to motor fuel and alternative fuel in volumes that meet the requirements of regulatory and legal acts» (which are in fact non-existent).

This document, submitted by a group of MPs bypassing the established procedure, is another example of imitation of «European integration» and distortion of EU requirements, as confirmed by the [reservations](#) of the Ministry of Energy, the Ministry of Infrastructure, the Ministry of Economy, the State Regulatory Service, the Main Legal Department, and the [Committee](#) on Ukraine's Integration into the European Union.

According to the [Ministry of Energy](#), the implementation of the law will not only lead to the emergence of petroleum products that are harmful to car fuel systems but may also disrupt the supply of petrol to the Ukrainian defence forces.

Equally questionable from the standpoint of proper fulfilment of Ukraine's international obligations are some [provisions](#) of the Law «On Amendments to Certain Laws of Ukraine Regulating Powers of Central Executive Bodies in the Field of Energy Efficiency», which essentially lay down the legal conditions for creating a vertically integrated monopoly in the electricity market that will simultaneously act as a distribution system operator and a universal service provider and will be directly or indirectly owned by the state.

Given the monopolisation of the gas market by Naftogaz Group in 2023, the signing of this document may indicate Ukraine's refusal to endorse the European model of energy sector regulation based on business continuity strategies and civilised competition mechanisms.

In addition to the above laws, the Verkhovna Rada [ratified](#) the Framework Agreement between the EU and Ukraine on special mechanisms for EU financing of Ukraine under the Ukraine Facility. This document establishes the principles of financial cooperation, including mechanisms for controlling and auditing expenditures in the amount of €50 billion, and creates the preconditions for attracting unconditional financing in the amount of €1.9 billion.

The Cabinet of Ministers:

- ✓ [approved](#) the National Energy and Climate [Plan](#) until 2030, the main goals of which include: reducing greenhouse gas emissions by 65% compared to 1990 levels; reaching a 27% share of renewable energy sources in total final energy consumption; meeting the requirement for the supply of no more than 30% of each energy resource via one route from one supplier; limiting primary and final energy consumption to 72.2 and 42.2 million toe;
- ✓ [approved](#) the procedure for providing financial state support to individuals who install photovoltaic modules and/or wind turbines with an installed capacity of 1-10 kW in their households, together with hybrid inverters and energy storage systems with a capacity of 1 kWh for each 1 kW. The maximum [compensation](#) per household for the installation of a 10-kW system will be UAH 244 thousand;
- ✓ [introduced](#) additional measures to stabilise the operation of Ukraine's IPS, which, in particular, restricted the use of air conditioners, outdoor lighting of buildings and adjacent territory, lighting of streets and roads, parks, and outdoor advertising;
- ✓ [allocated](#) an additional UAH 2.5 billion to ensure sustainable passage of the 2024-2025 heating season and create appropriate living conditions for the population of Kharkiv city and Kharkiv oblast;
- ✓ [named](#) the winners of the selection for the positions of the Energoatom supervisory board members, in particular Vitalii Petruk and Tymofii Mylovanov as representatives of the state;
- ✓ approved the [financial plan](#) for 2024 and the [results](#) of the financial and economic activities of JSC Naftogaz Ukraine for 2023;
- ✓ [determined](#) that in the case of a natural gas supply agreement between a heat producer or state-funded institution and

Gas Supply Company Naftogaz Trading LLC, in accordance with the Regulation on the imposition of special obligations on natural gas market participants, obligations under the agreement arise from the first day of the month in which it was concluded.

The Ministry of Energy has **set up** an International Assistance Coordination Group for rapid restoration of the energy system and winterisation.

The NEURC:

- ✓ **increased** the maximum term for concluding contracts on the purchase of ancillary services by Ukrenergo in the electricity market from 1 to 5 years with a three-year grace period for the provision of such services;
- ✓ **brought** the procedure for its monitoring of wholesale energy markets in line with the requirements of the **law** on prevention of misuse in wholesale energy markets;
- ✓ added **JSC Market Operator, NPC Ukrenergo, and GTS Operator of Ukraine LLC** to the register of administrators of insider information platforms;
- ✓ **improved** the mechanism for market participants to submit bids for ancillary services auctions and in the balancing market, as well as to provide load-following services to RES with support;
- ✓ **updated** the Rules of the retail electricity market in terms of ensuring the functioning of the common property of an apartment building; regulating consumer activities in an aggregated group; restructuring debts between the consumer and the supplier of last resort for a period exceeding 90 days; preventing the use of electricity by household consumers for non-household needs;
- ✓ **amended** the Methodology for the formation, calculation and setting of tariffs for electricity and (or) heat produced at combined heat and power stations, thermal power plants and cogeneration plants taking into account the prices of domestic and imported coal used at these facilities;

- ✓ **stipulated** that scheduled and unscheduled on-site inspections of licensees and entities belonging to a special group of consumers located and/or carrying out licensed activities in the regions of Ukraine with ongoing active hostilities and temporarily occupied territories will not be conducted for the period of martial law;

- ✓ **approved** the rate of the regulatory contribution for Q3 2024 at 0.046% of the net income of taxpayers and **determined** the planned rate of the regulatory contribution for 2025 at 0.062%;

- ✓ **provided** possible models for connecting and/or installing generating facilities and selling electricity supplied to the grid.

The Antimonopoly Committee of Ukraine **granted** Ukrnafta a merger clearance to start full management of Tatneft Group's **assets** located in Poltava and Kharkiv oblasts.

The State Service of Geology and Mineral Resources of Ukraine, based on **a decree** amending personal economic and other restrictive measures (sanctions) against Vadim Novinsky, **renewed** three special permits for the development of natural gas fields in Poltava and Kharkiv oblasts granted to Smart Energy Group companies.

The National Bank of Ukraine **adopted** a series of decisions aimed at stimulating the financial sector's involvement in energy recovery and decentralisation projects, including lending for the purchase of energy equipment by households and small and medium-sized businesses.

## PROJECTS AND INTENTIONS

The Verkhovna Rada of Ukraine:

- ✓ adopted as a basis the **draft law No. 11256-2** of 13 May 2024 on the gradual adjustment of excise tax rates in 2024-2028, including on fuel, to the levels set by **Directive 2003/96/EC** (Annex XXVIII, Article 353 of the **EU-Ukraine Association Agreement**) (for unleaded petrol, diesel fuel and liquefied petroleum gas – €359 and €330 per 1,000 litres and €125 per 1,000 kg).



Unlike the [Cabinet's bill](#), this document supported by MPs meets the requirements of Directive 2003/96/EC in terms of the LPG excise tax rate;

- ✓ adopted as a basis the [draft law No. 11083](#) of 13 March 2024 on bringing the terminology of legislation in the field of smart grids in line with international standards;
- ✓ recommended to consider the first reading of the draft law No. 11146 of 3 April 2024 on the siting, design and construction of KhNPP Units 3 and 4. The document defines the locations, the number of reactors, their type, characteristics, and requirements for design and construction. The project should be implemented exclusively at the expense of Energoatom, but this is unlikely given the company's poor financial state, the project cost based on the [2018 feasibility study](#), and the simultaneous [preparation](#) «for the construction of KhNPP-5 and KhNPP-6 using Westinghouse AR1000 technology»;
- ✓ registered a [draft law No. 11273-1](#) of 5 June 2024 aimed at settling the debts of district heating companies for natural gas supplied after June 2021. Unlike the [Cabinet's bill](#), this document provides for a different debt restructuring and the implementation of a current account mechanism with a special regime for settlements with Naftogaz Group companies;
- ✓ registered a [draft law No. 11343](#) of 17 June 2024, which temporarily, but no later than 1 June 2025, proposes to exempt from value added tax operations on the importation of goods into the customs territory of Ukraine under sales contracts concluded with licensees of electricity and natural gas markets, in which the Energy Community Secretariat is one of the parties;
- ✓ registered a [draft law No. 11344](#) of 17 June 2024, which temporarily, but no later than 1 June 2025, proposes to exempt from import duty hydraulic and steam turbines, electric generators, inverters, photovoltaic cells assembled

into modules or mounted in a panel, components for the production of transformers imported into the customs territory of Ukraine.

Unfortunately, the quality of draft laws No. 11333 and 11344, despite the good ideas contained therein, is unsatisfactory, so they are unlikely to be included in the parliamentary session's agenda.

The government [reportedly approved](#) the procedure for using money of the State Fund for Decarbonisation and Energy Efficient Transformation. This is an additional programme worth UAH 759 million; its funds are [to be used](#) on compensations, reimbursement, and reduction of obligations of individuals and legal entities under loan agreements concluded for energy efficiency measures and installation of renewable energy facilities. However, no document confirming these intentions was published in June.

Despite the urgency, the Cabinet is yet to submit its [draft law](#), approved back on 24 May 2024, to the Verkhovna Rada for consideration. This document seeks to improve payment discipline in the electricity market, according to which suppliers will open special use accounts to which payments for services rendered will be made; the NEURC will be tasked to develop an algorithm for distributing funds from these accounts; consumers classified as critical infrastructure will have to open special use accounts in accordance with the government-approved procedure to avoid interruptions in energy supply; suppliers will have the right not to resume energy supply to consumers if the latter have debts to the supplier of last resort and/or no debt restructuring agreement.

The Ministry of Energy has [announced](#) the expansion of the government's «Affordable Loans 5-7-9%» [programme](#) for the «construction and installation of gas turbine, gas piston and biogas generating units», but this information has not yet been confirmed.

The status of the [draft resolution](#) (published by the Ministry of Energy back on 18 January) restoring the ban on the circulation of petroleum products that do not meet Euro 5 environmental standards, [allowed](#) from 17 March 2022

«to supply the Armed Forces and other military formations», remains unknown. The relevant decision seems to have been [made](#), but there is no confirmation of this yet.

The NEURC has [postponed](#) consideration of the approval for an indefinite period:

- ✓ a [resolution](#) to increase the Ukrenergotariffs for electricity transmission to UAH 628.65/MWh and UAH 464.78/MWh (+19 and +27%; excluding VAT), respectively, for system users and green electrometallurgy enterprises, starting from 1 July 2024;
- ✓ a [resolution](#) to increase by 11% the Ukrenergotariff for dispatch control services to UAH 115.91/MWh (excluding VAT), starting from 1 July 2024;
- ✓ a [resolution](#) to increase the tariffs for electricity distribution services to UAH 348.48/MWh and UAH 2,062.69/MWh (+1.6 and +2.3%; excluding VAT), respectively, for consumers and operators of energy storage facilities of the first and second voltage classes, starting from 1 July 2024.

Instead, the NEURC published the following drafts:

- ✓ a [resolution](#) to amend the minimum standards and requirements for the quality of customer service and natural gas supply, which allow the GDN operator to compensate for losses caused by violations during the reconstruction or technical re-equipment of an already connected facility by transferring funds to the bank details specified by the consumer or customer of services;
- ✓ a [resolution](#) to supplement the Methodology for determining and calculating the tariff for gas distribution services with a new section, which grants the NEURC the right to set the gas distribution tariff for the GDN at a level higher than used before 24 February 2022 only after six months after the month in which martial law is terminated or cancelled. The difference between the economically justified and

established tariffs should be compensated to the GDN operators from the state budget.

## INTERNATIONAL COOPERATION

The [bilateral security agreement](#) between Ukraine and the United States of America provides, inter alia:

- ✓ support of recovery efforts to strengthen Ukraine's economic stability and resilience, including by supporting Ukraine's energy security and its vision of a modern, cleaner, more decentralized energy system that is integrated with Europe;
- ✓ strengthening the resilience and security of Ukraine's civilian nuclear energy sector, cognizant of their collaboration under the 21 September 2023, Memorandum of Understanding between the Government of Ukraine and the Government of the United States regarding Collaboration on Ukrainian Energy System Resilience;
- ✓ assistance to Ukraine to improve the cyber resilience of its critical infrastructure, especially energy facilities, and to support the quick restoration of destroyed infrastructure, including by providing material and technical assistance.

Within the framework of Joint Security [Commitments](#) between Ukraine and the European Union, the latter will continue to support energy security and transition, nuclear safety and security in Ukraine and to strengthen the Ukrainian nuclear regulatory authority and provide support on capacity building on Chemical Biological Radiological and Nuclear (CBRN) issues, as well as on Strategic Trade Controls (export control of dual-use items and technologies). In view of Ukraine's EU path, Ukraine will work towards alignment with the EU acquis. The Union Civil Protection Mechanism (UCPM) will continue delivering in-kind assistance to the Ukrainian energy sector as well as CBRN assistance. The European Union and Ukraine will deepen cooperation within the framework of the EU Initiative «Centres of Excellence for CBRN Threat Reduction» to enhance

security capabilities and effective countering of CBRN threats and preparedness for man-made disasters. The European Union and Ukraine will continue to share intelligence and satellite imagery, within agreed parameters.

[Accord](#) on Support for Ukraine and Cooperation between Ukraine and the Government of Japan seeks to:

- ✓ create fundamental basis for recovery, including enhancing protection, resilience and reconstruction of critical infrastructure, such as energy infrastructure;
- ✓ encourage Japanese private sector to partner with Ukraine's industry in assisting the latter's efforts to modernize and increase industrial capacity in the key sectors including energy;
- ✓ provide support to Ukraine in enhancing the nuclear safety, security and safeguards, including those of the Zaporizhzhia Nuclear Power Plant, through the IAEA.

According to the [Agreement](#) on Security Cooperation between Ukraine and the Republic of Lithuania, the latter will provide support to Ukraine's energy sector. In particular, Lithuania will continue to assist Ukraine in restoring its damaged and destroyed energy infrastructure, providing all available equipment, means, or other necessary materials and resources. Acknowledging the importance of the decentralisation of energy generation and distribution systems, and the liberalisation of energy markets, Lithuania is ready to provide assistance in modernising Ukrainian energy system in compliance with the EU standards. Lithuania will share its experience with Ukraine on the development of renewable energy sector, as well as on energy efficiency, and other clean energy technologies.

[Agreement](#) on Security Cooperation and Long-term Support between Ukraine and Estonia states that the latter will help Ukraine build resilience of energy and other critical infrastructure. Acknowledging that energy supply security remains crucial for Ukraine's resilience, Estonia will seek any possibilities to support Ukraine's overall energy sector. Estonia will also explore opportunities to support

Ukraine in enhancing the resilience of its critical infrastructure in various sectors.

The [Grant Agreement](#) between Ukraine and France on assistance in restoring and maintaining critical infrastructure and priority sectors of Ukrainian economy provides for the allocation of €200 million in grant funds from the French government for the reconstruction and restoration of Ukraine's critical infrastructure, including €60 million to support the energy sector.

During the International Ukraine Recovery Conference (URC 2024) in Berlin, 12 international [agreements](#) on cooperation in the development of energy networks and systems were signed with financial institutions and energy companies.

The NEURC, as the [issuing body](#) of Renewable Energy Guarantees of Origin in Ukraine, has become an [official member](#) of the Association of Issuing Bodies (AIB). Joining the AIB is a prerequisite for international trade in guarantees of origin and further recognition of Ukrainian guarantees in the European Union and the Energy Community. Further, the creation of the Ukrainian system of guarantees of origin provides for its audit for compliance with the European Energy Certificate System (EECS) and the CEN 16325 standard.

## GENERAL CONCLUSIONS AND RECOMMENDATIONS

Despite a series of decisions aimed at restoring the operation of energy grids and systems, reducing losses from Russian attacks and resolving debt problems that impede the normal functioning of markets, it is impossible to go through the winter period of 2024-2025 without significant restrictions on electricity consumption.

Even provided that all nine NPP units operate simultaneously, the cross-border transmission capacity is increased to 2.2 GW, and at least 2 GW out of 8 GW of installed capacity of large TPPs is restored, a shortage may be from 3 to 5 GW. The imbalance will be caused by the impossibility to rapidly change the system's architecture, in particular, to construct 300 power plants with a capacity of 5-30 MW and 1 GW of energy storage systems in the regions.

The expected deficit can be reduced only under certain conditions:

- ✓ implementing the decision of the Supreme Commander-in-Chief's Staff, primarily regarding anti-missile protection of critical infrastructure, and stimulating the construction of small power plants with guaranteed capacity in the regions, primarily cogeneration plants;
- ✓ resuming operation of all energy facilities, including low-capacity TPPs and CHPPs that were shut down due to inefficiency, fuel shortages, court orders, etc., with their connection to the grid upon request of the military administrations;
- ✓ focusing all resources on infrastructure facilities, where the duration of repairs does not exceed six months, and ensuring energy autonomy of settlements and city districts by involving private business in the construction, installation and operation of energy facilities in local communities, including cogeneration, as well as related energy storage systems and small distribution networks.

It deems unacceptable to:

- ✓ disperse resources on long-term projects of dubious efficiency, such as construction works at Khmelnytskyi NPP Units 3 and 4 in accordance with draft law No. 11146 of 3 April 2024;
- ✓ refuse to use thermal coal, oil products, and natural gas as fuels for small power plants under the pretext of transition to green energy and reduction of greenhouse gas emissions, for example, according to the National Energy and Climate Plan for the period until 2030;
- ✓ install of energy systems with non-guaranteed capacity, such as photo-voltaic panels and wind turbines without inverters and energy storage systems, including in areas with low solar radiation intensity and average wind speeds of up to 5 m/s, respectively;
- ✓ withdraw funds from consumers and energy market participants through the initiatives falsely recognised as «European integration», such as the law on the mandatory use of liquid biofuels (biocomponents) in the transport sector and the draft law on bringing excise tax rates on petroleum products to the levels set by Directive 2003/96/EC as early as July 2024;
- ✓ refuse to shift from an administrative to a European model of energy regulation based on business continuity strategies and civilised competition mechanisms, for example, by reviving vertically integrated monopoly energy companies through recently adopted law on the regulation of powers of central executive bodies in the field of energy efficiency.