

Brief Ukrainian energy sector evaluation and damage assessment - III

(as of October 24, 2022)

**Cooperation for Restoring the
Ukrainian Energy
Infrastructure project**

Task Force



INTRODUCTION

The full-scale military aggression by the Russian Federation, launched on February 24, 2022, has had a significant negative impact on the Ukrainian energy sector. Due to their economic, humanitarian and geopolitical importance, energy infrastructure facilities were among the primary targets for the Russian army.

The first Ukrainian energy sector evaluation and damage assessment report was published on August 24, 2022, on the six-month anniversary of Russia's full-scale invasion.¹ The second report covered the period from August 24 to September 24, 2022.²

Since October 10, 2022, Russian military forces have significantly intensified their attacks on Ukrainian critical energy infrastructure, aiming to disrupt the energy supply and leaving Ukrainian citizens without electricity, heat and hot water during the winter period. Therefore, the Ministry of Energy of Ukraine restricted the dissemination of detailed information on damages and losses of energy infrastructure facilities in October 2022. As a result, the third Ukrainian energy sector evaluation and damage assessment report covering the period from February 24 to October 24, 2022, includes a brief overview of damages rather than detailed reports published by the Task Force from August – September 2022.

As of September 05, 2022, the damages to the Ukrainian energy sector, including utilities and district heating sectors, were estimated to be at least \$5.9 bln.³

The damage assessment report was developed by the Task Force comprised of representatives of Ukrainian authorities and the Energy Charter Secretariat, established under the project "Cooperation for Restoring the Ukrainian Energy Infrastructure", and in cooperation with other Ukrainian and international organisations. The general objective of the project is to assist the Government of Ukraine in the cost-effective restoration of energy infrastructure, taking into account the clean energy transition while ensuring energy security. The project is funded by the European Commission and implemented by the Energy Charter Secretariat.

DISCLAIMER

Information contained in this work has been obtained from sources believed to be reliable. However, the Task Force does not guarantee the accuracy or completeness of any information published herein, and the Energy Charter Secretariat shall not be responsible for any losses or damages arising from the use of this information or from any errors or omissions therein. This work does not attempt to render legal or other professional services.

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¹ Task Force, "Ukrainian energy sector evaluation and damage assessment – I (as of August 24, 2022)", 2022,

https://www.energycharter.org/fileadmin/DocumentsMedia/Occasional/20220829_UA_sectoral_evaluation_and_damage_assessment_final.pdf

² Task Force, "Ukrainian energy sector evaluation and damage assessment – II (as of September 24, 2022)", 2022,

https://www.energycharter.org/fileadmin/DocumentsMedia/Occasional/2022_09_30_UA_sectoral_evaluation_and_damage_assessment_Version_I.pdf

³ "The total amount of damage caused to Ukraine's infrastructure is more than \$127 billion" — Kyiv school; of economics, 2022,

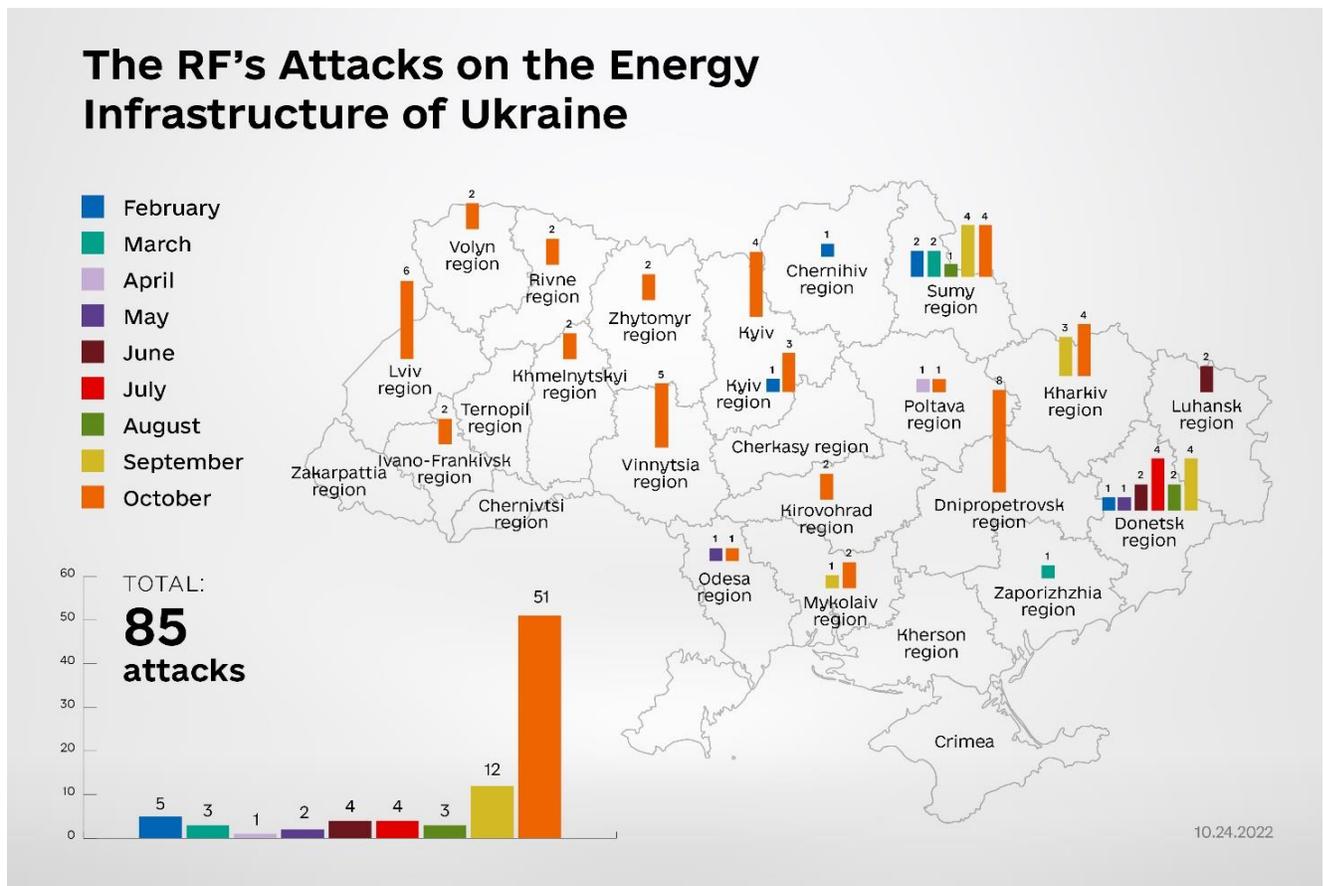
<https://kse.ua/about-the-school/news/the-total-amount-of-damage-caused-to-ukraine-s-infrastructure-is-more-than-127-billion-kse-institute-s-report-as-of-september-2022/>

Key changes in the Ukrainian energy sector

From the beginning of the full-scale military aggression by the Russian Federation, energy infrastructure facilities were among the primary targets for the Russian army. During February - August 2022, the key targeted energy objects were oil refineries, oil products storage facilities, as well as power plants and substations powering the Ukrainian railway system. As a result, the Ukrainian oil refinery industry and large oil depots were destroyed, and the country became 100% dependent on imported petroleum products.

Nevertheless, the missile and drone attacks targeting power plants and substations did not disrupt the railway transportation of military equipment from the West to the East of Ukraine. In fact, Ukraine managed to adapt its legislation and implement measures to overcome the energy crisis and restore the damaged elements of power and gas systems in an efficient manner. As a result, even despite the attack on critical energy infrastructure during the first seven months of the war, Ukraine gradually increased the volume of electricity exports to European countries from June 30 to October 10, 2022.

Since October 10, 2022, Russia has changed its tactics and resorted to a massive attack on critical energy infrastructure facilities.



Source: [General prosecutors office of Ukraine](#)

The massive attack and consequential damages to the power sector also resulted in the decision of the Ukrainian Government to stop electricity export to the European Union (EU) on October 11, 2022. As soon as the restoration works are completed and the power system generates a surplus, electricity export from Ukraine is planned to be resumed.

Therefore, the Russian Federation's launching massive missiles and drone attacks on critical Ukrainian critical energy infrastructure facilities aimed at two main goals:

- 1) to leave Ukrainian citizens without electricity, heat and hot water supply during the 2022/2023 heating period;
- 2) to stop electricity export and worsen the energy crisis in the European countries, i.e. the energy crisis that was primarily caused by the deliberate disruption of natural gas supply to the EU market by Russia.

Fire after shelling at an energy facility in Rivne region



Source: <https://dsns.gov.ua/uk>

During October 10 - 24, 2022, almost all large energy facilities, including nodal power substations, thermal power plants (TPP) and combined heat and power plants (CHP), were targeted either by missiles or kamikaze drones. Many energy facilities have been repeatedly attacked on a daily basis. As of October 24, 2022, about 35-40% of the installed TPP and CHP capacities in Ukraine were either damaged or completely destroyed. The power transmission and distribution networks were also heavily damaged, resulting in complete or rolling blackouts in almost all Ukrainian regions. Russian military forces also used drones to attack the transmission system operator's dispatching centre, aiming to destroy the command and control centre of the Ukrainian power system.

During October 10 - 24, 2022, about 5 million consumers or 30% of all power consumers, were temporarily disconnected from the electricity supply. For example, only on October 10, there were more than 4 million disconnected consumers as a result of the massive attack on critical energy infrastructure facilities. Thanks to Ukraine's coping mechanisms and the efforts of the power sector employees, access to the power supply was restored to almost all consumers within 12-24 hours during the period of the massive attacks. However, due to the significant losses in generation capacity and damages to the network infrastructure, the Ukrainian energy system was forced to switch to a saving mode.

As a response to the critical energy infrastructure damages, the Government of Ukraine introduced consumption and capacity-limiting schedules to ensure efficient balancing of the power system during wartime. At the request of the transmission system operator and the Ministry of Energy of Ukraine, households and commercial consumers voluntarily reduced their electricity consumption during peak hours by 10-20%, which allowed them to avoid additional disconnection of consumers and to balance the power system.

Kyiv city center under capacity-limiting schedule



Source: <https://t.me/+EuUy15sgtdjMzI6>

The massive attacks of Russian military forces on critical energy infrastructure facilities not only threaten Ukrainian citizens' lives and well-being during the heating season but could potentially lead to an irreversible humanitarian catastrophe in the whole country.

Zaporizka Nuclear Power Plant (ZNPP)

Since September 11, 2022, the operation at ZNPP has been completely suspended. However, periodic power outages of ZNPP continue due to attacks on the networks supplying the power to meet the plant's own needs.

Kakhovska HPP (KHPP)

According to the Ministry of Defense of Ukraine, the Russian military forces planted explosives at the dam and the units of KHPP (Kherson region). The explosion of the Kakhovska dam will cause severe damage, deaths and destruction to citizens and the whole ecosystem of the Kherson region. KHPP is one of the largest hydropower facilities in Ukraine. The dam holds about 18 million cubic meters of water. In case of its detonation by Russia, more than 80 settlements, including the City of Kherson, will be in the zone of rapid flooding, and hundreds of thousands of people will be affected.

Furthermore, the water supply in the South of Ukraine may be destroyed. This may also have an impact on the ZNPP, as it may be left without water for cooling due to the fact that the water for the ZNPP is taken from the Kakhovsky Reservoir.

ECT as an important tool to ensure energy security and a sound investment climate

The Government of Ukraine considers the profound reforming of the energy sector as one of the main tasks to achieve economic development.⁴ Since the full-scale invasion of Russia with critical energy infrastructure as a key military target, the need to enhance Ukraine's energy security and the question of restoring energy facilities became vital.

The reform in the energy sector aims to bring the Ukrainian legislation in line with that of the EU, as required by the Association Agreement between the EU and its Member States, of the one part, and Ukraine, of the other part.⁵ The Association Agreement stipulates that cooperation on energy matters shall be guided by the principles of mutual interest, reciprocity, transparency and predictability, consistent with the Energy Charter Treaty (ECT),⁶ of which Ukraine and the EU are founding members. Further, the Association Agreement expressly incorporates Articles 7.1 and 7.3 of the ECT with regard to measures to facilitate the transit of energy resources.⁷

On March 3, 2022, Ukraine adopted Law "On the Main Principles of Forced Seizure of Objects of Property Rights of the Russian Federation and Its Residents in Ukraine" setting out the conditions for expropriation without compensation of assets owned by the Russian Federation or legal entities owned or controlled, directly or indirectly, wholly or partly, by the Russian Federation.⁸ In the interest of potential lawsuits of Ukraine against the Russian Federation, the Resolution of Cabinet of Ministers of Ukraine No 187, dated March 3, 2022, further prohibits or restricts certain transactions with the Russian Federation, its nationals or legal entities owned or controlled by them, or their assets in Ukraine.⁹

On the other hand, following the Russian Federation's military aggression, Ukraine has adopted certain measures that may affect property rights, including foreign direct investments, of Russian nationals and other individuals and legal entities associated with the Russian Federation. Notably, in response to the Russian offensive on February 24, 2022, Ukraine has severed diplomatic relations with the Russian Federation¹⁰ and further adopted a number of legislative amendments restricting or prohibiting transactions with the Russian Federation and its nationals, including the Law "On Sanctions".¹¹ As a result, in its letter of August 18, 2022, the Ministry of Foreign Affairs of Ukraine notified the Energy Charter Secretariat that starting from August 15, 2022, Ukraine would exercise its right under Article 17(2)(a)-(b) of the Energy Charter Treaty (ECT) to deny advantages of Part III of the ECT (Investment Promotion and Protection) to investments of Russian investors. Therefore, as of August 15, 2022, investments made by Russian investors in the territory of Ukraine no longer enjoy protection under the ECT.

Given that, on the one hand, significant foreign investments are required to restore Ukrainian energy infrastructure, and, on the other hand, Ukraine is committed to following its way towards the EU, including clean energy transition – the ECT in its modernised edition can be the key element for facilitating post-conflict investments in Ukraine.¹²

⁴ Ukraine Government's Portal, <https://www.kmu.gov.ua/en/reformi/ekonomichne-zrostannya> (consulted on 18/10/2022).

⁵ The text of Association Agreement available at <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A22014A0529%2801%29> (consulted on 18/10/2022).

⁶ Ibid, Articles 337-338.

⁷ Ibid, Article 272.

⁸ Verkhovna Rada of Ukraine, 2116-IX (3 March 2022 as amended on 28 July 2022).

⁹ Cabinet of Ministers of Ukraine, Resolution No 187 "On Ensuring the Protection of National Interests in Future Lawsuits by the State of Ukraine in Connection with the Military Aggression of the Russian Federation" (3 March 2022 as amended on 24 June 2022).

¹⁰ Ministry of Foreign Affairs of Ukraine, Statement of the Ministry of Foreign Affairs of Ukraine regarding the severance of diplomatic relations with the Russian Federation (24 February 2022), <<https://mfa.gov.ua/news/zayava-mzs-ukrayini-shchodo-rozrivu-diplomatichnih-vidnosin-z-rosijskoyu-federacijeyu>> accessed 18 October 2022.

¹¹ Verkhovna Rada of Ukraine, 1644-VII (14 August 2014 as amended on 12 May 2022).

¹² The ECT is considered as a risk mitigation mechanism for investments in the energy sector by institutions such as the World Bank Multilateral Investment Guarantee Agency (MIGA). The modernised ECT could be considered as the first coordinated multinational effort to successfully implement a comprehensive review aligned with the Paris Agreement.