

Financial mechanisms for the green reconstruction of Ukraine to be more attractive for European banks and investors

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1. Summary

The post-war recovery of Ukraine's energy sector must go hand in hand with the broader rebuilding of the national economy based on sustainability, decarbonisation, and high energy efficiency criteria. To succeed, Ukraine must effectively mobilise domestic potential and support from partner countries. Investors from partner countries will consider Ukraine attractive upon adoption of a clear long-term decarbonisation policy in line with the European Green Deal, transparent and equal access to auctions for permissions and licences on building and operating energy infrastructure on the national energy market, and effective mechanisms of investment protection from military damages and raiding.

2. Expected future needs of the energy sector

Ukraine's energy sector is passing through unprecedented challenges in its modern history due to the full-scale Russian war of aggression and massive targeted attacks on the electricity sector (generation, substations and grids), gas and oil production, transportation infrastructure, and refineries.

The restoration of substations and grids is already well on track due to their universality for current and future green architecture, available spare parts from

domestic reserves, and substantial support from partner countries.

Nuclear (13,8 GW) and big hydro (6,3 GW) generation assets will remain relevant for the future sustainable energy sector and subject to investments into maintenance, modernisation, and possible enlargement in the next 20 years. To succeed in these sectors, Ukrainian authorities have to pass legislative and regulatory amendments, which will make possible for domestic and foreign interested parties to attract around \$30 bln for large-scale and medium projects. The most sensitive aspects in developing nuclear and big hydro projects are related to massive public special obligations of respective state-owned companies, diminishing their investment attractiveness and state monopoly in those sectors. Corporatization of these companies, supervision councils, and reasonable public obligations can increase investors' interest and bust inflow of resources.

On a political level, Ukraine must also ensure access to existing and promising future small modular reactor technologies and objectively consider water resource availability and compliance with environmental and sustainability conditions for new large projects. Small hydro generation projects will be a part of energy decentralisation efforts at the local communities' level to prevent harmful environmental impact and be implemented if respective integrated energy and climate action plans are adopted and communicated to domestic and foreign donors and investors.

Coal-fired 23 GW thermal power plants, quite outdated and significantly damaged, will most probably be repaired and maintained by current owners at a minimum scale sufficient to cover short-term needs. Instead, the Ukrainian energy system must develop fast-starting and manoeuvrable power plants able to cover consumption peaks and intermittent generation of renewable energy sources (RES). Gas-fired combustion engine power plants and electricity storages are among the most promising technologies to be used in constructing a future sustainable energy sector, with starting needs of 2-3 GW. The needed of \$2-3 bln might become available upon amendment of electricity market regulation about balancing services to ensure the return of investments.

By the end of 2021, Ukraine's renewable sector was nearing 10 GW of installed capacities, with 7,5 GW of solar, 1,7 GW of wind, bio and small hydro capacities, and investments of around \$12 bln. Despite the current minimum access to RES capacities on temporarily occupied territories and low payment ratio for produced green electricity, this sector is the most promising in terms of development because it is affordable for small and medium private investors, territorial communities, and energy associations. However, rising security concerns regarding China and the supply of PV panels can create substantial burdens in renewable scaling up and increase costs per installed capacity. To turn solar and wind power into attractive investment options, Ukraine must adopt clear support mechanisms, most probably secured access to export infrastructure, all components of the wholesale market, and clear rules for imbalance responsibility.

After the deoccupation and demining of the Black Sea, Ukraine will proceed with the extraction of hydrocarbons, first of all, natural gas, gas condensate and oil, on the shelf. Current assets will most probably be severely damaged or destroyed but can be reopened and restarted at least partially in a short period. However, considerable hydrocarbon reserves, including up to 1583.5 billion cubic meters of natural gas and up to 409.8 million tons of crude oil¹, will need substantial investments, advanced technologies, and cooperation with leading energy companies from partner countries. Ukraine has advanced production-sharing legislation and will be

able to bilaterally negotiate beneficial agreements with leading European and American energy companies.

Ukraine has to prepare a background for the effective deployment of domestic potential and support from external partners for green energy recovery based on a clear long-term commitment to European Green Deal implementation. On the governmental level, the key indicators of Ukraine's progress seem to be an **integrated energy and climate plan until 2030, a decarbonisation strategy until 2050**, amendments to regulation for ensuring **equal access** for all interested parties to the **internal energy market and export infrastructure**, the **protection of investments**, including special mechanisms of guarantees, as well as a predictable long-term economic development road map, and the **lifting of subsidised prices** for certain groups of consumers.

The office of the Deputy Prime Minister for European and Euro-Atlantic Integration of Ukraine can facilitate non-financial support for the green reconstruction of Ukraine. In particular, it shall launch a dialogue with European instruments and initiatives, for instance, assisting local energy communities – Energy Communities Repository² and Rural Energy Community Advisory Hub³.

3. Possible instruments for financing the green recovery of the energy sector

3.1.

In the coming one to two years during and after the war, Ukraine will probably rely on remaining energy sector facilities to cover domestic consumption and unlock export possibilities. The eventual costs of infrastructure rehabilitation are hard to estimate. Before the massive missile and drone attacks of October-December 2022, direct losses amounted already over 1,7 bln USD and indirectly reached more than nine bln USD⁴. According to official estimations, Ukraine's energy sector will need 300-500 mln USD for 2023⁵. During this period, Ukraine will mostly rely on support mechanisms launched before and during the active war period.

1 <https://www.blackseanews.net/en/read/183635#:~:text=In%20particular%2C%20exploration%20of%20the%20Ukrainian%20shelf%20of,than%2030%20percent%20of%20Ukraine%27s%20total%20hydrocarbon%20reserves>

2 https://energy-communities-repository.ec.europa.eu/index_en

3 https://rural-energy-community-hub.ec.europa.eu/index_en

4 P.10 <https://www.kmu.gov.ua/storage/app/sites/1/recoveryrada/ua/energy-security.pdf>

5 P.53 *ibid.*

3.1.1.

The **Ukraine Energy Support Fund**⁶ is one of the financial instruments providing direct technical and financial support for Ukraine's energy sector during the war and is expected to play this role further after the war ends, at least for some time. The Fund is expected to collect several hundred million Euros in support and potentially become a coordination and supervision body for international contributions in a medium-term perspective. To stay attractive for donors and contributors, the Fund should prepare and share the results of its work with, at a minimum, the target groups.

3.1.2.

State-owned bank loans for energy enterprises can become quite an affordable and quick financial resource for reconstructing damaged energy infrastructure and some initial capital investments into new projects for small and medium enterprises from Ukraine.

3.1.3.

Corporate green bonds can be issued at least by several state-owned and private energy companies in Ukraine to quickly find financial resources for the recovery of energy infrastructure compliant with sustainability criteria. Those companies have experience issuing bonds for up to 1 bln USD but will most probably need additional guarantees from the state or foreign partners in order to get reasonable interest rates.

3.1.4.

Governmental bonds for internal and foreign investors can be issued to accumulate resources for covering debts in the energy sector, particularly those towards RES owners and energy companies with special public obligations. Respective measures can unlock corporate investments in the energy sector, especially in RES development, which has experienced numerous difficulties in Ukraine in 2020-2021 and severe damages in 2022.

3.1.5.

Portions of the expected Nefco Green Recovery Programme for Ukraine⁷ and potentially available resources from the World Bank Multi-Donor Trust

Fund or the IMF Multi-Donor Administered Account can become a significant supporting resource for municipal and local authorities, provided their compliance with respective requirements and capabilities to manage transparently projects.

At this stage, Ukraine's potential for financial support could be much higher. It requires ongoing initiatives and discussions around ensuring efficient, transparent and responsible utilisation of resources would result in a **single platform** that unifies and merges tools such as the Ukraine Energy Support Fund, multiple government funds, and the Presidential Office initiative of the Ukraine Recovery Fund.

3.2.

In the medium-term three to five years after the war ends, Ukraine is expected to adopt a legislative and regulatory basis for a substantial inflow of international support, including donations, access to European structural funds, and direct foreign private investments. The requested investments for that period are calculated at 10-15 bln USD⁸. The recovery of transmission grids and adoption of certificates of origin will ensure growing energy exports, including from renewable energy resources, with the respective increase of corporate revenues and investments.

3.2.1.

Adoption of Ukraine's analogy of the European recovery and resilience plan can open access to the **Recovery and Resilience Facility** of the EU and provide support to the realisation of joint projects to increase transborder transmission and transportation capacities with neighbouring countries.

3.2.2.

Production sharing agreements with western energy mayors from the CEE region to the USA and Canada, which have experience in hydrocarbon exploration and extraction on offshore fields, deep-water drilling technologies, and access to international financial resources to get attractive loans, can become driving force for the Black and Azov seas. To become sustainable, those projects should be coupled with offshore wind parks and solar installations on shallow waters. Western energy mayors have already started with respective diversification of their portfolios.

6 <https://www.energy-community.org/regionalinitiatives/Ukraine.html>

7 <https://www.nefco.int/financing-options/green-recovery-ukraine/>

8 P.53 <https://www.kmu.gov.ua/storage/app/sites/1/recoveryrada/ua/energy-security.pdf>

Thus, it can be acceptable also to launch them in Ukraine. If these projects can integrate further hydrogen electrolysers, they will potentially benefit from expected EU-Ukraine cooperation⁹.

3.2.3.

National programmes for supporting regional reconstruction under the auspices of the European Alliance of Cities and Regions for the Reconstruction of Ukraine¹⁰ are expected to be developed and adopted on the level of respective states from the EU and other partner countries. They are aimed at providing targeted support to certain Ukrainian regions (oblasts) or cities. Being at the very initial state, these programmes can become effective facilitators for the engagement of European communities, municipalities and businesses in Ukraine's reconstruction, including decentralised energy infrastructure. To become attractive and workable, an effective coordination structure from the Ukrainian government and local authorities should be established, clear procedures and deadlines for approval of projects should be determined, as well as openness and transparency at all stages until final implementation.

3.3.

In the long-term period of five to ten years, Ukraine will remain attractive for European and international investors if its European integration proceeds well and the state authorities work on further simplifying access to the internal market and improve the work conditions of small, medium, and large businesses in Ukraine. This includes access to energy resources, production, wholesale and retail markets and exports to other countries.

Provided the above, the energy sector of Ukraine can expect significant interest from domestic and foreign investors with a respective substantial inflow of capital, technologies and qualified personnel.

⁹ <https://ukraineinvest.gov.ua/news/06-06-22-2/>

¹⁰ <https://cor.europa.eu/en/engage/pages/european-alliance-of-cities-and-regions-for-the-reconstruction-of-ukraine.aspx>