KSE | Institute

DECEMBER 2025 ANALYTICAL BRIEF

Energy Sector Priority Projects in Ukraine – Status, Challenges, and Financing Programs

Government
of Norway

Implemented with the support and financing of the Government of Norway.

1. ENERGY SECTOR IN THE CONTEXT OF WAR

1.1. Baseline System (before February 2022)

At the beginning of 2022, Ukraine's energy sector was one **of the most advanced in Europe**, with

56 GW

of electricity generation capacity

making it one of the largest. It was also among the **top three natural gas producers (~20 billion m³)** and had **Europe's largest underground gas storage (31 billion m³)** with a **38,000 km natural gas transmission system**.

Nuclear energy provided over half of Ukraine's electricity (55.5% in 2021 and 58.1% in 2022), followed by thermal power generation, which accounted for **~39% of installed capacity** and **23.8% of electricity production in 2021**. By 2021, Ukraine had installed **more than 8 GW of onshore wind and solar capacity**[1].

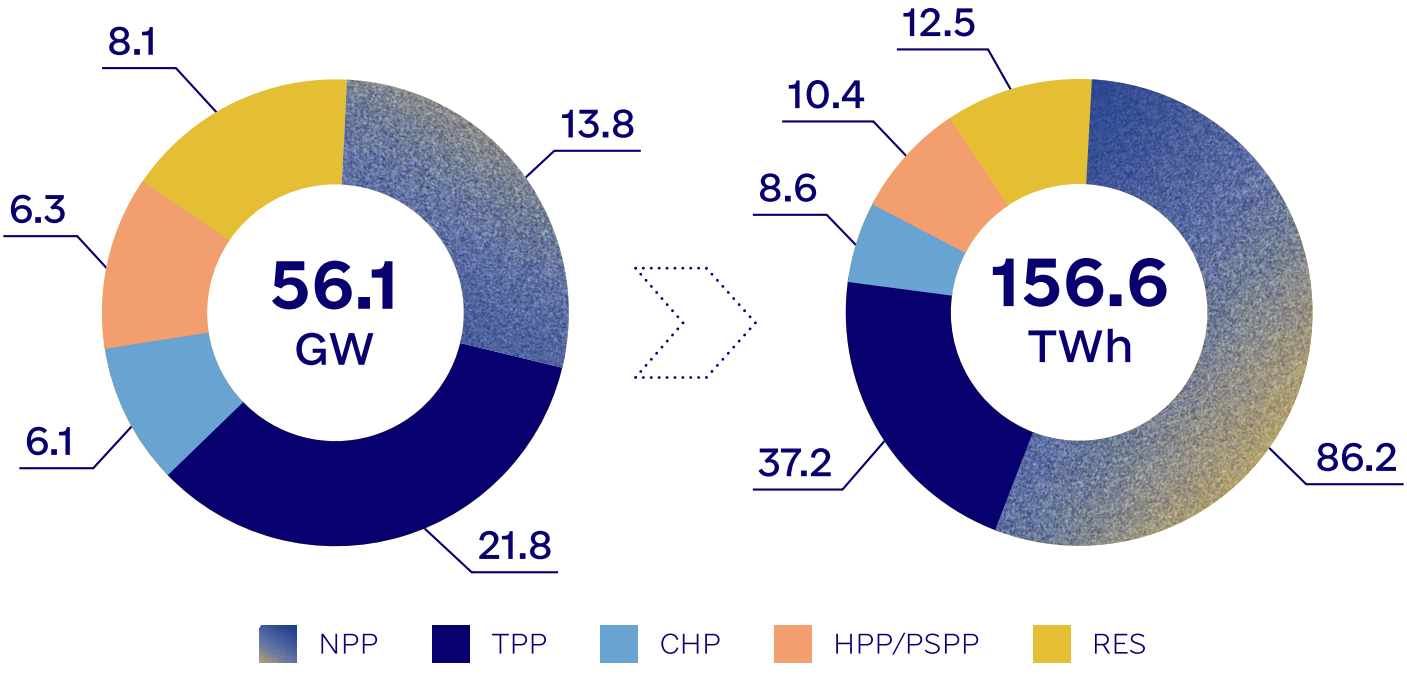
The electricity sector contributed **up to 8% of the Gross Domestic Product. The entire population had access to electricity**.

The country's energy mix relied heavily on **nuclear generation (13.8 GW of capacity which provides 55% generation)**, with **thermal generation** utilising coal and natural gas also playing significant roles.

Notably, in recent years, there has been a **rapid increase in the share of generation from RES**, including water, solar, wind, biomass, and biogas. Before the start of the fullscale war, Ukraine's installed renewable energy capacity included **~1.7 GW onshore wind**, **~6.4 GW solar** and **~6.3 GW hydroelectric power plants**.

~1.7 GW	~6.4 GW	~6.3 GW
onshore wind	solar	hydroelectric power plants

INSTALLED CAPACITY, GW, AND ELECTRICITY GENERATION, TWH IN 2021



[1] Investment Guide - May 2024, KSE Institute in collaboration with the Ministry of Economy of Ukraine

1.2. Current State of the Sector (2022–2025)

Ukraine's energy sector has suffered **some of the biggest losses** as a result of the war, in particular due to **massive shelling and destruction of power generation facilities**. According to the **RDNA4**[2],

total damage in the **Energy and Extractives sector** as of December 31, 2024, is estimated at

$20.51 billion

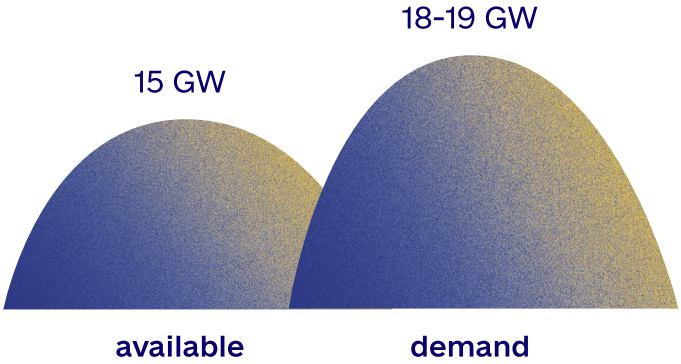
In 2024, Ukraine's energy infrastructure suffered additional damage, particularly during March - June, August, and November - December, as a result

of 13 large-scale attacks

According to the **RDNA4**, during this period new damages were recorded to:

- power generation facilities, including maneuverable capacities such as **thermal power plants (TPPs)**, **large hydroelectric power plants**, and **combined heat and power plants**;
- facilities of the electricity transmission system operator **Ukrenergo**;
- facilities of distribution system operators - a total of **299 damaged units**.

As a result, the **available generation capacity fell to 15 GW as of December 31, 2024**, significantly below the peak winter electricity demand of **18–19 GW**.



The peak demand fell to around **16.5 GW** in the **2024/25 heating season** due to **mild temperatures** but might increase again to 'normal' **18 GW or even higher** in case of **low temperatures**. In addition to available generation capacity, the **2.3 GW of import capacity** will be available in **December 2025** plus **250 MW of emergency support** from the **EU**.

Former Ukraine's **Ministry of Energy** anticipated that **17.6 GW of total generation capacity** would be available ahead of this **heating season**[3].

However, **Russian attacks on power infrastructure in September-November** induced the KSE to lower this estimate with further **downside risks** due to **non-stopping attacks on power generation capacities**. During the attack on September 8-9, 19 drones severely damaged the recently rebuilt Trypilska TPP, which had initially been destroyed in spring 2024. Another massive attacks by Russia targeted energy infrastructure across Ukraine, causing serious damage to several thermal power plants in Kyiv and other regions in Central and Western Ukraine. In mid-November 2025, the load shedding by the transmission system operator increased to 12-16 hours per day indicating around 3 GW system deficit. Thus, the available generation capacity could decline to just around 11-12 GW but part of it may be restored, in particular, damaged substations currently locking nuclear power units, ahead of the upcoming 2025 winter season.

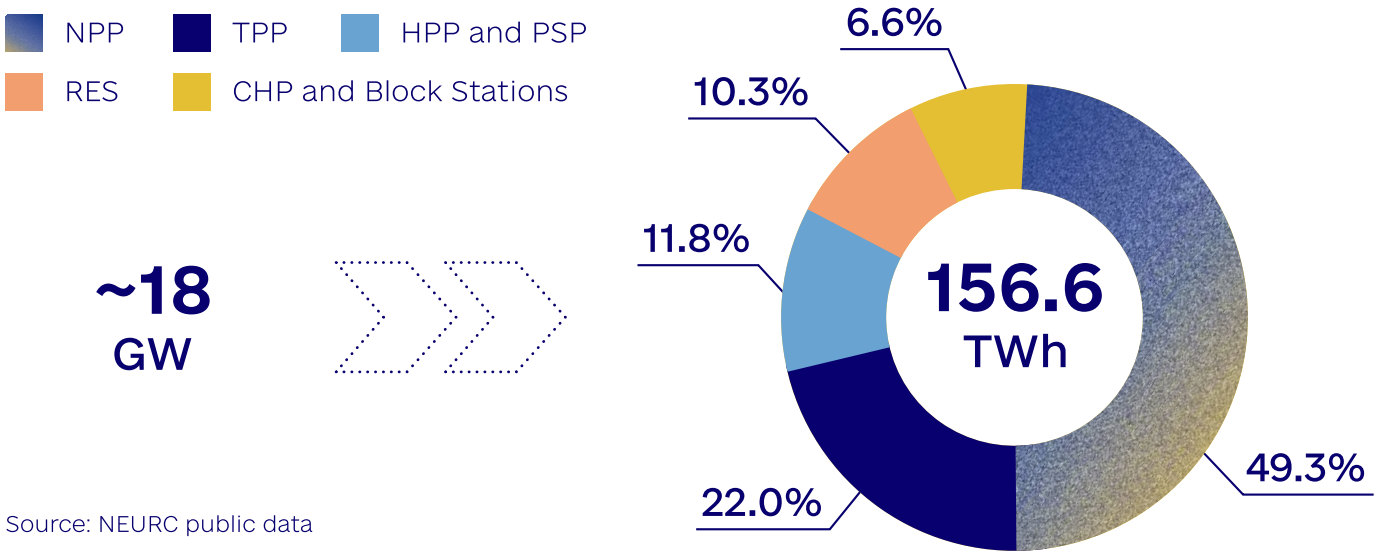
Currently, approximately **18 GW of generation capacity has been occupied by Russian forces**, including HPP, TPP, RES, and the largest nuclear power plant in Europe - Zaporizhzhya NPP (6 GW).

Electricity production in Ukraine is dominated by **NPPs**, which generate stable volumes of electricity, and **RES**, which depend on weather conditions. This **energy mix does not ensure a balance** between generation (supply) and consumption (demand), as **seasonal and daily weather variations significantly increase the risk** of imbalances in the energy system.

[2] RDNA4 - February 2025, the World Bank, the Government of Ukraine, the European Union, the United Nations
[3] https://mev.gov.ua

The following presents the structure of electricity generation in Ukraine by source as of 2023. For security reasons, updated information on the electricity generation structure is not publicly available. However, based on publicly available data on damage to generation capacities, it can be assumed that electricity production from **TPPs and HPPs decreased** in 2024.

TOTAL AVAILABLE INSTALLED CAPACITY (GW) AND STRUCTURE OF ELECTRICITY GENERATION (TWH), 2023[4]



Source: NEURC public data

The energy sector remains both a **critical vulnerability and a foundation for post-war modernization**. Repeated Russian attacks continue to **damage power generation and transmission infrastructure**, leading to **periodic blackouts** and **higher operating costs**, especially expected during the **winter 2025-26**, which are projected to cause a **2.5% decline in GDP in 2026**.

Nonetheless, **integration with the European electricity network** and **diversification of generation sources** have supported **gradual stabilization** and will continue further. **Electricity exports reached record highs in mid-2025**, while imports filled seasonal gaps.

Nuclear energy continues to anchor supply, with **nine Energoatom units** expected to operate through the winter.

Gas and coal reserves remain sufficient for winter operations, backed by **EBRD-financed imports** and **domestic storage programs.**

In addition, Ukraine continues to improve the mechanism for conducting quota allocation auctions, so-called "green" auctions, drawing on leading global practices to attract investment in renewable energy projects. According to Article 9-3 of the Law of Ukraine "On Alternative Energy Sources," support for RES producers is provided through green auctions based on a **Contract for Difference (CfD)**.

Under this mechanism, the auction winner signs a **market premium (feed-in premium) agreement** with the state-owned enterprise "Guaranteed Buyer." The Guaranteed Buyer purchases all of the producer's electricity, but not at a fixed tariff: it compensates the difference between the auction price (plus any applicable regulatory premiums, e.g., for localization) and the market price of electricity. In other words, the producer sells electricity on the market and then receives a premium to bring revenues up to the winning auction bid. The contract is concluded for 12 years, and participants must provide bank guarantees (€15/kW of installed capacity).

PARTICIPATION IN AUCTIONS

- Mandatory for large PV plants (>1 MW) and wind farms (>5 MW).
- Smaller installations and other types of RES (biomass, small hydropower, etc.) may participate voluntarily.

Auctions are held annually based on quotas approved by the government, taking into account proposals from the transmission system operator and the National Energy and

[4] Energy Sector Investment Guide - January 2025, KSE Institute in cooperation with the Ministry of Economy of Ukraine, the Ministry of Energy of Ukraine

Utilities Regulatory Commission (NEURC). After winning the auction, the producer signs a market premium agreement, under which the difference between the approved tariff and the market price is calculated using either the daily weighted average price or the average price of bilateral contracts.

PRACTICAL EXPERIENCE OF 2025 AUCTIONS

The first pilot "green" auctions in 2025 (still under the previous direct purchase model) showed weak demand:

- March–April 2025: 33 MW of solar and 100 MW of wind - no participants; auctions were declared null and void.
- Subsequent rounds (May–July 2025): only a few projects participated, and only one received support (120 MW out of 150 MW offered by a wind project).

The reasons included low investor interest, a limited number of winners, and insufficiently attractive auction conditions. This led to the preparation of draft law **No. 13219** (October 2025) to improve conditions - including higher participation guarantees and location-based incentives.

The Cabinet of Ministers has already set quotas for 2026–2029 (340–400 MW), while the Antimonopoly Committee and NEURC are developing technical rules for conducting auctions under the new scheme.

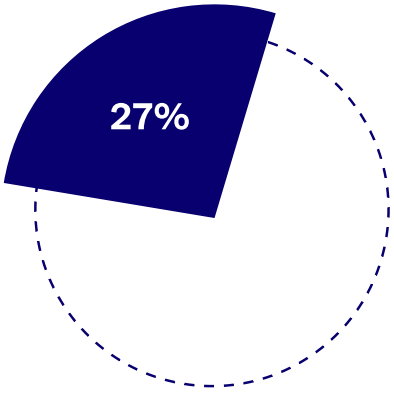
INTERNATIONAL CFD SUPPORT

In parallel, EBRD is developing a CfD support scheme for Ukraine - URMM (Ukraine Renewable Energy Risk Mitigation Mechanism). This mechanism provides risk insurance, revenue stabilization for investors, and long-term CfDs funded by donor resources. URMM is planned to be rolled out in 2026, and technical assistance will also be provided to the government to build a national CfD scheme that will gradually complement or replace existing green tariff and auction mechanisms.

1.3. Energy Challenges

In recent weeks, Russia has caused serious damage to Ukraine's energy infrastructure once again - with serious implications for import needs, budget expenditures, and economic activity.

Challenges during the winter of 2025-26 are expected to be considerable - in fact, the situation will be more difficult than last year. We estimate that 50% of Ukraine's natural gas production has been taken out of service. Likewise, **27% of electricity demand cannot be met due to damage to generation facilities and the distribution network**.



Imports: In our assessment, Ukraine will need to import an additional 4.1 bcm in gas during the heating season (i.e., until April), amounting to $1.9 billion. Importantly, this scenario assumes no further damages. Should Russian attacks remove additional gas production leading to only 20% of the original total capacity, import needs would rise to 6.9 bcm worth $3.2 billion. The cost of imports is not the only concern for the energy supply, however, as interconnectors do not allow for more than 2.55 GW . That would permit 4.5 TWh in additional imports ($1.4 billion) but would still lead to serious power outages for households and businesses during the winter, even without additional damages. This also has negative implications for the widening trade deficit, increasing depreciation pressure on the Hryvnia.

Repairs: Rebuilding energy infrastructure carries its own costs - $2.4 billion in the base scenario and $4.3 billion in the downside scenario that covers both electricity gridline and gas production system.

Economic activity: While assessing the macroeconomic effects of the energy deficit is complicated by limited information and strongly influenced by key assumptions, the estimated effect may be on par with the one during the winter of 2022-23. Despite the strong GDP growth in 2023 of 5.5%, the negative effect still materialized. The NBU, in its January 2023 Inflation Report, projected

effects of -1.9pp and -0.6pp for 2023 and 2024, respectively. The readiness of the system and businesses (with generators and fitted systems) was assumed for 2024 but only partially for 2023, leaving the true estimate for 2025-26 closer to the 2024 estimate of -0.6pp. The energy deficit is already mostly accounted for in the KSE Institute's current forecast and explains most of the difference between the current and July edition - of -0.6pp for 2025 and -0.5pp for 2026 - amid the improvement of the economic activity in recent months. Regarding prices, the inflationary effect of increased electricity costs from generators is mostly offset by the base effect created by electricity price increases in 2023-24. Moreover, the enlargement of the trade deficit may have an effect - from negligible in the case of full coverage by international partners to very significant otherwise - if the currency demand for imports is not balanced, increasing the demand for Dollars.

Financing the energy sector could take several forms with varying effects and corresponding risks:

More international support: This is the most viable solution in terms of the effects on the balance of payments and economic activity. Ukraine already received €1.25 billion for its energy system during 2022-25 through the Ukraine Energy Support Fund, which could be expanded upon. It may prove to be too slow, however, as further negotiations with partners would be required.

Special "Energy Government Bonds": The Ministry of Finance may issue bonds with short maturities (i.e., of 12-24 months) specifically dedicated to the funding of grid repairs and gas imports. Interest rates comparable to other domestic debt - or possibly linking to inflation - may improve their appeal and decrease budget pressure amid pro-inflationary fears. The NBU could also make them eligible as benchmark bonds to increase attention from banks.

Reorient budget money from lower priority programs: Given that most military expenses are in secured parts of the budget that have not been touched, such an approach will impact social programs. However, insufficient supply of electricity and natural gas over the winter may be an even more socially-unacceptable outcome than cuts to certain programs.

Funding through the banking system: To increase absorption of domestic debt issuance, the NBU could further increase the benchmark-bond ratio in reserves, redirect banking liquidity from 3-month CDs, and/or temporarily increase the bank profit tax. These steps could each generate $0.5-1 billion. However, this approach would further damage the credibility of the GoU from the perspective of banks, increase incentives to obfuscate profits, and undermine efforts to privatize state-owned banks[5].

Additional sector challenges: Beyond the immediate supply constraints and macroeconomic pressures, several structural factors continue to limit the sector's ability to mobilize investment and prepare for long-term recovery. A key barrier is the persistent lack of bankable project documentation. Many priority initiatives require robust feasibility studies and standardised financial models before IFIs, DFIs, and private investors can commit capital at scale. The absence of such preparatory work increases uncertainty and prolongs decision cycles, delaying both financing and implementation at a time when the sector requires rapid interventions.

Risk-management mechanisms also remain underdeveloped relative to wartime conditions. Existing insurance products do not sufficiently cover operational, construction, or political risks, creating hesitation among sponsors and financiers. Strengthening these instruments - together with targeted technical assistance - would reduce lender exposure and help align projects with eligibility criteria under the Ukraine Investment Framework. Without such improvements, otherwise viable investments may remain stalled despite strong demand and clear strategic value.

Operational inefficiencies add another layer of vulnerability. Fragmented processes, inconsistent technical documentation, and the uneven capacity of project developers hinder timely preparation, evaluation, and execution. Addressing these bottlenecks is essential to accelerate project pipelines, reduce cost overruns, and improve absorption of available financing. Streamlined workflows and clearer procedural standards would also contribute to greater predictability for counterparties.

[5] Ukraine Macroeconomic Handbook - October 2025, KSE Institute

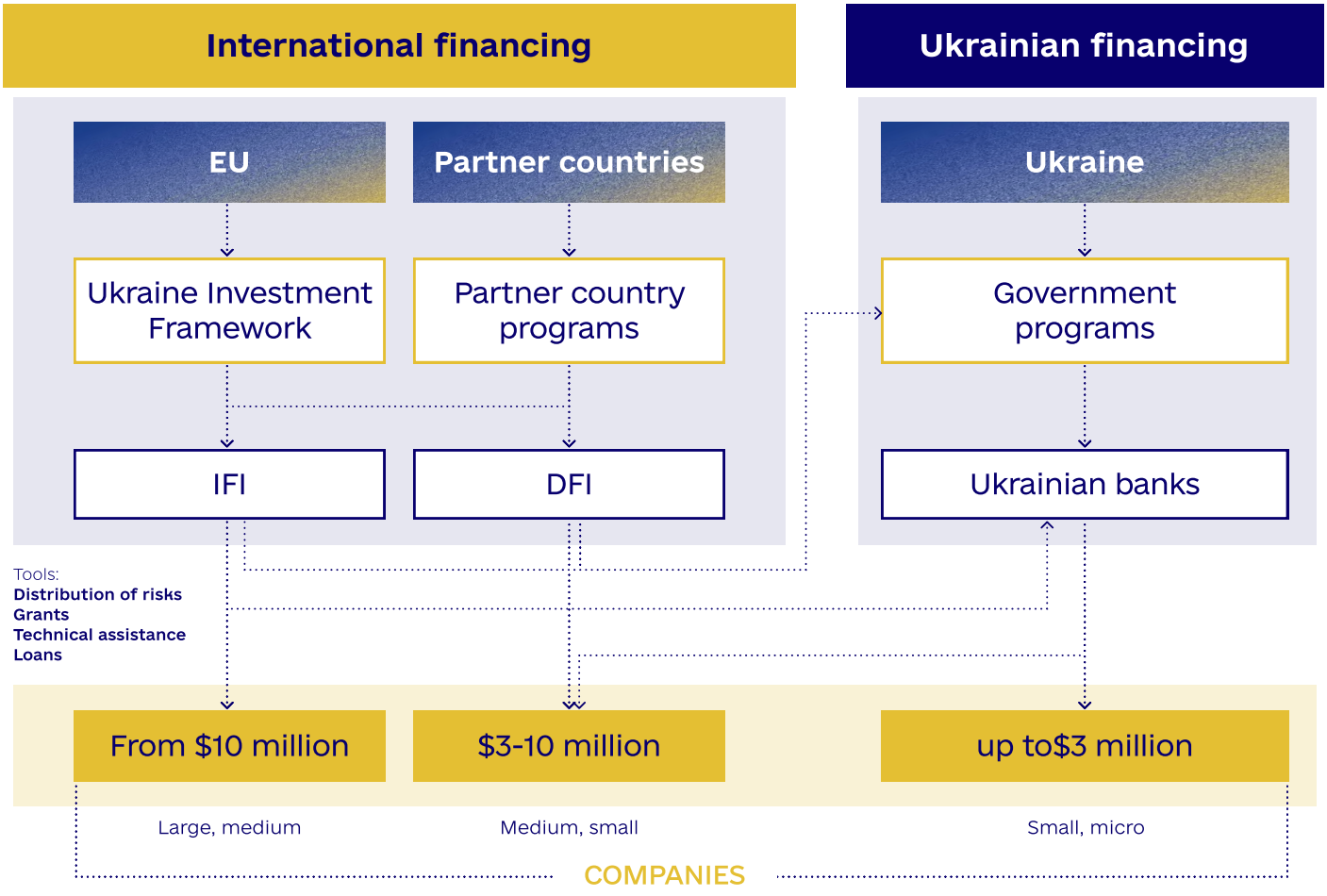
2. ENERGY SECTOR RECOVERY: FINANCING MECHANISMS AND PROGRAMMES

Ukraine has faced a major challenge in the form of significant losses of energy capacity as a result of Russia's regular missile attacks on key energy infrastructure. **Restoring and diversifying electricity and heat generation capabilities is one of the most important tasks for Ukraine today.**

To implement this task, it is necessary to attract significant financial resources and effectively use the tools and programs of both IFIs and Ukrainian banks. The largest existing program intended to finance Ukrainian businesses is the **€9.3 billion Ukraine Investment Framework (UIF)** from the EU, which is part of the Ukraine Facility (Pillar II). As supporting and developing the energy sector is one of the top priorities of the Government of Ukraine, companies can use UIF funding to implement energy projects in the country.

For **large projects** with a budget of **more than $10 million**, companies can attract financing from **IFIs/DFIs**. For **medium-sized projects** with a budget of **$3 to $10 million**, companies can seek funding from **DFIs** and, partially, from Ukrainian banks. Finally, for **small projects** with a budget of **up to $3 million**, companies can use financing from Ukrainian banks[6].

FINANCING PROGRAMS FOR UKRAINIAN BUSINESS, INCLUDING PROJECTS IN THE ENERGY SECTOR



[6] The Practical Guide (manual) for attracting financing for Ukrainian enterprises - September 2024, KSE Institute in collaboration with the Ministry of Economy of Ukraine

2.1. EFI funding programs and project areas in the energy sector

UIF financing for the energy sector is available to Ukrainian companies through 11 Eligible Financial Institutions (EFIs) - 6 IFIs and 5 DFIs. This financing is available under 40 different programs of the UIF **(€5.7 billion in total)** and includes:

- **Provision of guarantees** (lowering collateral requirements, and enabling more companies to obtain larger amounts of funding and mitigate the high risks or collateral impairment).
- **Grants for mixed financing** (reducing the cost of loans).
- **Technical assistance**.

All financial products under the UIF program, which are implemented through Ukrainian banks, **can be combined with other programs and products** (grants, 5-7-9 program, etc.). This provides companies with more favourable conditions for obtaining financing.

Under UIF, the top five EFIs financing the energy sector include EIB, EBRD, IFC, BGK and AFD, which are funding projects in Ukraine either directly (for projects with budgets over $10 million) or through the Ukrainian banking sector.

All of these EFIs identify the **energy sector as one of their priorities for investment** and, depending on their strategic goals, finance both public and private sector projects.

FUNDING UNDER UIF PROGRAMS THAT CAN BE USED TO FINANCE THE ENERGY SECTOR (BUT NOT ONLY) BY EFIS & SECTORS, € MLN

as of October 2025

Line	private direct	private via banks	public	Total
EIB	250.4	201.1	1607.8	2059.3
EBRD	567.8	544.7	550.2	1662.7
IFC	474.0			474.0
BGK	184.1	141.0	138.5	463.6
AFD			276.4	276.4
EDFI Ukraine	239.5			239.5
KfW		110.0	121.8	231.8
NEFCO			109.0	109.0
NRB	100.0			100.0
EXIMBANKA			93.2	93.2
CEB		15.1		15.1
Total initial budget	**1815.8**	**1011.9**	**2896.9**	**5724.6**
Disbursed (not only energy)	**212.2**	**173.3**	**455.8**	**841.3**
Remaining	**1603.6**	**838.6**	**2441.1**	**4883.3**

In total, **15%** of the funds (€841 million) from these programs have already been **allocated 10%** (€539 million) was **spent** specifically on **energy projects**.

DISBURSED SPECIFICALLY ON ENERGY PROJECTS:

As of October 2025, **two public projects worth €455 million** (NaftoGas and UkrEnergo) and **three private projects worth €84 million** (wind farms) had already been financed in the energy sector. An additional €173.3 million was financed to SMEs through banks, but the final sector of use is unknown.

The total remaining amount available for financing the energy sector (but not only) is **€4.9 billion**, including:

- **Public sector** - €2.4 billion
- **Private sector direct** - €1.6 billion
- **Private sector via banks** - €0.8 billion

Under programs related to the energy sector it is planned to mobilize an additional **€19 billion in investments** (81% in the private sector).

EFIS PRIORITY AREAS IN THE ENERGY SECTOR[7]

EFI	Priority areas in the energy sector	Historical funding structure
European Bank for Reconstruction and Development	Investing to stabilise and restore Ukraine's electricity grid and promoting RES	
European Investment Bank	Investing to stabilise and modernise Ukraine's electricity grid, as well as support RES and EE	
International Finance Corporation	Supporting critical infrastructure, including RES	
KFW Bank aus Verantwortung	Investing to stabilise and restore Ukraine's electricity grid and developing RES initiatives	
BGK Polski Bank Rozwoju	Investing in energy security, primarily in RES installations that meet the needs for reliable and sustainable energy in Ukraine, as well as the installation of RES onshore and offshore, and supporting the development of sustainable energy in Ukraine	

 financing of private sector projects

 financing of public sector projects

Source: KSE Institute analysis

2.2. DFIs financing projects in the energy sector

In addition to the proposed programs of Ukrainian banks and leading EFIs, it is worth considering the possibility of **attracting funding from DFIs - organisations that provide financial support and investments to stimulate economic development** in developing countries.

[7] Energy Sector Investment Guide - January 2025, KSE Institute in cooperation with the Ministry of Economy of Ukraine, the Ministry of Energy of Ukraine

The sources of funding for DFIs typically include funds from governments, insurance companies, pension funds, sovereign wealth funds, and EFIs. Some DFIs may also issue bonds and securities to finance their operations.

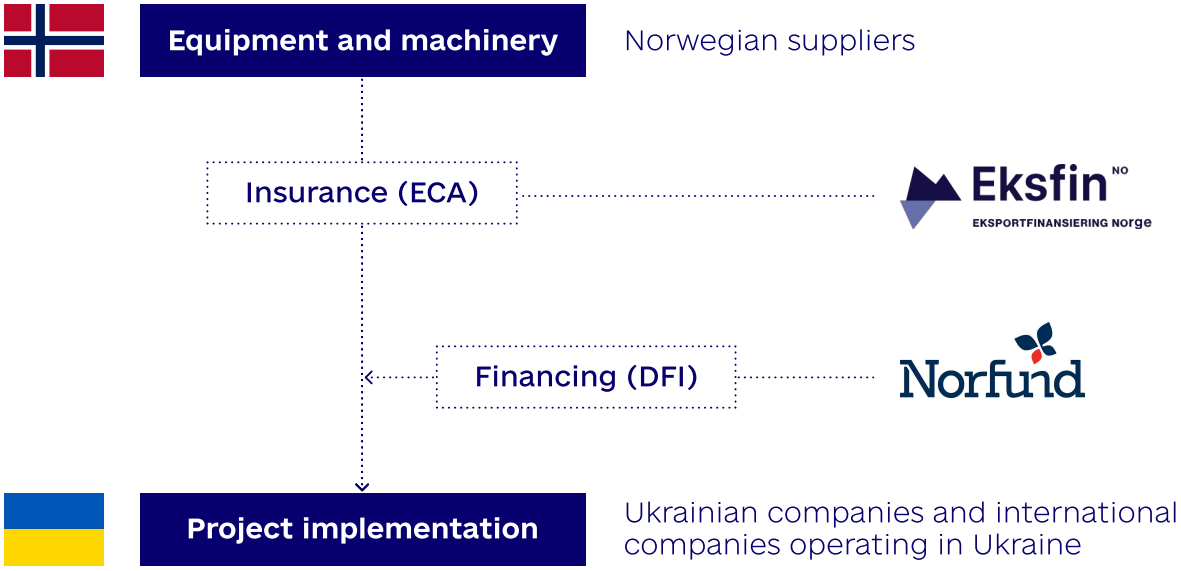
Most European DFIs are eligible for funding under the **€9.3 billion UIF program of the European Commission, in order to implement projects in Ukraine**.

DFIs fund projects in a variety of sectors and usually give **priority to projects that address climate change and/ or promote sustainable development**. This includes financing RES projects and EE initiatives.

DFIs can invest in Ukraine in a variety of formats:

- through the ECA of their countries, insuring investment risks within the available limits, in order to support their own exporters (equipment manufacturers or companies investing in Ukraine);
- through directly financing Ukrainian businesses;
- through private equity and venture capital funds;
- through international banks and Ukrainian banks, by providing credit lines and guarantees (which in turn are used to finance Ukrainian businesses).

ILLUSTRATION: FINANCING THE PURCHASE OF ENERGY EQUIPMENT VIA DFI & ECA (Norwegian example)



2.3. Ukraine Energy Support Fund

The Ukraine Energy Support Fund is a joint initiative established by the Ministry of Energy of Ukraine and the Energy Community Secretariat, which also serves as the fiduciary and the operational manager of the fund. Created in response to large-scale destruction of Ukraine's energy infrastructure, the mechanism enables international donors to provide targeted financial assistance for the procurement of critical equipment, emergency repairs, and the stabilisation of the national energy system. All contributions, procurement processes, and deliveries are managed with full transparency and in close coordination with the Ukrainian Government.

As of the beginning of the **second quarter of 2025**, the Fund has demonstrated **significant impact**. According to the Ministry of Energy, donor contributions have reached approximately **€1.2 billion**, reflecting strong and sustained support from **EU member states**, the **United Kingdom**, **Norway**, and other **international partners**. The Fund has already financed the purchase and delivery of a wide range of **essential equipment** required to **stabilise and restore Ukraine's energy sector**. This includes high-voltage transformers, autotransformers, mobile substations, gas-turbine units, circuit breakers, power cables, and specialised equipment for repairing transmission and distribution networks.

The projects implemented under the Fund cover **urgent infrastructure** needs across

multiple regions affected by targeted attacks on the power system. Among the notable achievements are: the replacement of damaged transformer capacity at key substations, emergency reinforcement of distribution networks to prevent winter blackouts, deployment of mobile generation and reserve power units, and restoration of critical grid nodes supplying major industrial and residential centres. These interventions have significantly strengthened Ukraine's ability to **maintain grid stability** during peak consumption periods, **reduce dependence on emergency imports**, and **prepare for the next heating season**.

Overall, the Ukraine Energy Support Fund has become one of the most **effective and transparent mechanisms** for channeling donor assistance into Ukraine's **energy recovery**. It continues to play a crucial role in addressing immediate operational needs while supporting longer-term resilience and the gradual modernisation of the energy system.

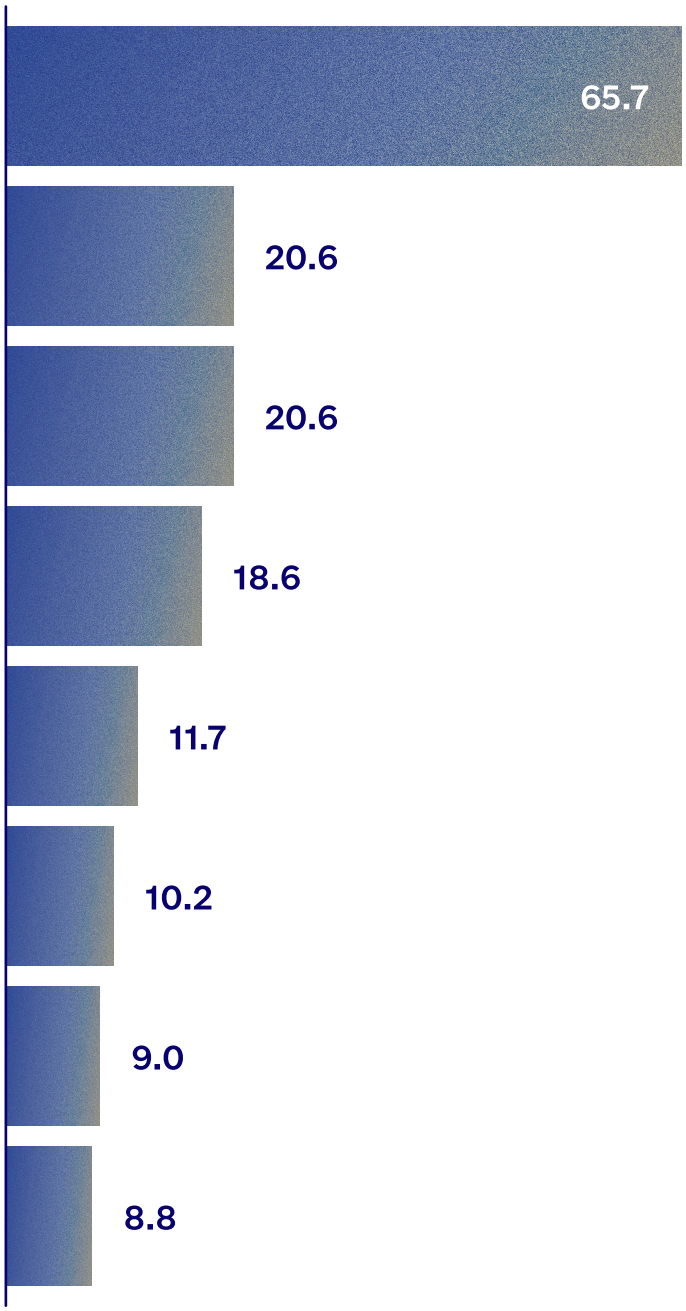
3. INVESTMENT OPPORTUNITIES IN THE ENERGY SECTOR

3.1. Prospects and potential for the sector

Despite extensive damage, Ukraine's energy sector remains one of the most attractive for investment. According to state strategic documents and KSE Institute estimates, the sector's projected needs through 2033 amount to **$167.6 billion**[8].

POTENTIAL INVESTMENT OPPORTUNITIES, $ BN

Potential investment opportunities, $ bn



Key energy subsectors development by 2033

Wind generation: Construction of new wind power plants with total capacities of 64.4 GW

Oil and gas: Restoration and modernization of refineries, exploration and development of the potential of new deposits, reconstruction of compressor stations, etc.

Bioenergy: Construction of alternative biofuel capacities – 0.3 GW; Increasing capabilities to produce 10 bn m^3 of biomethane

Nuclear power: Construction of new nuclear power units (3.7 GW)

Peaking power including cogeneration: Construction of new capacities with total capacities up to 13 GW

Solar generation: Construction of new solar power plants with total capacities of 15.6 GW

Hydrogen: Carrying out technical studies on the readiness of Ukraine's GTS for hydrogen; export to the EU countries (1 m tonnes); internal production for green steel manufacturing (0.375 m tonnes)

Grids and interconnectors: Modernization of the transmission system to increase transformer capacity and development of networks

Source: Ministry of Energy, Kyiv School of Economics

[8] Potential Investment Opportunities in Considered Sectors of Ukrainian Economy - January 2024, KSE Institute

POTENTIAL INVESTMENT OPPORTUNITIES, $ BN

Potential investment opportunities, $ bn

Source: Ministry of Energy, Kyiv School of Economics

Key energy subsectors development by 2033

Hydroenergy: Construction of pumped-storage hydroelectric power stations (2.1 GW)

Storages: Construction of instalment of 0.5 GW

Ukraine aspires to become a key contributor to addressing Europe's critical energy challenges, positioning itself as an energy cornerstone for the continent. The country aims to develop into **a major European hub for renewable energy**, **with more than 750 GW of potential capacity**, while also strengthening its role as **the EU's reliable partner for natural gas storage - particularly vital during winter periods**.

Ukraine is also emerging as **an important center for green hydrogen production**, supporting the EU's green industrial transition, and **a future net exporter of natural gas**, contributing to Europe's energy security. Also, leveraging its strong agricultural base, Ukraine is becoming **one of the leading suppliers of biogas to the EU**.

To rebuild its energy sector, Ukraine **requires modern**, **high-tech equipment** capable of ensuring resilience, efficiency, and alignment with European standards. This includes the modernization of generation capacities, the renewal of grid infrastructure, the deployment of energy storage systems, and the introduction of advanced digital solutions for system management and protection. Modern equipment is a critical prerequisite for rapid recovery, enhanced energy independence, and deeper integration into the European energy space. Equipment potential for energy is estimated to be **$7.7 billion per year in 2033** (turbines, transformers, power machines, generators, circuit breakers, electrical control systems, regulators).

Despite existing military risks, large-scale **energy projects are being implemented in Ukraine**, including those supported by international financial institutions. These projects aim not only to restore damaged energy infrastructure but also to advance the **overall development of the energy sector**.

INVESTORS & EFIS HAVE WORKED TOGETHER TO FINANCE ENERGY PROJECTS THROUGH UIF

	JSC "Galnaftogaz" (OKKO Group) €157M secured loan	Ukrenergo - Electricity Transmission Rehabilitation Programme (KfW) €100M EU Grant via KfW
EFI(s)	European Bank for Reconstruction and Development, IFC, BSTDB	KFW
Instrument	€60M EBRD Loan, EBRD Hi-Bar (UIF Guarantee) €60M IFC Loan, IFC Better Futures (UIF Guarantee) €37M BSTDB Loan	€100M EU Grant through KfW Development Bank
Parties	• Wind Power GSI Volyn LLC • Wind Power GSI Volyn LLC 3	NPC "Ukrenergo" (Ukraine's transmission system operator)

INVESTORS & EFIS HAVE WORKED TOGETHER TO FINANCE ENERGY PROJECTS THROUGH UIF

	JSC "Galnaftogaz" (OKKO Group) €157M secured loan	Ukrenergo - Electricity Transmission Rehabilitation Programme (KfW) €100M EU Grant via KfW
Financing	€157M	€100M
Notes	The funding enabled the construction of a 147 MW greenfield wind power plant. IFC & BSTDB contributed to an overall financing package of €157M.	EU grant through KfW to restore and modernise high-voltage substations and crirtical grid assets damaged by war, improving transmission reliability and integration of renewables.

ENERGY PROJECTS IN UKRAINE (NON-UIF)

Company	Project (2022-2025)	Description
DTEK	200 MW / 400 MWh Battery Energy Storage Systems (2023-2024)	Contract with Fluence to deliver Ukraine's first large-scale BESS portfolio: 6 sites totalling 200 MW, the biggest storage programme in Eastern Europe.
Elementum Energy	Acquisition of 200 MW Wind Projects in Western Ukraine (2023)	Purchase of three wind projects (Lviv, Rivne, Ternopil regions), enabling €300+ million pipeline in Ukraine despite wartime conditions.
Notus Energy	400 MW Kyiv Wind Farm – Project Agreement (2023)	One of the largest announced wind projects since the full-scale invasion; formal cooperation agreement with Makariv community.
Helios Strategia	Multiple solar EPC projects (2022–2024)	The company remained active in EPC/maintenance of Ukrainian solar plants; continuing replacement of damaged PV equipment.

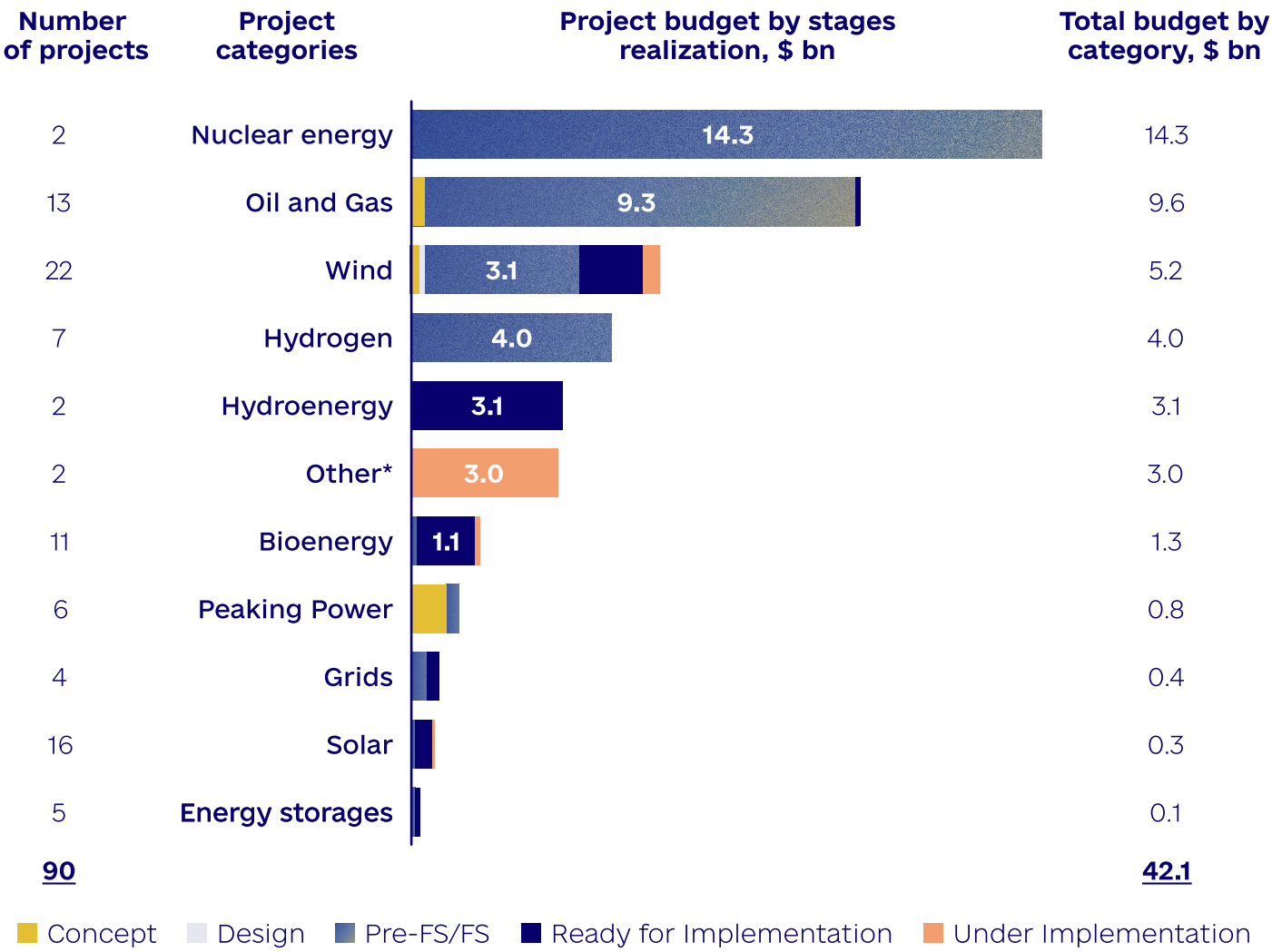
3.2. Investment Opportunities in Ukraine: Real Cases for the Recovery of the Energy Sector

As of December 2025, the KSE team, in cooperation with the Ministry of Economy of Ukraine, has processed over **500** investment projects in the energy sector. Of these, **90 projects** with a combined budget of **$42 billion** have been selected for further preparation and publication on the Investment Portal[9]. The selected projects range from conceptual designs to fully implementation-ready initiatives and represent various forms of ownership, while all of them demonstrate a high degree of readiness for realization.

Projects span NPP expansion, RES generation (wind, solar, bioenergy), hydro/PSPP development, transmission & distribution upgrades, storage systems, peaking generation and other modernization projects.

[9] Ukraine Investment Project Portal - KSE Institute in cooperation with the Ministry of Economy of Ukraine

ENERGY PROJECT BUDGET BY STAGES OF REALIZATION

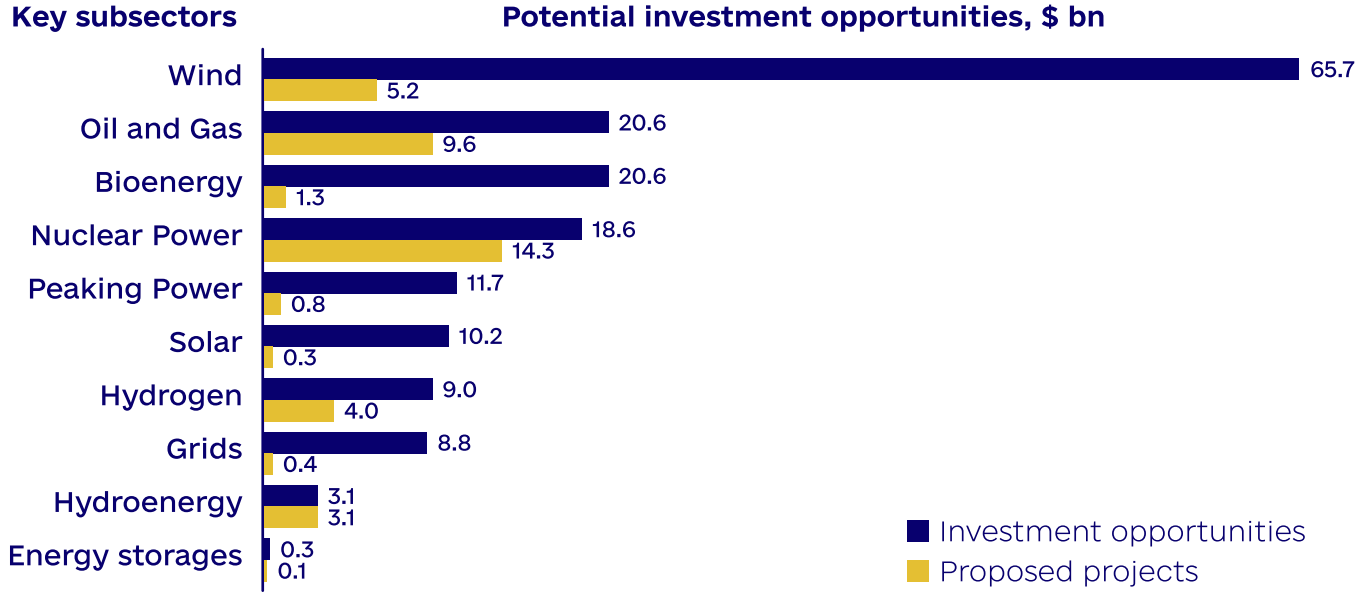


Source: Kyiv School of Economics

*Other includes building defense of energy infrastructure and creating state decarbonization fund

The existing investment projects are insufficient to meet the needs of restoring the energy sector. Therefore, Ukraine is interested in new high-quality projects and investments that can not only rebuild damaged infrastructure but also introduce modern technologies and attract foreign capital.

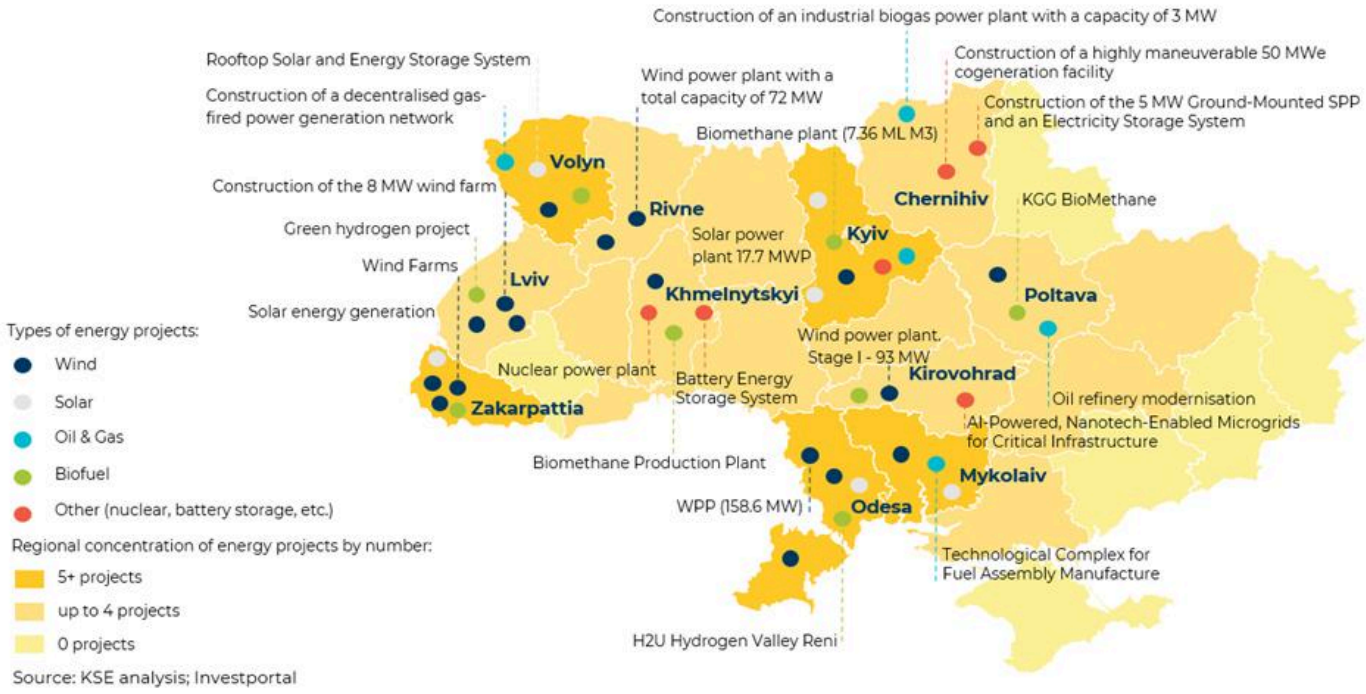
GAP BETWEEN UKRAINE'S NEEDS AND INVESTMENT CAPACITY (~$136 BN)



Source: Kyiv School of Economics

The geographic distribution of investment projects in the energy sector spans the entire territory of Ukraine and is shaped by several key factors. For renewable energy projects, solar irradiation levels and wind potential are particularly important; for bioenergy production, proximity to agricultural enterprises, farms, and livestock complexes plays a crucial role; and for oil and gas exploration and extraction, the determining factor is the presence of prospective hydrocarbon deposits.

MAP OF ENERGY PRODUCTS IN UKRAINE



4. Conclusions and possible options for cooperation

Ukraine's energy sector is a critical pillar of national security and economic recovery. **The sector is undergoing a historic transformation**, both forced by war and driven by long-term strategic goals. The sector offers unparalleled opportunities for investment in view of upcoming EU integration, its shift towards decentralised and green energy and the need to rebuild energy-related infrastructure (e.g., electricity, gas, oil, and heating). Given its natural endowments and regulatory alignment with the EU, **Ukraine could emerge as a future cornerstone of regional energy security and the European Green Deal**.

Given the above and considering the significant potential of Ukraine's energy sector, we **invite Norwegian companies and institutions to explore the following cooperation opportunities with KSE and Ukrainian side**, without limiting them to this list:

- Support to the Ukrainian side in preparing a **larger number of high-quality, bankable investment projects** within the framework of a project preparation facility.
- Organization of **courses for Ukrainian companies** in priority sectors of the economy (**energy**, **industrial production**, **green infrastructure**, **dual-use goods**, **innovative enterprises**) **on preparing bankable projects** and **improving the quality of company management**, with **exchange of experience with Norwegian companies** and improvement of economic and business ties between Norway and Ukraine.
- **Provision of local expertise by KSE** for project selection, and improving interaction between Norwegian companies and Ukrainian businesses for the purpose of supplying equipment, transferring technologies and implementing joint investment projects.
- **Conducting research, analytical support to the Government of Ukraine and**

- **capacity building for target ministries to implement reforms** for the development of the renewable energy market, decentralized power generation and heat supply systems and building sustainable carbon-neutral power supply systems in Ukraine.
- **Development of insurance instruments**, expansion of Eksfin limits, and **additional** Norfund **financing programs** aimed at jointly restoring energy infrastructure and implementing investment projects.