



CHAPTER 5

Investment opportunities in the energy sector

5.1. General list of investment projects

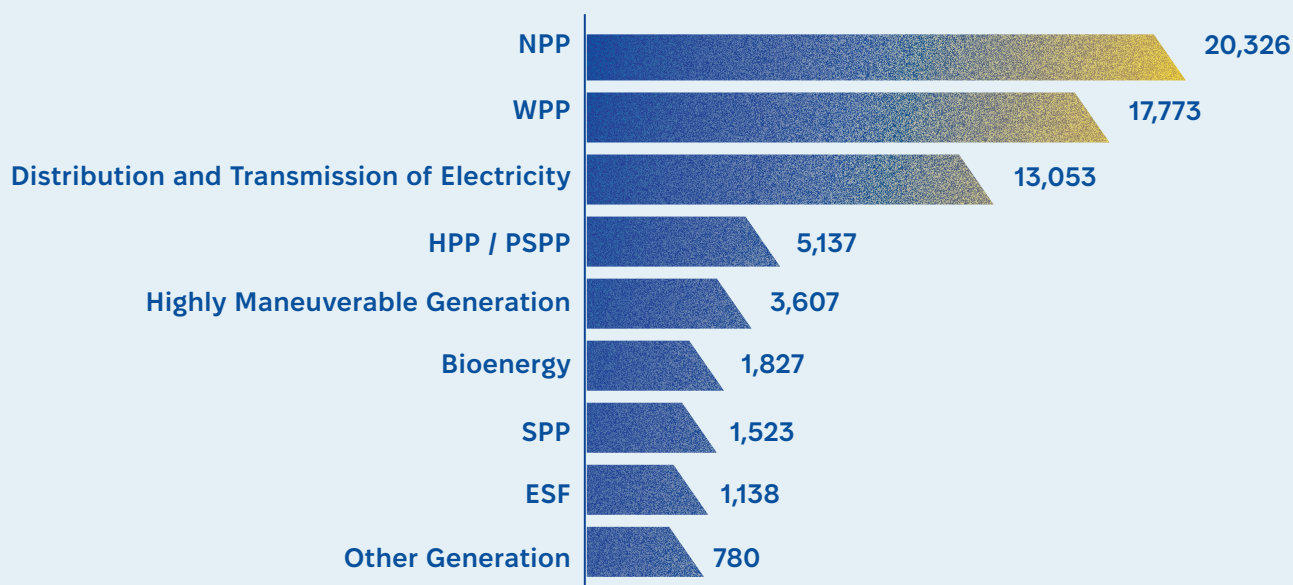
Between August 2023 and November 2024, the KSE team, in cooperation with the Ministry of Economy of Ukraine, collected **326 investment projects** in the energy sector aimed at electricity generation and distribution, with **a total budget of over \$65 billion**. The largest categories are: **NPPs (\$20.3 billion)**, **WPPs (\$17.8 billion)**, and **electricity transmission and distribution (\$13.1 billion)**.

It is also worth mentioning the passive energy protection projects (>\$2.8 billion budget) and the projects to support the State Decarbonisation Fund (\$125 million budget) that were submitted by the Ministry of Communities and Territories Development of Ukraine for inclusion in the Investment Guide, presented at URC 2024 in Berlin²⁹.

Natural gas and oil production and refinery projects are not included in this guide.



Breakdown of investment projects in the energy sector by category, \$ million



Source: KSE Institute

²⁹ - <https://investportalua.com/investment-guide/>

5.2. Examples of promising projects

The largest number of promising investment projects is concentrated in the **renewable energy** sector and includes a total of **42 projects with a budget of \$4.4 billion**. Also, a significant share of such projects' overall budget is occupied by **PSPP projects. This includes 2 projects with a budget of \$2.8 billion**, which play a balancing role in the energy system and do not generate additional greenhouse gas emissions. These initiatives not only align with the EU's goals of transitioning to a climate-neutral economy and the principles of sustainable development, but also promote the introduction of modern technologies in Ukraine.

The development of additional RES will be a key driver

in accelerating the industrial green transition and decarbonising Ukraine's economy. RES are expected to reduce dependence on fossil fuels and increase the country's competitiveness in the context of global climate policy, as well as facilitate the export of green energy resources to the EU after the war.

At the same time, it is important to emphasize the need for constructing flexible generation and modern ESF systems. This will help balance potential fluctuations in power generation from RES, ensure the stability of Ukraine's energy system, and meet the growing demand for energy resources.

TOP-50 most advanced energy projects

Total budget: \$7.7 billion, Need for external financing: \$6.4 billion.

Brief description of the project	Budget, \$ million	Required funding, \$ million	Implementation stage	Year the project started	Project implementation (launch) period, years
Hydroelectric power plant / Pumped storage power plant					
Construction and commissioning of the 1,000 MW Kanivska PSPP	1,523.0	1,062.2	Under implementation	2026	6.5
Construction and commissioning of the 972 MW Dniester PSPP	1,255.0	1,255.0	Under implementation	2023	5
Wind power plant / Solar power plant / Energy storage facilities					
Construction of the complex: 460 MW WPP + 460 MW SPP + 100 MW ESF in Odesa region	903.0	678.0	Ready for Implementation	2024	2
Wind power plant					
Construction of a WPP (200.6 MW / 34 turbines) in Rivne region	308.0	308.0	Ready for Implementation	2025	2
Construction of WPP: 30 wind turbines, total capacity - 156 MW in Zakarpattia region	285.0	285.0	Concept	2024-2025	2
Construction of a WPP with a capacity of up to 168 MW in the Kyiv region. The project will be implemented in stages.	265.0	180.0	Under implementation	2027	1.5

Brief description of the project	Budget, \$ million	Required funding, \$ million	Implementation stage	Year the project started	Project implementation (launch) period, years
Wind power plant					
152.5 MW WPP in Cherkasy region	254.9	254.9	Ready for Implementation	2024	2.5
Limanska WPP (158.6 MW)	230.0	150.0	FS/ pre-FS	2025	1.5
Lviv WPP (100 MW)	210.0	200.0	FS/ pre-FS	2025	1
Construction of a WPP with a capacity of up to 120 MW in the Volyn region. The project will be implemented in two phases of 60 MW each	200.0	135.0	FS/ pre-FS	2026	1.5
Wind of Independence project (WPP Petrivska). Stage I - 93 MW	171.0	120.0	Ready for Implementation	2025	2
Construction of WPPs: 13 wind turbines, total capacity - 68 MW in Zakarpattia region	125.0	125.0	Concept	2025-2026	2
86.8 MW WPP in Cherkasy region	104.6	104.6	Ready for Implementation	2025	2.5
Expansion of the existing WPP in Odesa region (32 MW) by an additional 66 MW	95.0	71.3	Ready for Implementation	2024	1
Volodymyrets WPP with a total capacity of 72 MW in Rivne region	93.5	70.0	Ready for Implementation	2025	1
Danube Spring WPP (58.5 MW)	83.0	57.0	FS/ pre-FS	2025	1.5
61 MW WPP in Cherkasy region	73.5	73.5	Ready for Implementation	2025	2.5
54 MW WPP in Kirovohrad region	65.0	65.0	FS/ pre-FS	2027	2.5
40 MW WPP in Kyiv region	48.2	48.2	FS/ pre-FS	2026	2.5
25 MW WPP in Kyiv region	30.1	30.1	FS/ pre-FS	2026	2.5
Construction of a WPP (100.3 MW / 17 turbines) in Lviv region	154.0	154.0	Ready for implementation	2025	2

Brief description of the project	Budget, \$ million	Required funding, \$ million	Implementation stage	Year the project started	Project implementation (launch) period, years
Solar power plant					
SPP project with energy storage in Novovolynsk Industrial Park (15 MW)	25.0	24.4	FS/ pre-FS	2024	1.25
SPP with a peak capacity of 65 MWp in Zhytomyr region	45.5	45.5	FS/ pre-FS	2025	1
41.1 MW DC SPP in Kyiv region	17.2	17.2	FS/ pre-FS	2025	1
37 MW DC SPP in Kyiv region	15.4	15.4	Ready for implementation	2024	1
32.1 MW DC SPP in Kyiv region	13.4	13.4	Ready for implementation	2024	1
A 30.6 MW DC SPP in Lviv region	12.7	12.7	Ready for implementation	2024	1
Construction of a 17.7 MW SPP in Kyiv region	11.6	9.3	Ready for implementation	2025	1
27 MW DC SPP in Ivano-Frankivsk region	11.0	11.0	Ready for implementation	2024	0.5
Construction of a 5 MW SPP in Dnipro region	5.6	5.6	FS/pre-FS	Since funding	0.5
Construction of SPP with a total capacity of 8.5 MW (AC) - 11 MW (DC) in Cherkasy region	5.5	5.5	Under implementation	2019	Depends on available funding
SPP with a capacity of 4.9 MW in Zakarpattia region	2.2	1.8	Under implementation	2019	6
Electricity distribution and transmission					
Network development to ensure free capacity for new connections in Odesa power grids	161.7	161.7	Ready for implementation	2024	10
Implementation of smart metering of electricity in Kyiv power grids	157.0	157.0	Ready for implementation	2024	10
Automation of the 10 kV network of Dnipro power grids	138.7	138.7	Ready for implementation	2024	10
Automation of the 10 kV network of Kyiv power grids	56.3	56.3	Ready for implementation	2024	10
Replacement of emergency/worn-out sections of 6-20 kV cable networks of Kyiv regional power grids	45.1	45.1	Ready for implementation	2024	10

Brief description of the project	Budget, \$ million	Required funding, \$ million	Implementation stage	Year the project started	Project implementation (launch) period, years
Energy storage facilities					
Installation of hybrid storage systems at five generating facilities	250.0	70.0	FS/ pre-FS	2024	3
ESF with a storage capacity of 25 MW in Kyiv region.	30.0	30.0	Ready for implementation	2025	1.25
ESF with a storage capacity of 24 MW in Kirovohrad region.	28.8	28.8	Ready for implementation	2024	1.25
Highly maneuverable generation					
Construction of a 30 MW distributed gas generation network in Volyn region	25.0	15.0	Under implementation	2023	0.5
Highly maneuverable generation / Bioenergy					
Construction of a new 3 MW biogas/biomethane plant in Kyiv region for domestic consumption and export of biomethane (2.1 million m ³ per year)	9.6	6.3	FS/ pre-FS	2025	1-1.5
Construction of a 2.4 MW biogas plant in Chernihiv region	6.5	6.5	FS/ pre-FS	2024	1
Bioenergy					
Bioethanol and DDGS production project in Rivne region (102 thousand m ³ bioethanol per year, 90 thousand tonnes of DDGS per year)	77.2	55.0	FS/ pre-FS	2025	2
Plant in Kyiv region with annual biomethane production of 7.4 million m ³ and 15 thousand tonnes of food-grade liquefied CO ₂ as part of the first phase	27.3	24.0	Ready for implementation	2025	1
Bio-LNG with a capacity of 5 million m ³ of biomethane per year in Ternopil region	25.20	17.60	Under implementation	2024	2
Bio-LNG with a capacity of 2.8 million m ³ of biomethane per year in Kyiv region	16.80	11.80	Under implementation	2024	2
Plant for the production of biomethane from agricultural waste in Khmelnytsky region with a capacity of 3 million m ³ biomethane per year	7.7	5.4	FS/ pre-FS	2025	2
Biomethane plant from poultry manure and corn silage in Semenivska territorial community, Poltava region, with a capacity of 3.7 million m ³ biomethane per year	5.9	4.9	FS/ pre-FS	2023	1.5
A plant for the production of biomethane from dairy waste, crop waste and corn silage in Omelnytska territorial community, Poltava region, with a capacity of 3.7 million m ³ of biomethane per year	5.9	4.9	FS/ pre-FS	2023	1.5

Source: KSE Institute

For more information on investment projects in the energy sector, please contact recovery@kse.org.ua.

5.3. Examples of project profiles with a high degree of readiness

This section provides a detailed description of 9 promising investment projects from the list of projects presented in Section 5.2 above. The current selection includes projects for the construction of PSPP, WPP, SPP, biomethane plants and a distributed gas generation network.

The financial indicators of investment projects are based on information provided by the project initiators.

Volodymyrets wind power plant with a total capacity of 72 MW

Company name: MCL Group

Type of ownership: Private

Sector: Power generation, RES

Category: WPP

Location: Volodymyrets district, Rivne region

Degree of readiness: Ready for implementation

Year of start of implementation: 2025

Launch period: 1 year

Total budget: \$93.5 million

The required external funding: \$70.0 million



Financial performance of the project:

• **NPV:** \$43.3 million

• **IRR:** 17.4%

• **Annual EBITDA:** \$13.2 million

Description:

The first phase of the Volodymyrets wind power plant will have a total capacity of 72 MW. The WPP will consist of 12 modern and innovative wind turbines with a unit capacity of up to 6 MW each and a height of 166 m, manufactured by Vestas or General Electric. According to the results of the two-year wind measurement campaign (2020-2022), the expected average annual wind speed is 6.9 m/s, which is sufficient for the annual generation of about 240 GWh in clean electricity. The wind measurement campaign was carried out in cooperation with GeoNET GmbH

and DNV and the forecasts are based on wind speeds at an altitude of 123 m. The developer has all the necessary connection permits, urban planning conditions, aviation approval, land lease agreements and a positive EIA, including an ornithology report. The project does not require significant costs for the construction of power transmission lines, as it is located in a developed network due to its proximity to the NPP. The plan is to only build a substation and a 1 km connection line to the existing network.

Lviv WPP 100 MW

Company name: LLC "Jurocape Ukraine Lviv"

Type of ownership: Private

Sector: Power generation, RES

Category: WPP

Location: Horodok and Yavoriv districts of Lviv region

Degree of readiness: Design

Year of start of implementation: 2025

Launch period: 1 year

Total budget: \$210 million

The required external funding: \$200 million



Financial performance of the project:

• **NPV:** \$35.8 million

• **IRR:** 12.1%

• **Annual EBITDA:** \$23.8 million

Description:

The 100 MW Lviv WPP will generate around 300 thousand MWh per year of clean, renewable electricity from wind. It is expected to supply around 35,000 households, reducing CO2 emissions by 240 thousand tonnes per year. The project consists of 17

wind turbines, a 35/110 kV transformer substation, and a 110 kV transmission line. The project is being designed using the most advanced technologies and in compliance with social responsibility standards.

Project "Wind of Independence" (WPP Petrivska). Stage I - 93 MW

Company name: ENERGY TRADE GROUP LTD

Type of ownership: Private

Sector: Power generation, RES

Category: WPP

Location: Petrivska territorial community, Oleksandriia district, Kirovohrad region

Degree of readiness: Ready for implementation

Year of start of implementation: 2025

Launch period: 2 years

Total budget: \$171 million

The required external funding: \$120 млн



Financial performance of the project:

• **NPV:** n/a

• **IRR:** 14.3%

• **Annual EBITDA:** \$24 million

Description:

The implementation of the Wind of Independence project (Petrivska WPP) began in 2022. The design capacity of the WPP is 93 MW, with 15 wind turbines manufactured by Vestas as the main equipment. Other project partners include Katzenbach Ingenieure (Germany, engineering solutions) and Holleman (Germany, logistics service providers). The project is being implemented in two stages: the first stage includes the construction and launch of 93 MW of WPP in 2025-2026 while the second stage expands to an additional 323.8 MW of WPP in 2026-2028. The total capacity of the WPP will be 416.8 MW, with an

expected annual production of 1.3 million MWh of energy, which will reduce harmful CO2 emissions by 1.2 million tonnes per year. At present, the ownership of the land plots has been formalised, the relevant SPVs have been established, a FS has been prepared and wind measurements have been carried out for 1.5 years. In addition, an Energy Yield Assessment Report has been obtained from ProfECVentus GmbH (Germany), technical conditions for connection have been obtained and an environmental impact assessment has been carried out.

Semenivska SPP (17.7 MW)

Company name: LLC VES Polovoe № 1
Type of ownership: Private
Sector: Power generation, RES
Category: SPP
Location: Kyiv region
Degree of readiness: Ready for implementation
Year of start of implementation: 2025
Launch period: 1 year
Total budget: \$11.6 million
The required external funding: \$9.3 million



Financial performance of the project:

- **NPV:** \$1.9 million
- **IRR:** 16.5%
- **Annual EBITDA:** \$2.0 million

Description:

The 17.7 MW project is the first stage of the Semenivska SPP construction, with a total projected capacity of over 60 MW. The project is being implemented by an SPV. Semenivska SPP will be located in the east of

Kyiv region, a few kilometres from the grid connection point. Two phases of the project are being developed in parallel.

Construction of the 1,000 MW Kanivska PSPP

Company name: Ukrhydroenergo
Type of ownership: State
Sector: Power generation, RES
Category: PSPP
Location: Cherkasy region
Degree of readiness: Under implementation
Year of start of implementation: 2026
Launch period: 6.5 years
Total budget: \$1,523 million
The required external funding: \$1,062 million



Financial performance of the project:

- **NPV:** \$491.8 million
- **IRR:** 9.52%
- **Annual EBITDA:** \$179.2 million

Description:

Construction and commissioning of new highly maneuverable generating facilities at the Kanivska PSPP with a capacity of 1,000 MW in generating mode

(4 hydraulic units of 250 MW each) and 1,040 MW in pumping mode (4 hydraulic units of 260 MW each).

Biomethane plant (7.36 million m³)

Company name: Pro-Energy LLC
Type of ownership: Private
Sector: RES
Category: Bioenergy (biofuels, biomethane)
Location: Kyiv region
Degree of readiness: Ready for implementation
Year of start of implementation: 2025
Launch period: 1 year
Total budget: \$27.3 million
The required external funding: \$24.0 million



Financial performance of the project:

- **NPV:** \$9.0 million
- **IRR:** 35.0%
- **Annual EBITDA:** \$7.0 million

Description:

The first phase of the project includes the construction of facilities with capacity to produce 7.36 million m³ of biomethane per year and 15 thousand tonnes of food-grade liquefied CO₂ per year. The second phase of the project will bring up the total biomethane production

capacity to 15 million m³ per year. The project also provides for the annual processing of 270 thousand tonnes of livestock and 80 thousand tonnes of crop waste (silage of intermediate crops, straw) as well as the creation of more than 30 jobs in rural areas.

Biomethane production plant (3.7 million m³)

Company name: KG GROUP LLC
Type of ownership: Private
Sector: RES
Category: Bioenergy (biofuels, biomethane)
Location: Poltava region
Degree of readiness: FS/pre-FS
Year of start of implementation: 2023
Launch period: 1.5 years
Total budget: \$5.9 million
The required external funding: \$4.9 million



Financial performance of the project:

- **NPV:** \$0.9 million
- **IRR:** 26.8%
- **Annual EBITDA:** n/a

Description:

The project envisages the construction, launch and operation of a biomethane plant to produce biomethane from poultry manure and corn silage. The

plant's capacity will be 3.7 million m³ of biomethane per year. In the future, the project is expected to also produce electricity from biogas.

3 MW biogas plant with additional biomethane production (2.1 million m³ annually)

Company name: "AR Boryspil" LLC

Type of ownership: Private

Sector: RES

Category: Highly maneuverable generation, bioenergy

Location: Kyiv region

Degree of readiness: Feasibility study/pre-feasibility study

Year of start of implementation: 2025

Launch period: 1-1.5 years

Total budget: \$9.6 million

The required external funding: \$6.3 million



Financial performance of the project:

- **NPV:** \$2.3 million
- **IRR:** 25.0%
- **Annual EBITDA:** \$2.2 million

Description:

The project includes the construction of a new 3 MW biogas/biomethane plant in Kyiv region, which will produce electricity (biogas) for sale on the domestic market and biomethane (2.1 million m³/year) for export. The project is fully supplied with feedstock from Agro-Region's land (corn silage, triticale, straw), while negotiations with animal manure suppliers

are ongoing. Applications for connection to the gas transmission system have already been submitted to the authorities. Agro-Region is cooperating with ProEnergy, a technological expert in project development with a successful track record of 27 projects, 10 of which were financed by IFIs such as the EBRD, World Bank, NEFCO, SECO, etc.

Construction of a 30 MW distributed gas generation network

Company name: Transgasindustry AG

Type of ownership: Private

Sector: Power generation

Category: Highly maneuverable generation

Location: Volyn region

Degree of readiness: Under implementation

Year of start of implementation: 2023

Launch period: 6 months

Total budget: \$25 million

The required external funding: \$15 million



Financial performance of the project:

- **NPV:** \$26.1 million
- **IRR:** 51%
- **Annual EBITDA:** \$21.8 million

Description:

Construction and maintenance of a distributed gas-fired generation network with a capacity of up to 30 MW. The project envisages a full cycle of electricity production and sales to industrial consumers, as well as the sale of surplus electricity to the central grid on the day-ahead market. The key competitive advantage is the project company's direct access to the Ukrainian gas transmission system and the availability of all the necessary infrastructure to compress up to 100 million

m³ of natural gas per year (which is planned to be sent to gas-fired power generation units). As a result, the company purchases natural gas at wholesale prices directly from producers and does not incur additional costs for intermediary services. This ensures a high margin of electricity generation at gas-fired power plants, enabling the project to achieve payback in 1.5-2 years.