War and Opportunity

INVESTING IN UKRAINE'S OIL & GAS INDUSTRY 2024

Every country is unique, distinguished by features that set it apart from others.

We want to share with you one of Ukraine's most captivating attributes – its **oil and gas production industry.** Extraordinary discoveries and record-setting achievements mark this sector's rich history. Ukraine was the birthplace of Europe's first oil fields, it boasts one of the world's largest underground gas storages, and pioneered the world's first interstate exports of natural gas. And this is just the tip of the iceberg.

Ukraine still retains unique capabilities in the oil and gas production sector, with potential that ranks among the most powerful in the EU.

We present this document at a challenging moment for Ukraine. For the third consecutive year, Ukrainians have shown extraordinary courage and heroism, defending not only their homeland but also the future of democratic Europe against Russian aggression.

Naturally, some information about this vital sector remains undisclosed during martial law. For security reasons and in line with current regulations, we cannot reveal all details. However, we are committed to providing you with as much insight as possible into Ukraine's oil and gas production and exciting investment opportunities.

This Guide is prepared by:

UKRAINE'S OIL AND GAS PRODUCTION INDUSTRY

Ukraine is a country with immense potential in hydrocarbon production, natural gas storage, and transportation.

This potential can significantly contribute to strengthening the European Union's energy security.

Ukraine has 3 oil and gas bearing regions:

Ukraine in Europe

№1 for the size of underground gas storages - **31 bcm**

№2 in proven natural gas reserves - **678 bcm**

№2 for the scale of the gas transmission system

281 bcm per year – capacity of the GTS at the entry points

146 bcm per yea – capacity of the GTS at the exit points

№3 for natural gas production (after Norway and the United Kingdom) - **18.7 bcm**

The overall balance of hydrocarbon reserves and resources in Ukraine

Developed & undeveloped booked reserves

- A+B+C1 (111)
- C1 (121)
- C2 (122)

677.6 bcm
76.6 mln tonnes
30.4 mln tonnes

Contingent resources

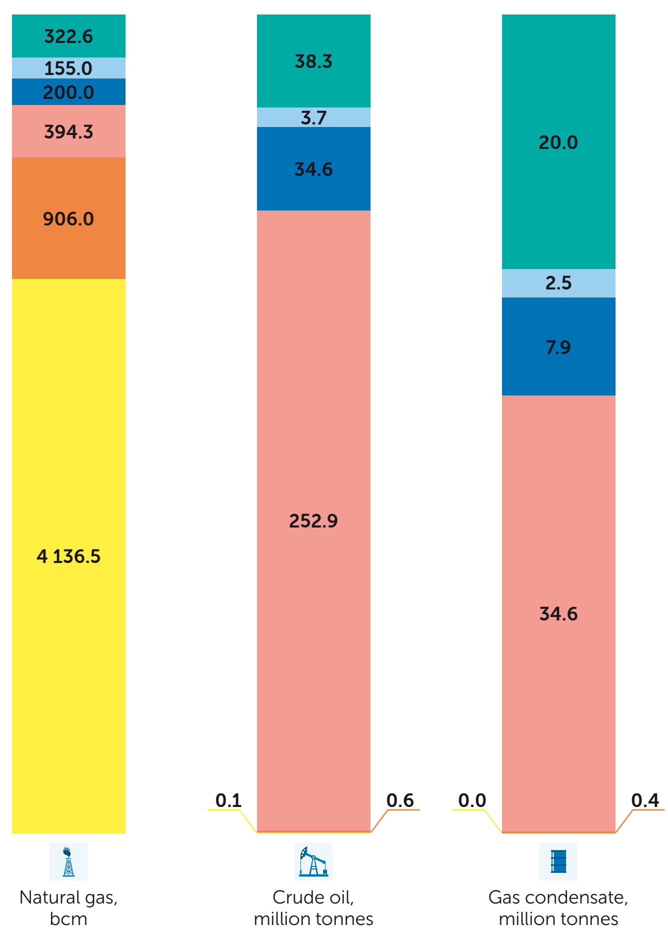
- C1 (221) + C2 (222) + C2 (322)

394.3 bcm
252.9 mln tonnes
34.6 mln tonnes

Undiscovered

- Prospective resources (333)
- Inferred resources (334)

5 042.5 bcm
0.7 mln tonnes
0.4 mln tonnes



Source: State balance of mineral reserves of Ukraine as of 01.01.2023
*Note: *contingent resources including basin center natural gas and gas condensate of the Svyatogirske field (three-digit numeric codes 122 and 322)*

THE OIL AND GAS PRODUCTION INDUSTRY OF UKRAINE IS A SIGNIFICANT SECTOR OF THE ECONOMY AND A SUBSTANTIAL CONTRIBUTOR TO BOTH NATIONAL AND LOCAL BUDGETS.

Year after year, companies in the industry are among the largest taxpayers. This is a crucial contribution to building a strong country and strengthening its defence capabilities, especially in the context of full-scale Russian aggression.

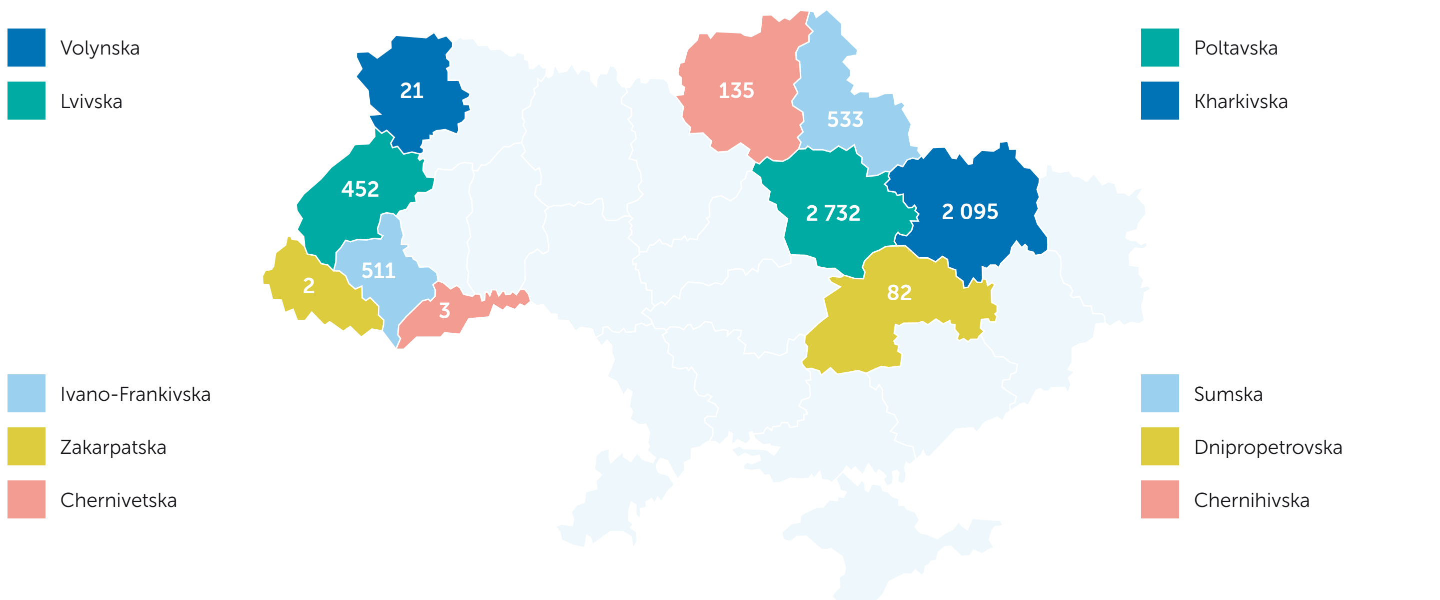
In 2022-2023, the enterprises of the oil and gas production complex paid nearly UAH 259 billion in taxes to the country's consolidated budget. This amount is almost 28% of the receipts from the European Union, foreign governments, international organisations, and donor institutions, according to the data from the Open Budget state web portal. Or it represents 72% of the consolidated budget's healthcare expenditures.

A significant portion of the taxes paid, namely UAH 132.4 billion, was the royalty – a national tax in Ukraine paid for the subsoil use for hydrocarbon production. With royalty making up 51% of total taxes, it can rightfully be regarded as primary for the sector.

In 2018, the state implemented one of the important reforms in the sector – the decentralisation of the royalty. This reform stipulates that 95% of the royalty paid by oil and gas producers goes to the state budget, while 5% - to local ones, in the areas where the enterprises are operating.

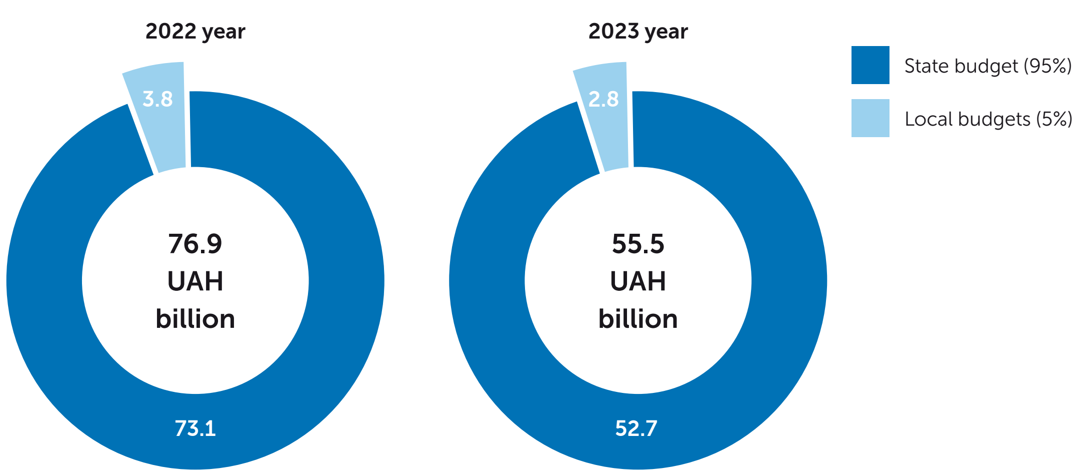
This initiative is a win-win story for the state, business, and local communities. The more hydrocarbon companies produce, the more funds stay in the oil and gas production regions. Local communities manage these funds at their discretion, directing them towards important social projects, infrastructure, the reconstruction of educational and medical institutions, and more.

Royalty for hydrocarbon production in oil and gas bearing regions in 2022-2023, UAH million



Source: Open Budget

Royalty for hydrocarbon production to the state and local budgets in 2022-2023



Source: Open Budget

HYDROCARBON PRODUCTION

The full-scale war has not halted hydrocarbon production in Ukraine.

Despite all the challenges and risks, Ukrainian companies continue to produce oil, natural gas and gas condensate wherever it is physically possible. They do so even though Russian missile strikes regularly target sector facilities, and some production fields are practically on the front lines.

For the first time in history, Ukraine completed the 2023/2024 heating season using only domestically produced gas. This was made possible primarily due to the increased production volumes by state-owned enterprises. Last year, JSC Ukrgasvydobuvannya increased natural gas production by more than 5%, and PJSC Ukrnafta by 6%. Additionally, the well-established mechanism for purchasing domestically produced gas by the Naftogaz Group from independent producers played a crucial role in successfully passing the winter.

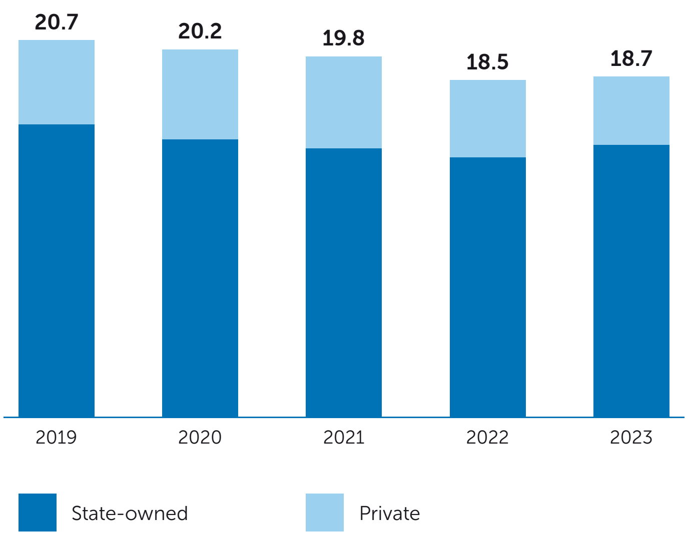
The largest oil producer in Ukraine is PJSC Ukrnafta. In 2023, the enterprise produced 1.41 million tonnes of oil and condensate, an increase of 3% compared to the results of 2022.

In the third year of the war, both state-owned and private companies continue to invest in the industry, adopt new technologies to increase production outputs, develop new fields/blocks, drill wells, and work efficiently with existing infrastructure.

Since the beginning of 2024, Ukraine has experienced a consistent trend of increasing gas production. In the first quarter, there was a 2.4% rise in average daily gas production compared to the same period last year. State-owned companies are leading this growth. Notably, JSC Ukrgasvydobuvannya managed to boost its production outputs by nearly 12% from January to March.

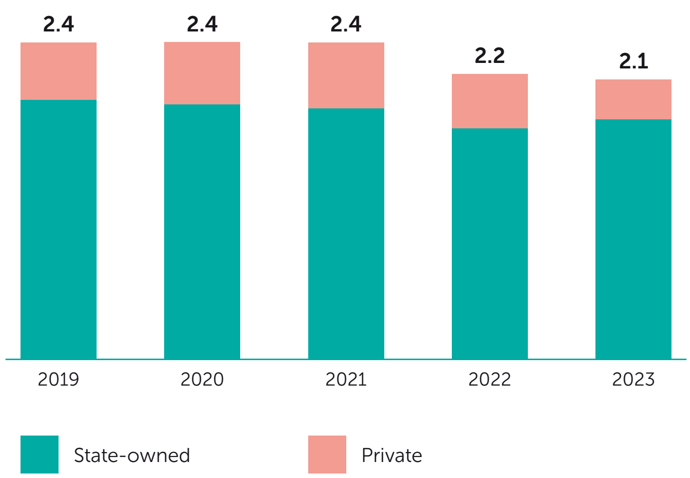
Every cubic meter of gas produced in Ukraine is crucial for strengthening energy security and ensuring a successful winter season passage. The strategic goal for the 2024/2025 heating season is to replicate last year's achievement and meet Ukraine's energy needs exclusively with domestically produced gas.

Natural gas production in Ukraine during 2019-2023, bcm



Source: AGPU

Oil and gas condensate production in Ukraine during 2019-2023, million tonnes



Source: AGPU

NEW WELLS

Ukraine is ramping up the drilling of new gas wells and setting records despite daily armed aggression.

In 2022-2023, Ukrainian gas producers drilled 224 wells. In the first year of the war, 74 wells were drilled, surpassing pre-war numbers, and in 2023, the count increased to 150 wells. This is the highest number in Ukraine over the past six years since the incentivised taxation implementation for drilling new gas wells.

The state company JSC Ukrgasvydobuvannya leads the sector, having put into operation 86 new wells last year, with 24 of them having an initial output of over 100 thcm.

In 2023, an average of 42 drilling rigs were operational, representing more than half of the total in Europe. This is an increase from the pre-war average of 30 rigs.

The figures for 2024 are even more impressive: in the first quarter, Ukraine had an average of 46 drilling rigs in operation.

Across Europe, there were 118 rigs in total, meaning nearly 40% of the drilling equipment was active in Ukraine.

In the face of depleted Ukrainian fields and annual natural declines, drilling new wells is the only way for companies to maintain and increase production. Key factors for investors in making positive decisions include geology, work costs, equipment and technology availability, and most importantly, fiscal policy.

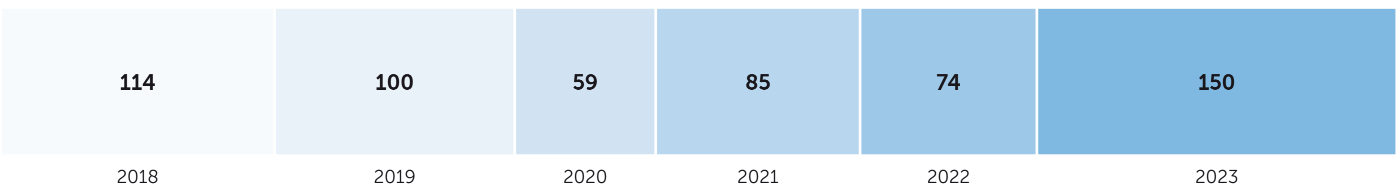
The increase in the number of drilling rigs in Ukraine, even amid military aggression, underscores the fact that boosting hydrocarbon production is a strategic goal for both the government and producers. Maintaining the pace of drilling new wells is crucial for strengthening Ukraine's energy security.

Number of gas wells drilled in Ukraine over the last six years

% 38 the share of wells drilled during the war

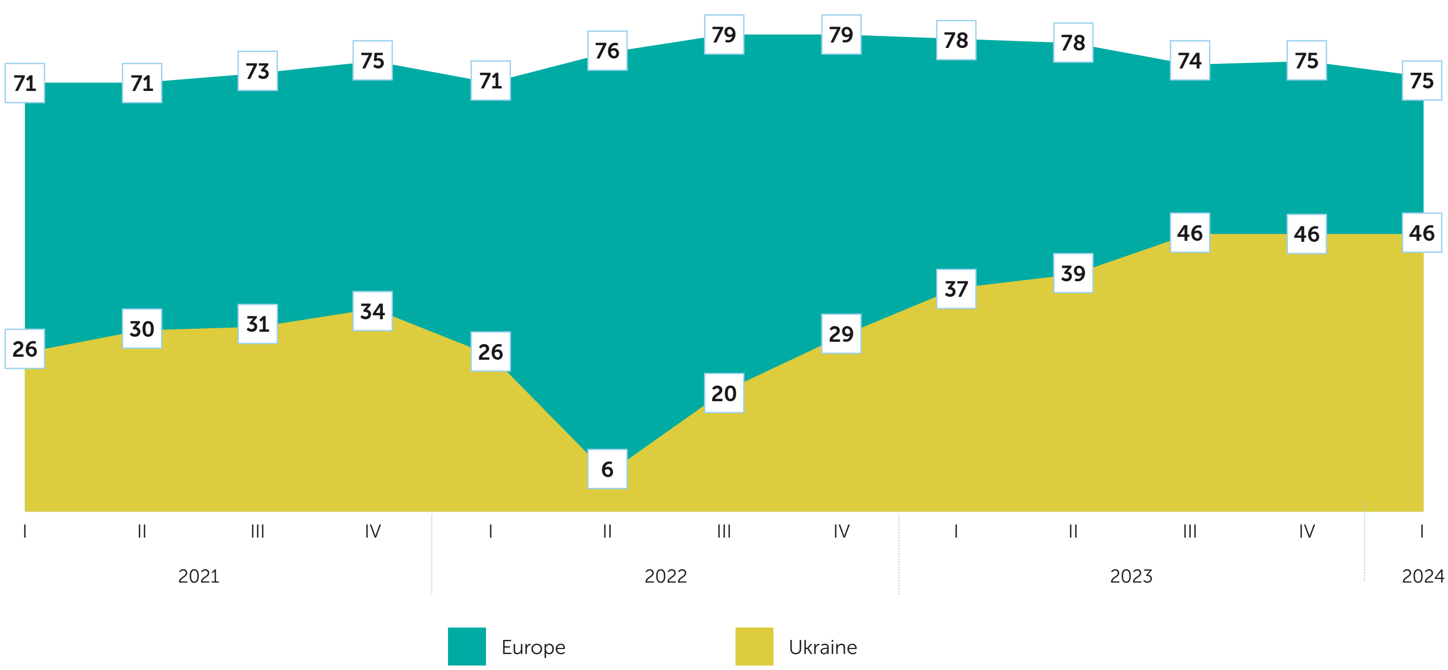
+582 new gas wells

+17 bcm of gas in total



Source: AGPU

Average quantity of rigs involved in oil and gas drilling in 2021-2024



Source: Baker Hughes Rig Count

GAS TRANSMISSION SYSTEM

The Ukrainian GTS is one of the most extensive networks of main gas pipelines in the world.

It is interconnected with the systems of neighbouring European countries, integrating it into the broader European gas network. The GTS has an entry capacity of 281 bcm per year and an exit capacity of 146 bcm per year.

2024 marks the final year of Russian gas transit to the European Union through Ukraine. In the face of Russian armed aggression, Ukrainian authorities have decided not to extend the current contract. Moreover, since the start of the full-scale war, the EU has firmly stated its intention to abandon resources from the aggressor country. Over the past two years, the EU has actively diversified supplies and established partnerships with new suppliers.

During the full-scale war, the GTS Operator, in collaboration with USAID's Energy Security Project, the Energy Community Secretariat, the European Commission's Joint Research Centre, international technical experts, and accordingly from GTSOU, Naftogaz of Ukraine, and Ukrtransgaz, have conducted stress tests on the system. These tests aim to confirm the sufficient capacity and reliability of the GTS and UGS under conditions of bombardment and the cessation of Russian gas transit. The 2023 test results showed that Ukraine's gas infrastructure is ready to operate without Russian gas transit. The 2024 stress test is currently underway.

With zero transit of Russian gas, Ukraine's gas transmission system will undergo optimisation according to market needs.

Firstly, internal pressures in the main gas pipelines will need to be regulated to ensure a stable natural gas supply for the population and industry. Additionally, a special operating regime for the main Ukrainian gas pipelines will be established as provided by Draft Law No. 6133.

A promising direction for the GTS is the transportation of renewable gases, such as hydrogen and biomethane. Considering Europe's green agenda, Ukraine could play a significant role among suppliers of these resources.

Tariffs for natural gas transportation for entry points and exit points to/from the gas transmission system(s) on interstate connections for the regulatory period 2020 - 2024 for GTSOU are as follows:

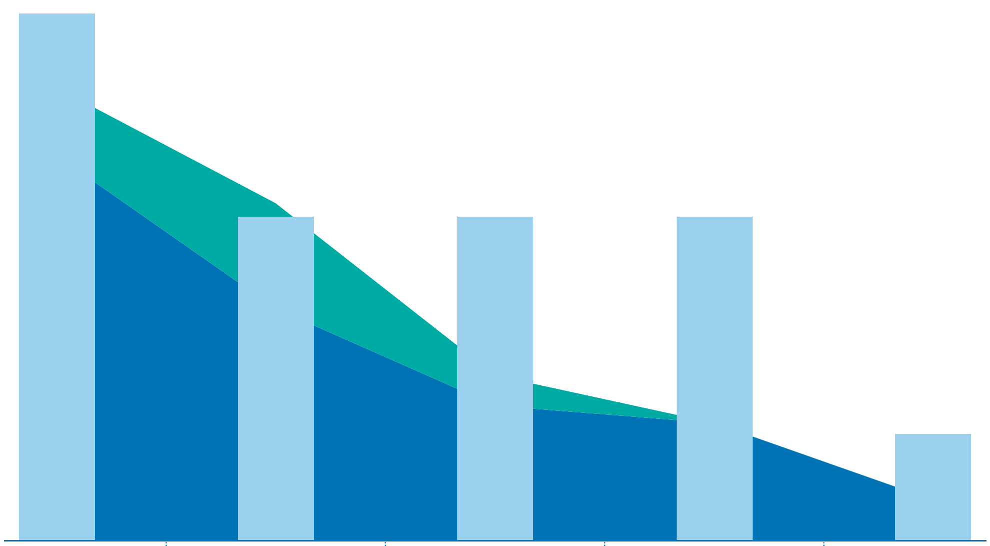
- for European entry points: $4.45 per 1 000 cm per day net of VAT,
- for European exit points: from $0.56 to $9.71 per 1 000 cm per day net of VAT.

Tariffs for natural gas transportation services for internal entry points and exit points to/from the gas transmission system(s) for the regulatory period 2020 - 2024:

- for entry points: UAH 101.93 per 1 000 cm per day net of VAT,
- for exit points: UAH 124.16 per 1 000 cm per day net of VAT.

Given that these tariffs are valid until the end of 2024 and Russian gas transit through Ukraine will cease, a future tariff review is anticipated.

Russian natural gas transportation volumes via Ukraine in 2020-2024, million cm



	2020	2021	2022	2023	2024 (January-April)
GMS "Sokhranivka"	8 292	12 961	3 734	0	0
GMS "Sudzha"	47 592	28 702	16 721	14 650	5 097
Mandatory capacity	65 000	40 000	40 000	40 000	13 260
Residual mandatory capacity	9 116	-1 663	19 545	25 350	8 164

Source: AGPU, GTSOU

UNDERGROUND GAS STORAGES

Ukraine has domestically located 12 underground gas storages with a total capacity of 31 bcm.

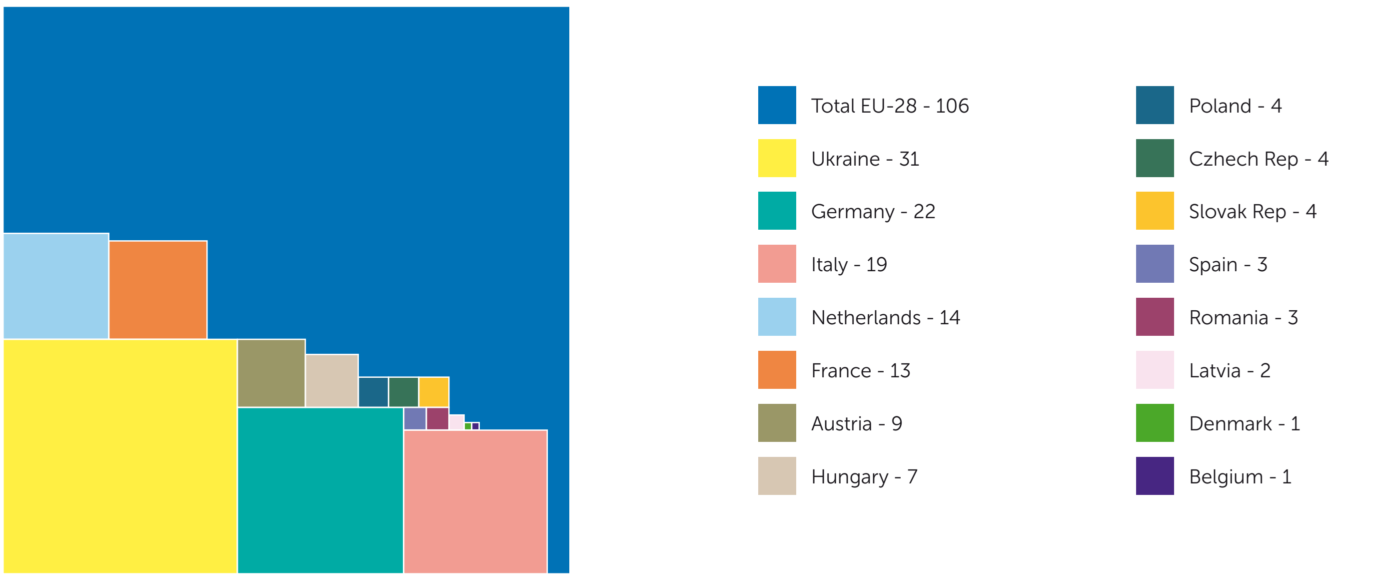
Despite the full-scale war, Ukraine's gas storages have been functioning reliably, as the stored gas is located deep underground and is well-protected from external attacks.

The operator of Ukraine's UGS is JSC Ukrtransgaz, which is a part of the Naftogaz Group. In April 2023, Ukrtransgaz became the second European storage operator to successfully undergo certification, confirming its right to conduct gas storage operations under the updated rules of the European Union and the Energy Community.

Certification of Ukrtransgaz allows for the storage of gas reserves for foreign clients, including countries without such facilities or those jointly purchasing gas for crises. This is particularly relevant in the context of collective natural gas procurement on the AggregateEU platform.

As of early 2024, Ukraine increased its UGS client base by 15%. Out of 1 269 partners, 163 are foreign traders from 32 countries, who injected 2.5 bcm of natural gas for storage. This year, Naftogaz Group, traditionally offering competitive storage prices and favourable conditions, plans to increase European companies' storage volumes to 4 bcm.

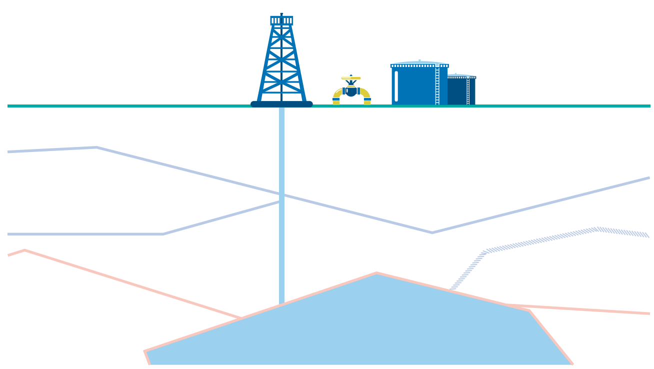
Storage capacities in Europe, bcm/year



Source: AGPU, GTSOU

Ukraine offers foreign partners

- 10 bcm for storage by non-residents
- gas supply from one point to four EU countries
- "customs warehouse" mode (storage for 1 095 days without paying taxes and duties) + short-haul (reduced tariffs for transportation between specified entry or exit points at interstate connections)
- guaranteed capacity booking for any number of months during the storage year
- access to storage with the right to inject/store/withdraw an equal volume of gas during the gas day



attractive and competitive tariffs (effective since 1.07.2022, net of VAT):

- Storage: UAH 0.40 per 1 000 cm per day
- Withdrawal: UAH 253.03 per 1 000 cm per day
- Injection: UAH 243.52 per 1 000 cm per day

NATURAL GAS MARKET

The full-scale Russian war against Ukraine has caused a storm in the European gas market and fundamentally altered the global hydrocarbon landscape.

2022

Gas prices in Europe soared after February 24th, driven by the full-scale Russian invasion of Ukraine and subsequent declarations to cease reliance on Russian energy resources.

The peak was reached in August 2022, with gas prices hitting an all-time high of approximately $3 500 per 1 000 cm. However, aggressive storage replenishment, new supply routes, conservation efforts, and other critical measures caused prices to plummet to $800 per 1 000 cm by October.

Throughout the first year of the war, there was a significant disparity between gas prices in Ukraine and Europe. On average, gas prices in Ukraine were 55%, or $506 lower than those at the TTF hub. Given that royalty was tied to the import customs value and TTF hub quotations, Ukrainian companies ended up paying royalty significantly higher than the selling price.

In September 2022, Ukraine temporarily adjusted the royalty calculation to domestic gas prices. The existing tax system is the foundation for fair assessments under conditions of closed exports, which have been uninterrupted since the start of the full-scale war, resource surplus, and Russian military aggression.

2023

European natural gas prices stabilised due to diversification, reduced consumption, and record-high storage levels.

The futures price at the TTF hub steadily declined, reaching a low of $342 per 1 000 cm in August. The spot market followed a similar trend, with the highest price of $694 per 1 000 cm in January and the lowest of $339 in July.

In 2023, the average actual selling price of natural gas in Ukraine, from which producers paid royalty and which reflects domestic market realities, was $412 per 1 000 cm. This was 34% less than the futures price at the TTF hub.

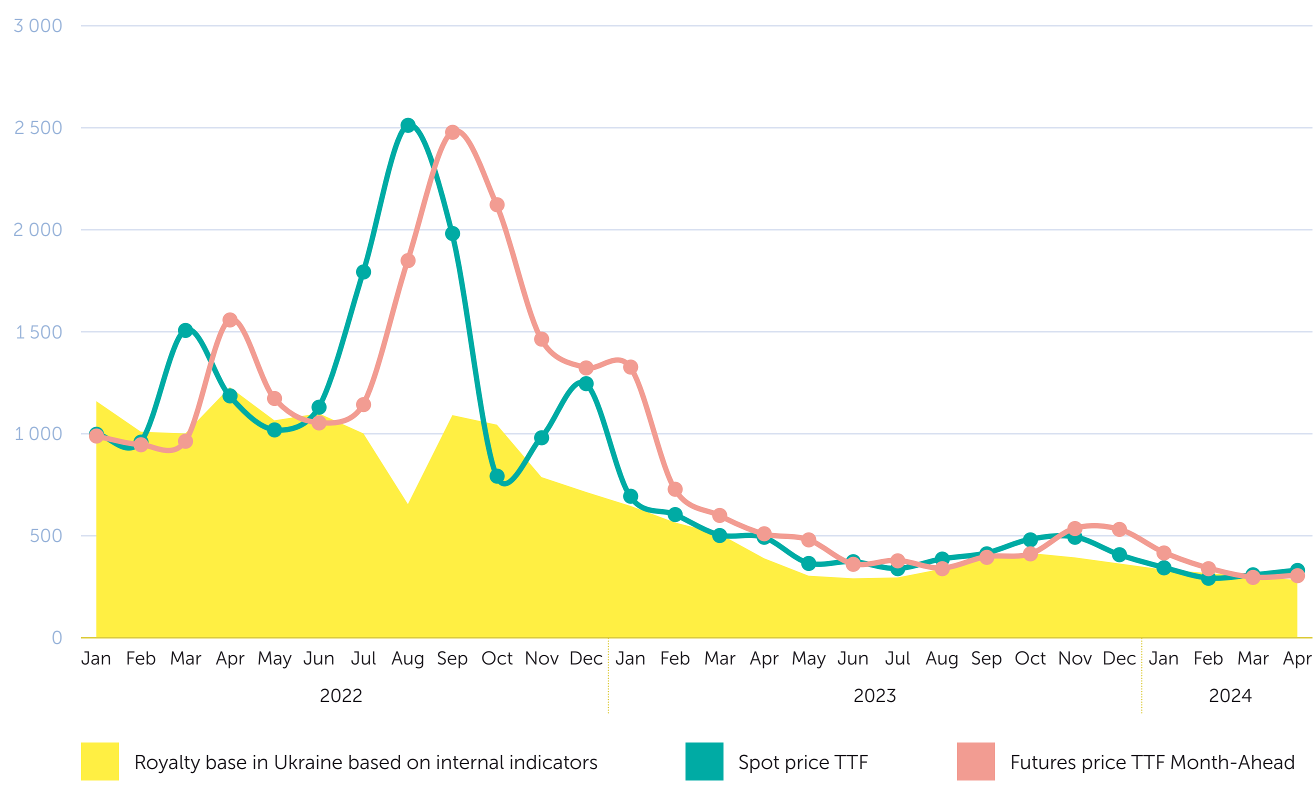
2024

Record-high gas storage levels in the EU and established imports are key factors for markets returning to pre-war levels.

From January to April, the average TTF futures price for the Month-Ahead was $341 per 1 000 cm, almost 7% or $22 lower than the spot market price.

Meanwhile, the Ukrainian indicative for royalty payments - the actual selling price of natural gas - was the lowest, averaging $310 per 1 000 cm. Notably, April demonstrated the lowest natural gas price in the market in the last 28 months.

Comparison of price dynamics in Ukraine and Europe in 2022-2024, $ per thcm



Source: Mineconomy, Powernext/EEX

Amid a full-scale war, Ukraine is making efforts to develop its internal gas market.

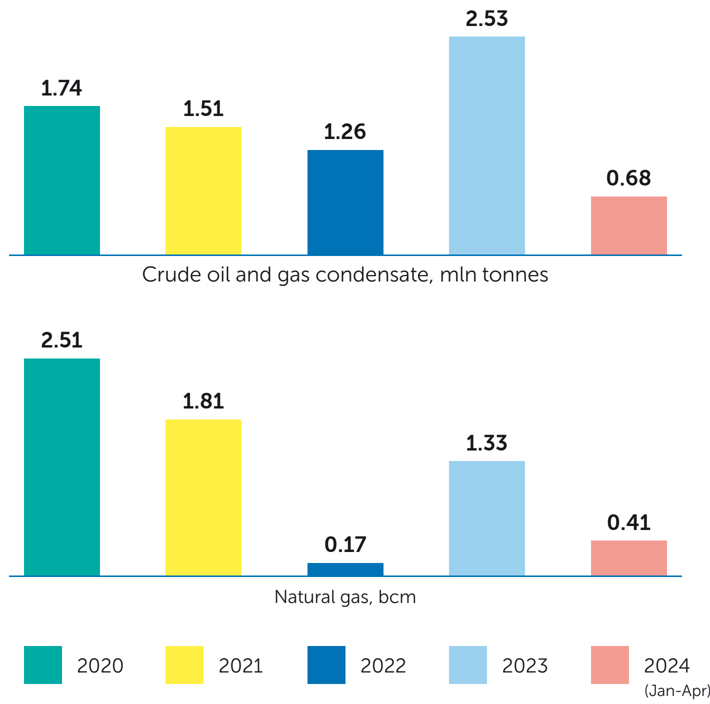
In 2023, trading on the Ukrainian Energy Exchange was relaunched and fully operational, ensuring completely fair and transparent rules for all participants.

On April 26, 2023, the Naftogaz Group began purchasing gas of Ukrainian origin from private producers and traders. Under the conditions of closed export since the start of the full-scale war, this mechanism allowed companies to continue activities, invest in new drilling, conduct major repairs, and plan future projects. Owing to these purchases, Ukraine successfully completed the 2023/2024 heating season using only domestically produced gas.

According to amendments to the government resolution, from July 28, 2022, private companies are required to sell all volumes of crude oil, gas condensate, and LPG at the exchange. The most convenient and liquid platform for this is the Ukrainian Energy Exchange.

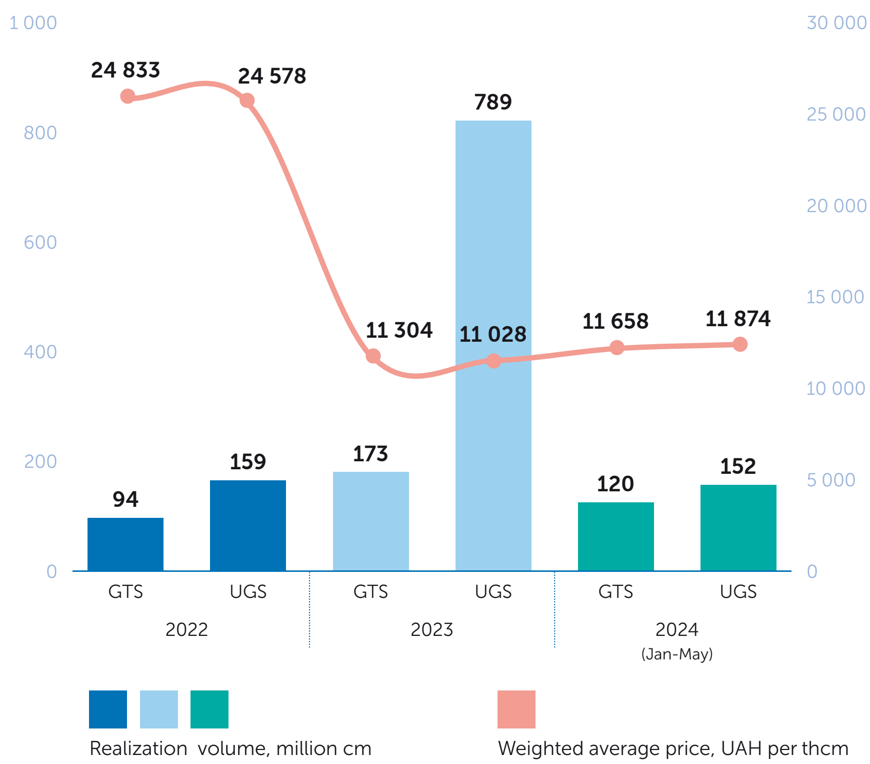
The increased activity in Ukraine's gas market vividly demonstrates that even under challenging and unpredictable conditions, licenced trading can thrive and yield positive results. Throughout 2023, more than 1.3 bcm of natural gas (excluding GMU) was sold on the UEEX.

Results of hydrocarbon trading on the Ukrainian Energy Exchange in the period of 2020-2024



Source: UEEX

Naftogaz Group's purchase of Ukrainian gas in 2022-2024



253 + **962** + **272** » **1 487 bcm of gas purchased in total**

Source: UEEX, AGPU

OPERATING RULES IN THE SECTOR

Regulatory framework

The exploration and extraction of mineral resources in Ukraine is governed mainly by the following legislation:

- Code of Ukraine on the Subsoil No. 132/94-BP dated 27 July 1994, including recent amendments known as the Small Subsoil Code
- Law of Ukraine No. 2805-IX "On Amendments to Certain Legislative Acts of Ukraine on Improving Legislation in the Field of Subsoil Use" dated 1 December 2022
- Law of Ukraine No. 1039-XIV "On Production Sharing Agreements" dated 14 September 1999
- Law of Ukraine No. 2665-III "On Oil and Gas" dated 12 July 2001
- Law of Ukraine No. 3141-IX "On making amendments to certain laws of Ukraine for prevention of abuse in wholesale energy markets" dated 10 June 2023
- Mining Law of Ukraine No. 1127-XIV dated 6 October 1999
- Law of Ukraine No. 1216-XIV "On the State Geological Service of Ukraine" dated 4 November 1999
- Law of Ukraine No. 2545-VIII "On ensuring transparency in extractive industries" dated 18 September 2018
- CMU Resolution No. 993 "On Approval of the Procedure for Holding Auctions for the Sale of the Special Permits for Subsoil Use" dated 23 September 2020
- CMU Resolution No. 939 "On Certain Questions on the Disposal of Geological Data" dated 7 November 2018

Regulatory authorities

The main regulatory authorities of the oil and gas sector are:

- Verkhovna Rada (the Parliament of Ukraine) - passes primary legislation.
- Cabinet of Ministers of Ukraine (CMU) - passes secondary legislation aimed at implementing the primary legislation.
- Ministry of Energy (MoE) – implements state policy in the oil and gas sector.
- State Labour Service of Ukraine (SLS) – implements state policy on industrial safety and labour protection.
- Ministry of Environmental Protection and Natural Resources (MoEnv) – responsible for implementing the environmental protection policy of the state.
- Ukrainian Geological Survey (UGS) - issues special permits for subsoil usage (licences), monitors the activities of the subsoil users and imposes sanctions for infringement of the subsoil use terms.
- The National Energy and Utilities Regulatory Commission (NEURC) is an independent energy regulation authority that is responsible for regulating the energy sector, overseeing market development and creating a healthy regulatory environment. As a result, the Regulator is the primary authority that regulates gas market rules and natural monopolies in the energy sector of Ukraine.

LICENCES

According to Article 13 of Ukraine's constitution, mineral resources (including oil and gas) belong to the Ukrainian people. Although the people retain ownership, state authorities may dispose of subsoil rights to those minerals on behalf of the people.

The right to use the subsoil is granted via licences from the Ukrainian Geological Survey. A licence holder becomes the owner of the mineral resources once the resource is extracted from the subsurface. In certain cases, a licence is the basis for obtaining other permits and authorisations needed to develop the resource.

Licences differ by type of activity, as described below:

Duration of licences	Activity
Up to 20 years	oil and gas production (onshore)
	geological exploration and production of oil and gas subsoil with further development (onshore)
Up to 30 years	oil and gas production on the continental shelf and inside Ukraine's maritime exclusive economic zone
	geological exploration of oil and gas subsoil with further development on the continental shelf and within Ukraine's exclusive maritime economic zone
Up to 50 years	construction and operation of underground oil and gas storage facilities, production sharing agreements

It shall be outlined, that licences for subsoil use that expire during the period of application of martial law will be automatically extended for the period of application of martial law + 6 months after the end of martial law.

In addition to obtaining subsoil rights, a licence holder is generally required to obtain land-use rights from landowners to produce the resource from the licenced area.

Each licence for subsoil use is supplemented by a subsoil use agreement which establishes the basic rights and obligations of the licence holder, including:

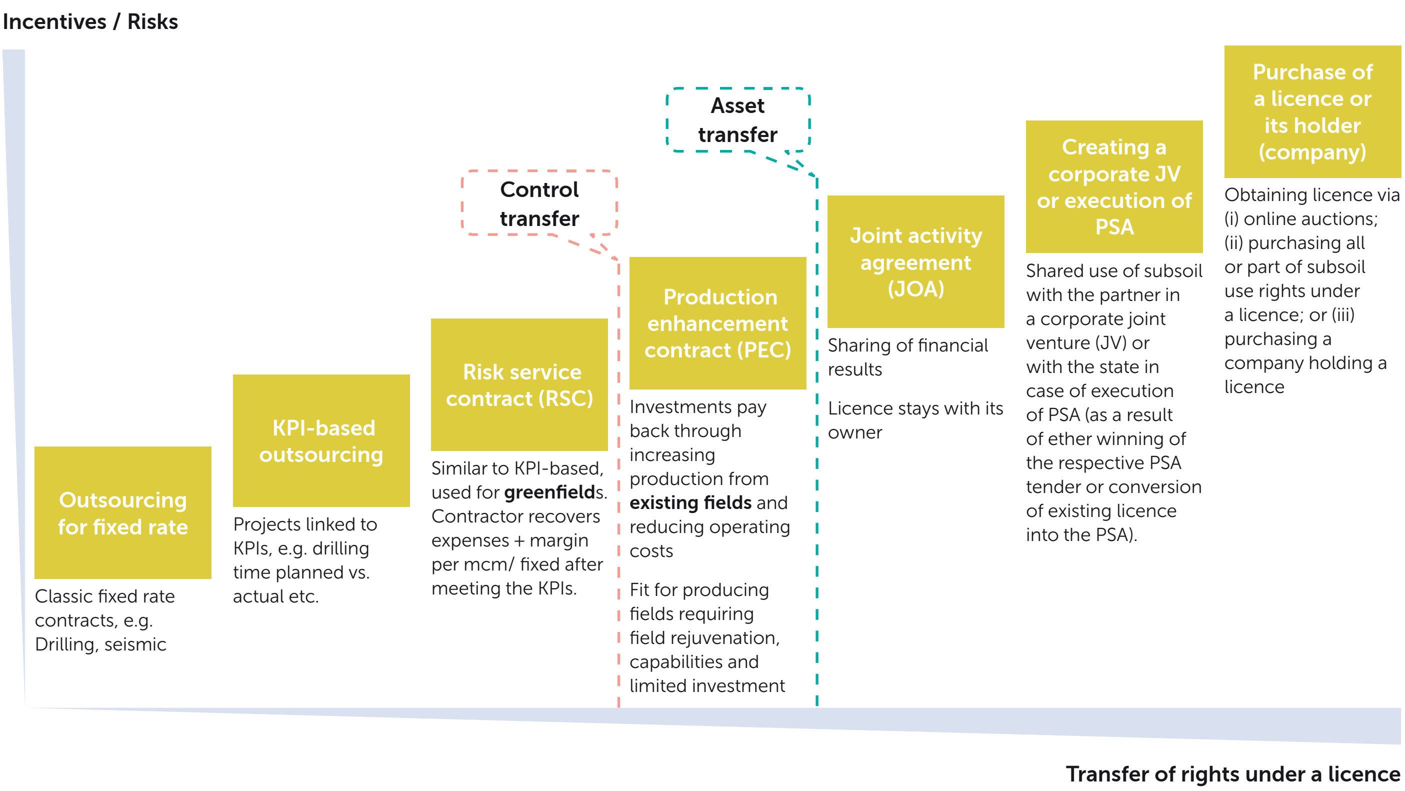
- The scope and timeframes of the work.
- The environmental protection requirements.
- The requirements for work efficiency.

TYPES OF INVESTMENT AND JOINT PARTICIPATION IN OIL AND GAS PROJECTS IN UKRAINE

For many years, it was prohibited for a licence holder to transfer its subsoil use licence to another entity. At the same time, the recently adopted Law of Ukraine No. 2805-IX "On Amendments to Certain Legislative Acts of Ukraine on Improving Legislation in the Field of Subsoil Use" dated 1 December 2022, has made it possible to dispose of subsoil use rights fully or partially. This effectively means that a subsoil use licence or part of a licenced subsoil area thereunder may be sold to a legal entity or an individual, contributed to the charter capital of a legal entity, or contributed to a joint activity established in accordance with Ukrainian civil law. Please also note that the law restricts Russian citizens and residents, as well as legal entities affiliated with Russian entities, from acquiring direct or indirect rights to subsoil resources in Ukraine.

In practice, a transfer of subsoil use licence can be completed online through the personal account area of a subsoil user at the web portal of the Ukrainian Geological Survey. Also, the existing types of investment or joint participation in oil and gas exploration and production projects in Ukraine are outlined below.

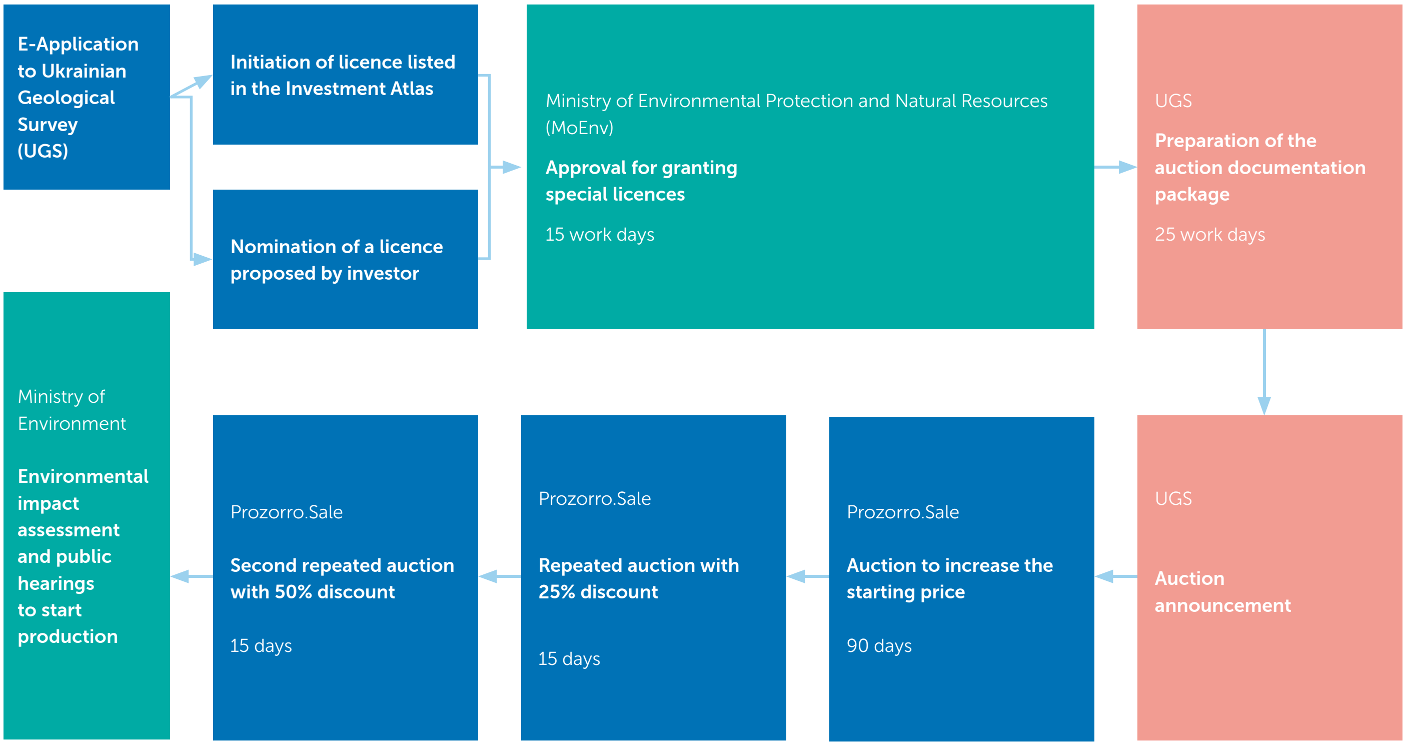
Different forms of investment in oil and gas projects in Ukraine depending on risk / reward level and control over the assets



Source: CMS

AUCTIONS FOR SALE OF SUBSOIL USE LICENCE

Obtaining a Special Permit (Licence) through E-auction



Winner:

1. Signs the protocol of auction.
2. Pays a fee to the exchange operator.
3. Concludes a contract of purchase and sale of a special licence.
4. An agreement on compensation of state expenses for exploration works is concluded.
5. Pays the fee to the state budget.
6. Concludes an agreement on terms and conditions of subsoil use.
7. Receives a licence.

Source: Ukrainian Geological Survey

Licences are sold at online auctions held by the Ukrainian Geological Survey. The initial price for the auction is determined according to a specific methodology provided by the Cabinet of Ministers of Ukraine.

Starting from December 2019, auctions for the sale of licences are held online via the Prozorro.Sale, a state-owned electronic platform for public procurement.

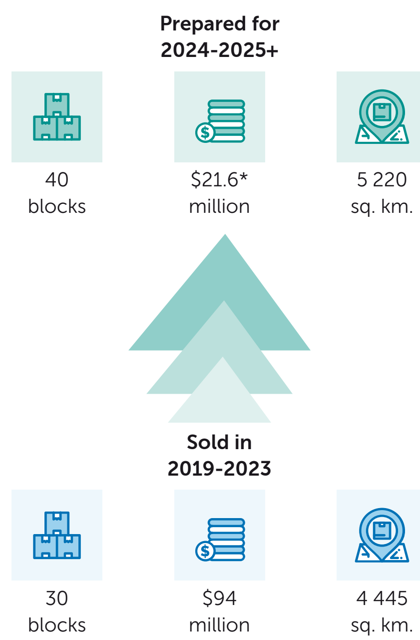
In November 2022, the Mayorivska block in the Poltava region was sold at e-auctions on the Prozorro.Sale platform, with an initial price of UAH 40 million, and the final one – of UAH 1 102 million. This became an absolute record in the history of Ukrainian oil and gas auctions, as the amount is the largest ever paid for an oil and gas block/field.

In addition, two more oil and gas blocks were sold at online auctions in the war year. Thus, DTEK Oil&Gas acquired another block – Birkivsko-Zinkivska in the Poltava region for UAH 211 million.

The winner of another lot - Rybnytska block in the Ivano-Frankivsk region was state-owned Ukrgasvydobuvannya. The block was sold for more than UAH 9 million. The successful implementation of these three oil and gas lots replenished the state budget in 2022 by more than UAH 1 322 million.

The conduct of e-auctions in 2022-2023 demonstrated that companies believe in Ukraine's victory and are even willing to invest significant funds in the development of the industry during the war. Increasing gas production volumes is a top priority for enterprises.

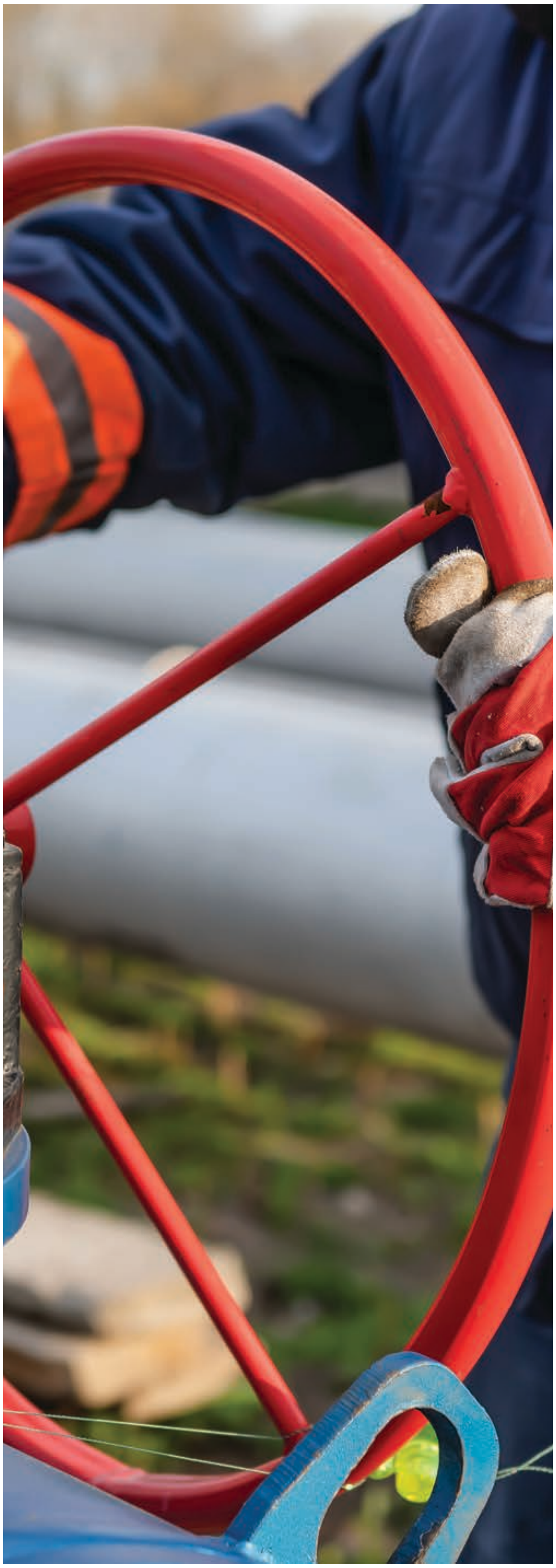
Oil and gas e-auctions results in 2019-2023, as well as future trading plans



Source: Ukrainian Geological Survey

*Note: *initial price may change, as some of the blocks are waiting for evaluation*

PRODUCTION SHARING AGREEMENTS



According to the production sharing agreement ("PSA"), which is concluded between the investor and the Cabinet of Ministers of Ukraine (representing the State) as a result of an open tender, the investor undertakes to carry out a certain work program at his own expense and risk. In its turn, the State provides the investor with:

- a contract area for and all permits required to carry out such works,
- the right to compensate investors' expenses at the cost of a certain portion of minerals produced,
- an entitlement to a certain share of profit production.

PSAs can be also executed as a result of the conversion of the existing licence into the PSA. In this case, a licence holder and a potential investors, if any, must prepare and submit to the PSA interagency commission a proposal on the conversion of the licence into the PSA including information about Investors, their technical and financial capabilities, as well as key commercial terms of the PSA and economic model to demonstrate how the State would benefit from such conversion. A PSA is executed and negotiated after consideration and approval of the proposal by CMU.

The PSA regime is more attractive than the licensing regime in Ukraine due to the following advantages:

- Allows for a 'legal and tax stabilisation clause', which fixes the state of the legislation at the time of signing the PSA and protects the investor from any disruptive changes in the legislation (including any fiscal and tax or legal changes).
- Assistance is provided by the state in obtaining the necessary permits and approvals, including a licence for the relevant subsoil area.
- Settlement of disputes in international arbitration.
- Special conditions and exemptions from restrictions on foreign currency transfers and customs operations, including export of products.
- For tax purposes, the investor's profit is determined by the value of the profitable share of the product, accounted for by the investor under the PSA. All other types of income received by the investor during the PSA are not subject to corporate income tax.
- Services enjoyed by foreign investors from non-residents in Ukraine are not subject to VAT.
- Reduced royalty tax rates.
- The term of the agreement can be up to 50 years (permission up to 20 years onshore, 30 years – on the shelf.

PSAs

In 2019, Ukraine held a large-scale series of oil and gas tenders for PSAs. As of March 2023, Ukraine has signed 12 PSAs with investors (see Table: Operating PSAs).

Blocks	PSA's investors	Signature date	Acreage, sq. km
Oleska block	Nadra Oles'ka LLC	5 November 2013	6 500
Yuzivska block	Nadra Yuzivs'ka LLC	24 January 2013	7 886
Buzivska block	Ukrgasvydobuvannya JSC	31 December 2020	670
Ivanivska block	Ukrgasvydobuvannya JSC	31 December 2020	842
Berestyanska block	Ukrgasvydobuvannya JSC	31 December 2020	286
Balakliiska block	Ukrgasvydobuvannya JSC	31 December 2020	1 119
Sofiivska block	Geo Alliance Partnership B.V.	31 December 2020	2 716
Uhnivska block	Well KO LLC	31 December 2020	**967**
Zinkivska block	Oil&Gas overseas trading D.V.	31 December 2020	571
Varvynska block	Ukrainian Energy LLC	13 January 2021	3 471
Okhtyrska block	EP Ukraine B.V.	08 November 2021	672
Grunivska block	EP Ukraine B.V.	08 November 2021	1 082
Ichnianska block	York Energy (UK) Holdings Limited	08 November 2021	2 086

Due to Russia's full-scale invasion of Ukraine, most PSAs have been suspended on force majeure grounds. However, one PSA has become a real milestone for the industry. PSA operated by Well Ko LLC in the Uhnivska block of western Ukraine, has started yielding gas, becoming Ukraine's first successful PSA. Uhnivska PSA comprises drilling 45 exploration wells and a minimum investment of $65.7 million during the first five years. In addition, some investors (despite force majeure) are preparing for exploration and drilling of additional wells in the PSA areas. Producers are also to fulfil their social obligations under the signed agreements.

Joint Activity Agreements

Investors can be engaged in an unincorporated joint activity with the licence holder under the Joint Activity Agreement (JAA). In essence, they are similar to Joint Operating Agreements (JOA) in the rest of the world. Under the JAA, the partners will share commitments, profits and expenses under the terms and conditions of the JAA they conclude.

JAAs can be used for conducting exploratory activities. However, at present, a JAA is a less favourable option for production, as it lacks stability and proper regulation under Ukrainian law and is subject to very high royalty (70%).

Production Enhancement Contracts

The Production Enhancement Contract (PEC) is a new tool for the Ukrainian market. Under PEC, the licence owner hires a contractor to boost production at existing fields. The contractor is paid for achieving specified production increases above the base level. The licence is not transferred (prohibited by law), but the contractor controls field operations and production, and covers operating and capital costs. PECs are for terms defined by the parties (e.g., the current PEC between UGV and Expert Petroleum is for 15 years) and can be extended. Staff transfer to the contractor is possible.

Purchase of a company-owner of a licence or creation of a Joint Venture

Any investor can either:

- buy a share in a company that: (1) already holds a licence; (2) had entered into a PSA; or (3) conducts joint activity with a licence holder

or

- create a joint venture with a partner by incorporating a new company under the laws of Ukraine with shared charter capital that holds or would become a holder of the licence.

Traditional purchase of corporate rights (M&A) is performed based on a sale and purchase agreement of shares or participatory interest in the company. The sale and purchase agreement may be governed by foreign law.

An economic concentration permit may be required from the antitrust authority in Ukraine in case of exceeding established thresholds as a result of M&A.

Comparison of PSA, PEC, JV and JAA

	Production sharing agreement (PSA)	Production Enhancement Contract (PEC)	Join venture (JV)	Join Activity Agreement (JAA)
General	2-Party (or more) contract between the investors and the State; investors commit to execute the work program and perform minimum spend obligations	2-Party partnership between licence holder and contractor; contractor is selected as a result of tender procedure	Sale and purchase agreement and shareholders agreement	2-Party agreement between special licence holder and investor without incorporation of a separate entity
Duration	50 years	15+ years	Duration of the special licence	Duration of the special licence
Title to the licence	Licence is issued to all investors under PSA for the whole term of the PSA (covers all stages of the project)	Licence remains with the licence holder; contractor has access to operate all available infrastructure on the field	Special licence remains with the JV	Special licence remains with the licence holder
Title to the reserves and production	Investors can book their share of reserves and get the title to their share of production	Remain with the licence holder	Remain with the JV	Remain with the licence holder
Operational control	Stays with the Operator (agreed by the Parties); Joint Operatorship Agreement (JOA) has to be signed between the investors	Contractor has operational control; licence holder approves key decisions (e.g. WP&B, Key CAPEX items) via Management Committee	JV has operational control	Licence holder has operational control
CAPEX / Financing	Shared between licence holder and investor, depending on participation share / other commercial agreements (carry etc.)	100 % financed by the contractor	100 % financed by the JV; investors share them depending on participation share or other arrangements	Shared between licence holder and investor, depending on JAA
Compensation mechanism	Up to 70 % of production offsets against Investors' recoverable expenses, up to 89% of remaining 30% - investor's profit share	Service fee: 2-stage $/tcm tariff (baseline and incremental); incremental is much higher than baseline	Not applicable	Not applicable
Taxation	Fixed tax regime for the whole PSA term. Income tax – 18%, dividend repatriation tax – 15%, royalty for the production of liquids – 2 %, natural gas – 1.25%	Income tax – 18%, Dividend repatriation tax – 15%	Income tax – 18%, Dividend repatriation tax – 15% Applicable royalties	Income tax – 18%, Dividend repatriation tax – 15% Royalties – 70%

Source: CMS

FOREIGN INVESTMENT PROTECTION REGIME

Foreign investors in Ukraine generally enjoy the same rights as domestic ones, with some exceptions.

Foreign investment can be performed in any form not prohibited by law, including:

- JVs with Ukrainian partners.
- Purchase of all or part of the subsoil use rights under a licence.
- Purchase of shares or stakes in an existing Ukrainian company.
- Creation of Ukrainian legal entities, representative offices or branches.
- Purchase of movable and immovable property or property rights.
- Foreign investments can be performed in UAH or in any foreign currency that can be converted by the National Bank of Ukraine.

GUARANTEES FOR FOREIGN INVESTORS IN UKRAINE

Protection against changes in legislation

Foreign investors are protected from changes to Ukrainian legislation on foreign investment for a period of validity of the contract/ agreement from implementation of the respective changes at the request of the investor. This guarantee does not apply to matters of national security, environmental protection or other matters.

Protection against expropriation

Foreign investments may not be nationalized or expropriated by the state, except in cases of emergency measures approved by the government.

Compensation and reimbursement of damages

Foreign investors have the right to compensation for losses, including lost profits and non-pecuniary damage caused by actions, omissions or other improper actions performed by public authorities of Ukraine in relation to a foreign investor or enterprise with foreign investment. Losses shall be reimbursed in the currency of the investment (or in another currency that is acceptable to the investor).

Return of discontinued investments

Within six months of the termination of the investment activity, the foreign investor has the right to recover (a) his investment either in kind or in the currency of the investment (in the amount actually paid and without customs duties) and monetary or commodity form, taking the market value at the time of termination of investment activities into account.

Repatriation of profits

Taking the rules of monetary control of the National Bank of Ukraine into account and after covering all due taxes and fees, foreign investors are guaranteed unobstructed and immediate transfer abroad of income and revenue from investment activities in Ukraine and of other funds in foreign currency.

Treaties concerning investment protection and dispute resolution institutions

Following the investment legislation of Ukraine, investment disputes between foreign investors and the state are resolved in the courts of Ukraine, unless the treaty on investment protection otherwise provides. All other investment disputes to which the foreign investors are parties are resolved in the courts of Ukraine or arbitration courts, including arbitration courts outside of Ukraine.

Today, Ukraine is a signatory to 67 bilateral and 3 multilateral treaties aimed at promoting the inflow of foreign investment into Ukraine and protecting international investors and their investments in Ukraine. Most investment protection treaties signed by Ukraine provide for one or more institutions where an international investor can seek arbitration to resolve an investment dispute with the state of Ukraine.

TAX AND FISCAL POLICY

Royalty is a special tax for the production of minerals

Licence holders pay a royalty for the amount of extracted minerals. The royalty rate, subject to defrayal is calculated based on the value of the mineral produced during the reporting period and on the royalty rate set forth in the Tax Code for each respective mineral.

In some cases provided for in the Tax Code, such as the production of minerals exceeding permitted volumes or in specified fields, such as the continental shelf, a correction factor (0.01 - 2.00) is applied.

For PSA, the investor pays royalty based on the rate envisaged in the PSA provisions and Tax code.

Mineral	Activity
Oil	31% of deposits that lie at a depth of up to 5 000 meters 16% of deposits that lie at a depth of more than 5 000 meters
Natural gas	11% for gas produced from deposits in fields within the continental shelf and/or the exclusive (marine) economic zone of Ukraine 7%/14.5% depending on depth (from/up to 5 000 m), if the gas price is less than $150 14%/29% depending on depth (from/up to 5 000 m), if the gas price is in range of $150-400 If the price of natural gas in more than $400, for the share of $400, depending on depth (from/up to 5 000 m) the royalty rates are 29%/14%, and the difference is taxable for 65%/31%
Natural gas produced from wells drilled after January 1, 2018	3%/6% depending on depth (from/up to 5 000 m), if the natural gas price is less than $150 6%/12% depending on depth (from/up to 5 000 m), if the natural gas price is in range of $150-400 If the price of natural gas in more than $400, for the share of $400, depending on depth (from/up to 5 000 m) the royalty rates are 6%/12%, and the difference is taxable for 18%/36% The stabilisation condition provides that these rates for new wells will remain effective until 1 March, 2032

Source: CMS

General taxes in Ukraine

Tax type	Tax rate
Income tax	18%
Withholding tax	15%, may be reduced in accordance with international agreements on avoidance of double taxation
Value added tax (VAT)	20%, 0% for export
Personal income tax (PIT)	18%, 5% on dividends from Ukrainian companies, 9% on dividends from non-resident companies
Military tax	1.5% in addition to personal income tax on all income
Single social security tax: employer	22% applies to wages but is limited to the amount of 15 minimum wages (UAH 106 500 or approx. EUR 2 535)
Single social security tax: employee	Does not apply
Minimum wage (full-time)	UAH 7 100 or EUR 170 per month in 2024

Source: CMS

CURRENCY CONTROL REGULATION

The 2019 Law of Ukraine "On Currency and Exchange Transactions" ushered in a new regulatory framework based on the principle, "everything which is not forbidden is permitted," the opposite of previous practice. At the same time, Russia's war against Ukraine seriously impacted the pace of currency-control liberalisation.

Impact of the war on the currency regulation:

- Ukraine's FX regulatory reforms have slowed or been paused.
- Martial law imposes new limitations on FX transactions.
- Verification of FX transactions by banks can suffer delays.
- Limits have been imposed on cross-border payments.
- Limits have been imposed on cash withdrawals.

At the same time, on 3 May 2024, the National Bank of Ukraine adopted **Regulation No. 56**, which introduces the biggest pack of softening amendments to Regulation No. 18 "On the Operation of Banking System during the Martial Law Period" since the beginning of Russian aggression.

Repatriation of new dividends allowed

Businesses are now allowed to repatriate «new» dividends, i.e. dividends distributed from the profits earned from activities starting 1 January 2024. To minimise risks to macro-financial stability, Regulation No.56 sets a monthly limit for repatriating "new" dividends at EUR 1 million.

Ease of payments under "new" financings

Restrictions on the repayment of "new" loans from non-residents have also been eased. Regulation No.56 simplifies conditions for residents to purchase currency for servicing and repaying "new" external loans, where funds arrive in foreign currency after 20 June 2023. Notably, the minimum term for such loans eligible for currency purchase is reduced from 3 years to 1, and businesses can buy currency for interest payments on "new" loans regardless of the loan term.

Payments by representative offices abroad

Restrictions on the transfer of foreign currency from representative offices to their parent companies are eased. Regulation No.56 allows representative offices of international card payment systems and foreign airlines to purchase and transfer foreign currency abroad to the account of a non-resident legal entity whose interests these representative offices represent in Ukraine, with a monthly limit set at EUR 5 million equivalent per representative office of each company.

LABOUR RELATIONS

Employment agreement and contracts

Under Ukrainian law, employees are hired either under an employment agreement or an employment contract. The employment contract is a specially tailored form of employment agreement that allows more contractual freedom and can only be signed with certain categories of employees, such as with a company director or a foreign employee. The law allows these employment contracts to contain additional provisions and to deviate from the default provisions concerning the term of employment, grounds for termination, material liability, and other conditions.

Generally, employment agreements are for an indefinite period. An employment agreement for a fixed term may be signed only where the nature of work does not allow for indefinite employment when it is in the interests of the employee, and in other cases expressly provided by Ukrainian law, such as for seasonal work or to replace an employee who is temporarily absent.

Employees' compensations

Employees are entitled to compensation for the work they perform, including:

Employers in Ukraine must pay salaries only in the local currency, which is the Ukrainian Hryvnia (UAH), although an employment agreement may set the value of the salary in a foreign currency (e.g., EUR or USD).

Working hours

Generally, the maximum work week is 40 hours excluding lunch breaks. The law does not specify the duration of a working day, which is left to the discretion of the employer and is regulated by the employer's policies, individual employment agreements, or collective bargaining agreements.

Holiday entitlement

All employees are entitled to a minimum of 24 calendar days of paid annual leave after working for an employer for six continuous months. At the employee's request, annual leave can be partially replaced by a payment in lieu, although only for the part exceeding 24 calendar days. An additional maximum of 15 calendar days per year in unpaid leave can be agreed between the employer and employee.

Termination of employment

Under the Labour Code of Ukraine, an employment agreement may be terminated on the following grounds:

1. Mutual consent of the parties.
2. Termination by the employee. Employees, including those working under fixed-term agreements, may terminate their employment by giving two weeks' written notice to the employer.
3. Termination by the employer. Valid grounds for termination can be divided into those related to the employee's breaches of employment duties (termination with cause on the part of the employer) and those not related to the employee's actions (termination without cause). Termination is not generally allowed while an employee is on annual or sick leave.
4. Expiration of a fixed-term agreement.
5. Other grounds, including those stipulated in the employment contract.

Health and safety regulations

The employer must provide a safe work environment for its employees and ensure that workplaces and sanitary conditions fully comply with the requirements of Ukrainian law.

Special requirements, including special clothing and protective equipment, additional rest breaks, and regular medical checks, apply to employees whose work involves exposure to dangerous or hazardous conditions (such as in the oil and gas sector).

A breach of legal requirements regarding work safety and the workplace may result in a fine of up to 5% of the average monthly salary at the company for the previous financial year, plus administrative and criminal liability, if applicable, for the company's officials.

State authorities may prohibit, suspend, terminate, or limit a Ukrainian company's operations, its separate workplaces, buildings, etc. if the work conditions pose a threat to employees' lives.

LITIGATION AND DISPUTE RESOLUTION

Litigation is the usual mechanism for resolving civil and commercial disputes, as well as conflicts with state and municipal bodies. In Ukraine, however, litigation has been criticised as unreliable and frequently unpredictable. The reasons are plentiful, but recent improvements have raised both the perception and quality of Ukraine's judicial process.

The general judicial system of Ukraine is comprised of:

<table>
<tr><td colspan="6">Supreme Court
Grand Chamber of the Supreme Court</td></tr>
<tr><td>Criminal Court of Cassation</td><td>Civil Court of Cassation</td><td>Administrative Court of Cassation</td><td colspan="2">Commercial Court of Cassation</td><td>III instance</td></tr>
<tr><td colspan="2">Appellate courts
(courts of the AR Crimea, regional courts,courts of cities of Kyivand Sevastopol)</td><td>Appellate administrative courts
(appellate circuit courts)</td><td colspan="2">Appellate commercial courts
(appellate circuit courts)</td><td>II instance</td></tr>
<tr><td>High Anti-corruption Count</td><td>Local general courts
(circuit courts)</td><td>Local administrative courts
(circuit courts)</td><td>Local commercial courts
(circuit courts)</td><td>High Court on Intellectual Property</td><td>I instance</td></tr>
</table>

Source: CMS

CHANGES DURING THE FULL-SCALE WAR

Source: AGPU

Liberalisation of licence circulation

The possibility to buy or sell a licence for subsoil use.

Regulation of rights and obligations between the buyer and the seller.

Use of a licence as an asset - collateral or contribution to joint activities.

"Dormant" licences - a thing of the past

Prohibition of extending licences if less than 1% of reserves are produced.

Fee for extending the licence if less than 5% of reserves are produced.

Instead of only geological exploration - an immediate "integrated" licence for 3 to 20 years (exploration + production).

Transparency and openness

Full deregulation is introduced, access to subsoil is simplified, and the best international standards for assessing reserves and resources are recognised (CRIRSCO, PRMS, etc.).

A number of archaic agreements and bureaucratic barriers are abolished.

Automatic extension of licences

Subsoil use licences expiring during martial law will be automatically extended for the duration of martial law plus six months after its end.

National security – the priority

Citizens and residents of the aggressor state will not have access to the subsoil use sphere.

Digitalisation is the future

A single-state portal will provide the opportunity to submit documents directly through an e-cabinet.

Modernisation of Rules in the sector

During the year, a number of government documents were modernised for the effective functioning of the industry.

The Rules for the development of oil and gas fields, updated in March 2017, have been modernised due to changes in profile legislation. Key updates include revised approval procedures for hydrocarbon projects, refined evaluation processes for deposits, and the introduction of advanced production technologies. These clear rules ensure the rational use of Ukrainian subsoil resources.

Another one is the modernisation of the Rules for safety in the oil and gas production industry. It is important for the sector, as it significantly simplifies regulation by adapting technological standards to European legislation.

In particular, it brings the Rules to be fully in line with the provisions of Council Directive 92/91/EEC on minimum requirements for improving the safety and health protection of workers in production industries using drilling.

Future development of the PSA tenders

The Draft Law «On Amendments to Certain Legislative Acts to Stimulate the Development of the Oil and Gas Industry» No. 4344, which improves the procedure for holding tenders for PSA, is expected to be passed this year.

According to the Draft Law No. 4344, it proposes to improve the procedure for holding PSA auctions, namely:

- to clarify the terms and conditions of the tender and improve the criteria for evaluating the bidders' proposals,
- to ensure transparency and publicity of the activities of the procedure and Interagency Commission on Organisation of Conclusion and Implementation of PSA ,
- adopt legislative changes in accordance to the Subsoil Code of Ukraine.

NEW TAXATION SYSTEM

In March 2022, Ukraine introduced differentiated royalties for production, which depend on the realisation price of natural gas. This approach is being applied in Ukraine's gas production sector for the first time and includes three different taxation scenarios based on price and well types. Guarantees of unchanged royalty rates for new gas wells until 2032 are also maintained.

The new system changed the mechanism for determining the tax base. Specifically, the actual selling price of gas, from which the royalty is paid, is now the arithmetic average between the futures price at the European TTF hub for the Month-Ahead and the customs value of imported natural gas.

These taxation system changes coincided with the start of the full-scale war when the country, particularly the Ukrainian industry - the main consumer of independent producers - came under targeted attacks by Russian terrorists, and resource exports were banned for energy security reasons.

To mitigate the war's consequences and preserve Ukrainian gas production, the state made an important decision allowing royalty payment upon de-facto gas realisation. Thus, companies calculate the royalty for the entire volume of produced natural gas each month but pay only for the portion sold during that period.

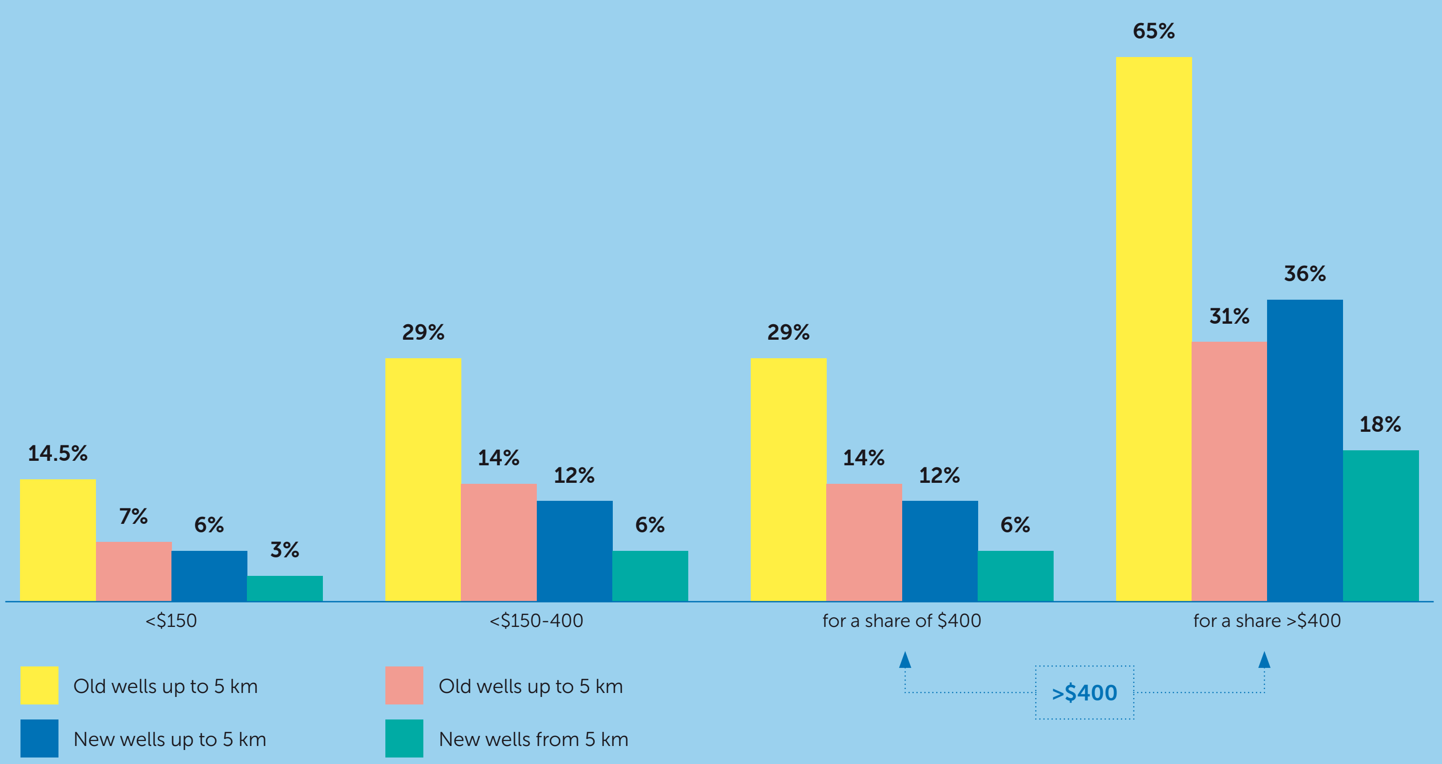
Additionally, due to constructive cooperation between the government, parliamentarians, and businesses, since August 2022, the calculation of royalty has been temporarily tied to internal price indicators, and determines as highest among the following:

- the weighted average price in sales contracts based on the result of Naftogaz buying natural gas from private companies on licenced exchanges
- the weighted average price of natural gas based on the results of trading of privates companies' natural gas on licenced exchanges.
- arithmetic average price between UA VTP indices in Argus European Natural Gas and ICIS European Spot Gas Market reports.

This norm will remain in effect until the export ban on Ukrainian gas is fully lifted.

Tying the royalty to internal market prices was a significant step toward creating a domestic price indicator for natural gas, which Ukraine previously lacked. This government decision positively impacts every consumer and the gas production industry by protecting against abnormally high prices. Now, Ukraine focuses on the domestic sector and is not subject to European market volatility. Owing to the change in the tax base, companies can operate stably and have the potential to increase gas production in the country.

The practice of applying a new approach to taxation given the gas price of $1 000 per 1 000 cm



If the natural gas price is less than $150, the 0.5 coefficient is applied for 29/14%, 12/6% royalty rates;

If the natural gas price is in the range of $150-400, royalty rates are 29/14% for old wells and 12/6% for new ones;

If the natural gas price is more than $400, the royalty rates of 29/14% for old wells and 12/6% for new ones are applied for the share of $400, and the difference between the actual price and $400 is taxable for 65/31%, 36/18% royalty rates.

Source: AGPU

EUROPEAN VECTOR OF UKRAINE

On June 23, 2022, the leaders of the 27 European Union member states decided to grant Ukraine candidate status for EU membership.

This status officially initiated the process of Ukraine's accession to the European Union. Despite the full-scale war, the country has begun working on a comprehensive transformation to align with EU principles and laws.

November 8, 2023, marked another historic date in Ukraine-EU relations. The European Commission, the main executive body of the European Union, published a report positively evaluating Ukraine's progress in implementing recommendations and proposed that EU members begin negotiations on expansion with our country.

The European Commission assessed the alignment of our legislation across all chapters of EU law. The energy chapter received one of the highest ratings - 4 out of 5 (good level of preparation).

The EC highlighted, in particular, the adoption of the National Energy Strategy until 2050, which outlines a vision for decarbonising the energy sector over the next 30 years in line with the European Green Deal.

In the internal energy market, the legislation's compliance with the EU's Third Energy Package is noted. This achievement results from years of state work harmonising Ukrainian legislation with European standards. This includes the completed certification of independent system operators in the gas and electricity sectors and the unbundling of distribution system operators.

The European Commission's report confirmed that despite difficult conditions, Ukraine is on the right path.

Ukraine's Eurointegration Commitments in the Oil and Gas Sector

Formation of minimum reserves of oil and petroleum products

Adopted Law of Ukraine No. 3484-IX, which will come into force in December 2024.

The document stipulates that the total volume of minimum reserves of oil and petroleum products to meet the needs of Ukraine's internal market during a crisis is determined by the larger of two indicators: 90 days of average daily net imports or 61 days of average daily domestic consumption.

Prevention of abuses in wholesale energy markets

The Law of Ukraine No. 3141-IX came into force in July 2023.

The document incorporates principles envisaged by EU Regulation No. 1227/2011 of October 25, 2011, on the integrity and transparency of the wholesale energy market (REMIT) into Ukrainian legislation. Implementing REMIT mechanisms in Ukraine requires developing secondary legislation, and creating monitoring methodologies, reporting, information exchange, and special information platforms. Completing this process is scheduled within 18 months of the law's enactment.

INVESTMENT OPPORTUNITIES

OIL AND GAS REGIONS OF UKRAINE

Ukraine's oil and gas deposits are categorised into four oil and gas provinces and nine oil and gas regions. Their geographic location and unique characteristics allow them to be grouped into three main oil and gas regions where a significant portion of Ukraine's fossil fuel reserves are concentrated:

Tight Gas

Ukraine has significant potential for developing unconventional gas deposits. Technically recoverable reserves are estimated at 1.2 trillion cm, which are currently undeveloped. The most promising type of unconventional natural gas is tight gas. The Eastern region alone holds 100 bcm of this resource. Active production could start new deposits development and proportionally increase production volumes in a relatively short period.

Eastern – Dnieper-Donets Basin

Region highlights:

- actively developed, producing over 90% of the country's gas
- contains 76% of Ukraine's proven natural gas reserves
- features deep and ultra-deep wells - 5 km and more
- high production rates

Southern - North Black Sea Basin

Region Highlights:

- most promising for development
- contains about 40% of Ukraine's total energy reserves
- most hydrocarbon reserves are located in deep waters with geology similar to Romanian and Turkish blocks

Western - Pre-Carpathian Basin

Region Highlights:

- currently underexplored, despite being a pioneer in oil and gas production
- shallow wells - up to 2 km deep
- rock formations similar to those successfully exploited in neighbouring countries - Poland, Romania, Slovakia, and Hungary

BLACK SEA OFFSHORE

The Ukrainian shelf is the largest investment project in Ukraine. The deep waters are extremely promising for hydrocarbon exploration and production, as evidenced by the successes of neighbours Romania and Turkey, who have actively explored the Black Sea depths and discovered new fields.

According to the Ukrainian Geological Survey, potential oil and gas reserves in the Ukrainian part of the Black Sea are estimated at 2.3 billion tonnes of oil equivalent, which is equivalent to 2.3 trillion cm, representing about 40% of Ukraine's total energy reserves.

Ukraine already has experience in developing offshore. Before Russia's occupation of Crimea in 2014, the state company Chornomornaftogaz produced natural gas in the Black Sea, producing 2 bcm of gas in that year, a 400 million cm increase over the previous year. During the occupation, illegal production consistently decreased as the occupiers did not invest but merely produced Ukrainian gas. In early autumn 2023, this lawlessness was halted owing to a special operation by the Main Intelligence Directorate of Ukraine. Ukrainian defenders successfully conducted an operation and regained control of the drilling platforms "Petro Hodovanets" and "Ukraine," as well as the self-elevating floating drilling rigs "Tavrida and Sivash." This equipment, after Ukraine's victory, will be the first step toward the large-scale development of the Black Sea.

In late 2020, the Cabinet of Ministers of Ukraine issued a resolution granting Naftogaz exclusive rights for exploration, appraisal, and development in the north-western part of the Black Sea, in close proximity to major gas discoveries. Before the full-scale invasion, Naftogaz had the right to develop the Black Sea offshore with 36 licences covering approximately 30 000 sq. km. These licences include four types of plays, ranging from shallow water (<150 m WD) to deep water (<2 000 m WD), with a total GIIP estimated at 1.6 tcm and EUR of ~200 bcm, with the majority concentrated in deep water.

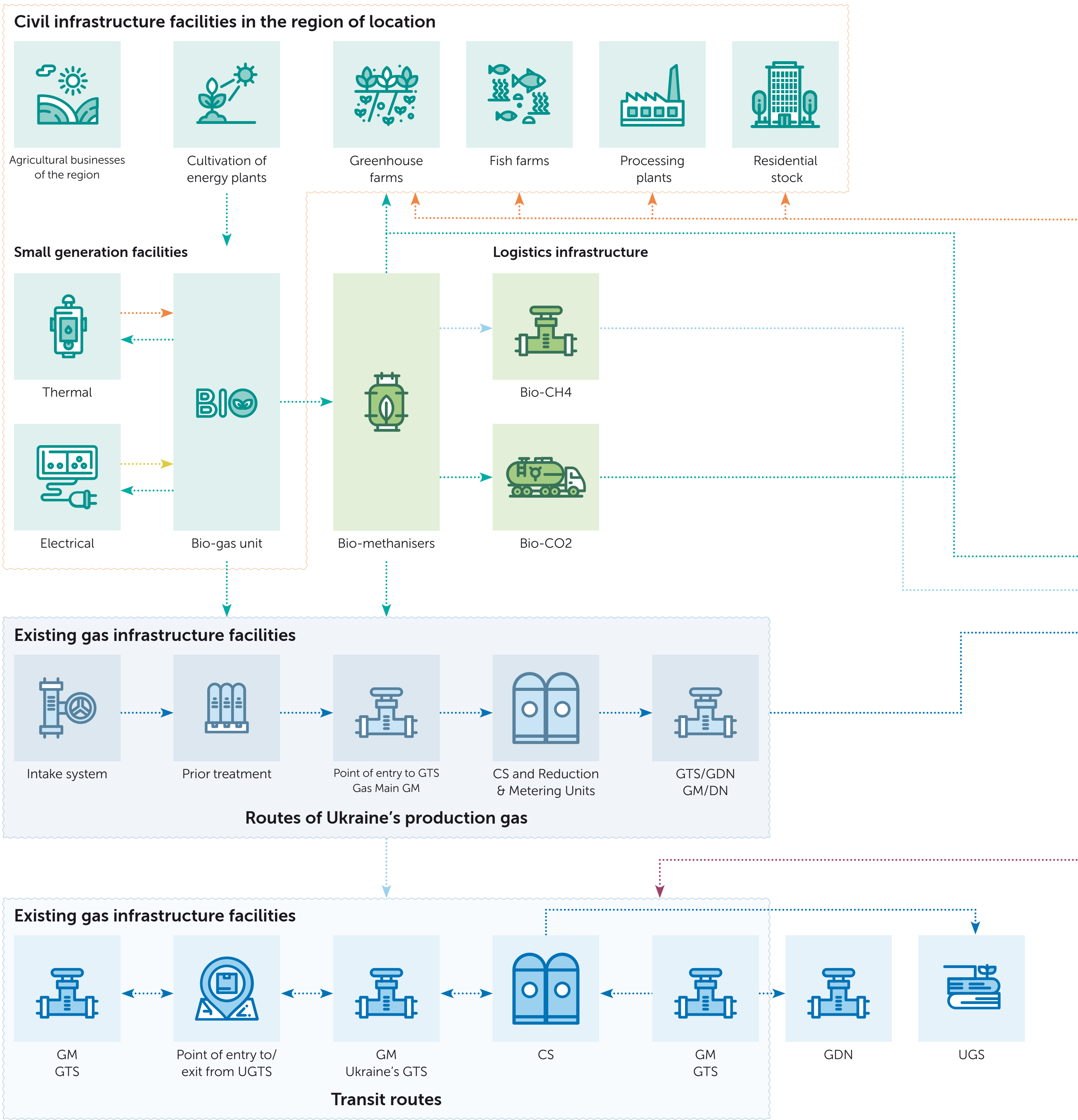
The full-scale Russian invasion of Ukraine has paused the development of the Black Sea shelf. The main issue remains the security in the region. After the war and Ukraine's victory, this direction will become crucial for increasing hydrocarbon production.

NATIONAL TECHNOLOGICAL CLUSTER CCUS

In Ukrainian reality, the CCUS technology envisions creating a cluster based on the existing gas infrastructure for CO2 capture, storage, and processing. This is facilitated by the extensive UGS and GTS systems, along with suitable geological conditions.

Location: Implementation is possible in most regions of Ukraine.

The technological cluster will drive deep industry transformation in line with modern challenges, promote the implementation and dissemination of sustainable development principles (ESG), decarbonisation with extensive use of taxonomy tools, and development prospects for the carbon market, preservation, and expansion of professional expertise, the technological potential of

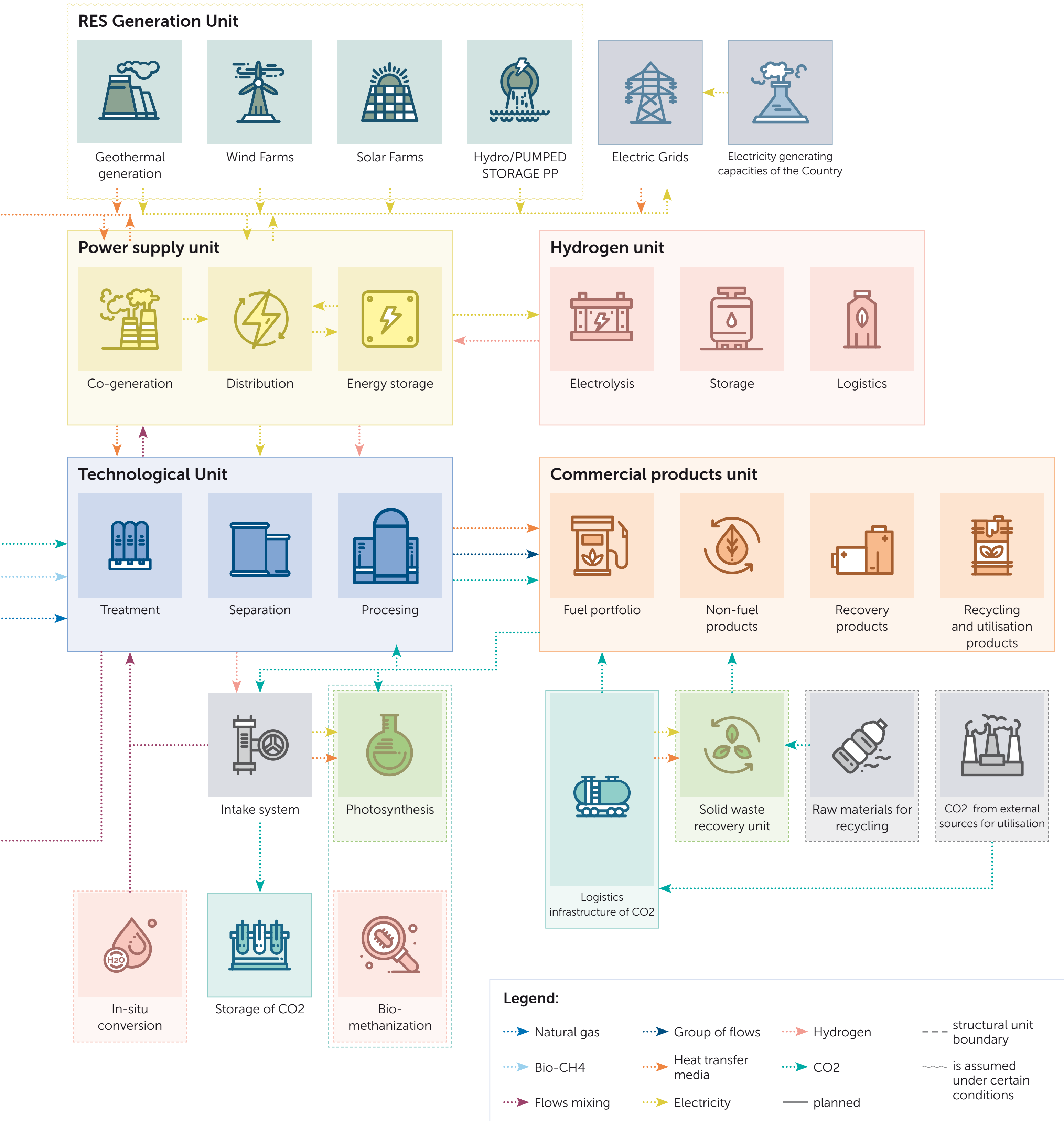


Source: AGPU

existing assets, industrial development of regions, and creation of cross-sectoral hubs and circular economy chains.

At the same time, scaling and development will create a strong base for expanding technological components, optimising investment burdens for reconstructing existing infrastructure, organising material and human resources for creating new facilities, and engaging a wide range of stakeholders considering their readiness to participate actively in the cluster's development and operation.

Implementing the CCUS cluster will be a significant step towards closer economic integration between Ukraine and the EU, both of which have firmly committed to decarbonisation.



CONSTRUCTION OF A METHANOL PLANT

Potentially important Naftogaz GREEN DEAL project, in terms of CO2 capture and hydrogen production.

Location: Western region (priority), Eastern region (perspective).

Methanol production stages (alternative technology – catalytic synthesis of methanol from carbon monoxide and hydrogen):

Gas treatment:

- CO2 and H2 blending
- syngas compression
- syngas compression by a circulation compressor

Methanol synthesis:

- methanol synthesis
- methanol concentration

Exit to EU market with a volume of about 60 thousand tonnes / year

Reducing carbon footprints

Reduction of Ukraine's dependence on methanol import

CO_2 Industrial emission flows + **H** Renewable electricity $+H_2O$ » **eMethanol** Liquid fuels Plastic - Fiber Chemicals

Economic indicators and timeline

When lending at 2% per annum

CAPEX
UAH 13.3 billion

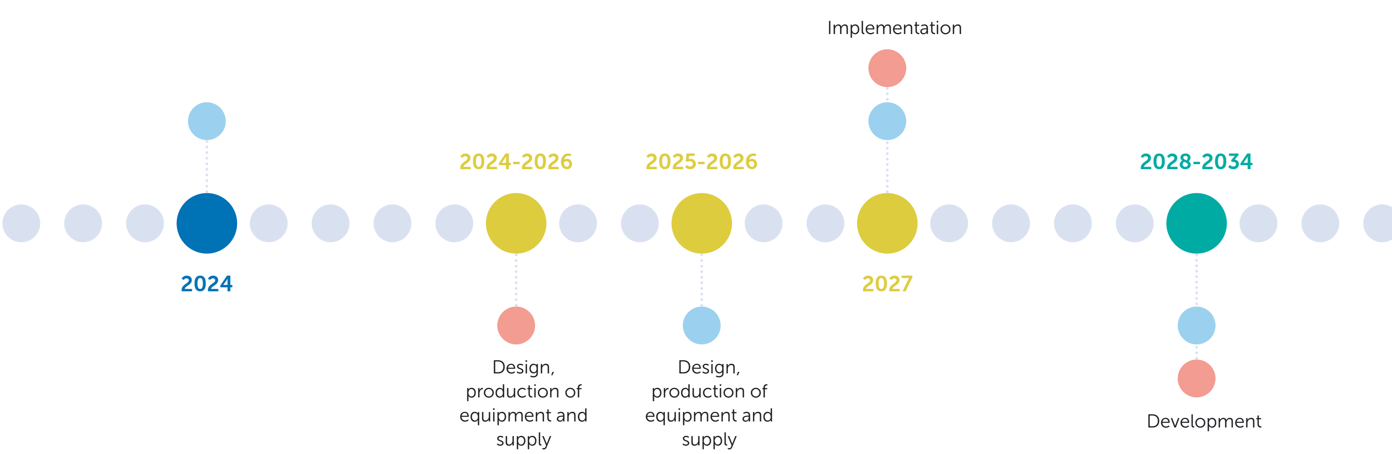
Methanol production
733.3K tonnes

Life cycle
10 years

Payback period
10 years

Cost of methanol production
UAH 1 901.1 / t (without depreciation)

Preparation	Development, manufacturing and supply	Implementation



withdrawal from the CO2

methanol production

CONSTRUCTION OF ADVANCED HYDROCARBONS EXTRACTION PLANT AT KRESTYSHCHENSKA BCS

The goal of the project is the construction of the ADVANCED HYDROCARBONS EXTRACTION PLANT from natural gas (AHEP).

Location: Khrestischenske gas processing department (Kharkiv region, Krasnograd district).

Existing plant

Regular extraction to C_{5+}

AHEP

Advanced extraction to C_{3+} with separation into LPG and stable condensate

Getting a product with a greater marginality

20 Thousand tonnes / year	**Additional stable condensate production**
100 Thousand tonnes / year	**Additional LPG production**

Providing the center and east of Ukraine with own fuel

Possible combination with the Carbon Capture technology (Captured CO2 is use for methanol synthesis)

LPG line capacity per year up to 120 thousand tonnes

Reduction of Ukraine's dependence on import petroleum products

Tentative budget € 100 million (excl. VAT).

Technical parameters of the project and equipment

- Gas treatment and dehydration unit
- Low-temperature gas separation unit
- Liquefied hydrocarbons unit
- Stable gas condensate storage and shipping tank fleet
- LPG storage and shipping tank fleet
- Residue Natural gas

Economic indicators and timeline

FEED $5M Design $7M Equipment $73M Construction $35M

CAPEX	$120M
EBIDTA	$45M
NPV	$37M
Life cycle	20+ years

Scope | **Development** | **Production**

- **2020** — **Project Appraisal**: Project Appraisal and Investment Decision
- **2021** — **Market feedback**: Discussion of Technical and Contractual Details with market
- **2024** — **Project re-evaluation**: Project re-evaluation due to new challenges
- **2025** — **Design**: Engineering, Start of Equipment manufacturing
- **2026** — **Manufacturing**: Equipment Supply, Construction Works
- **2027** — **Construction**: Plant construction
- **2027** — **Start Up**: Production start

COMPREHENSIVE DECARBONISATION INVESTMENT PROGRAM SCOPE I - DIRECT NATURAL AND GREENHOUSE GASES EMISSIONS

Reduction of production and technological costs and effective implementation of technologies to reduce the level of the carbon footprint by implementing 3 groups of projects in the following areas: workovers, blow-outs related operational activities, and surface facilities operational activities.

Total additional commercial gas production **666 million cm.**

Consists of **7 projects:**

SNUBBING

Units for performing well work without killing and venting gas into the atmosphere

Well-Test

Units allow conducting well tests without venting gas into the atmosphere

Low-pressure compressors (VRU)

Allow avoiding flare gases blow-outs

LDAR

Decline the level of uncontrolled gas leaks

Small-sized wellhead compressors

Eliminate the need for blowouts and stabilize gas production from the low-pressure well stock

Leaks Detection System

Reliable and trouble-free condensate transportation and fulfilment of the company's Environmental Protection commitments

Honeywell

SCADA systems allow to monitor of parameters in real-time and quickly identify problems

Economic indicators and timeline

CAPEX

UAH 1.6 billion

Additional sale gas

666 million cm

Life cycle

10 years (7 projects)

NPV

UAH 2.4 billion

Payback period

3 years (projects with procurements)

9 years (project with credit)

Preparation	Development, manufacturing and supply	Implementation

2024 – Projects approval at GTC, development and approval of investment passports

2025 – Execution of contracts for supply and installation of equipment, supply of equipment, installation

2026 – Start of the test period, operation at selected surface infrastructure facilities

2027-2033 – Operation, evaluation of implementation efficiency

SOLOTVYNO ECOFIELD

The project provides for the application of thermal formation water from Ukrgasvydobuvannya fields for heat and electricity generation.

Location: Solotvino village, Solotvynske or Lypchanske gas field (Transcarpathian region).

A memorandum on the implementation of energy and green projects was signed with the local community in 2023.

According to the available temperature estimate (120-150 oC) and the heat flow, binary open or closed loop technology, which provides for the installation of the Organic Rankine Cycle - ORC) to generate electricity will be used.

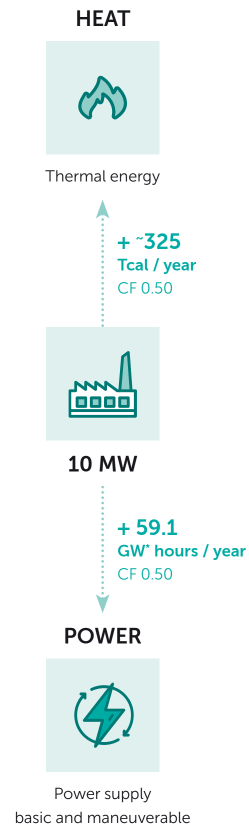
UGV task

- GHG emission reduction (decarbonisation programme)
- Testing of geothermal technologies (subsurface and surface parts)
- Comprehensive exploration to minimise risks
- Groundwater study (including related microelements)

Target consumption

- Connection to the national power grid (as part of the Gas2Power project)
- Maramures Industrial Park and Solotvyno community (needs up to 15MW)
- Potential exports through interconnector construction to Romania (Sziget Marmara, up to 5 km long)
- Potential construction of agricultural greenhouses

Pilot GeoTech



Emission reduction

- 46

thousand CO_2 / year

Replacing gas consumption with electricity generation

19

million cm / year

Economic indicators and timeline

Scoping $0.5M PreFS $5.5M Design $5M FS ~$17-20M Construction $20M

CAPEX
$51.1M

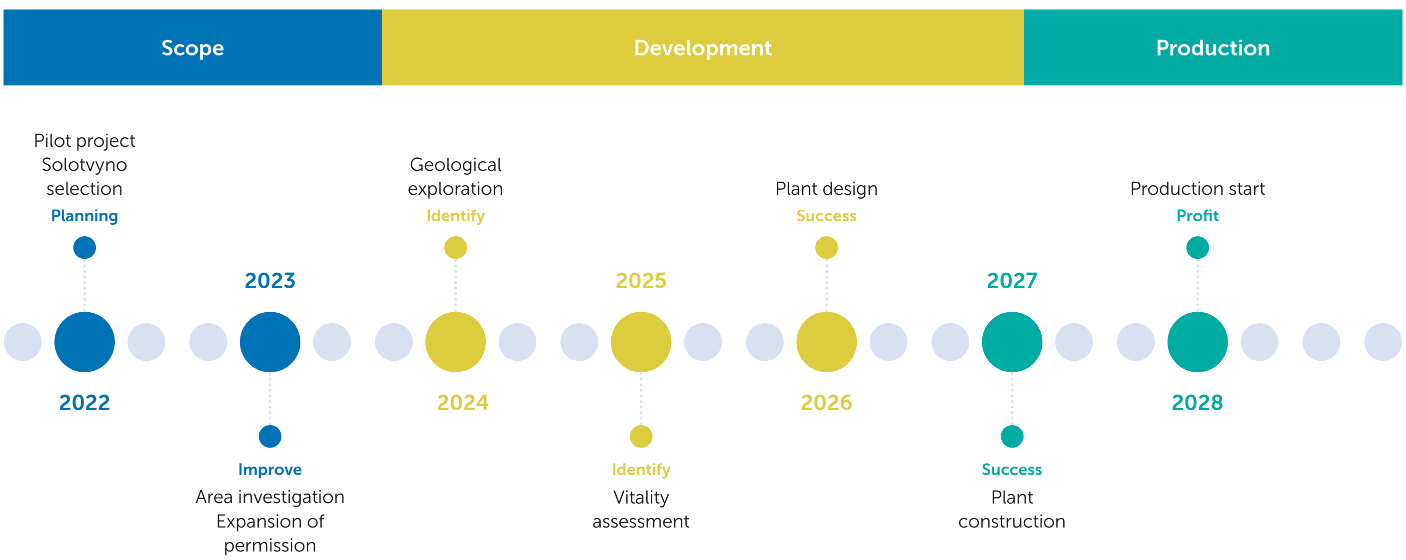
EBIDTA
$33.3M

NPV
$109.9M

Co-funding
£ 1.68 million grant funding for 2024-2026

Payback period
30 years (23-production)

Related projects
Extraction of critical minerals



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