# Untapped potentials: first steps of the Ukrainian biomethane industry

August 2025

DataDriven | Research & Consulting

# Content

# 1. Introduction to the study

# DataDriven provides best-in-class research and consulting services on the Ukrainian market

## DataDriven – a generalist consulting agency…

***Research***

Based on our many years' experience In collecting, analyzing and interpreting data, as well as in creating recommendations for public and private stakeholders.

***Consulting***

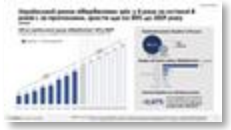
Appy in-depth knowledge of Ukrainian civil society, politics and business for the benefit of our clients. To pave the way for the world to Ukraine, and for Ukrainian enterprises to the world.

## …with a particular expertise in private and public sectors…

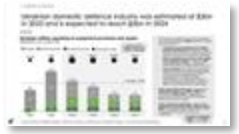
Our research involves:

- **Overview of international development projects in Ukraine** *(February, 2025)*


- **Ukrainian cybersecurity market** *(January, 2025)*

- **Ukrainian defence tech market** *(September, 2024)*



## …advising a wide range of clients in energy sector:

**Energy producers**
(Business strategies in the Ukrainian and EU markets, transition to renewable energy)

**Electricity & Gas TSO/DSOs**
(Modernisation of infrastructure; Transition to decentralised and "green" generation)

**Investors**
(Evaluation of energy projects; market analysis and identification of investment opportunities)

# Context & objectives of the study

## Context

**European transition of the gas sector & untapped Ukrainian potential**

- EU is accelerating the decarbonisation of the gas sector, aiming for 35 bcm biomethane by 2030 under REPowerEU and RED III.
- Biomethane is gaining traction across Europe, supported by regulatory incentives, carbon pricing, and investment frameworks.
- Ukraine holds strong comparative advantages: abundant feedstock, developed gas grid, and large storage capacity — yet is underrepresented in EU biomethane strategies.
- Current Ukrainian market remains nascent, with only a few operational plants and limited export activity, despite high theoretical production potential.

## Objectives

**Reveal market structure, strategies, and untapped growth levers in the Ukrainian biomethane sector**

- Map current market dynamics: players, projects, production volumes, and technological pathways (e.g., Bio-LNG, hybrid biogas/biomethane).
- Categorise key stakeholders: distinguish agricultural vs energy players and their differing motivations, assets, and constraints.
- Highlight long-term potential: projected growth scenarios, export capacity, and environmental/economic benefits of scale-up.
- Analyse the regulatory frameworks: identify gaps, recent reforms, and necessary EU–Ukraine harmonisation (RED II/III, GOs, PoS, certification schemes).

# Methdogolody

The research is based on a **combined approach**, integrating both quantitative and qualitative analysis to identify the current status, motivations, and barriers to the development of the biomethane market in Ukraine. This approach makes it possible to reveal strategic behaviour patterns of key players, regulatory constraints, and the export growth potential. The methodology includes secondary data analysis and semi-structured in-depth interviews with market participants, investors, experts, and government representatives.

## In-depth interviews

**Data collection method:** 10+ semi-structured interviews with current players in the biomethane market (energy and agricultural companies), potential investors (investment funds, industrial groups), independent renewable energy experts, and representatives of public authorities.

**Topics covered:** Business models and market entry strategies; Motivations and barriers for participating in biomethane projects; Experience with certification, export procedures, and regulation; Perspectives on the industry outlook through 2030

**Період збору даних:** March – June 2025 року.

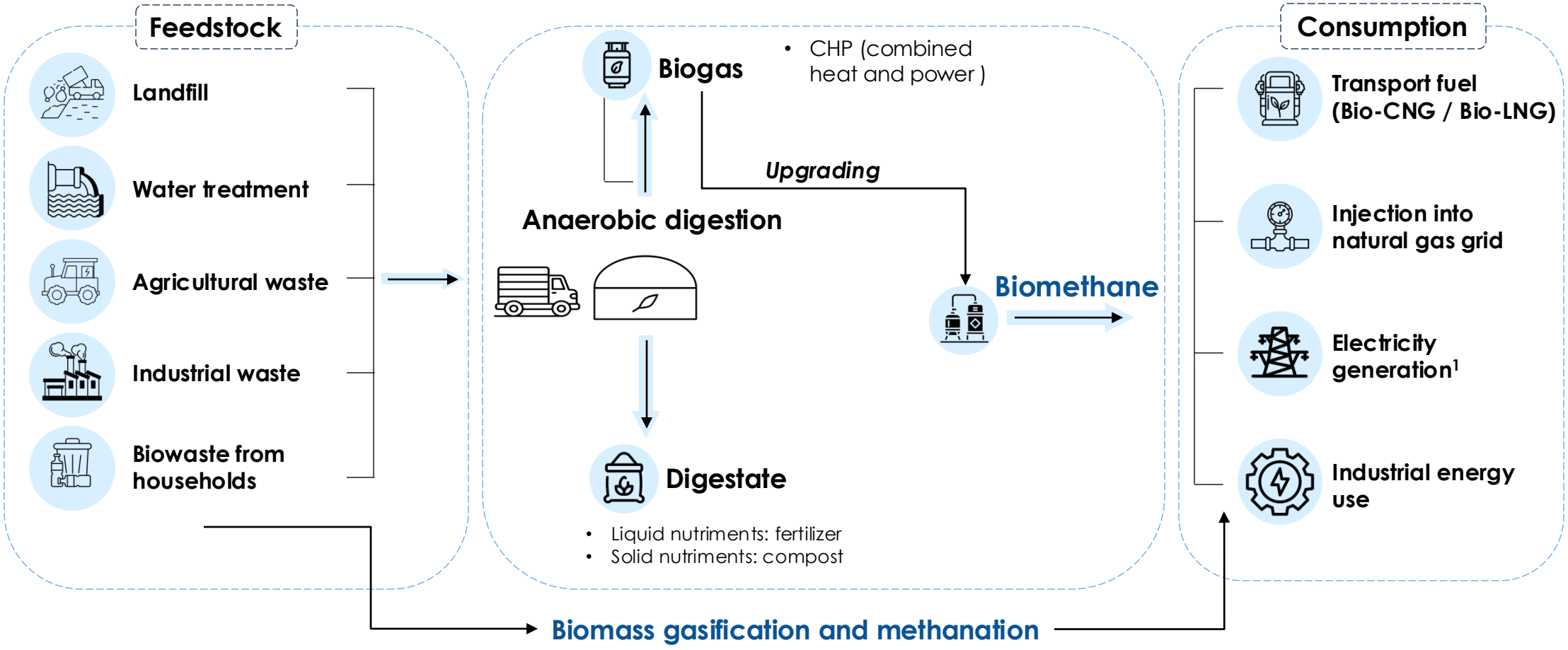
## Secondary Data Analysis

**Data collection method:** Review of over 30 sources: international industry reports (EBA, IEA, REPowerEU, ISCC), donor analytics (GIZ, USAID, Forum Energii), Ukrainian sectoral reports and databases (UABIO), as well as technical documents and pilot export case studies (Vitagro, MHP).

**Objective:** Identify key market trends in both the EU and Ukraine; Assess regulatory frameworks (RED II/III, certification, customs clearance); Analyse successful launch and export cases; Provide actionable recommendations for institutions, companies, and investors

# 2. Biomethane: basics

# Biomethane is a low-carbon renewable gas produced by upgrading biogas to natural gas quality through the removal of $CO_2$ and other impurities






Notes: 1. Biomethane is rarely used for electricity generation only in specific cases, such as peaker plants to provide flexible low-carbon power during peak demand or in off-grid/remote sites where grid injection isn't feasible.

# Ukraine plays an important role in the transition to biomethane, which is crucial for the decarbonisation of the EU gas industry

## Biomethane in EU in numbers

**35B** **M³** potential level of **biomethane production per year** in the EU **in 2030**

**111B** **M³** potential level of **biomethane production per year** of EU-27, Norway, UK & Switzerland **in 2040**

**€37B** potential **investments** in the EU biomethane industry

**60M** tonnes annually - **reduction of greenhouse gas emissions** through production of renewable gases

> **Our forecast is for up to 20B m³ of biomethane to be produced in Ukraine for 2050**

**Georgii Geletukha**
The chairman of the board of the Bioenergy Association of Ukraine

## Benefits of EU–Ukraine's biomethane cooperation:

- **Diversification of energy supplies for the EU:** The partnership with Ukraine allows the EU to **diversify its gas supply** network by replacing natural gas **with sustainable biomethane produced in Ukraine**
- **Strategic infrastructure:** Ukraine has a strong **gas transmission** system with a capacity of **over 150B m³** and **31B m³ of underground storage**, making it a key hub for biomethane storage and transit to the EU
- **Regulatory integration with the EU:** The implementation of the **Energy Community acquis** paves the way for Ukraine's full integration into the European energy market and accession to **ENTSO-G**
- **New opportunities after 2025**: The completion of the transit agreement with Russia and the unblocking of biomethane exports create conditions for **strengthening EU energy security** through new, environmentally friendly sources from Ukraine

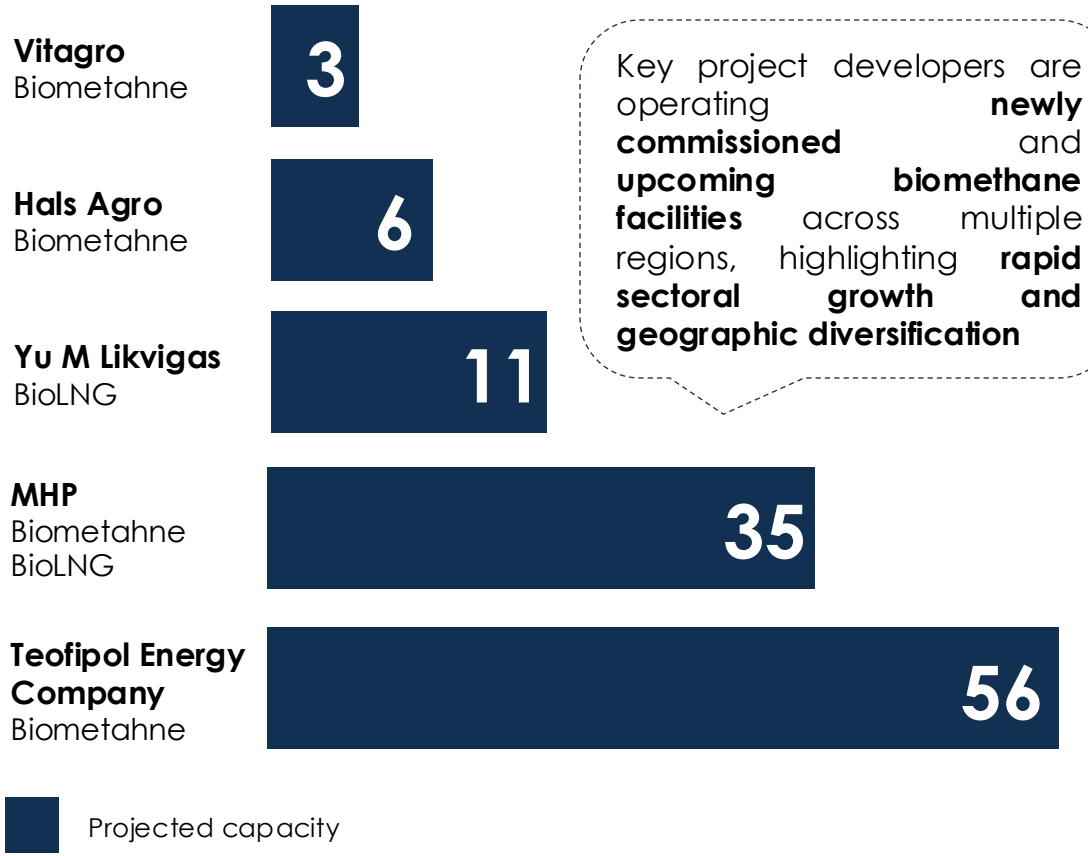


Sources: RePowerEU; EBA; UABIO

# 3. Production of biomethane & its derivatives

# Ukraine's nascent biomethane industry has proven its viability and is poised for rapid expansion to meet growing EU demand

**Biomethane plants in operation or ready to be launched and what will be produced**




Key project developers are operating **newly commissioned** and **upcoming biomethane facilities** across multiple regions, highlighting **rapid sectoral growth and geographic diversification**

**Key takeaways on current Ukraine's biomethane market**

1. Ukraine's **biomethane sector** is in its **infancy**, with first operational projects producing **up to 50 million m³/year** of biomethane
2. Ukraine aims to commission at least **5** additional biomethane **plants** in 2025, raising annual capacity to **over 100 million m³**
3. In 2024, Ukraine produced its **inaugural million m³** of biomethane, marking a **key proof-of-concept** for the sector
4. By 2050, Ukraine could supply **up to 20 billion m³/year** of biomethane—approximately **20%** of current **EU biomethane demand**
5. The EU's **REPowerEU** plan to reduce **dependence** on **Russian gas** significantly boosts demand for Ukrainian biomethane and creates **export incentives**



Sources: European Biogas Association, Forbes, UABIO, DataDriven Analaysis

# Agricultural and energy companies are two main category of players entering the biomethane sector, each trying to leverage their complementary strengths

## Agricultural companies[1]

**Motivation**: to monetise agricultural waste and solve the problem of waste disposal in an environmentally friendly way. For agricultural producers, biomethane production is a new source of income and means of energy independence: their own gas for heating or machinery.

**Strengths**

- guaranteed **raw materials**
- **land** to locate **the plants**
- possibility to use the **digestate as fertiliser**

**Weaknesses**

- **lack of expertise** in **gas technologies** and gas **trading**
- **significant investments** not in the core **agribusiness**
- dependence on the **seasonality of raw materials**

MHP AGRO & INDUSTRIAL HOLDING · Gals Agro · VITAGRO · ТЕОФІПОЛЬСЬКА ЕНЕРГЕТИЧНА КОМПАНІЯ

## Energy companies

**Motivation**: business diversification and green transition. Diversification into biomethane is a way to decarbonise its product portfolio and attract new, often international, investments into its projects.

**Strengths**

- experience in running **energy projects**
- **understanding** of the gas **market**
- possibility to use the **digestate as fertiliser**

**Weaknesses**

- **lack** of a raw material **base**
- dependence on **yields** and **raw material logistics**
- no expertise in **managing by-products** and **environmental regulations** in agriculture

OKKO

Notes: 1. Despite its name, Teofipolska Energy Company is part of the 'Ukraina 2001' agro-industrial group', engaged in grain and industrial crop cultivation, pig and cattle farming, sugar beet processing, and sugar production.

# Several market players keep both biogas and biomethane plants to flexibly switch final product based on which current commodity — electricity or gas — offers higher margins

| Category | Biogas strategy | Biomethane strategy |
|---|---|---|
| Feedstock & Production | Local agricultural residues, AD[1] capacity 0.5–5 MW, electricity and heat generation | Local residues, biogas with additional upgrading to >97% methane, injection into gas grid and export |
| Market Models & Revenues | Electricity sales under feed-in tariffs, heat sales, organic fertilizer sales | Gas sales, revenue from carbon credits, long-term purchase agreements (BPAs) |
| Infrastructure & Investment | AD[1] plant + CHP, €1.2–1.7 million per MW, reliance on local grid, lack of district heating | Upgrading modules, compressors, €0.5–1 million per million m³ capacity, need access to transmission grids and export logistics |
| Flexibility & Regulations | Fixed operation focused on electricity and heat production, dependent on local infrastructure | Ability to switch between electricity, heat, and biomethane production, more complex licensing and standards |
| Environmental & Social Impact | Reduces methane emissions and improves local air quality, creates jobs and promotes circular economy | Significant GHG reduction via $CO_2$ credits, supports renewable gas targets, creates jobs and promotes circular economy |

## Market feedback

*There is a threshold price for biomethane that defines whether it's more profitable to use biogas for electricity or to upgrade it to biomethane. Combined generation gives you more control and revenue flexibility — every megawatt should be consumed smartly*

**Director of a Ukrainian biomethane company**

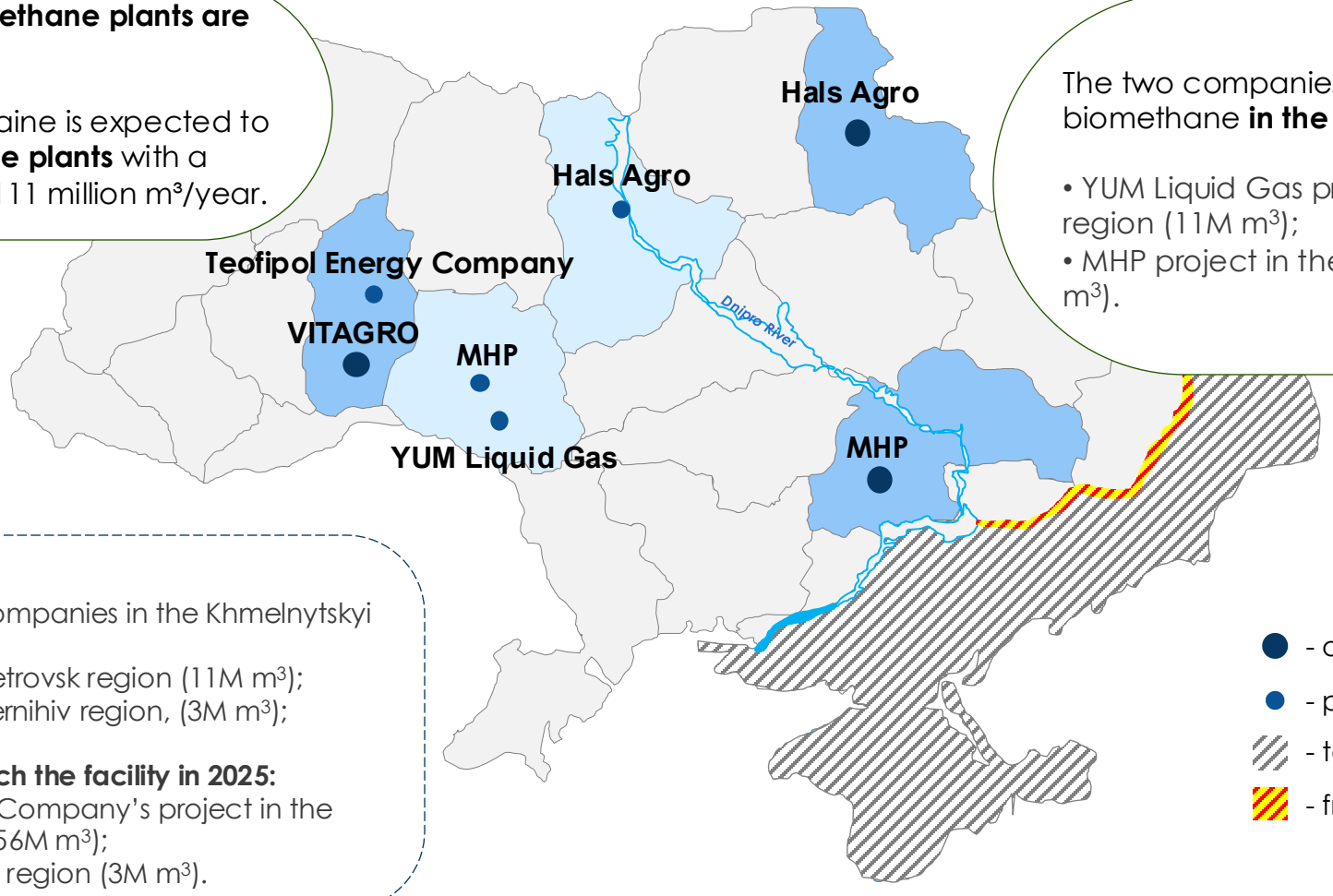


Notes: 1. Anaerobic digestion

# Ukraine's biomethane producers, with several operational and upcoming plants, are building a strong foundation for the production ramp-up in the coming years

As of May 2025, **3 biomethane plants are operational** in Ukraine.

By the end of 2025, Ukraine is expected to have **seven biomethane plants** with a total capacity of over 111 million m³/year.




The two companies aim to produce biomethane **in the form of Bio-LNG**:

- YUM Liquid Gas project in the Vinnytsia region (11M m³);
- MHP project in the Vinnytsia region (24M m³).

**Working facilities:**
- Vitagro Group of Companies in the Khmelnytskyi region (3M m³);
- MHP in the Dnipropetrovsk region (11M m³);
- Hals Agro in the Chernihiv region, (3M m³);

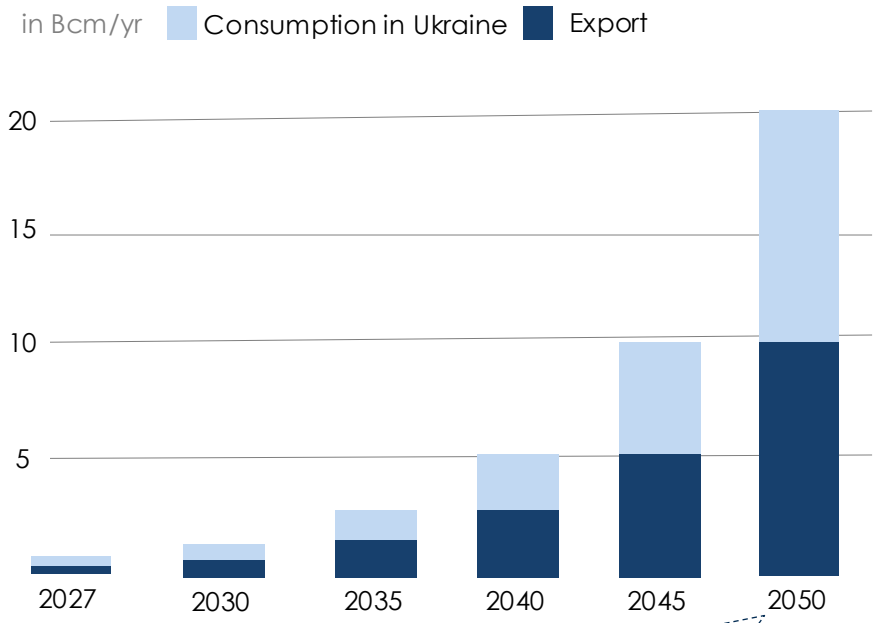
**It is expected to launch the facility in 2025:**
- The Teofipol Energy Company's project in the Khmelnytskyi region (56M m³);
- Hals Agro in the Kyiv region (3M m³).



Sources: Ukraine Business News; DataDriven analysis

# Under the positive development scenario, number of Ukrainian biomethane plant can increase by 20x to reach 200 in 2030

**Positive scenario of biomethane production in Ukraine**




The forecast for biomethane production in Ukraine from 2027 to 2050 shows **significant growth**. Production **will increase** to almost **20 billion** cubic metres per year. At the same time, the share of exports to imports is expected to be at 50% in 2050.

| | 2027 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|---|---|---|---|---|---|
| number of biomethane plants (units) | 50 | 200 | 420 | 900 | 1900 | 4000 |
| necessary investment (billion Eur) | 0.5 | 2 | 4.2 | 4.2 | 19 | 40 |
| reduction of GHG emissions (million mt of CO2e/y) | 0.6 | 2.5 | 5.3 | 5.3 | 23.8 | 50 |
| created new jobs (thousands units) | 3.1 | 12.5 | 26.2 | 56.2 | 118.7 | 250 |

Rapid **expansion** of the **biomethane plant network** by mid-century indicates **industrialization of the sector**, requiring significant investments and ensuring substantial emission reductions and job creation. A positive sector development could strengthen **Ukraine's energy independence**, stimulate innovation in the agricultural sector, and support **sustainable economic and social** growth, enhancing welfare of local communities.



Sources: UABIO

# Bio-LNG is also emerging as a promising commercialization route among Ukrainian market players

**Bio-LNG** is liquefied biomethane and is chemically identical to LNG.

**99,8%** methane concentration in LBM (liquefied biomethane) and Bio-LNG.

Biomethane and bio-LNG are particularly **suitable for use in the road transportation sector** to replace fossil CNG and LNG respectively.

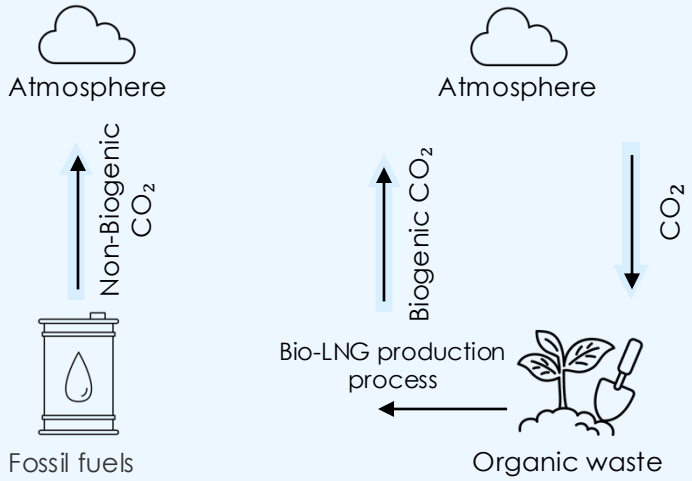
**Example**

Ukrainian company **MHP** has begun **commercial production and export of Bio-LNG**. The fuel is **ISCC EU certified** and fully compliant with **EU sustainability standards (RED II/III)**.

**MHP exported nearly 18,700 tons** of Bio-LNG with a **methane content of over 95%** to **Germany**, with **Vitol** as the buyer. The transport was carried out via **road tankers**, using the **NCTS Phase 5 simplified transit procedure**, which allows seamless cross-border movement with a single customs document.

## Environmental benefits of Bio-LNG

- **Fossil fuels** release carbon stored underground, increasing $CO_2$ emissions into the atmosphere.
- **Bio-LNG** returns carbon recently absorbed by plants, making it part of the natural carbon cycle.




Bio-LNG production captures and reuses biogenic $CO_2$ from biogas, reducing emissions. This makes it **carbon neutral** or even **carbon negative** over its full lifecycle (well-to-wheel).



Sources: ExPro, Nordsol

# With mineral fertilizer prices remaining high and pressure to decarbonise agriculture increasing, digestate is gaining attention as a low-cost, low-carbon alternative

**Digestate** is the byproduct of methane fermentation where organic materials break down into simpler compounds, microbes, and biogas (55–70% methane, 30–45% $CO_2$). Biogas is typically produced from **agricultural waste in semi-flow bioreactors.**

## Key benefits of digestate use:

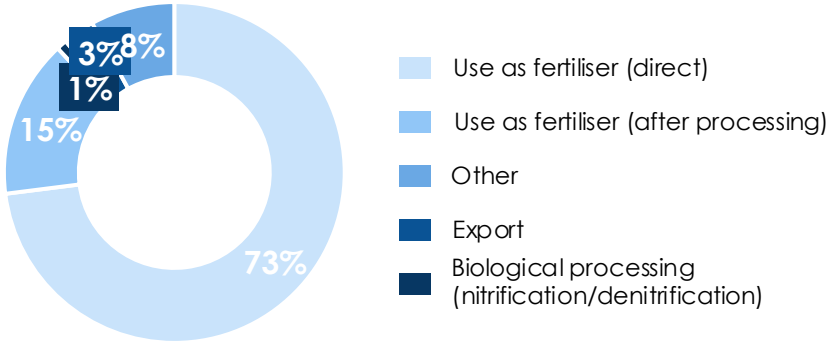
Digestate retains the ability to form humus, just like the original organic substrates, enriching long-term soil fertility.

Returning digestate to the soil **closes the loop** of essential nutrients like **nitrogen (N)**, **phosphorus (P)**, and **potassium (K)**.

Long-term application improves **soil structure**, **aeration**, and **water-holding capacity**, unlike traditional synthetic fertilizers.

Digestate use reduces emissions by capturing methane during fermentation, decreasing reliance on synthetic fertilizers, and enhancing carbon sequestration in soil.

## Digestate end-use in Europe




**Key EU regulations governing digestate use:**

- **Directive on waste 2008/98/EU** (differs between Member States, leading to varying classifications of digestate as either recovery or recycling.)
- **Regulation on fertilizing products (EU) 2019/1009** (allows to set national rules for labelling and quality assurance, meaning different quality control systems apply);
- **Nitrates Directive 91/676/EEC** (imposes nitrogen application limits that constrain digestate use, particularly in environmentally sensitive zones, posing a **significant barrier** to its broader agricultural deployment).



Sources SAF, EBA, UABIO

# $BioCO_2$ is a promising carbon-neutral biomethane byproduct, but its valorisation in Ukraine remains very limited tied to pilot projects

**$BioCO_2$** refers to **biogenic carbon dioxide**—$CO_2$ produced as a **by-product of biomethane** production from biological feedstocks such as agricultural residues, animal manure, food waste, or dedicated energy crops. Unlike fossil-based $CO_2$, $BioCO_2$ is considered part of the **natural carbon cycle**. Its release does not add new carbon to the atmosphere, making it **carbon-neutral** when sustainably managed.

### $BioCO_2$ already replaces traditional functions..

Alternative[1] to fossil $CO_2$ in food & beverages, chemicals, welding, fire protection, pharma

### ...while offering new long-term commercialization opportunities


Enables **BECCS** (Bioenergy with Carbon Capture and Storage) for negative emissions;

When combined with green hydrogen, $BioCO_2$ can produce synthetic fuels (e-methanol, e-kerosene);

### BioCO2 in Ukraine

Although biogas and biomethane facilities begun operating or are under development in Ukraine, almost none of them possess extra bio-CO2 focused infrastructure ($CO_2$ capture, $CO_2$ polishing & drying sink, etc)

**Key obstacle** hampering the emergence of in-country $BioCO_2$ projects include: the local demand for bioCO2 in Ukraine is only nascent as well as levels of willingnesss-to-pay a premium are low; therefore biomethane developers do not focus on bioCO2 commercialization pathways. Also bioCO2 is mostly consumed locally (within ~100km area); longer transport would significantly incease the cost

So far, the track record of $bioCO_2$ use in Ukraine is limited to pilot-scale projects, mainly led by international beverage companies. Going forward, demand is expected to rise as more producers seek to reduce the $CO_2$ footprint of biomethane to meet GHG reduction thresholds.



Notes: 1. List is not exhaustive

# 4. Biomethane feedstock

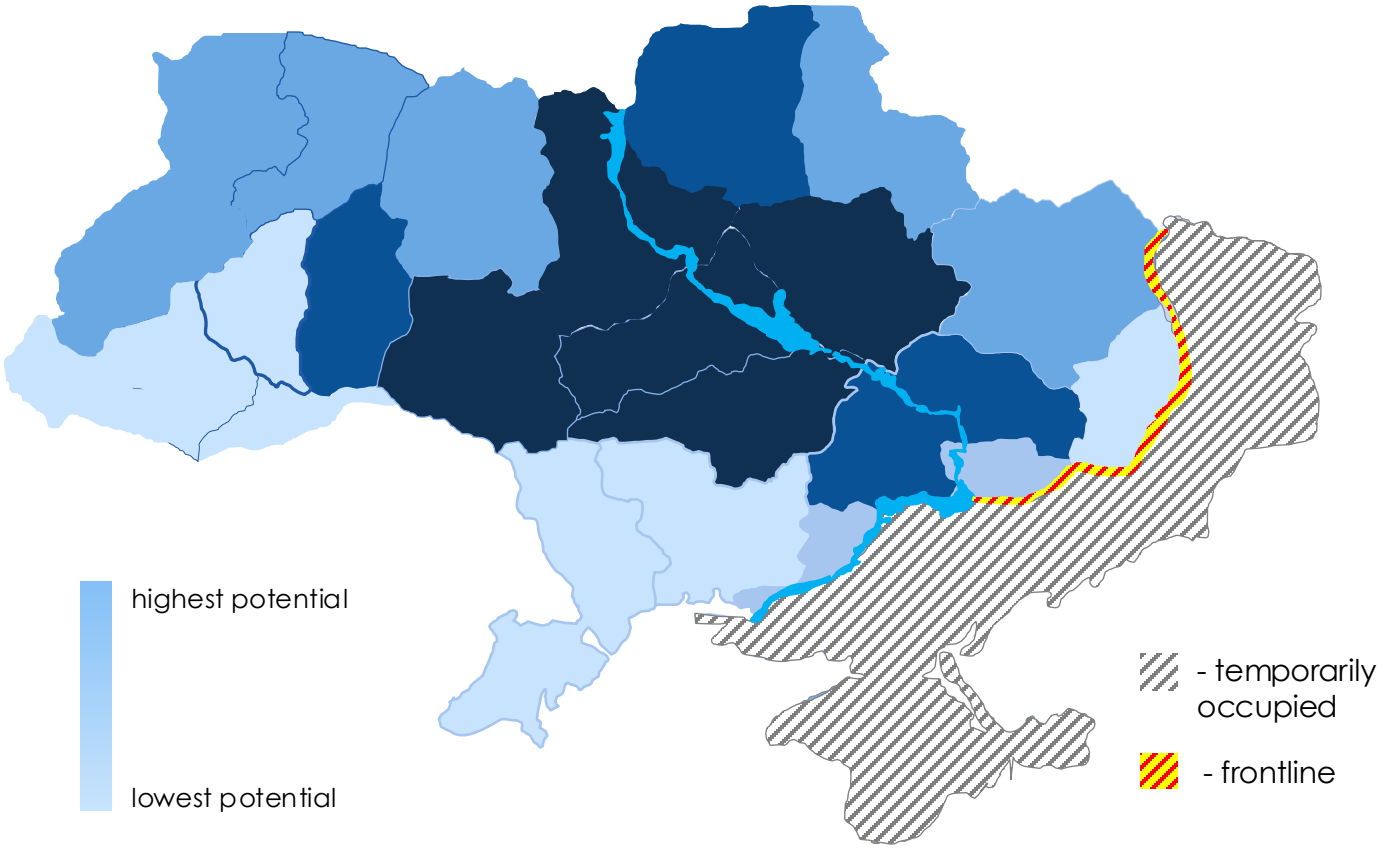
# Energy corps and agricultural residues make up 80%+ of Ukraine's total biomethane potential

## Common Biomethane Feedstock Types, Typical Yield, and Potential in Ukraine

| Feedstock Type | Definition | Typical Methane Yield ($m^3$ $CH_4$/tonne) | Ukraine's Biomethane Potential (billion $m^3$/year) |
|---|---|---|---|
| Agricultural Residues | Leftover plant material after harvest, such as straw, husks, and corn stover, which can be digested for biomethane production. | 180-250 | 5.2 |
| Animal Manure | Organic waste from livestock (cattle, pigs, poultry, etc.), containing undigested nutrients suitable for anaerobic digestion. | 8-39 | 0.9 |
| Energy Crops | Crops grown specifically for energy production, such as maize, sugar beet, wheat, which have high methane yields. | 160-250 | 13.6 (maize and cover crops estimate) |
| Food Waste | Organic waste from households, restaurants, and food processing industries, rich in easily digestible materials. | 222 | 1.2 (municipal waste and food processing estimate) |
| Sewage Sludge | The semi-solid byproduct of wastewater treatment, rich in organic material and microorganisms for methane production. | 110-120 | 0.1 |
| Industrial Waste | Waste from food processing, beverage production, and other industrial sources, often with high organic content. | 361 | 0.7 (food processing) |
| Landfill Gas | Methane-rich gas produced by the anaerobic decomposition of organic waste in landfills, which can be captured and purified. | 100 | 1 |

# Agricultural residues in central regions, livestock manure in the northwest, and industrial waste in cities form a complementary feedstock network for biomethane

**Feedstock production potential depending on the region**




**Vinnytsia, Poltava, and Kirovohrad** regions have the highest availability of **agricultural residues** due to large-scale grain and sunflower production.

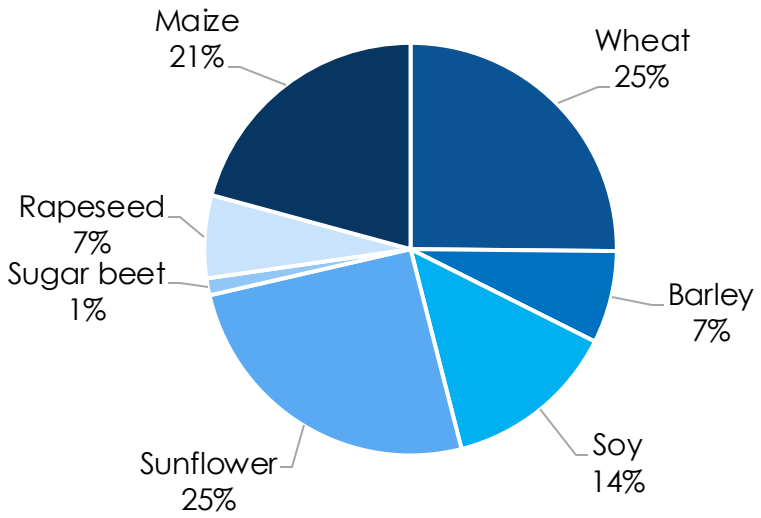
Regions such as **Lviv, Volyn, Zhytomyr, and Chernihiv** have dense livestock populations. This provides a steady supply of **animal manure** feedstock, especially for small-scale biogas units.

**Kyiv, Kharkiv, Odesa, and Dnipro** are top producers of **food and municipal waste**, ideal for centralized waste-to-gas projects.

**Vinnytsia, Mykolaiv, and Zaporizhzhia** host major food and beverage industries.
High-yield organic **industrial waste** from these regions is underutilized and ripe for circular economy models.

# Despite the abundant supply of agricultural residues in Ukraine, a preferred feedstock mix should include both crop residues and animal manure due to its chemical content

**Crop areas in Ukraine in 2024**, in %




- Ukraine is **one of Europe's leading** producers of key crops like wheat, maize, and sunflower, one of the most important feedstocks for biomethane production
- The crop distribution shown (soy 27%, wheat 23%, maize 18%, sunflower 12%) highlights Ukraine's strong agricultural sector focused on both oilseed and staple crops
- Compared to the EU average, **Ukraine has larger shares of land dedicated** to some crops, namely sunflower and maize

**Monofermentation of agriculture residues will not lead to the increases in the biomethane yield**

*Mixing farm animal manure and plant biomass increases the efficiency of biogas plants, creating a favorable environment for methane-forming bacteria. Nutrients from manure help to maintain an active medium for biomethane production and prevent destabilization of anaerobic digestion*

***Carbon-to-nitrogen ratio***

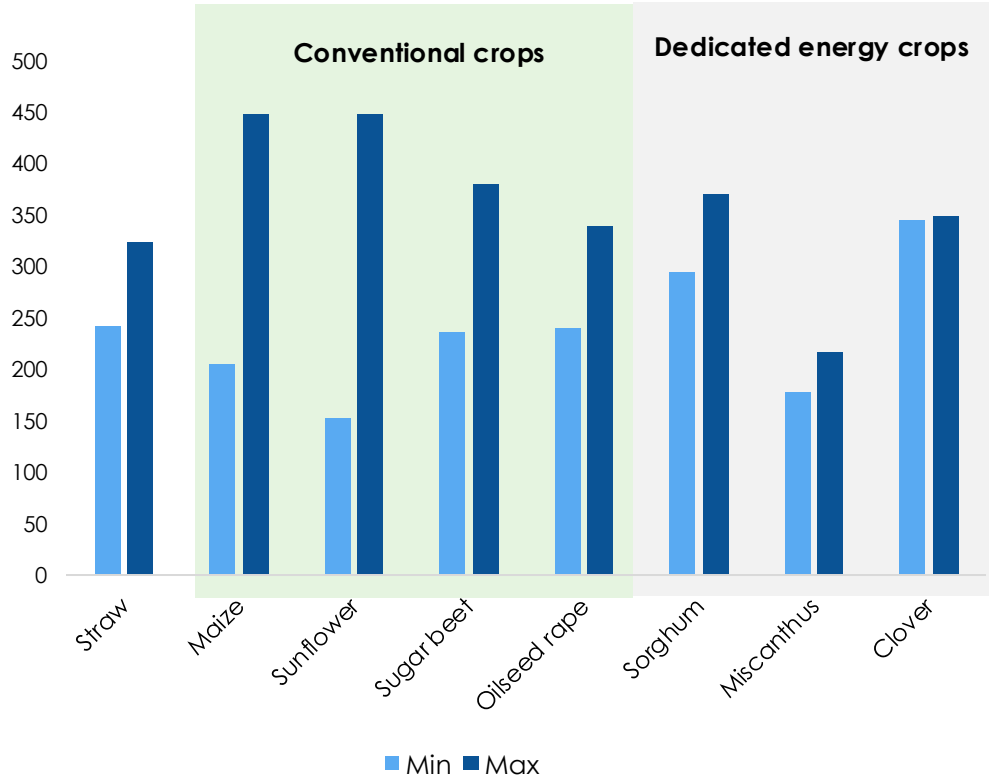

| | |
|---|---|
| **Definition** | The C/N ratio measures the balance of carbon and nitrogen in organic materials, crucial for optimal anaerobic digestion. Ideal C/N ratios support microbial activity needed for efficient biomethane production. |
| **Relevance** | Agricultural residues have high carbon but low nitrogen, leading to an imbalanced C/N ratio. Animal manure adds nitrogen and nutrients, balancing this ratio to optimize microbial activity and boost biomethane production |



Sources: State Statistics Service of Ukraine

# Maize, rapeseed, sunflower and sugar beet constitute the best choice among the energy crops available in Ukraine

**Minimal and maximal methane yields of energy crops**
$m^3$ per t volatile solids




**46**

allowed **types of energy crops** according to the State Register of plant varieties that are suitable for distribution in Ukraine

**Biofuels competition**

Energy crops like willow, miscanthus, paulownia, rod-shaped millet, oil radish, and poplar are expected to face demand to produce solid biofuels in Ukraine, increasing their usage competition beyond biomethane production.

**Common corps**

Maize, rapeseed, sunflower, and sugar beet are considered traditional & the most popular energy crops due to their high oil and sugar content

**Sorghum sourcing**

Although sweet sorghum offers high methane yields, it is currently not commercially attractive in Ukraine. Its sowing area has declined significantly (from 46.4 thousand ha to 18.8 thousand ha in 2024) partly due to the Russian invasion.

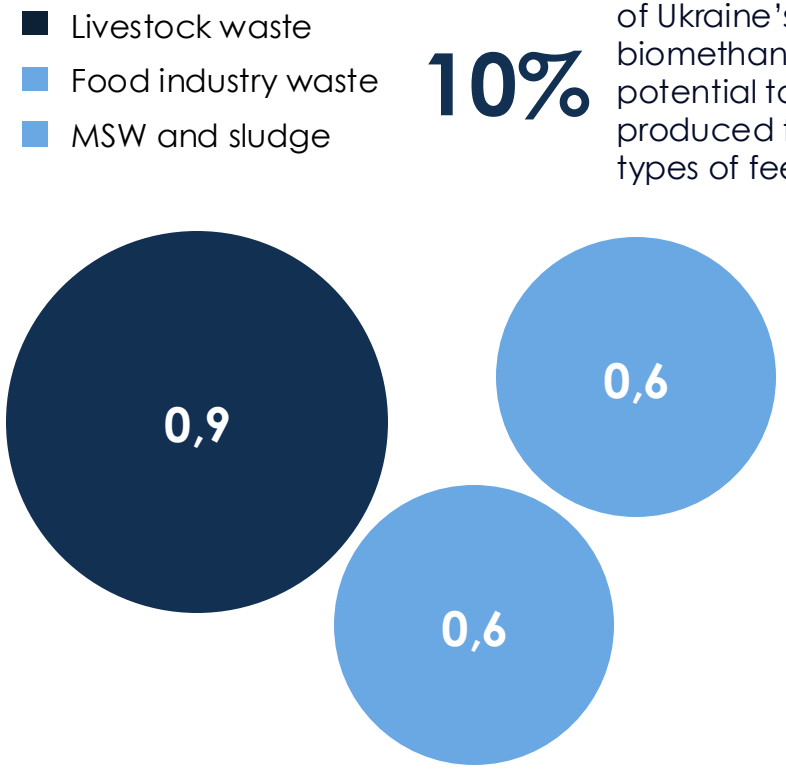


Sources: IEA Bioenergy

# Organic and industrial waste are another promising biomethane feedstock type, currently dominating among Ukrainian installed biogas plants

**Overall Waste-Based Biomethane Potential**

Billion $m^3$




**10%** of Ukraine's biomethane potential to be produced from such types of feedstock

Utilizing organic and industrial waste avoids direct competition with food and feed production, which is crucial for Ukraine given its role as a major grain exporter globally:

- It **aligns with EU sustainability criteria** (Annex IX, RED II) that favor wastes and residues in biomethane production, enabling access to higher market premiums and double energy crediting in some cases
- This approach **supports waste valorization**, reducing landfill pressure and methane emissions from unmanaged waste.

**15-30%** potential reduction in production costs using biomethane from waste compared to energy crops.

**Using waste as biomethane feedstock we can benefit from:**

- **enhancing circular economy** by turning waste into valuable energy resources
- **reducing environmental impact** by lowering methane emissions from waste decomposition
- **improving food security** by diversifying feedstock sources away from crops



Sources: UABIO

# 5. Biomethane exports to European countries

# Main offtake strategy of Ukrainian biomethane producers is to export biomethane to the European Union given the growing regional demand

1. As of 2025, Ukrainian biomethane trades at approx. **€900/1,000 m³**, significantly above the **€580/1,000 m³** TTF natural gas benchmark.

2. The European Union has committed to becoming **carbon-neutral by 2050**, with strong regulatory incentives under the **EU Emissions Trading System (ETS)**.

   Using **biomethane** allows polluters to cut emissions and **avoid purchasing $CO_2$ credits**, which trade like any other commodity.

3. Ukraine lacks a functional **carbon pricing mechanism** or domestic ETS, meaning there is **no extra financial incentive**for local industries to use biomethane over natural gas.

   Without carbon penalties, **domestic biomethane prices remain equal to natural gas**, making local use less economically viable.

**1B m³** The amount of biomethane that Ukraine could potentially export to the EU by 2030.

→ **0,5 %** Covering the expected gap between target and expected EU production capacity in 2030.

**7B m³** The amount of biomethane that Ukraine could potentially export to the EU by 2050.

→ **6 %** Covering the expected gap between target and expected EU production capacity in 2050.

Given the **high European demand**, **strong regulatory pull**, and **better price margins**, Ukrainian producers are prioritizing **biomethane exports** over domestic supply — particularly amid the growing demand to substitute Russian gas in the European Union.

# Ukrainian producers already began pilot biomethane exports to EU buyers, proving feasibility but revealing legal and infrastructure gaps

## Vitagro

**Start of export**: 7 February 2025

**Feedstock:** 100% livestock waste

**Amount:** 68 000 $m^3$

**Customer**: ERU Europe

VITAGRO's integration into the EU energy market reflects **growing investor confidence** in Ukraine's green gas potential.

The main challenges during this process were:
- **Insufficient** development of **the legal framework;**
- Lack of experience in **connecting the GTS** to a **biomethane plant**;
- Lack of a **developed** and proven **export mechanism.**

## MHP

**Start of export**: 11 February 2025

**Feedstock:** poultry manure and processing waste

**Amount:** 27 400 $m^3$

**Customer**: Vitol

MHP currently **exports biomethane** through major international **traders**, because there are **no direct long-term** contracts with **end customers**.

The first export was **a small shipment** intended to **validate technology** and **establish the supply c**hain. Scaling up will require:
- **Expanding purification and liquefaction capacity** at the biomethane facility;
- **Securing stable buyers and volume commitments** to ensure economic viability.



Sources: Company information

# Adressing such gaps could unlock 0,5-1 billion m3 biomethane exports from Ukraine to the EU countries by 2030

## Previous examples of biomethane exports from Ukraine

### Vitagro

**Start of export**: 7 February 2025

**Feedstock:** 100% livestock waste

**Amount:** 68 000 $m^3$

**Customer**: ERU Europe

### MHP

**Start of export**: 11 February 2025

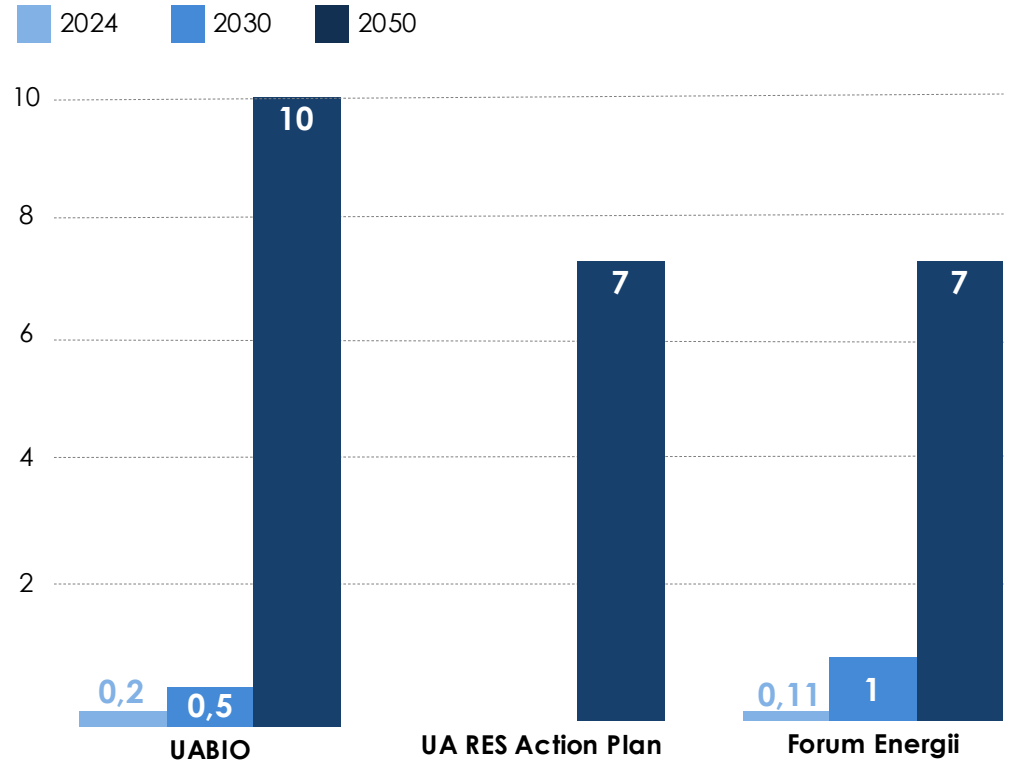
**Feedstock:** poultry manure and processing waste

**Amount:** 27 400 $m^3$

**Customer**: Vitol

## Potential of biomethane export from Ukraine to EU according to different estimations

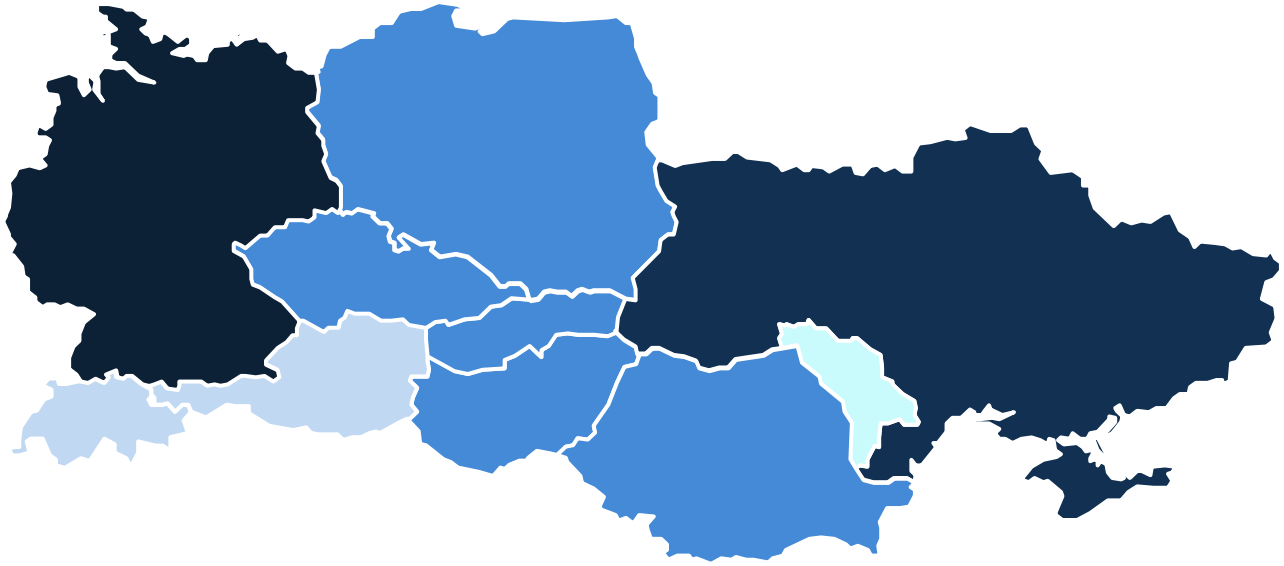
billion $m^3$ per year




Sources: UABIO; UA RES Action Plan; Forum Energii

# Ukraine's gas grid is highly developed and integrated with Europe, providing multiple export routes, and storage options

The Ukrainian gas transmission system is technically capable of transporting biomethane to multiple EU countries



There are **several exit points**, such as interconnectors with **Poland, Slovakia, Hungary, and Romania**. In the case of Vitagro, gas was **supplied to the Ukrainian GTS** and then transited **through Slovakia to Germany**. MHP used the **route through gas pipelines to Poland.**

**When transporting biomethane both on the territory of Ukraine and on export routes, the biomethane producer can benefit from:**

**Developed gas transmission infrastructure**
Almost every region has distribution or main gas pipelines, and more than 90% of the territory is gasified

**Simplicity of network connection**
Availability of a gas network within a radius of ~5 km. If there is a pipe near the biogas plant, the connection is relatively simple[1]

**Underground gas storage facilities**
Producers can accumulate biomethane in storages to form larger export lots

**Bio-LNG**
Alternatively, if the pipes are far away, the producer can install a liquefaction unit and transport the biomethane in a liquid form



Notes: 1. National Commission for State Regulation of Energy and Public Utilities (NCREPU) simplified the technical conditions for connection in 2024

# 6. Regulations

# Ukraine's legal framework now includes a dedicated biomethane production law, registry procedures, and customs amendments to enable domestic production and export

## Current legislative regulation:

- Law of Ukraine "On Amendments Regarding the Development of Biomethane Production"
- Resolution of the CMU "On Approval of the Procedure for the Functioning of the Biomethane Register"
- Resolution of NERC[1] on oxygen №847
- Resolution of NERC[1] on reverse №1021
- Order of the MFU On Amendments to Certain Regulatory Legal Acts of the MFU on Customs Matters
- The Law on Amendments to the Customs Code of Ukraine on Customs Clearance of Biomethane

## What is required to allow biomethane to cross the customs border of Ukraine:

- periodic customs declaration;
- certificate of compliance with biomethane sustainability criteria;
- documents confirming the manufacturer's connection to the GTS or GDS;
- act of acceptance and transfer of produced biomethane;
- act of the Ukrainian gas storage operator on the movement of biomethane.

## What is needed to export biomethane:

- A declaration of the volumes of transported biomethane;
- Proof of Sustainability;
- General Act of Acceptance and Transfer of Natural Gas;
- certificate of the GTS operator on the accounting of commercial supplies and withdrawals of biomethane.

## What needs to be changed?

- Integration of Ukraine's biomethane register into the EU's Union Database.
- Securing EU recognition of biomethane guarantees of origin issued in Ukraine.
- Review the approach to financing the construction of reverse compressor stations to develop biomethane transportation capacities to the regions.



Notes: 1. The National Commission for State Regulation of Energy and Public Utilities

# As Ukraine approaches the European Union, it will have to implement relevant provisions of European acquis Communautaire, having to define also its own national biomethane strategy

## EU Legal Framework

### RED² II / RED² III

**RED II** established that new[1] biomethane must deliver **at least 65% GHG emission savings** as per fossil fuels $CO_2$ levels.

With the adoption of **RED III (2023)**, the EU strengthened these sustainability rules by extending them to **small-scale plants** and introducing **enhanced verification mechanisms** for the entire biomethane value chain.

*RED III target of biomethane production by 2030 :* **35B m³**

### European Green Deal/ REPowerEU

**Target: 35 bcm biomethane production in EU by 2030**.

⚠ *REPowerEU sets a goal to increase EU biomethane output from **~3.5 bcm** in 2020 to **35 bcm** by 2030 — enough to substitute ~20% of pre-invasion Russian gas imports. This tenfold scale-up requires ~€70–80 billion in investment.*

Launched by the European Union in 2022, **Biomethane Industrial Partnership** brings governments, producers, investors, and researchers to coordinate this scale-up

### National strategies

Many Member states have developed national biomethane strategies in line with RED II, RED III, and the REPowerEU Plan.

**These strategies include:**

- streamlined permitting, investment incentives (permitting procedures can take **2-3 years** on average, with outliers of **5-7 years**);
- infrastructure planning to facilitate biomethane injection into gas grids.

Notes: 1. Biomethane production plants that were built and began operations (i.e., commissioned) after July 1, 2021. 2. Renewable Energy Directive
Sources: BIP Europe

# Ukrainian biomethane producers must now treat GHG reduction not just as an environmental responsibility, but as a precondition for accessing tariffs, contracts for difference (CfDs), and sustainability certification

To be recognized under **RED II / RED III**, biomethane producers must undergo **third-party sustainability audits**. These verify compliance with EU rules, including traceability of feedstock, lifecycle greenhouse gas (GHG) calculations, and land-use criteria.

**Each batch of biomethane is accompanied by a Sustainability Batch File:**

**Precise information on the feedstock** used (e.g., agricultural residues, manure, energy crops, or organic waste) to ensure compliance with EU sustainability criteria and traceability.

**Calculated emissions** related to collecting and transporting feedstock to the production site.

Includes **emissions from digestion, upgrading, compression, and other processing steps.** Average production emissions typically account for 5–10% of total life cycle emissions.


**Total GHG savings vs fossil baseline**

**Biomethane must achieve minimum GHG savings vs. fossil fuels:**

**65%** under RED II (for plants post-2021)

**79-80%** under RED III (for new plants post-2026)

→ Meeting this threshold is **mandatory for access to incentives** such as **premium feed-in tariffs, contracts for difference (CfDs), green certificates**, or exemptions from carbon pricing in some Member states.

Biomethane producers that meet GHG savings thresholds gain competitive advantages through higher subsidies, premium payments, and better market access. While **no fixed pricing directly links to GHG savings**, the market rewards biomethane with stronger sustainability performance, creating an indirect correlation between GHG savings and economic value.

# While Ukraine's biomethane register is not yet integrated in the EU's Union Database, Ukrainian biomethane producers should seek voluntary certification schemes to comply with RED II / RED III provisions

## Principal certification schemes

**Both systems** cover the entire supply chain—from feedstock production through processing to final biomethane delivery—ensuring transparency and compliance with regulatory requirements.

| Criterion | ISCC[1] | REDcert |
|---|---|---|
| industry geography | Companies aiming for **international trade** and recognition beyond the EU. | Operators working primarily in **Germany, Austria or EU markets** under RED II/III. |
| certification objective | Stakeholders seeking **comprehensive sustainability coverage** (including environmental, social, ethical criteria). | Companies seeking **simple, low-burden** certification. |
| enterprise size | **Medium to large-scale biomethane projects** with complex supply chains. | **Small and medium-sized producers** in agriculture and energy sectors. |

Biomethane trading within the EU relies on two key instruments: **Guarantees of Origin (GOs)** and **Proof of Sustainability (PoS)** certificates. GOs certify the renewable origin of biomethane, while PoS certificates confirm compliance with sustainability and greenhouse gas reduction requirements.



Notes: 1. International sustainability and carbon certification

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