State of the Art and Prospects of biomethane Development in Ukraine

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UABIO members

We thank the powerful companies and experts who joined the Association!

12 years

8 individuals

65 companies

20+ experts

Biomethane plants operating in Ukraine (January, 2026)

N	Company	Location region	Capacity, Mm^3/year	Connection	Sustainability certificate	Production in 2025
1	Hals Agro LLC	Chernihiv	3.0	GDS	ISCC	0,075 million m^3
2	VITAGRO group of companies	Khmelnytskyi	3.0	GDS	ISCC	2.5 million m^3
3	MHP	Dnipropetrovsk	11.0	GDS	ISCC	8.7 million m^3
4	MHP	Vinnytsia	24.0	Bio-LNG	ISCC	> 5,000 tones
5	YUM LIQUID GAS LLC	Vinnytsia	11.0	Bio-LNG	ISCC	~ 900 tones
	TOTAL		52.0			

GDS – Gas Distribution System, GTS – Gas Transmission System

Biomethane plants planned in Ukraine in 2026-28

№	Company	Location region	Capacity, Mm^3/year	Connection	Start of operation, year
1	**Teofipol Energy Company LLC**	**Khmelnytskyi**	**56,0**	**GTS**	**2026**
2	**Hals Agro LLC**	**Kyiv**	**3,0**	**GDS**	**2026**
3	Globynsk Biomethane Plant (ReAgro)	Poltava	3,6	GDS	2027
4	Novoselivka Biomethane Plant (ReAgro)	Poltava	5,1	GDS	2028
5	Agrocomplex Green Valley	Vinnytsia	5,0	GDS	2027
6	Goodvalley	Ivano-Frankivsk	13,0	GTS /GDS	2027
7	Group of Companies “Technology”	Rivno	4,7	GTS	2028
8	Podillya Food Company	Vinnytsia	5,4	GTS /Bio LNG	2028
	TOTAL		**95,8**		

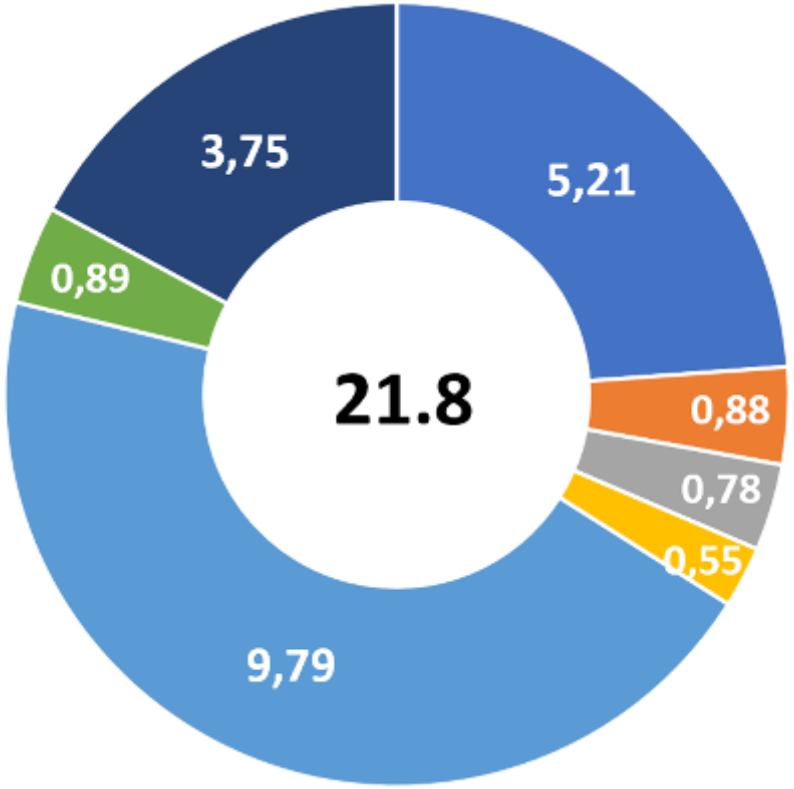
GDS – Gas Distribution System, GTS – Gas Transmission System

Why in Ukraine?

- Ukraine has **the largest area of agricultural land** in Europe and, accordingly, one of the best agricultural feedstock potential for biomethane production
- Ukraine can offer **the cheapest raw materials** for biomethane production and compete with any country in the biomethane market.
- Ukraine has a **developed system of gas networks** (GTS and GDS).
- The **structure of agricultural enterprises** is favorable for producing biomethane (big share of large and medium-sized enterprises).
- The possibility of exporting biomethane to the premium EU market, which has adopted ambitious plans for producing biomethane (REPowerEU):
  35 bcm/year in 2030.
- Potentially, in mid-term prospect, Ukraine can **provide up to 20%** of EU needs till 2050.

Biomethane production potential in Ukraine

BIOMETHANE, billion m^3 CH_4/year	
Biomerthane from animal waste	0,9
Biometahne from harvest residues of agricultural crops	5,2
Biomethane from by-products of the food processing industry	0,7
Biomethane from municipal solid waste (MSW)	0,5
Biomethane from municipal waste water treatment plants	0,1
Biogas from energy crops: corn silage (from 1 million hectares)	3,8
Biomethane from cover crops (20% of arable land)	9,8
Biomethane from biomass obtained by thermal gasification (10%)	1,0
TOTAL, billion m3 CH4/year	21,8



Ukraine has the highest biomethane potential among the EU countries

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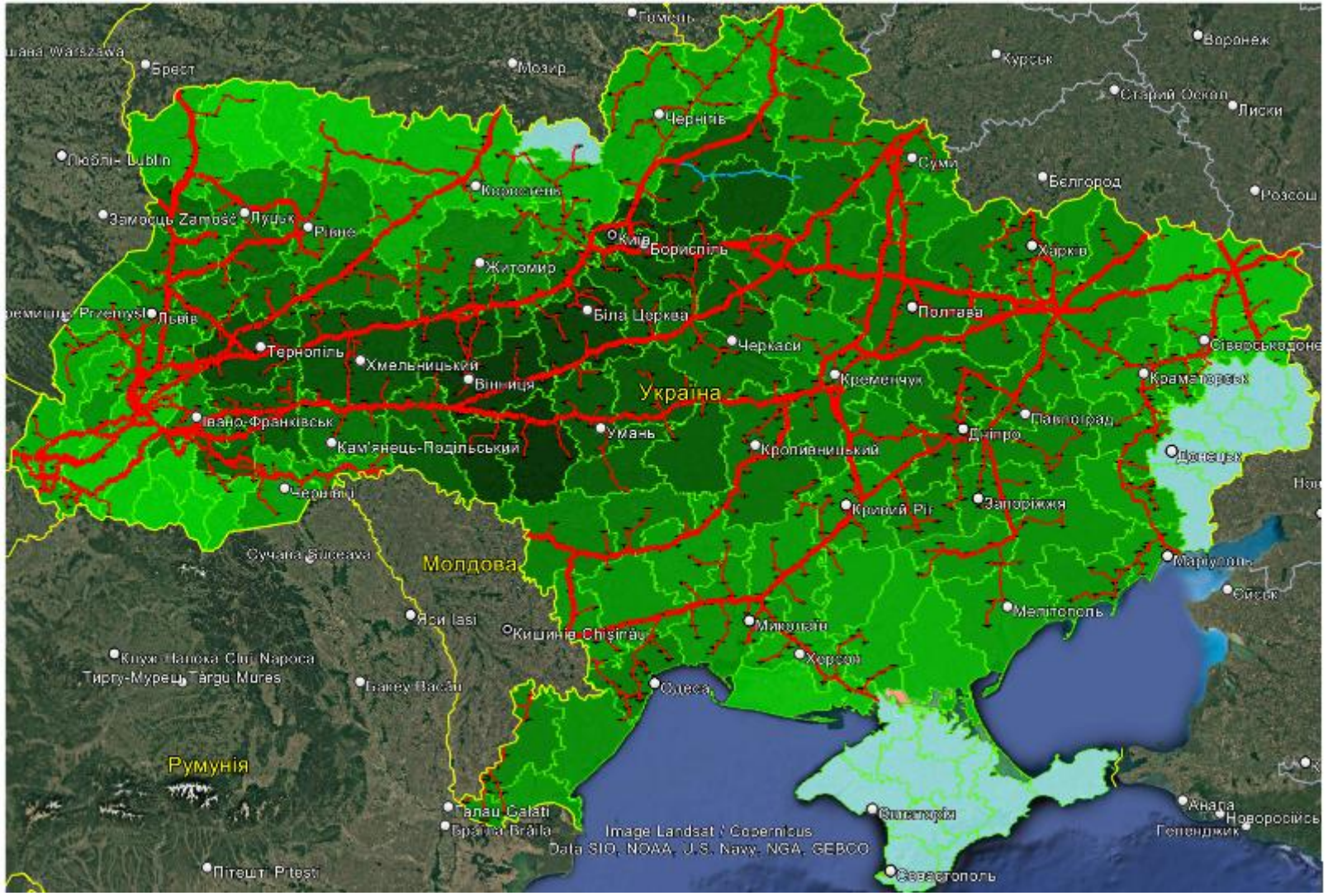
Structure of Ukrainian GTS and biomethane potential



136 reorganized districts of Ukraine

- District's biomethane potential is up to 707 mcm CH4/year
- Average district's biomethane potential equals 182 mcm CH4/year
- Almost half of the potential concentrated in western and central regions as Vinnytsya, Kyivska, Dnipropetrovska, Poltavska, Kirovohradska
- All regions of Ukraine with the greatest potential for biomethane production are quite well covered by GTS infrastructure

Developed feasibility studies

Company	Agroco		Slobodyshe		AgroRos'	Demetra	Podillya		L_Ukrainka	
	#1		#2		#3	#4	#5		#6	
Project concept	CH_4+CO_2	CH_4	CH_4+CO_2	CH_4	CH_4+CO_2	CH_4+CO_2	CH_4	Bio-LNG	CH_4	Bio-LNG
Feedstock	Cattle manure with straw bedding and corn harvest residues		Cattle manure with straw bedding, waste straw, feed residues, corn harvest residues, cover crops, and whey		Chicken litter on straw pellets, pig manure, corn silage, cover crops, straw, grain residuals	chicken litter, corn and wheat straw, soybean straw pellets, grain residuals	cattle manure with straw bedding, feed residues from cattle feeding (feed waste) and sugar beet pulp (SBP)		cattle manure, bedding straw, baled or granulated straw, feed residues, grain elevator waste, green mass of amaranth/rye and green mass of winter triticale, corn silage	
Location	Cherkasy oblast		Zhytomyrska oblast		Cherkasy oblast	Rivnenska oblast	Vinnitska oblast		Volyn oblast	
Potential of CH4, mcm	**6,9**	**6,9**	**5,5 (3,7)**	**5,5 (3,7)**	**8,0**	**5,0**	**5.4**	**3930 t/a**	**6.4**	**4436 t/a**
CAPEX, M€	19,1	16.8	15,1	13,0	23,0	12,5	15.3-16.2	21.3	17.3-18.1	23.1
OPEX, M€/a	5,6	5,3	3,3	2,8	5,5	4,3	2.1-3.0	2.2	3.7	3.4
INCOME TOTAL, M€/a	9,3	7,1	8,1	6,0	14,4	7,5	5.5	7.3	8.8	9.0
INCOME 1 (CH4), M€/a	6,0	6,0	4,2	4,2	10,4	4,6	5.4	7.1	5.8	7.9
INCOME 2 (CO2), M€/a	2,2	-	2,1	-	3,7	1,9	–	–	2.1	–
Premium evaluation procedure	100 €/MWh × 30% BM from cattle manure + 50 €/MWh × the rest 70% BM] ≈ 65 €/MWh		100 €/MWh × 51% BM from cattle manure + 50 €/MWh × the rest 49% BM] ≈ 75 €/MWh		100 €/MWh × 50% BM from chicken litter and pig manure + 50 €/MWh × the rest 50% BM] ≈ 75 €/MWh	100 €/MWh × 9% BM from chicken litter + 50 €/MWh × the rest 91% BM] ≈ 55 €/MWh	-47 g $CO_{2\text{-eq}}$/MJ		-18.6 g $CO_{2\text{-eq}}$/MJ	
CH4 price, €/MWh	35+65	35+65	35+75	37+75	37+75	37+55	100	1800 €/t	92	1800 €/t
CO2 price, €/t	278	-	278	-	278	278	–	–	225	225
NG grid connection	High pressure GTS (preliminary)		Low pressure GDS		High pressure GTS	High pressure GTS	GTS or GDS with reverse compressor	–	GTS or GDS with RC	–
IRR, %	**27**	**14**	**40**	**26**	**40**	**32**	**21-26**	**30**	**28-30**	**20.3**
DPP, years	5.9	11	4,1	6,0	5,0	6,1	6.4-8.0	5.6	5.6-5.2	7.7

UABIO's optimistic scenario of Ukrainian biomethane market

	2027	2030	2035	2040	2045	2050
Production of biomethane, bcm/y	0,25	1,00	2,1	4,5	9,5	20
Export of biomethane, bcm/y	0,13	0,50	1,05	2,25	4,8	10
Consumption in Ukraine, bcm/y	0,13	0,50	1,05	2,25	4,8	10
Number of biomethane plants, units	50	200	420	900	1900	4000
Necessary investments, billion €	0,5	2,0	4,2	9,0	19,0	40
Reduction of GHG emissions, mill t of CO2-eq./y	0,6	2,5	5,3	11,3	23,8	50
Created new jobs, thousand units	3,1	12,5	26,2	56,2	118,7	250

First Ukrainian Biomethane Plant (Hals Agro)

Location: biogas plant of Hals Agro company (Chernihiv reg.) Start of operation: **April 2023**

Production of **3 mill m^3 of CH_4/year** (eq. 1,3 MWel) on the base of existing biogas plant of **6,9 MWel**.

Feedstock: manure, sugar beet pulp, corn silage

Upgrading: membrane technology

Biomethane plant VITAGRO

Biomethane plant with a capacity of **3 mill m^3 CH_4/year**

The first stage of the complex is commissioned in **2024**

Location: Khmelnytskyi region

Maine parameters:

- Feedstock: pig manure, cattle manure, straw, corn silage
- Investments – 6 mill. Euro
- Upgrading: membrane technology
- Biomethane use: export

MHP biogas plants (poultry farms)

Poultry farm "Oril-Lider", Dnepropetrovsk region Production in 2017 – 42 mill heads (105,000 t/a)	**Poultry farm "Vinnitska",** Vinnytsya region Production in 2017 – 280,000 tons of chicken meat
Start of operation -2013 Installed power capacity – **5.7 MW** Digesters – 10x3500 m^3 Feedstock – chicken dung, wastewater Investment - 15 mill EUR Biomethane production – **11 Mm^3/year**	Start of operation -2017 Installed power capacity (1^{st} stage) – **12 MW** Digesters – 12x8200 m^3 Feedstock – chicken dung, wastewater, corn silage Investment (1^{st} stage) - 25 mill EUR Biomethane production is planned (with biomethanation)

YUM LIQUID GAS LLC (on the base of "Yuzhefo-Mykolaiv Biogas Company“ LLC)

Project: Biogas/biomethane plant, first stage **3.2 MW** of installed capacity, second stage **5.2 MW** of electricity + enrichment to biomethane (amine scrubber).
The first stage of the 3.2 MW complex was put into operation in 2019 and produces 36,000 cubic meters per day of biogas; the second stage, stage 5.2 MW – 60,000cubic meters per day of biogas.
Replacement of GHG – 50,000 cubic meters per day of biogas.
Total biogas productivity –110,000 cubic meters per day.

Location: Mykhaylin village, Vinnytsia region.Biogas is used: For electricity and heat production.
Biomethane (BIO LNG) production from 2025.
Raw materials: beet pulp, sugar beet tails, chicken droppings, apple pulp, straw.
Electricity production 45,552 MW/year**.**
Investments – $11 million (excluding biogas upgrading)

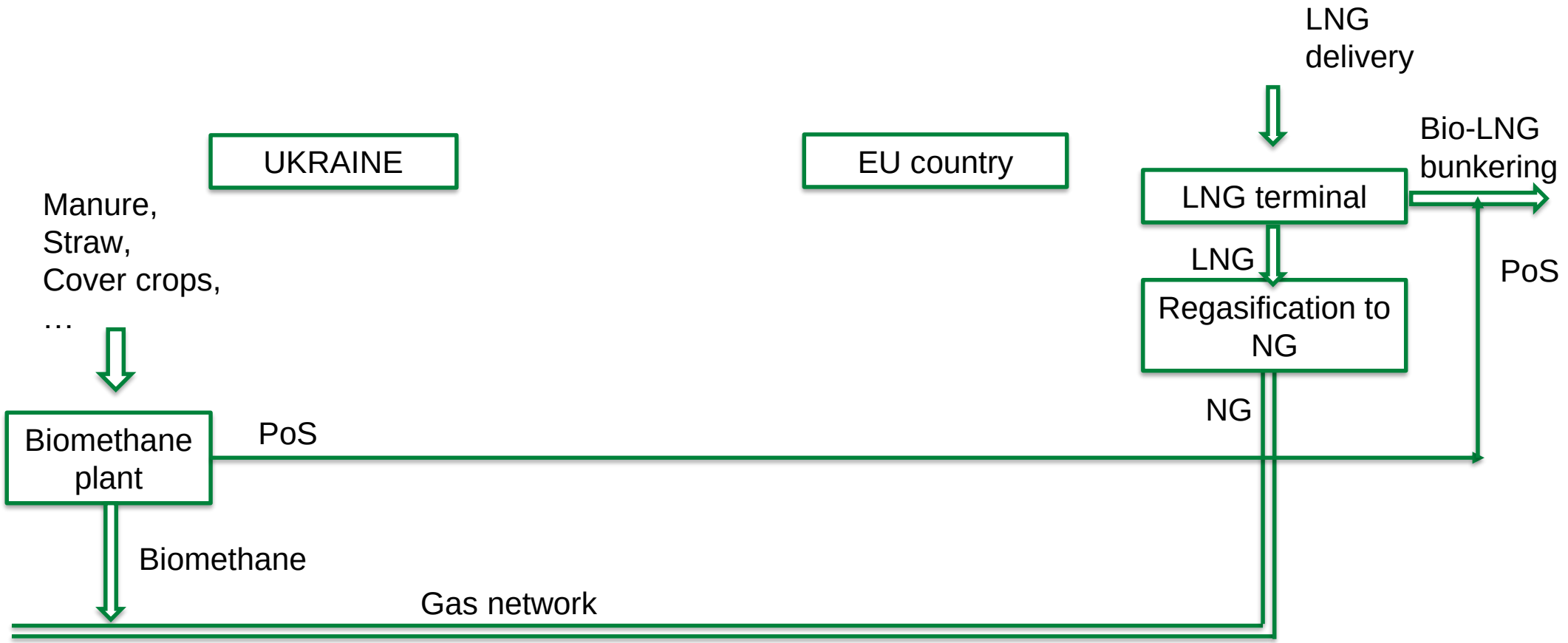
first stage - 3.2 MW el

1st and 2nd stages - 5,2 MW el.

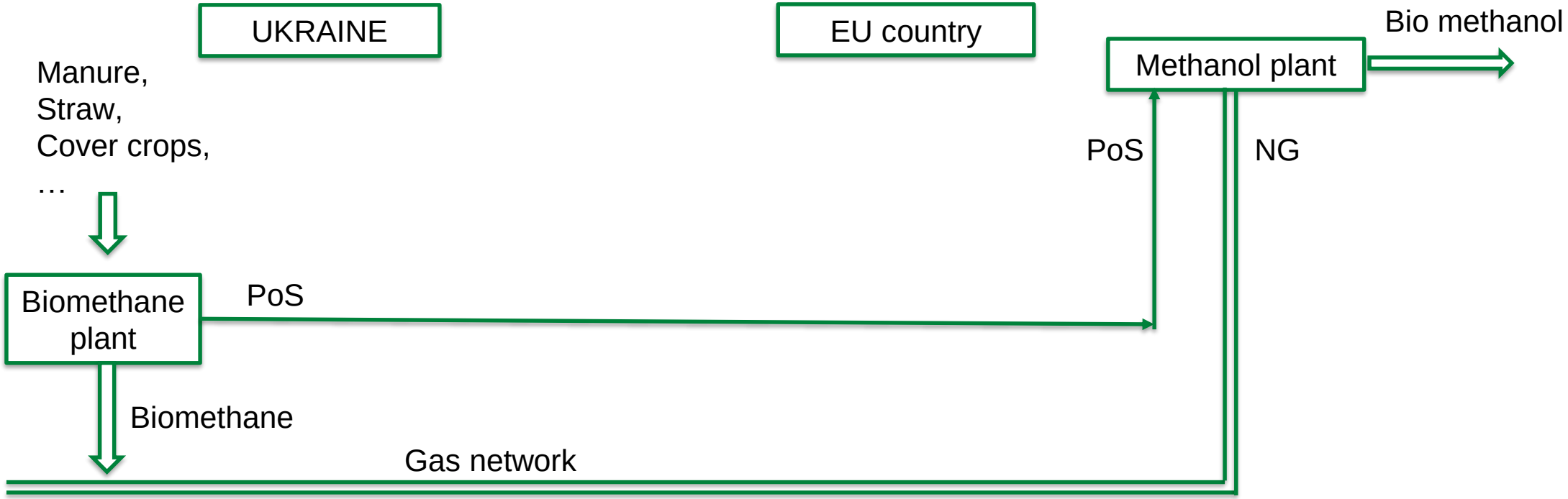
Pros and cons of biomethane use for maritime transport

Advantages	Disadvantages
1. Broad raw material basis for advanced biomethane production.	1. Short time of storage under -162 C.
2. High GHG emission reduction. Possibility of negative carbon intensity.	2. Bigger volume of storage
3. Cheap infrastructure for pipeline biomethane transportation (gas networks)	3. Lower HHV
4. One of the cheapest option for decarbonization of maritime transport.	4. Limited number of LNG ready ships
5. Direct use on LNG ready ships.	
6. Possibility to produce feasible biomerthanol from biomethane.	

Strategic view of Ukrainian biomethane use for EU maritime transport: Bio-LNG



Strategic view of Ukrainian biomethane use for EU maritime transport: Biomethanol



Thank you for your attention!

Welcome to UABIO!

UABIO

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