



## Prospects of biomethane in Ukraine

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Critical role of bioenergy in ensuring EU Energy Security,  
WBA webinar, 25 April 2023

# UABIO

**Bioenergy Association of Ukraine** – non-profit civic union, that unites business and experts for sustainable bioenergy development in Ukraine.

9

years

20+

experts

37

companies

11

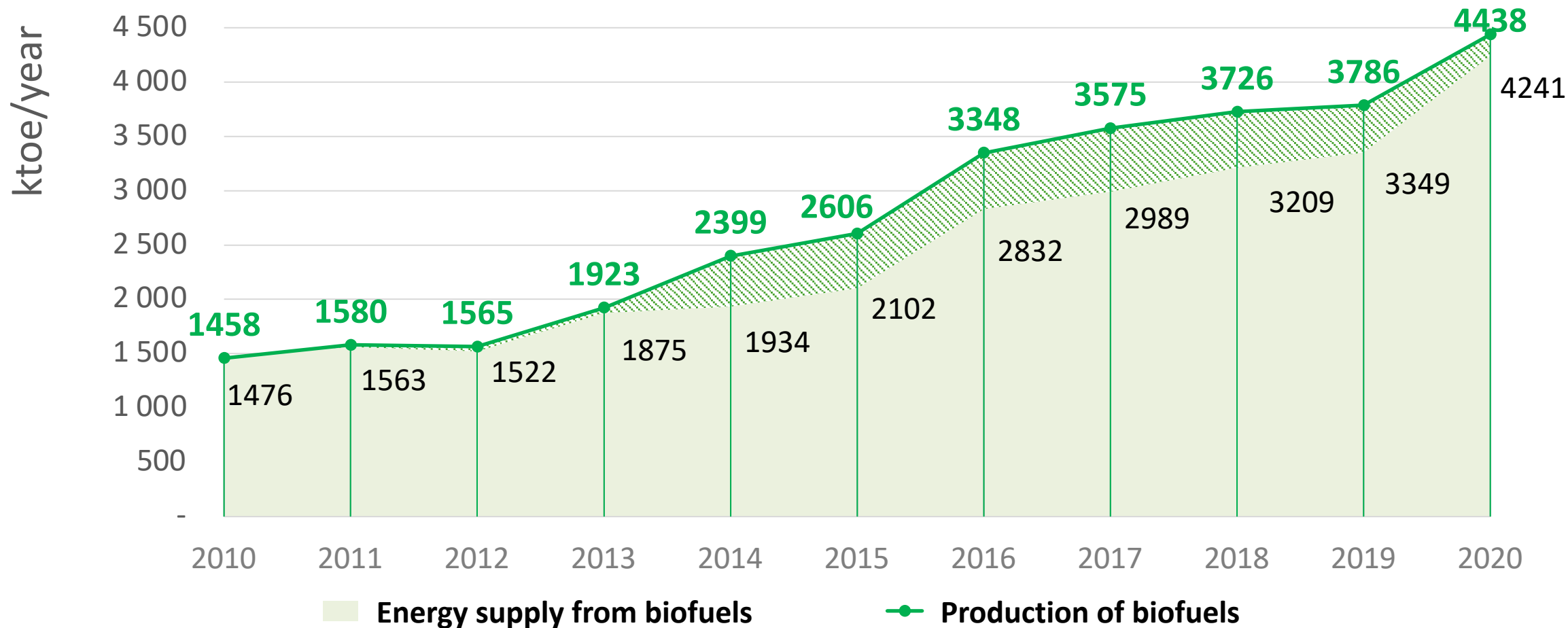
individuals



## Development of bioenergy in Ukraine, 2010 – 2020

Substitution of natural gas by biomass – 5.2 billion m<sup>3</sup>/y in 2020

Average annual growth of bioenergy in Ukraine – 11%



Source: State Statistics Service of Ukraine

## Biogas/biomethane in Ukraine

Parameter	Biogas	Biomethane
Installed capacity, MW e (2021)	<b>124.3</b> (32.4 MW for LFG)	3 mill m3/year
Number of plants	<b>73</b> (31 for LFG)	<b>1</b>
Gas networks (km)	33 400	
Gas refilling stations for CNG	~ 300	

- The individual projects ranged from **125 kW<sub>e</sub>** to **26 MW<sub>e</sub>** installed capacity.
- Despite the limited number of implemented agricultural biogas plants their technical scope covers **a wide range** of industries and different types **of feedstock**
- **First biomethane project(s)** in 2022-2023 (conversion of existing biogas plants)



### Why biomethane and why in Ukraine?

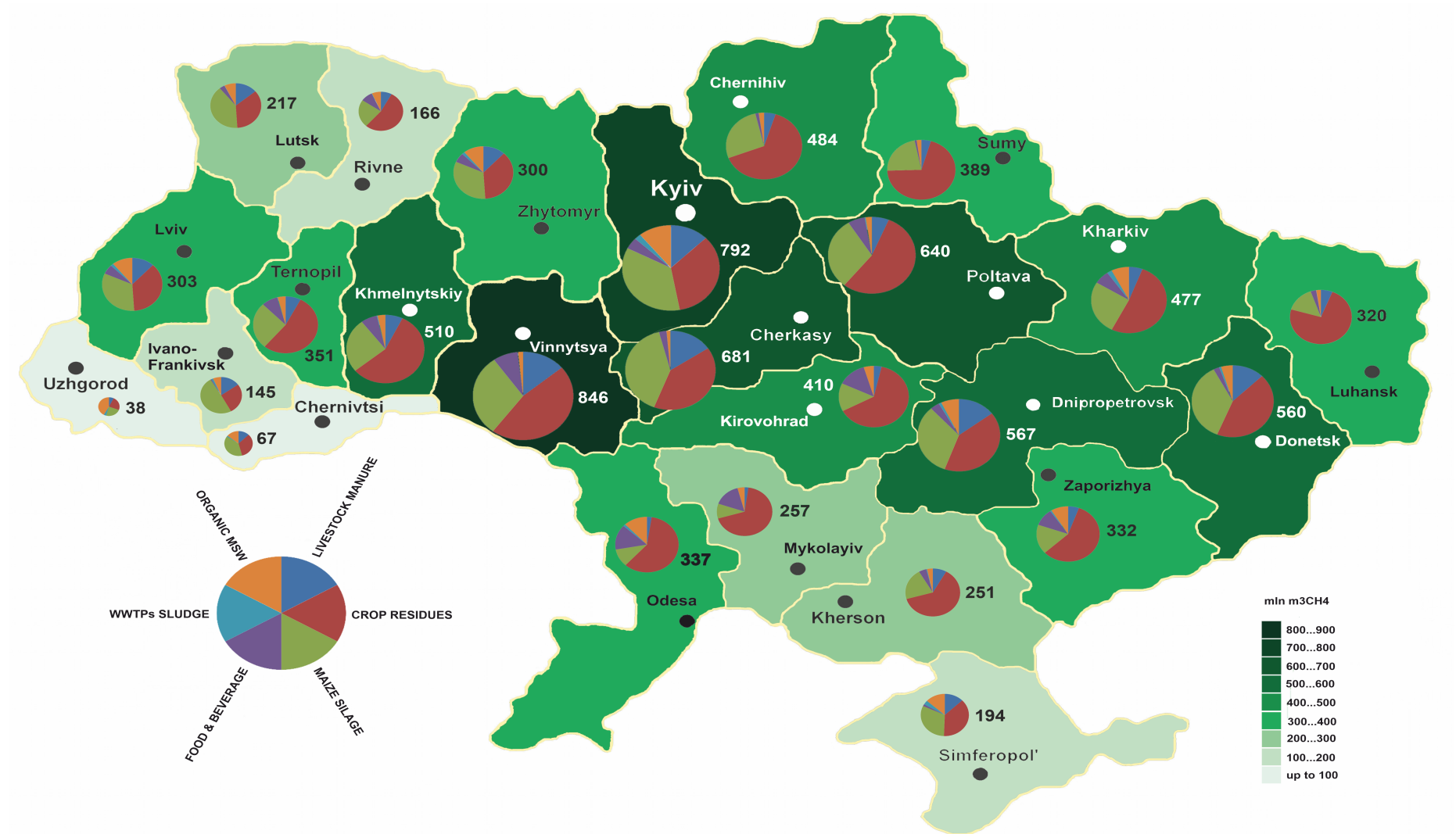
- Biomethane is **absolutely ready for injection into the gas network** today. No investment is required in the modernization of gas networks (GTS and GDS) and gas equipment (gas burners, engines, turbines,...).
- Ukraine **can really compete with any country in the production of biomethane**. Ukraine can offer the cheapest raw materials for biomethane production. Ukraine has the largest area of agricultural land in Europe, and, accordingly, one of the world's best potentials of agricultural raw materials for biomethane production.
- Biomethane plants, in addition to biomethane, generate **digestate, which can become the main organic fertilizer** needed for the revival of Ukrainian soils.
- Today it is **the cheapest of the possible renewable gases**.
- The EU adopted ambitious plans for the production of biomethane (REPowerEU): **35 billion m<sup>3</sup>/year in 2030**. Ukraine can potentially provide up to 30% of this need.

## Biomethane

### Biogas/biomethane production potential in Ukraine

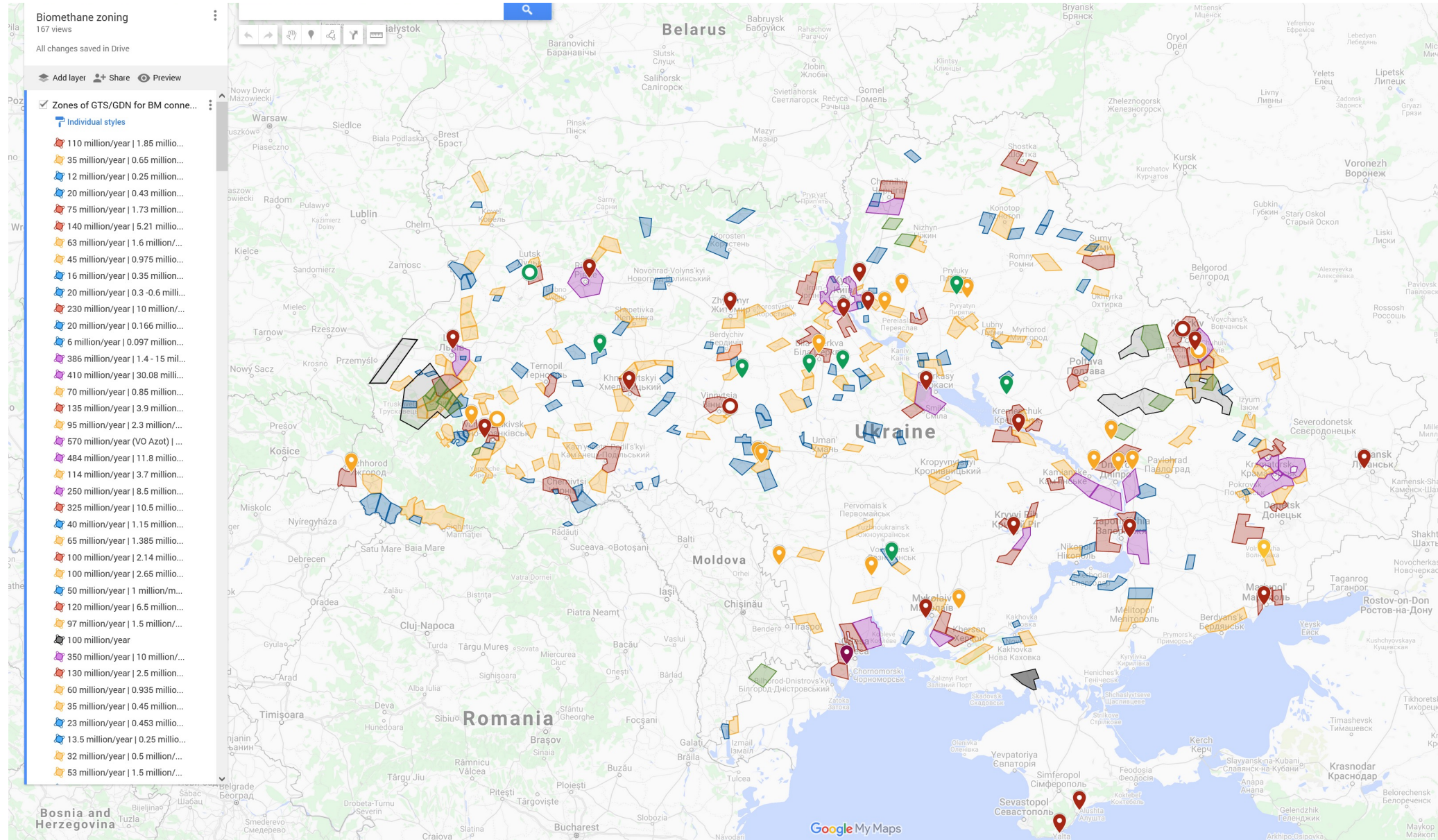
BIOGAS/BIOMETHANE, billion m3 CH <sub>4</sub> /year	
Biogas from animal waste	0,9
Biogas from harvest residues of agricultural crops	5,2
Biogas from by-products of the food processing industry	0,7
Biogas from solid household waste	0,5
Biogas from sewage sludge (municipal treatment plants)	0,1
Energy plants: biogas from corn silage (from 1 million hectares)	3,8
Biogas from cover crops (20% of arable land)	9,8
Biogas from BM obtained by thermal gasification (10%)	1,0
<b>BIOGAS/BIOMETHAN, total, billion m3 CH<sub>4</sub>/year</b>	<b>21,8</b>

Regional structure of biomethane potential in Ukraine





# Interactive map of optimal zones for location of biomethane plants in Ukraine



Link to the map: [https://www.google.com/maps/d/u/0/edit?mid=1ttZ12uWjd2NxxH-xc3Lin61fN\\_4JrE1D&usp=sharing](https://www.google.com/maps/d/u/0/edit?mid=1ttZ12uWjd2NxxH-xc3Lin61fN_4JrE1D&usp=sharing)



### Feasibility study of biomethane production (10 mill m<sup>3</sup>/year)

Indicator		straw/stalks processing via bio-extruders + corn silage + manure
Straw/Stalks and corn silage price	€/tDM	40
Biomethane price	€/1000 m <sup>3</sup>	900
CAPEX	mill €	16,3
NPV	mill €	28,2
IRR	%	28,3
Simple payback period	years	3,6
LCOE (biomethane)	€/1000 m <sup>3</sup>	524
	€/MW*h	49,7

# Biomethane

## First Ukrainian Biomethane Plant

Location: biogas plant of Gals Agro company (Chernihiv reg.)

Start of operation: April 2023

Production of **3 mill m<sup>3</sup> of biomethane/ year** (eq. 1,3 MWeI)  
on the base of existing biogas plant of 6,9 MWeI.

Feedstock: corn silage

Upgrading: membrane technology



# UABIO

**Welcome to Ukraine  
and to UABIO!**

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uabio.org

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