



**Gasum**

**Biovahva webinar 27.8.2024**

**Biokaasusta puhdasta energiaa  
tulevaisuuden teollisuudelle**

**Gasum**



# Products and services in a nutshell

– We help our customers to reduce emissions



Natural gas  
Liquefied  
natural gas LNG



Biogas,  
Liquefied biogas LBG



Power



Bunkering  
solutions  
for maritime  
transport



Gas filling station  
network  
for transport



Circular economy  
solutions



## Energy market services

- Portfolio Management and Brokering Services
- Balance Services in the Wholesale Physical Electricity Market
- 24-h Control Room Services
- Marketing Analyses
- Reporting Services
- Guarantees of Origin Services for electricity and alternatives

# Gasum has Nordics largest Supply Chain in LNG/LBG

- conducting over 20.000 safe deliveries per year



1 LNG production plant (tolling agreement) ●



21 Biogas plants



6 LNG/LBG terminals



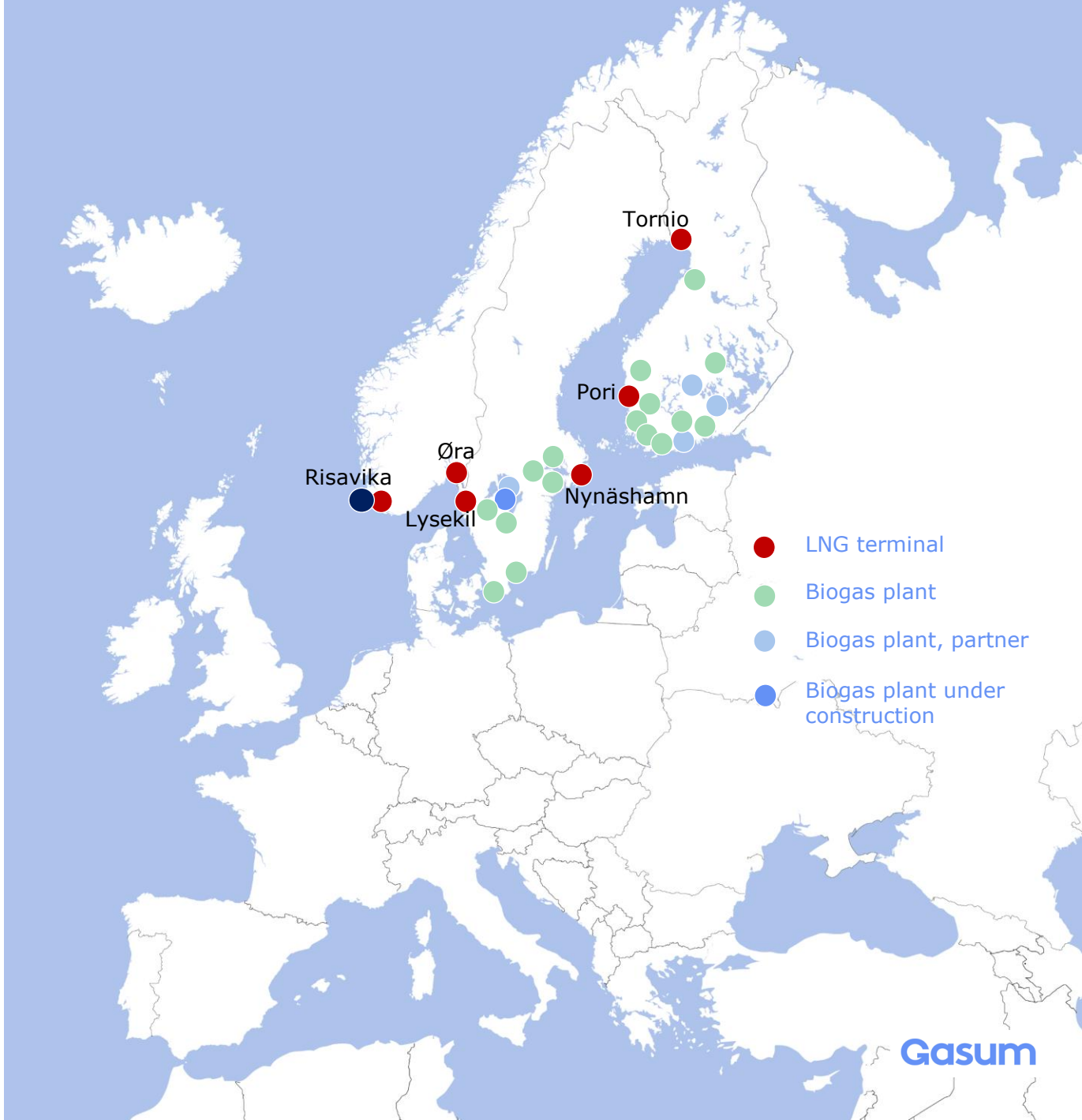
5 Feeder/bunkering vessels



68 LNG Trailers

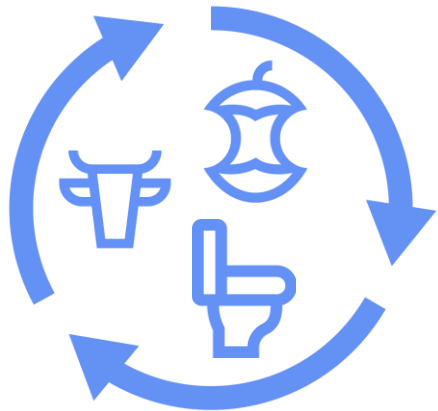


250 SWAP Bodies (CBG/CNG) (movable storage containers)



## RENEWABLE METHANE

Sustainable methane can be produced through different processes



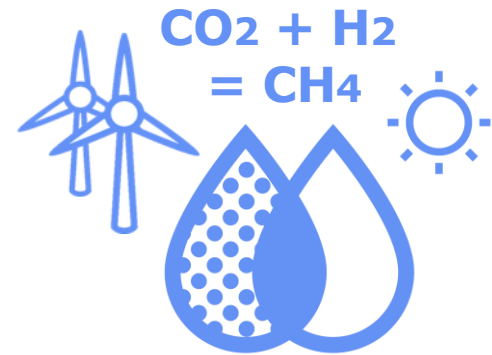
### **Anaerobic digestion**

Traditional biogas production from waste feedstock



### **Gasification**

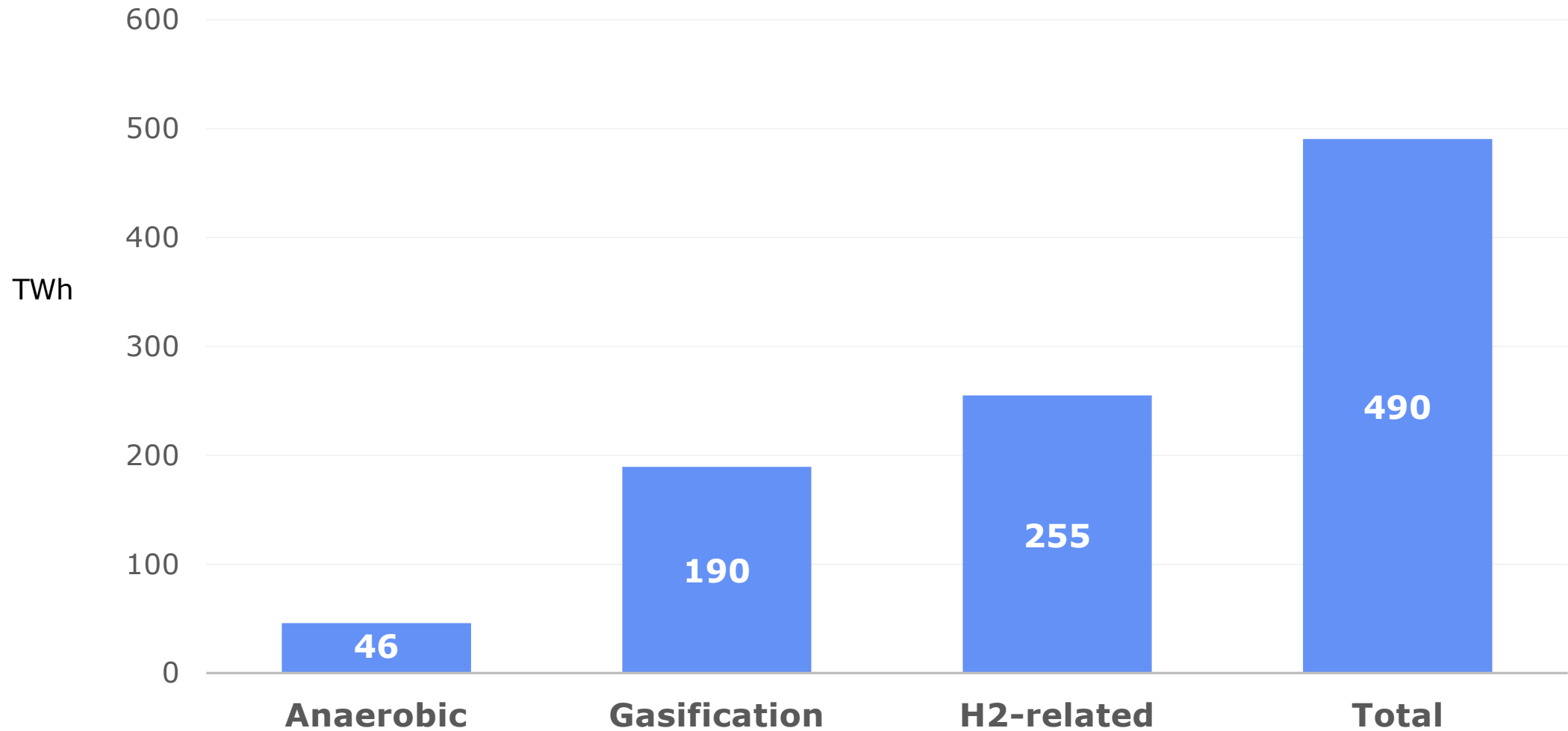
Dry woody or lignocellulosic biomass and solid waste to methane



### **Power to Gas process (P2G)**

Methanation of green hydrogen using renewable electricity

# Nordic potential for sustainable methane <sup>6</sup>

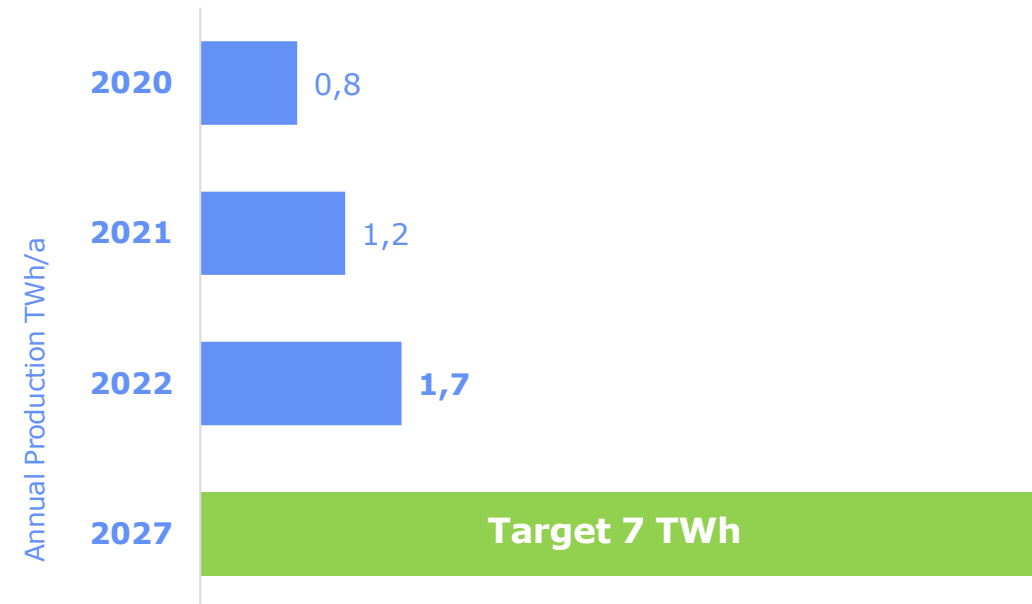


Sources:  
Gas for climate, Biomethane potentials in EU report, Nordic H2-potential according to bio-CO2 availability

## GASUM'S BIOGAS AVAILABILITY DEVELOPMENT PLAN

- Gasum is committed to increasing the availability of renewable gas in the Nordics & broader European market, through partnerships and our own production efforts
- The European biogas market is growing in terms of infrastructure, availability, and legislative and subsidy support
- In Europe, there is an increased focus on feedstock and digestate, which is driving growth in biogas production
- Further growth via e-LNG to ensure sufficient volumes in the long run
- <https://www.gasum.com/en/About-gasum/for-the-media/News/2024/gasum-and-nordic-ren-gas-to-bring-renewable-e-methane-to-market-starting-2026/>

### Gasum's Biogas Supply Forecast



## Direct CO<sub>2</sub> emission reductions in combustion, 50 GWh energy use

	Biogas	Natural gas	LPG (propane)	LFO (gas oil)	HFO (0.9% S)
<b>CO<sub>2</sub> emissions*</b>	0	9 954	11 700	13 230	14 256

### Reduction when you switch to:

<b>LNG</b>		0%	15%	25%	30%
<b>LBG</b>		100%	100%	100%	100%

\* Tonnes of CO<sub>2</sub> per year. Emission factors' source: Statistics Finland, Fuel classification. Calculated for customer's annual energy use of 50 GWh.



## LNG AND LBG IN INDUSTRY

- LNG and LBG are versatile process fuels for various processes and energy production in the industry.
- By switching from oil-based products to LNG, a reduction in emissions is achieved
  - Sulfur oxide and particle emissions are eliminated.
  - Nitrogen oxide emissions are reduced by up to 85%.
  - Carbon dioxide emissions are reduced by 15-25%.
- Using LBG, CO2 emissions are reduced to zero in the industrial processes (scope 1).
- If liquefied gas is used, it is a requirement that the end user acquires an LNG receiving terminal including LNG tank, vaporizers, and other process equipment, as well as automation.
- It is very common in the industry using methane and is growing both in the Nordic countries and globally.
- In addition to industry, liquefied gas is also used in the marine sector and in the heavy duty vehicles.

