

8th European Biomethane Benchmark

November 2025



Executive summary | Production trends



- / At the end of 2024, **more than 1,500 biomethane plants** were officially registered across Europe's main producing countries, representing a combined **production capacity of 60 TWh** (vs. 52 TWh end of 2023). **Over 90% of this biomethane was injected** into the gas grid.
- / Despite this growth, **significant potential remains untapped**: only 23% of available anaerobic digestion (AD) feedstock is currently used for biogas production, and just 8% of biogas plants are upgrading to biomethane.
- / **Agricultural residues**—such as manure, crop residues, and sequential crops—are the **primary feedstock used**, while the share of energy crops continues to decline, reflecting a shift towards more sustainable biomethane production. On average, biomethane in Europe is produced at 50% from agricultural residues, 21% from energy crops, and 21% from organic waste.
- / Over the past three years, **biomethane production capacity in Europe has grown at an average annual rate of 10%**, reflecting steady, albeit slower expansion compared to the sector's earlier development phases. This growth is largely driven by the **sustained performance of France and Italy** and a promising momentum in Denmark and in emerging markets like Spain. Meanwhile, several mature markets—including Germany, the UK, Austria, and Sweden—have entered a plateau phase, with little expansion in recent years.

Executive summary | Regulatory outlook

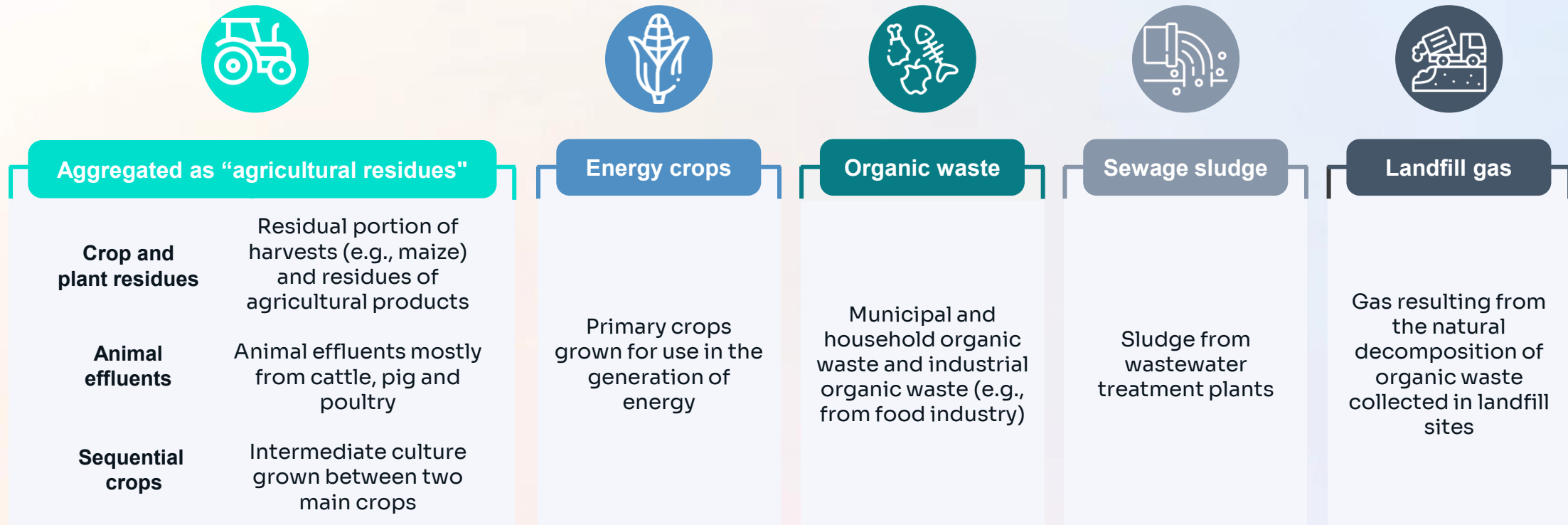


- / Countries with mature biomethane industries are gradually **shifting from incentives supporting production**—such as feed-in tariffs, premiums, or tenders—**towards incentives supporting consumption**, mainly to reduce public expenditure on biomethane development.
- / **Certain sectors are now subject to incorporation quotas for renewable energy**, including biomethane. Energy suppliers subject to these mandates **may fulfil their obligations through the use of biomethane**. The additional cost of biomethane is embedded in certificates and passed onto the energy consumer. For instance, several countries—including France, the Netherlands, and Austria—are introducing **biomethane blending obligations for gas suppliers**. Moreover, all EU member states have implemented raising **renewable fuel quotas in transport**. The **recognition of biomethane in the EU Emissions Trading Scheme (EU ETS)** is also expected to stimulate the development of **Biomethane Purchase Agreements (BPAs)** between producers and industrial consumers.
- / Nonetheless, **production-based incentives remain the preferred policy mechanism in countries where the sector is still emerging** (e.g., Italy) or recovering from a period of stagnating development (e.g., Denmark, the United Kingdom), as it is less complex to implement and offers project developers a long-term and stable outlook.
- / Overall, the European target of **35 bcm** (approximately 340 TWh¹) of biomethane by 2030, as set out in the RePowerEU plan, is **theoretically within reach**, given the available feedstock potential. However, with current installed capacity at just 60 TWh and project development timelines averaging 2 to 3 years, achieving this target would require a **sharp acceleration in growth** well before 2027.
- / Although the conditions to meet the 2030 target are not yet in place, the current trajectory is building momentum; with sustained policy support and market mobilisation, the goal can be achieved, albeit with some delay.

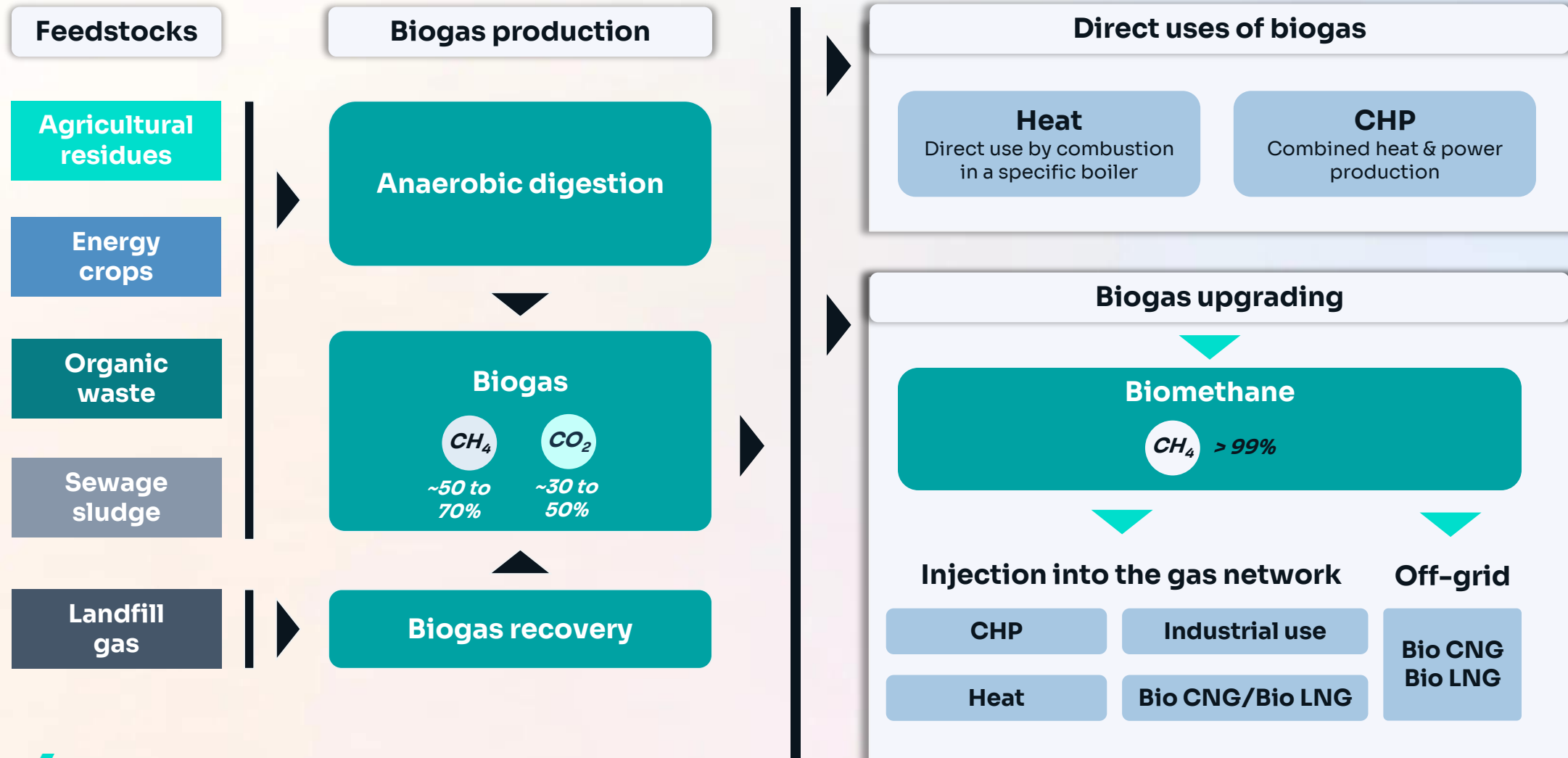
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Introduction

Introduction | Feedstock sources for biomethane production



Introduction | Biogas and biomethane production and valorisation



Introduction | EU regulatory framework

European climate and energy ambitions and translation into biomethane targets

EU has set out general climate and energy targets ...

-55% reduction in **GHG¹ emissions** in **2030** compared to 1990 (Green Deal)

+42.5% increase in the share of **renewable energy** (RED III)

+32.5% increase in **energy efficiency** across all sectors (Green Deal)



... Leading to specific biomethane targets

35 billion cubic meters (approx. 340 TWh) biomethane target **by 2030** (REPowerEU)

3 main legislations to achieve these targets



Legislative energy & gas packages

Overall objective

- Liberalise energy markets and separate infrastructure management
- Define network standards and market rules

Impact on biomethane

- Plan the integration of renewable gases
- Accelerate grid connection



RED I, RED II & RED III

- Establish a framework for the development of renewable energies and bioenergy
- Define the target system for GOs²
- Foster cross-border trade of renewable gases



Emissions Trading System

- Cap-and-trade system to achieve the EU-wide reduction in GHG emissions
- Allow in certain cases the use of GOs¹ to reach ETS obligations

Introduction | Main support schemes



Feed-in-Tariffs & Feed-in Premiums

Guaranteed remuneration for each unit of renewable energy produced, usually by offering long-term contracts.

€/MWh produced



Investment support

Fixed amount received for the building phase of the plant, independently from the amount of renewable energy (RE) produced.

€/plant



Fiscal incentives

Tax exemption or reduction on the energy carrier (e.g., carbon tax or tax on fossil fuel).

€/MWh produced or consumed



Quotas & Certificates

Governmental obligation to reach a certain proportion of renewable energy in a given sector. Certificates are used to report target achievements :

- Guarantees of Origin (GOs) are allocated to show the final customer that a given share of energy was produced from renewable sources. Depending on the country, GOs can be used in the EU-ETS and traded with other countries.
- Other types of certificates, to comply with national obligations, ETS or to use in voluntary markets. These certificates are mainly directed towards final use in the transport and residential heating sectors.

Incentives supporting biomethane production

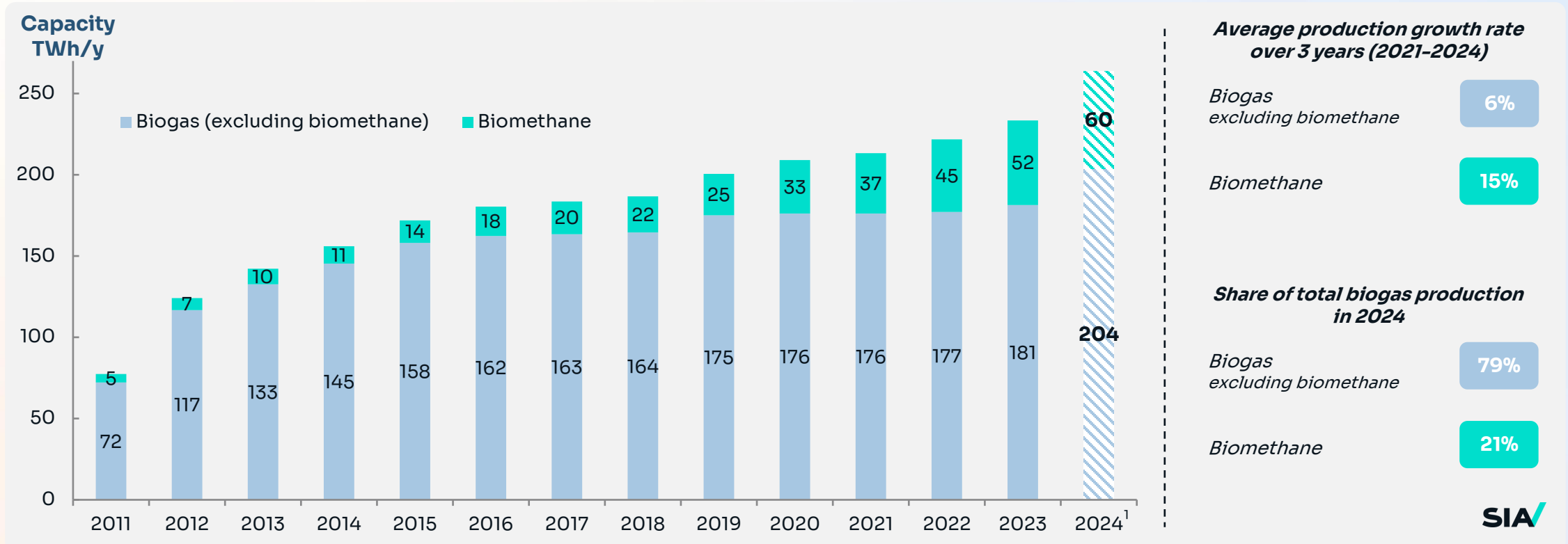
Incentives supporting biomethane final use

Other support mechanisms can complete the list such as vehicle incentives, etc.

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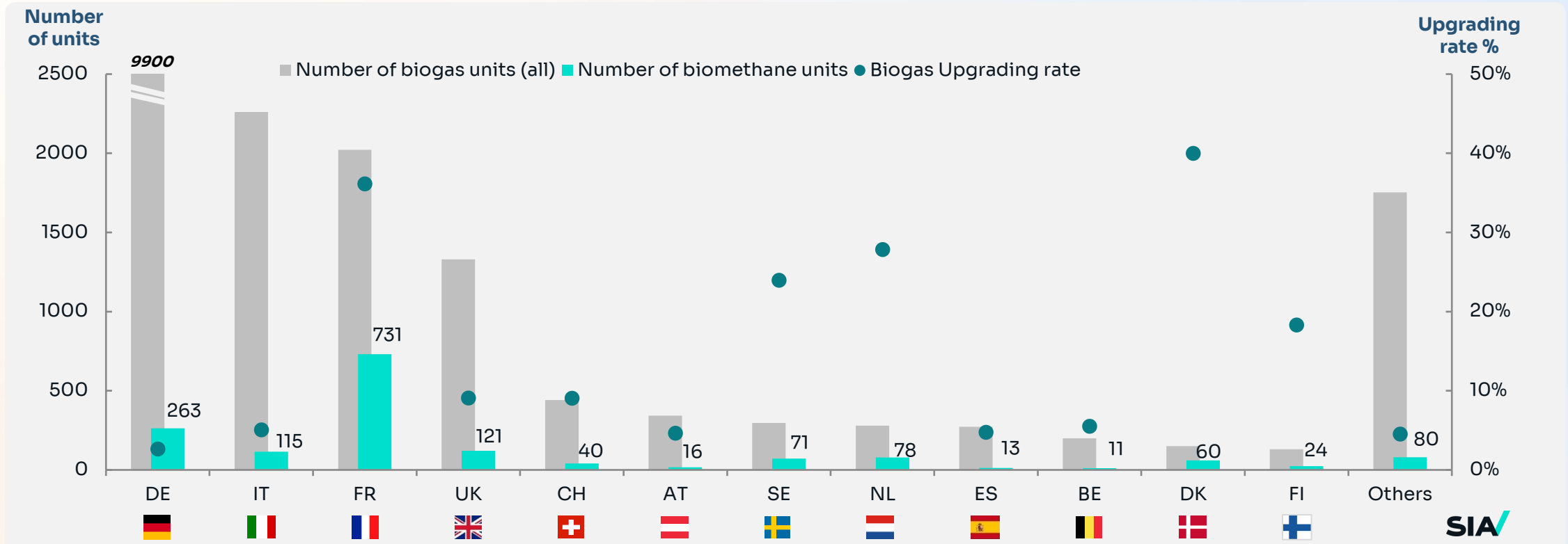
Overview of biogas and biomethane production in Europe

Europe | Biogas and biomethane have grown steadily over the past year, with biomethane reaching 60TWh and accounting for 21% of the European biogas output



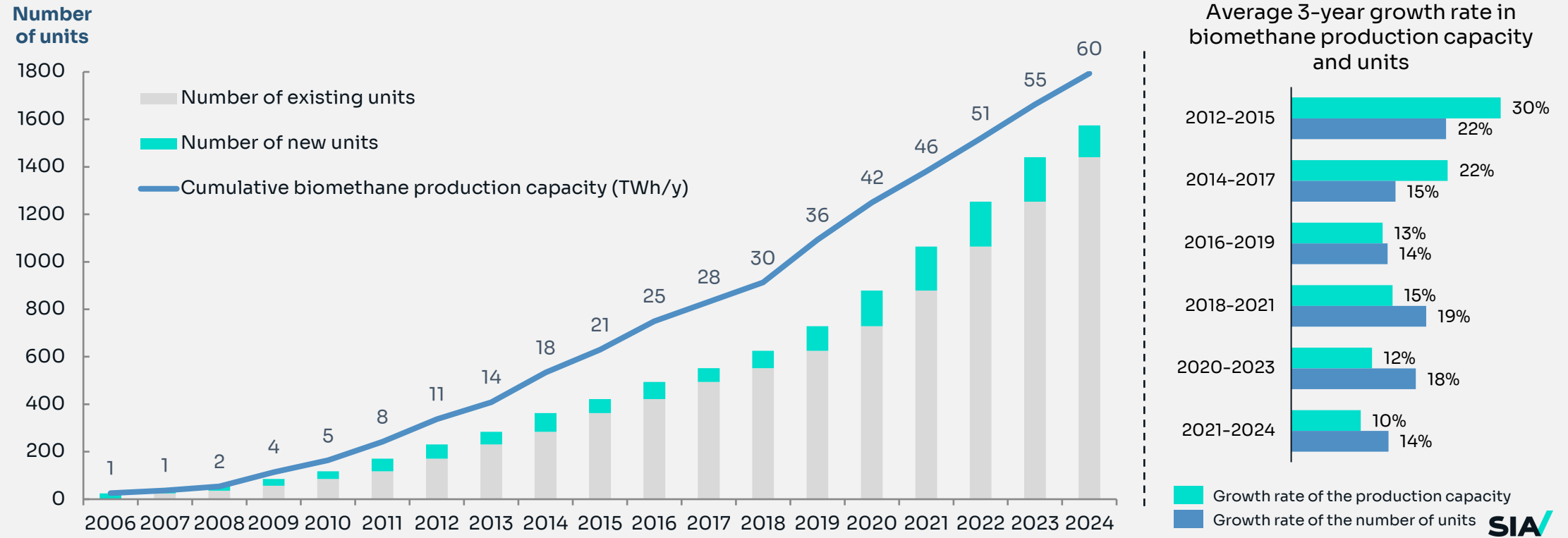
- / Since 2021, biogas and biomethane production has shown sustained growth, reaching approximately 200 TWh and 60 TWh in 2024, respectively.
- / Over the past three years, **biogas production has increased by 6% and biomethane by 15%, largely driven by capacity additions in France and Italy.**
- / Biomethane now represents 21% of total European biogas output.

Country comparisons | While some countries are prioritising upgrading units to biomethane, others continue to focus on biogas production



- France possesses the largest number of biomethane units (over 730) and a high upgrading rate from biogas to biomethane.
- Nordic countries (Sweden, Denmark, and Finland) and the Netherlands show high upgrading rates, indicating that a **substantial part of biogas production is being upgraded to biomethane**.
- Germany and Italy operate fewer biomethane units, **but each with high production capacities**. While Germany continues to focus more on biogas, Italy is showing strong development in biomethane units. Both countries could leverage upgrading capacity to enhance biomethane production.

Europe | The number of new biomethane units continues to grow, with a shift towards the development of smaller unit sizes



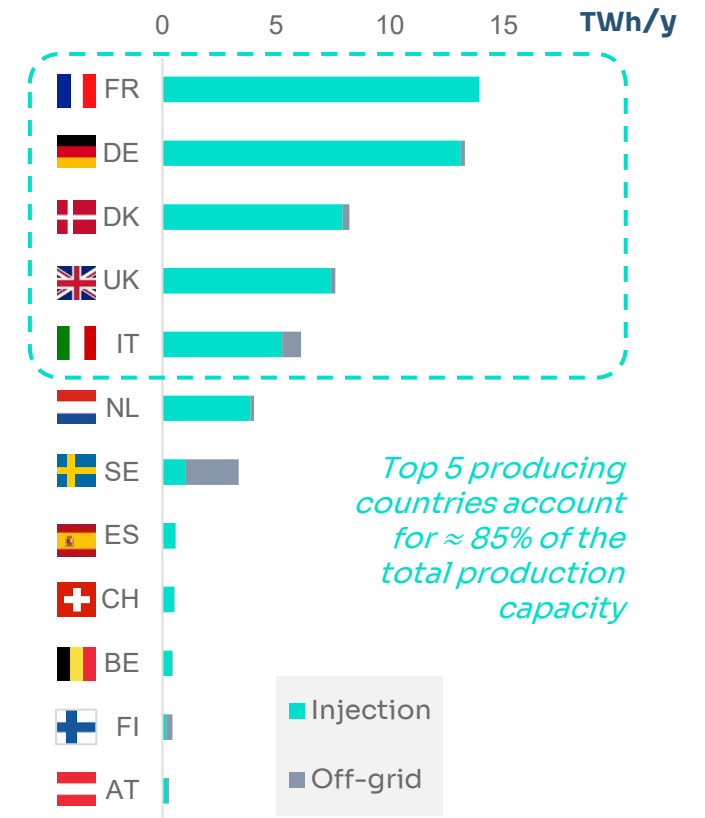
- / In 2024, Europe's biomethane production capacity **reached 60 TWh** (~6.1 bcm), with the **number of production units growing and exceeding 1,500**.
- / Over the past five years, annual additional units have ranged between 150 and 190 units per year. Since 2018-2021, **production units are growing faster than capacity, indicating a shift towards building smaller production units**.
- / Both production and unit growth rates have slowed down to 10% and 14% respectively compared to 12% and 18% over 2020-2023 and 15% and 19% over 2018-2021.

Country comparisons focus | Top 5 biomethane producing countries include France, Germany, Denmark, the UK and Italy and account for 85% of European production capacity

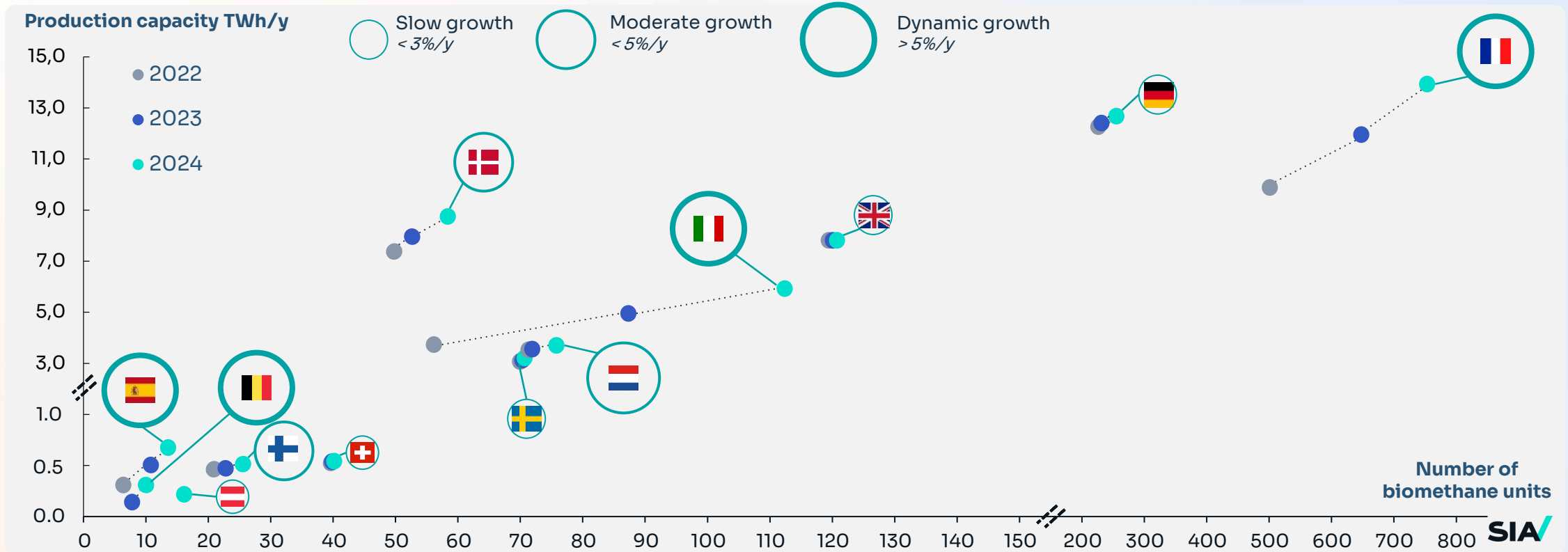
Feedstock breakdown in the main biomethane-producing countries



Biomethane production capacity ranking

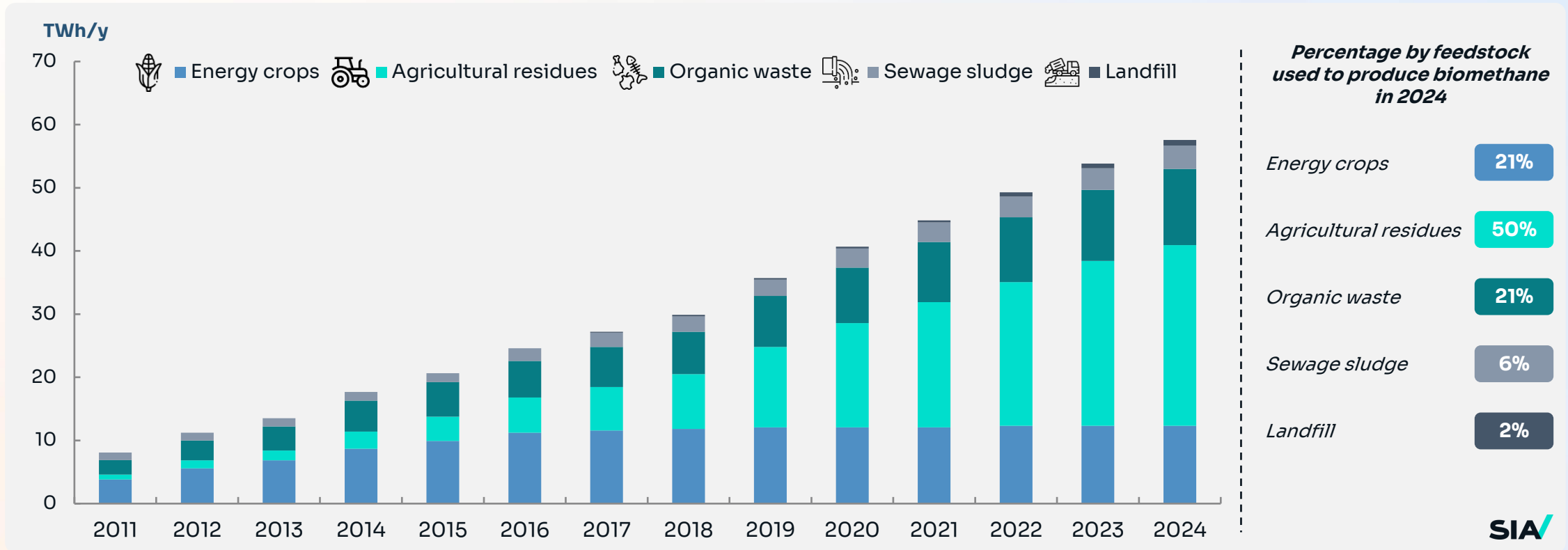


Country comparisons | Over the last 3 years, Italy and France stand out with strong growth in production capacities and Spain has emerged and shows fast signs of development



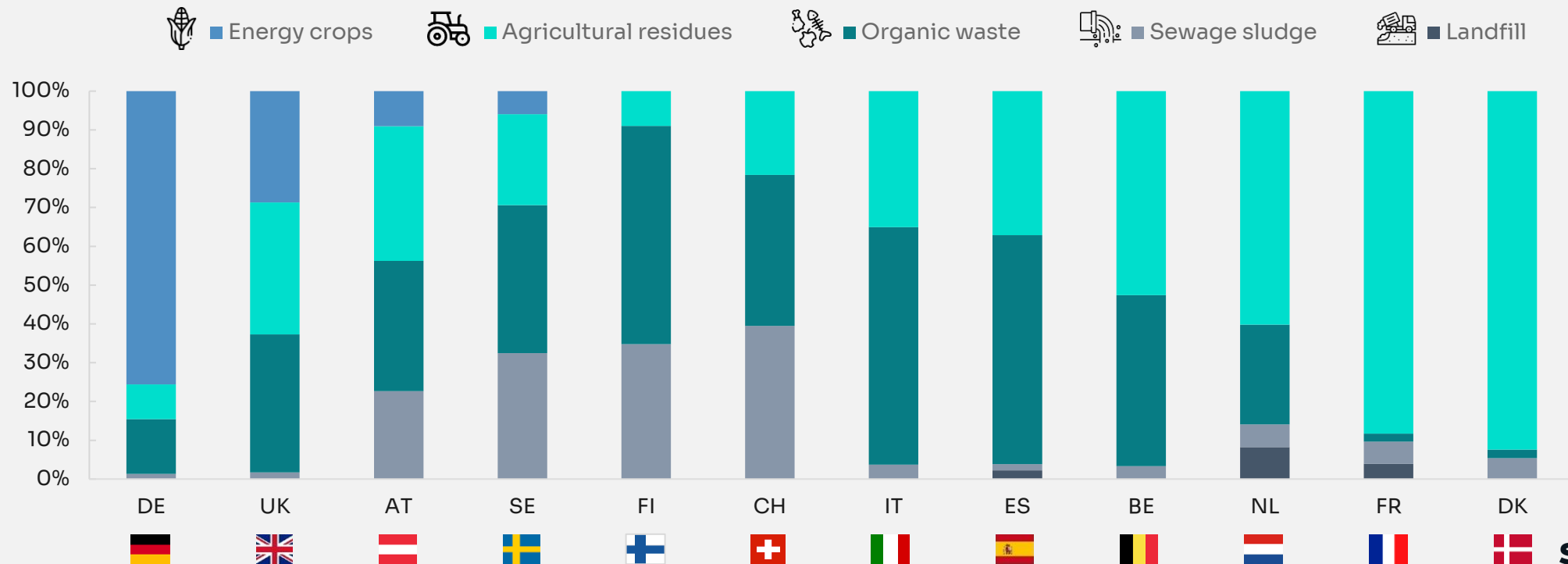
- / **France shows sustained growth**, with the highest number of units and largest production capacity in Europe.
- / **Italy stands out with the strongest growth** amongst benchmarked countries, while Denmark, the Netherlands, and Belgium are experiencing a more moderate expansion.
- / **Spain is emerging** as a biomethane producing country, **showing signs of fast development**.

Europe | The share of agricultural residues and organic waste continue to progress and represent the main feedstock sources, reflecting the shift towards waste-based production



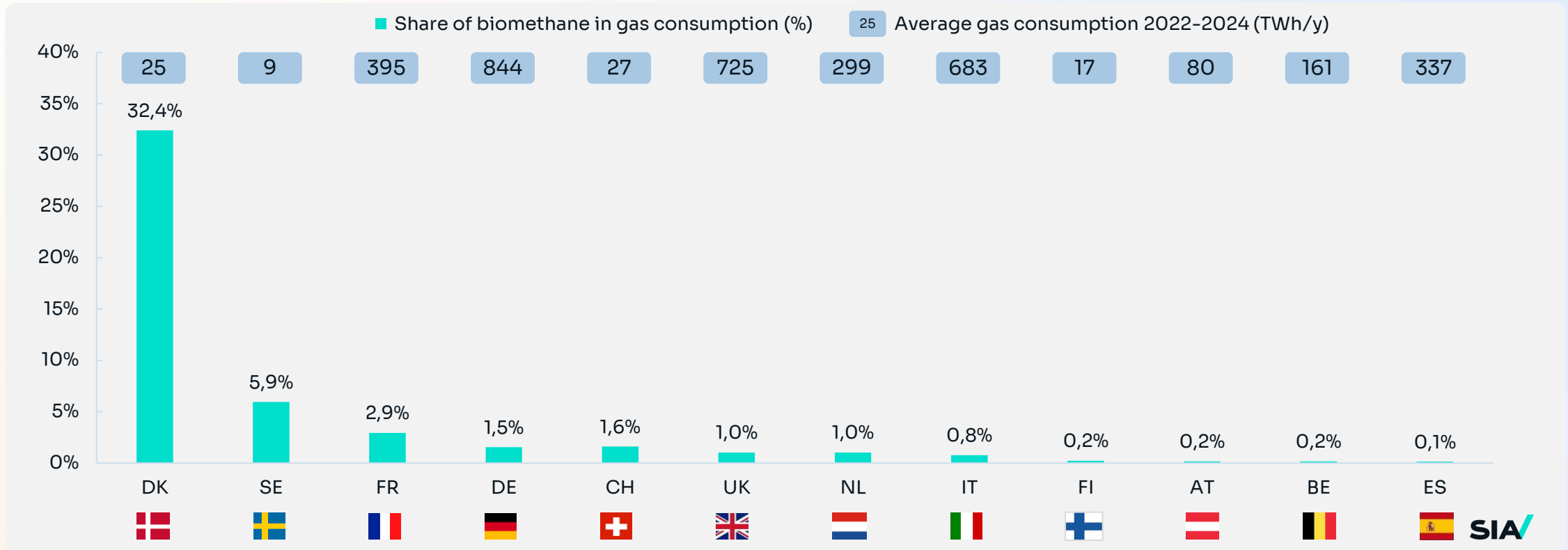
- / **Agricultural residues continue to be the main feedstock** source for Europe's biomethane production, **accounting for 50%** of the total feedstock used, **followed by organic waste at 21%. This reflects the sector's focus on waste-based production.**
- / In contrast, the use of **energy crops has plateaued since 2019 due to stricter sustainability criteria** since the adoption of RED II and its transposition into national legislation. Sewage sludge and landfill gas remain a minor share of the mix, though steadily increasing.

Country comparisons | Most European countries use agricultural residues and organic waste as main feedstock sources and only a handful are still reliant on energy crops



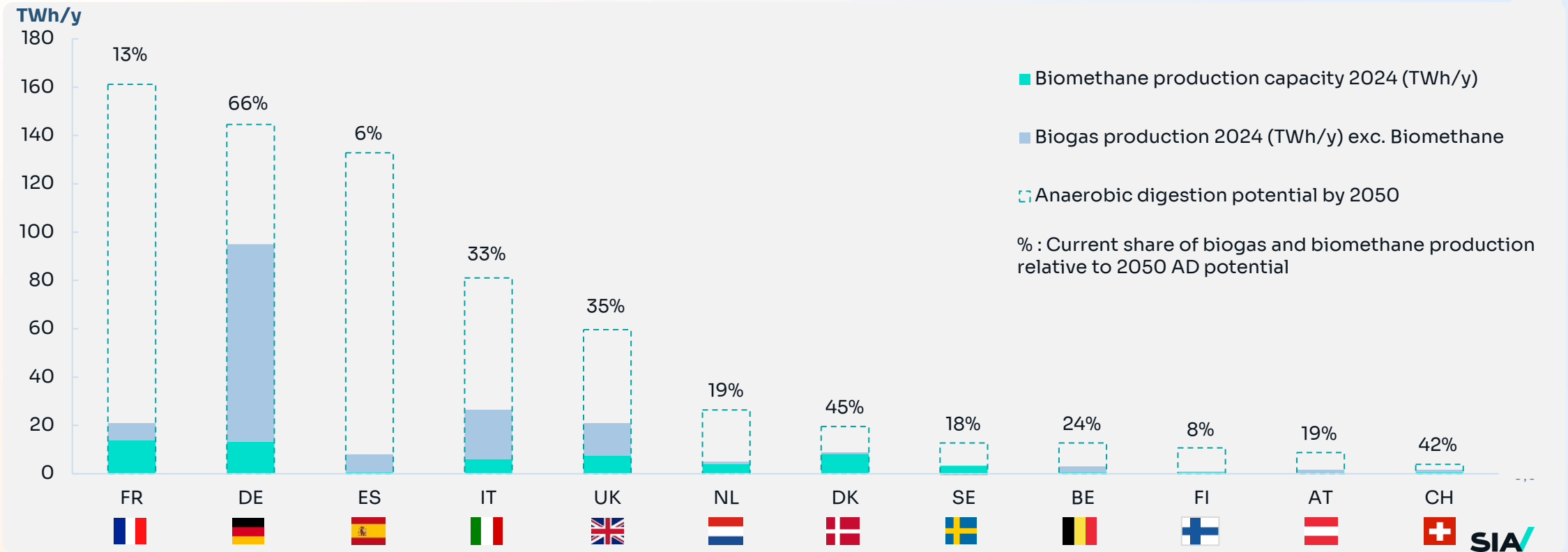
- / Belgium, the Netherlands, France, and Denmark **prioritise agricultural residues**, while Germany and the UK, albeit less than Germany, **continue to rely heavily on energy crops**.
- / In contrast, Austria, Sweden, Finland, and Switzerland balance **agricultural residues with organic waste and sewage sludge**.
- / Only a few countries currently upgrade landfill gas (Netherlands, France and Spain).

Country comparisons | Aside from Denmark, in most countries the share of biomethane in the gas consumption remains marginal, at less than 5%



- / Overall, **biomethane accounts for a marginal share of gas consumption across most European countries.**
- / Denmark stands out in Europe, **with biomethane accounting for more than 30% of the country's gas consumption**, highlighting a clear path towards low-carbon energy independence. Sweden and France follow but far behind Denmark with respectively 6% and 3%.
- / In most other European countries, biomethane contributes to less than 2% of total gas consumption.

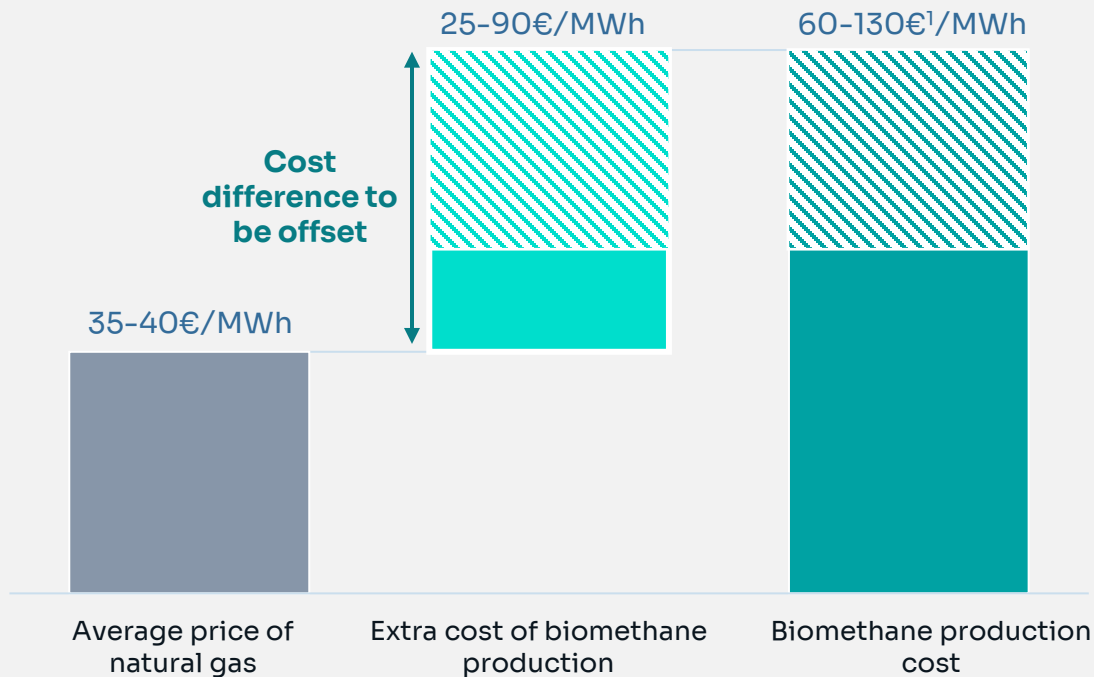
Country comparisons | In most countries, there is still substantial AD potential available to be exploited for biogas and biomethane production



- / Biogas and biomethane potential is **unequally distributed and leveraged across Europe**. Germany, Denmark, and Switzerland already exploit more than 40% of their 2050 anaerobic digestion (AD) potential
- / Spain, France and Finland utilise less than 20% of their potential and thus have significant untapped potential and expansion opportunities.
- / The discrepancies convey different **future development strategies**, with some countries relying on **upgrading their biogas production to biomethane and others on building new units**.

Europe | Biomethane costs remain much higher than natural gas and support via tradeable certificates is essential to continue developing production units and capacity

European biomethane cost compared to natural gas price (€/MWh)



Biomethane financial model is undergoing transformations



/ Biomethane production costs vary across countries and unit sizes. They are **much higher than that of fossil natural gas**. Production sites can therefore only be **developed if this difference is offset**.



/ Historically this gap was offset by **public support for production**, mainly with the implementation of feed-in-tariffs, feed-in premium and subsidies.



/ **Incentives supporting final use**, directed towards transport and residential usages are **taking over**. The new mechanisms are **shifting the extra biomethane cost to energy providers and their consumers**, as opposed to public expenditure.



/ These new mechanisms are taking shape through **incorporation mandates and tradeable certificates**, which **add value to biomethane** and help meet these new obligations.

Country comparisons | Countries studied can be split into 3 main groups, depending on the implemented support mechanisms¹ for biomethane

		Countries with regulatory systems shifting towards incentives supporting final use					Countries with historical support for production				Countries with emerging regulatory support		
													
Incentives supporting production	Feed-in tariff for biomethane injection			●		●				●			
	Feed-in premium				●	●	●	●	●				
	Investment grants	●	●			●		●	●		●	●	○
	Connection cost support	●	●	●	●						●		
	Tax exemptions		●				●	●					●
Incentives supporting final use	GO recognition in EU-ETS	●	●	●	●	●	●	●	●		●		
	Certificates for transport		●	○	●	●							
	Subsidies							●			●		
	Quota obligations for gas suppliers	●		○	○								
	Other mechanisms (e.g. for heating)		●										

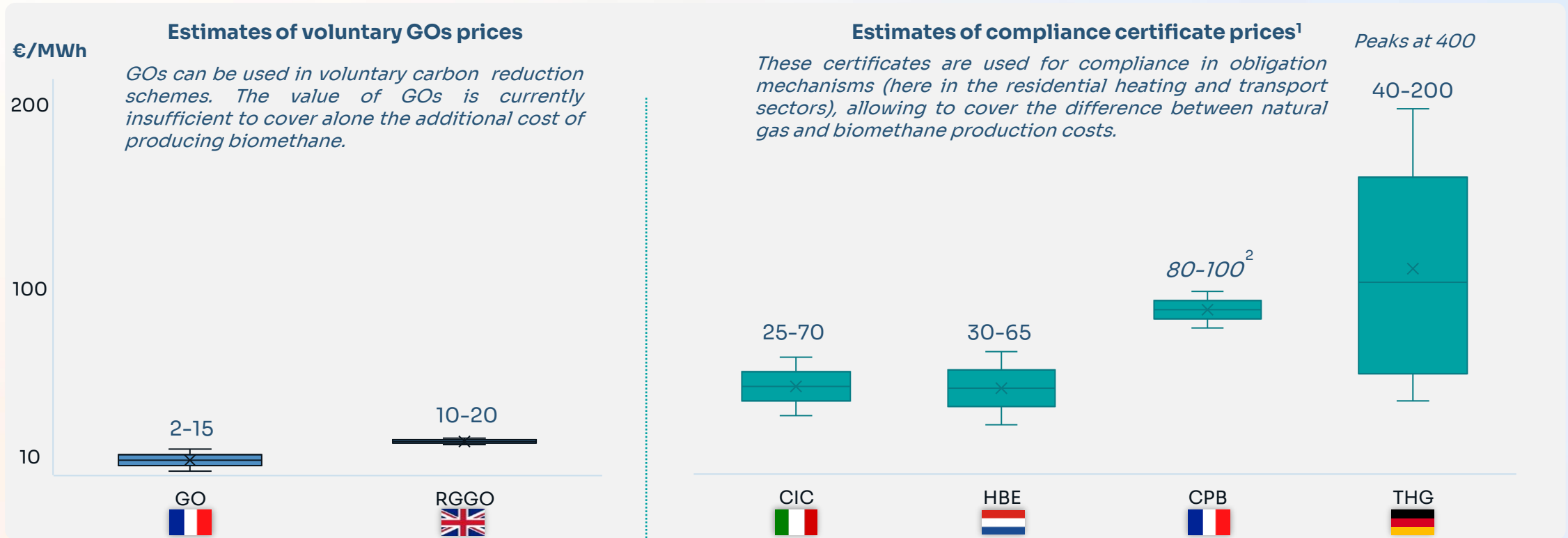
● Active ● Unclear ○ Upcoming

1. Focus only on the mechanisms available for biomethane

2. As quotas in transport sector are transposed in all EU countries under EU RED II, the focus here is on countries which have implemented / are going to implement a certificate system in addition to the quotas to incentivise further final use

3. Italy is a particular case, with incentives towards transport and subsequently for production being implemented recently

Country comparisons | Certificate prices vary considerably depending on their purpose (voluntary or compliance mechanisms)



- / Price of tradeable certificates **vary considerably**, based on supply and demand, type of feedstocks used (standard vs. advanced biomethane), and penalties enforced in the case of unmet incorporation obligations. **The price of certificates incentivising final use generally provides a revenue sufficient to bridge the gap between the cost of natural gas and of biomethane.**
- / In Germany, the **THG Quoten system is amongst the most generous**, with the emission factor reduction for advanced biomethane (e.g. biomethane from manure and agricultural residues) from counting twice that of other biomethane. Recently, there have been price peaks due to changes in the mechanism, which are expected to stabilise after the final decision regarding the double counting for advanced biomethane, expected in 2026.

Europe | Key challenges and outlook for the European biomethane sector (1/2)

Production & competitiveness

Europe's biomethane industry is expanding but faces structural challenges resulting from **feedstock availability, production efficiency, and cost competitiveness**:

- / **Feedstock security** is becoming increasingly constrained in several countries, calling for regional cooperation and biogas hub models to mutualise supply and optimise upgrading capacity.
- / **Co-product valorisation** is emerging as a profitability driver:
 - **Biogenic CO₂** is increasingly sought for Sustainable Aviation Fuels (SAF) and industrial uses.
 - **Digestate** offers new opportunities beyond spreading - nutrient recovery (NPK), biopesticides, humic substances and fibre valorisation through combustion or gasification.
- / **Efficiency gains** relying on process optimisation, reduced methane leaks, improved energy performance, and integration with on-site PV and self-consumption to enhance economic resilience.

Regulatory & support frameworks

Long-term investment in biomethane production depends on stable, **harmonised and predictable support mechanisms**:

- / The sector calls for clear **national production targets aligned across EU member states** and coherent with both voluntary certification schemes and regulation (e.g., differentiating feedstock emission factors).
- / At the EU level, traceability and transparency must improve through **harmonised systems** (UDB, ERGaR, AIB) to enable efficient cross-border trading of **Guarantees of Origin (GOs) and Proofs of Sustainability (PoS)**. A consistent regulatory framework is vital to build investor confidence and create a unified European biomethane market.



Europe | Key challenges and outlook for the European biomethane sector (2/2)

Recognition of biomethane decarbonisation potential to support BPA development



Biomethane delivers immediate decarbonisation potential for energy users, yet **carbon accounting frameworks** often fail to recognise its contribution:

- / The industry seeks **market-based recognition of biomethane in scope 1 emissions under the GHG Protocol and SBTi** supported by the Green Gas Count initiative.
- / This recognition is essential to develop **Biomethane Purchase Agreements (BPAs)**, which mirror PPAs for gas and underpin project bankability. Future priorities include integrating biomethane into **mandatory and voluntary carbon reporting**, allocating supply to high-impact sectors (transport, industry, heating), and managing cost pass-through to consumers.

Outlook & key milestones



- / Achieving the **EU target of 35 billion m³ of biomethane by 2030** requires systemic coordination amongst policymakers, producers, network operators, and end-users.
- / A cohesive regulatory vision, improved traceability, and optimised production models will determine Europe's ability to scale a **competitive and sustainable biomethane** ecosystem at the heart of its energy transition.

03

Country factsheet

Country factsheets | How to read

Description of the regulatory system and mechanisms supporting biomethane production and use



Feedstocks used

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Austria

State of play

Austria's biomethane production has plateaued since 2021. In 2023, the government introduced the Renewable Gas Act (EGG) setting an ambitious target of producing 7.5 TWh of renewable gas by 2030. This national objective, combined with grants supporting the development of production units and biofuel quotas are expected to create a momentum and increase production capacity in the coming years.

Main support incentives

Incentives supporting production

/ Austria offers **substantial annual grants for production units**. A maximum of €15 million to upgrade existing biogas units to biomethane and inject biomethane into the grid and €25 million for new biomethane projects, excluding those using energy crops.

/ **Connection costs** for units within defined capacity and distance limits are fully covered by grid operators.

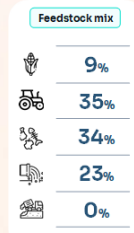
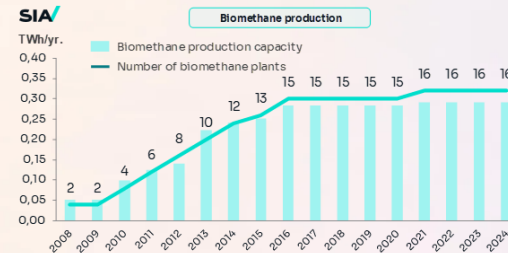
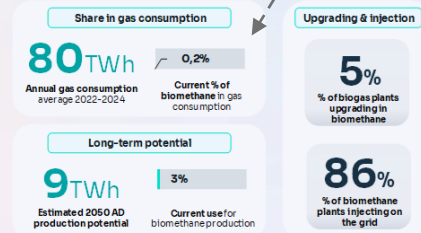
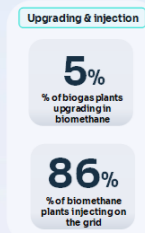
Incentives supporting final use

/ **GO¹ registry** is managed by AGCS. GO national and cross-border trading is possible with countries member of **ERGaR**. GOs can be used in **EU-ETS**.

/ **Austria's Renewable Gas Act (EGG) sets renewable gas injection quotas** rising from 0.35% in 2024 to close to 10% by 2030, with a 15 TWh target by 2035. Gas providers who cannot meet these quotas are required to purchase biomethane from producers or pay compensation up to €0.15/kWh, effectively providing a guaranteed minimum price.

/ Fuel suppliers are required to meet a **minimum quota of advanced biofuels of 1.0% in 2025**, rising to 3.5% by 2030.

Key figures



1. Guarantees of origin
2. All EU member states are required to establish biofuel quotas by transposing RED II (EU Renewable Energy Directive) into their national legislation

Biomethane volume injected in 2024 into the gas network (TWh/y)

Annual gas consumption and biomethane in gas consumption (Injected biomethane / Gas consumption)

Biogas upgrading rate (Number of biomethane units / Total number of biogas units)

Grid injection rate (Injecting biomethane capacity / Total biomethane capacity)

Number of biomethane units and capacity evolution over the past 10 years (production capacity in TWh/y)

Estimated AD production potential and use of 2050 potential for current production (Biomethane production capacity / Estimated AD potential)

Synopsis of the current situation of the biomethane sector in the country

Breakdown of biomethane units based on the main type of feedstock

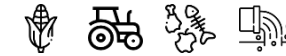


State of play

Austria's biomethane production has plateaued since 2021. The government introduced a proposal for a Renewable Gas Act (EGG) setting an ambitious target of producing 7.5 TWh of renewable gas by 2030 which is yet to be implemented. This national objective, combined with grants supporting the development of production units and biofuel quotas could create a momentum and increase production capacity in the coming years.

Key figures

Main feedstock used



Injected biomethane

0.1 TWh

Main support incentives

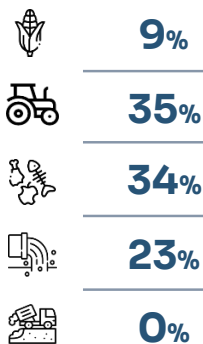
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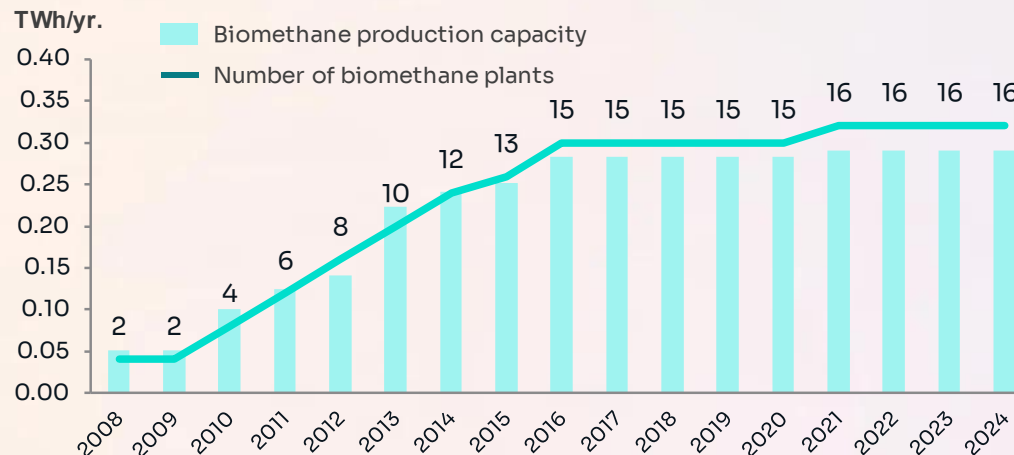
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- / Fuel suppliers are required to meet a **minimum quota of advanced biofuels of 1.0% in 2025**, rising to 3.5% by 2030.

Feedstock mix



SIA

Biomethane production



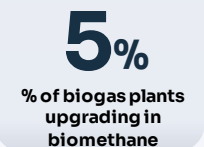
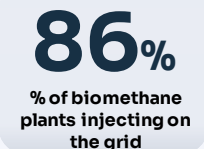
Share in gas consumption



Long-term potential



Upgrading & injection





State of play

The Belgian biomethane sector is still at an early stage of development, but has experienced a more substantial growth in 2024, with production capacity doubling and the addition of 3 new units. Currently, there are no specific biomethane targets incentivising production, only a quota for advanced biofuels at the federal level, and support mechanisms remain limited. The GO system is expected to be introduced in Wallonia.

Key figures

Main feedstock used



Injected biomethane

0.3 TWh

Main support incentives

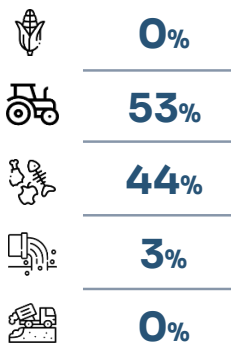
Incentives supporting production

- / **Investment grants** in Wallonia represent up to 40% (capped at €200k) for units <10 kW and 36% for >10 kW, while in Flanders up to 55%. At the federal level, investment deductions can be combined, covering up to 40%.
- / Fluxys (TSO) covers 50% of the **connection costs**. Walloon DSOs fully socialise these costs, while Flemish DSOs cover a limited portion.

Incentives supporting final use

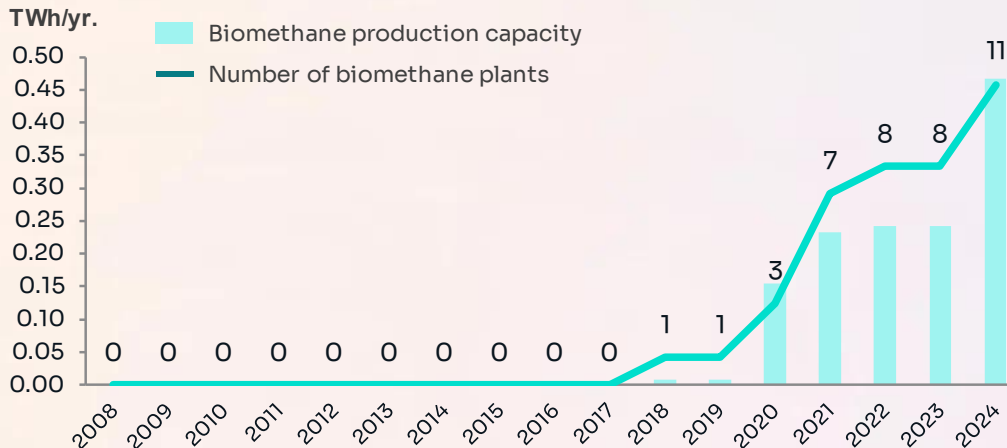
- / In Flanders, the **GO registry is managed by the Flemish regulator (VREG)**, with imports and exports possible with AIB members. GOs can be used to reduce EU ETS allowances.
- / In Wallonia, **'Labels of Guarantee of Origin' (LGOs)** support local CHP installations but are not yet recognised as EU-compliant GOs; a dedicated biomethane GO system is under development.
- / At the federal level, fuel suppliers are required to meet a **minimum quota of advanced biofuels of 1.1% in 2025**, rising to 4.2% by 2030.
- / Wallonia has been providing **subsidies for CNG and LNG heavy-duty vehicles** since 2019, up to 20% of the purchased price. At national level, a premium of €5,000 is delivered by the TSO & DSO gas association.

Feedstock mix



SIA

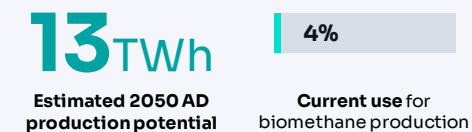
Biomethane production



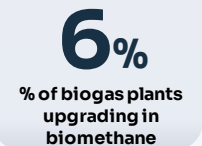
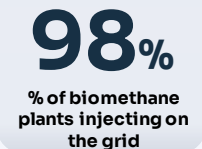
Share in gas consumption



Long-term potential



Upgrading & injection





State of play

Denmark's biomethane sector grew rapidly until 2020, and has since stabilised, reaching over 8.1 TWh injected into the gas grid by 2024. This rapid growth allows biomethane to account for 32% of the national gas consumption. This growth is expected to sustain itself as the Danish government targets 100% green gas coverage by 2035 and continues to support production via feed-in tariffs, investment grants and biofuel quotas.

Main support incentives

Incentives supporting production

- / The **feed-in tariffs ended in 2018** and have been replaced by a €1.7 billion **competitive tender** scheme running from 2024 to 2030. Tenders award a price premium paid on top of the natural gas market price, over a 20-year period.
- / **Investment grants** cover up to 15% of costs for green projects.
- / **Tax exemptions** for biomethane from the energy tax regarding the consumption of energy and the from the CO₂ tax is currently under review.

Main feedstock used



Injected biomethane

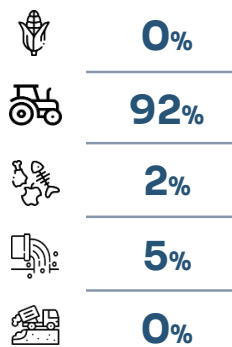
8.1 TWh

Incentives supporting final use

- / **GO registry is managed by Energinet**. GOs can be transferred to other European countries that are part of ERGaR and used in the **EU ETS**.
- / Fuel suppliers are required to meet a **minimum quota of biofuels of 7.6% since 2024**. Additionally, at least 0.3% of these biofuels must be advanced biofuels.

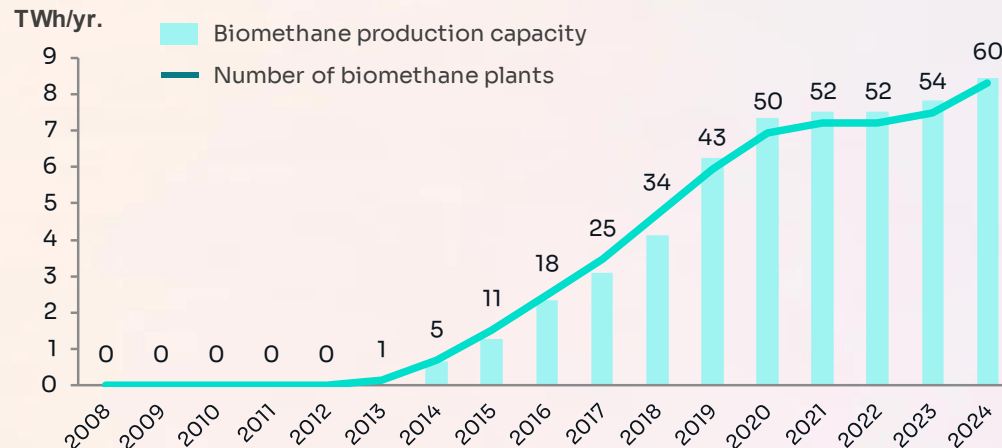
Key figures

Feedstock mix

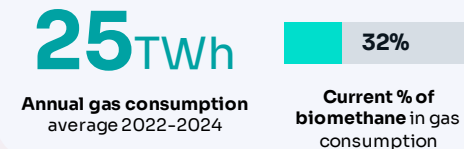


SIA

Biomethane production



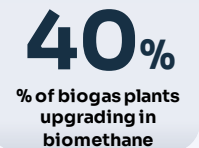
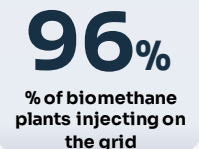
Share in gas consumption



Long-term potential



Upgrading & injection



Finland

State of play

Despite biomethane being a key component of Finland's climate and energy strategy, the sector's growth is stable with less than 0.5 TWh produced in 2024. In 2021, the national association set a target to produce 4 TWh of biogas, including biomethane, by 2030, however current production levels remain far from the objective. In Finland, support mainly incentivises the use of biomethane in the transport sector.

Key figures

Main feedstock used



Injected biomethane

<0.1 TWh

Main support incentives

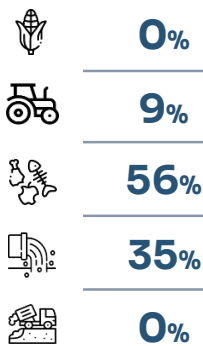
Incentives supporting production

- / **A Feed-in-Premium** exists for electricity production from renewable energy sources, including biogas and biomethane, based on a competitive tendering process.
- / **Investment subsidies** of up to 25% of the overall project cost are available for biogas units upon becoming operational. This subsidy can increase to 40% for projects involving new technology.
- / **20% tax deduction is available** for investment costs between €50M to €140M for renewable energy production projects (including biomethane).

Incentives supporting final use

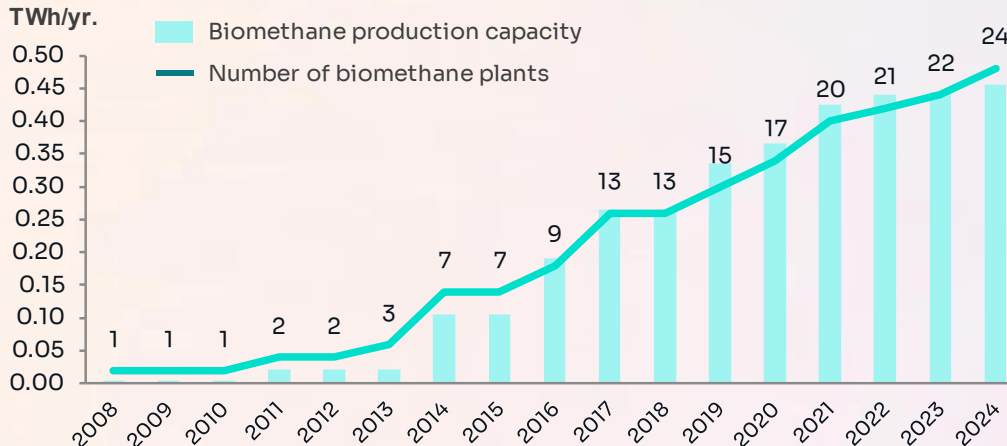
- / **GO registry is managed by Gasgrid Finland.** Imports and exports are only possible with AIB members. There is **no legislation** covering the possibility to use GOs in the EU ETS and no use cases have been observed yet.
- / Fuel suppliers are required to meet a **minimum quota of biofuels of 16.5% in 2025**, rising to 34% by 2030. An additional obligation for **advanced renewable fuels** is set at 4% as of 2026.
- / The Finnish government supports **CNG and LNG station deployment** and **subsidies** for gas-powered trucks ranging from €2,000 to €14,000.

Feedstock mix

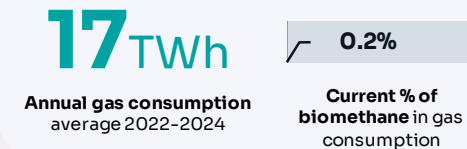


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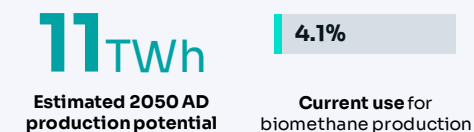
Biomethane production



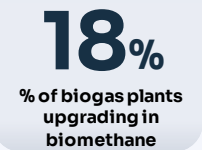
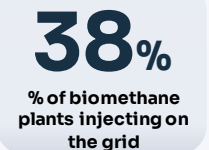
Share in gas consumption



Long-term potential



Upgrading & injection





France

State of play

France continues to lead the European biomethane production thanks to a favourable regulatory environment and a production target raised to 44 TWh/year in 2030, contingent on the validation of the next national energy plan. France is shifting to a market-based system directing the use of biomethane towards transport and energy providers with 2 news mechanisms starting in 2026 and 2027. These are expected to continue stimulating the growth of national biomethane production.

Key figures

Main feedstock used



Injected biomethane

11.6 TWh

Main support incentives

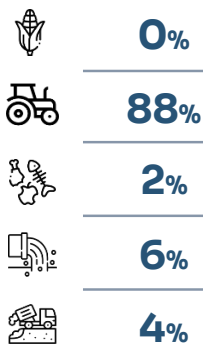
Incentives supporting production

- / **Feed-in-tariffs are available** for biomethane production units with a production capacity of less than 25 GWh. The initial scheme (2011 to 2020), imposed no capacity limits and provided highly attractive remuneration for projects. In contrast, the revised mechanism introduced in 2020 restricts eligibility to small-scale units and offers lower support levels.
- / **Connection costs** are covered by the TSO and DSO up to 60% and capped at €600k.

Incentives supporting final use

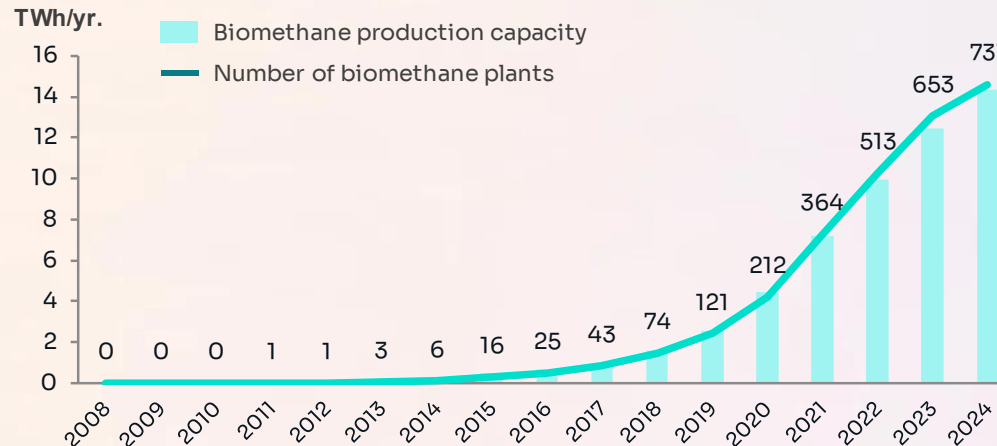
- / **GO registry is managed by EEX** and no import/export to other countries is allowed yet but there are plans to have this set up in the short term.
- / GOs from non-subsidised production units and a share from subsidised units can be used in the **EU-ETS and maritime transport ETS**.
- / From 2026, gas suppliers will be required to acquire **Biogas Production Certificates (CPB)** to support biomethane injected into the gas grid, with a **mandated blending rate** reaching up to 4.2% by 2028.
- / From 2027, the **IRICC scheme** requires the transport sector to purchase certificates to meet a 5.6% GHG reduction target and a 3% renewable share in NGV by 2029.

Feedstock mix



SIA

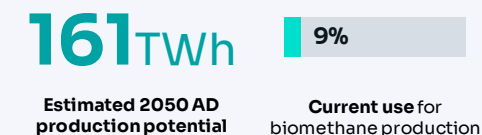
Biomethane production



Share in gas consumption



Long-term potential



Upgrading & injection

36%

% of biogas plants upgrading in biomethane

100%

% of biomethane plants injecting on the grid



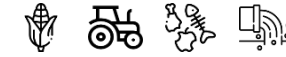
Germany

State of play

While Germany remains the European biogas leader, biomethane production has plateaued at 13 TWh for the past 5 years. Germany has not set a specific national objective for biogas or biomethane production. Nevertheless, the recent policy amendments in the building sector, encouraging the use of renewable energies, are expected to increase biomethane consumption in this sector. Germany must also tackle the sustainability of its feedstock mix in the coming years, especially by limiting the use of energy crops.

Key figures

Main feedstock used



Injected biomethane

13 TWh

Main support incentives

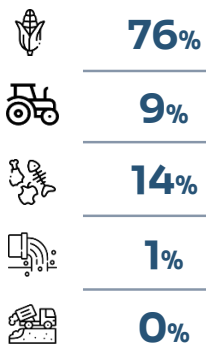
Incentives supporting production

- / The **EEG mechanism** supports electricity generation from biomethane in CHP via specific tenders.
- / **Connection costs** are covered by the TSO and DSO up to 75% for units within a 10 km radius.
- / Particular attention is now being paid to the **sustainability** of feedstocks. Biogas package sets a **gradual cap on maize use** to 35% in 2025, 30% in 2026, and 25% in 2027.

Incentives supporting final use

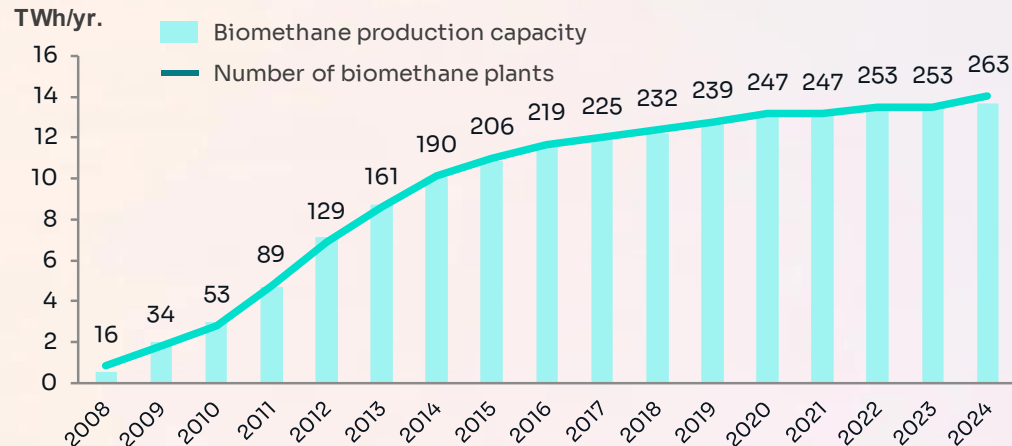
- / **GO registry** is managed by **DENA**. **GOs** can be traded, imported and exported via the ERGaR platform. GOs can be used in **EU-ETS and the national ETS system** (nEHS). **Nabisy system** manages PoS to certify the sustainability of biomethane and biofuels.
- / **Federal Immission Control Act (BImSchG)** mandates a **9.25%** CO₂ emissions reduction by 2024, increasing to **25%** by 2030 for fuel suppliers.
- / **Under Fuel Emissions Trading Act (BEHG), certified biomethane is exempt from the CO₂ tax** in the transport and building sectors.
- / **Heat Planning Act (WPG) and updated Buildings Energy Act (GEG)** have created new opportunities for biomethane by requiring **all new heating systems to use at least 65% renewable energy** and new buildings **to not exceed 55%** of primary energy consumption compared to reference buildings.

Feedstock mix



SIA

Biomethane production



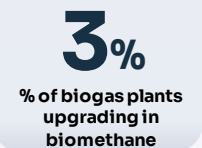
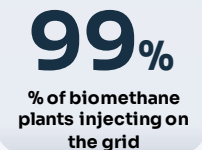
Share in gas consumption



Long-term potential



Upgrading & injection





Italy

State of play

Italy is experiencing a strong growth in biomethane production capacity, driven by a fast development of production units and an ambitious annual production target of 5.7 bcm (~60 TWh/year) of biomethane by 2030. Italy has introduced several support schemes, including feed-in tariffs and premiums, capital grants and quotas for the biofuels and transport sectors, strongly incentivising biomethane production and primarily directing the use of biomethane in the transport sector.

Key figures

Main feedstock used



Injected biomethane

5.2 TWh

Main support incentives

Incentives supporting production

- / **Feed in tariffs under the decree of 2022 support biomethane** for units producing up to 250 Sm³/h and connected to the grid. Support ranges from €155/MWh for agricultural units < 100 Sm³/h, €110/MWh if above and €62/MWh for units powered by organic waste. **Capital grants up to 40%** of the construction investment are also available under this decree.
- / **Feed-in-premium** are available for units > 250 Sm³/h via tender process.

Incentives supporting final use

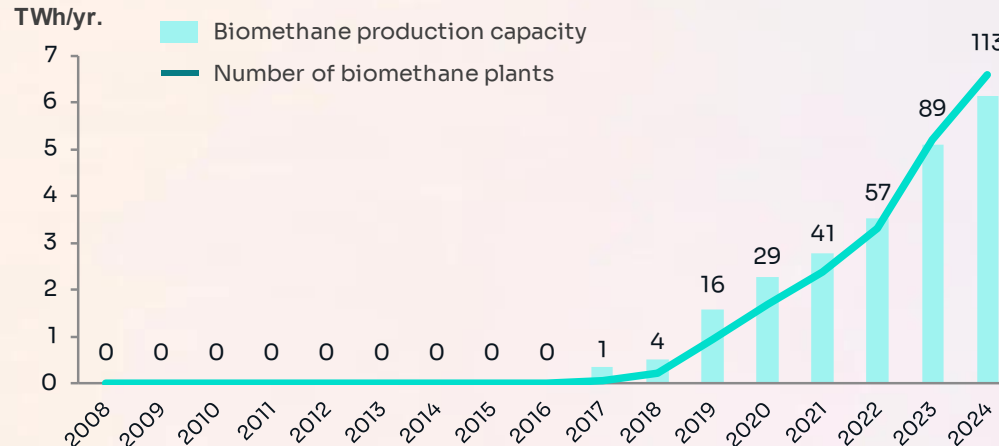
- / **GO registry is managed by GSE** and GOs can be used in **EU ETS**.
- / **Mandatory quotas** for renewable energy in transport have been increased from 10% to 16% by 2030.
- / Biomethane producers receive **Certificates of Supply for Consumption (CICs)** for each 10 Gcal of conventional biofuels supplied or for each 5 Gcal of advanced biofuels. For each advanced CIC, a fixed subsidy of €375 is set. Additionally, a 20% bonus in CICs is given for compression or liquefaction units. GOs and CICs cannot be combined.

Feedstock mix

	0%
	35%
	61%
	4%
	0%

SIA

Biomethane production



Share in gas consumption

683 TWh
Annual gas consumption
average 2022-2024

0.8%
Current % of
biomethane in gas
consumption

Long-term potential

81 TWh
Estimated 2050 AD
production potential

8%
Current use for
biomethane production

Upgrading & injection

5%
% of biogas plants
upgrading in
biomethane

86%
% of biomethane
plants injecting on
the grid



Netherlands

State of play

Biomethane production in the Netherlands is rapidly advancing as part of its ambitious climate and energy transition goals. The government has set a target to produce 2 bcm (~21 TWh/year) of biomethane annually by 2030. The Netherlands strongly supports biomethane through a combination of feed-in premiums and end-user incentives directed towards transport and gas suppliers. The introduction of the Green gas Act in 2027 is expected to encourage biomethane production.

Key figures

Main feedstock used



Injected biomethane

3.1 TWh

Main support incentives

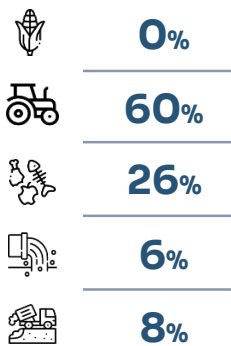
Incentives supporting production

- / The **feed-in-premium** through SDE++ scheme provides a variable feed-in premium covering the gap between production cost and market prices. The scheme covers the non-profitable portion of the production costs for 12 to 15 years via grants allocated through a tender scheme.
- / **Connection costs** are partially borne by producers and partially by grid operators.

Incentives supporting final use

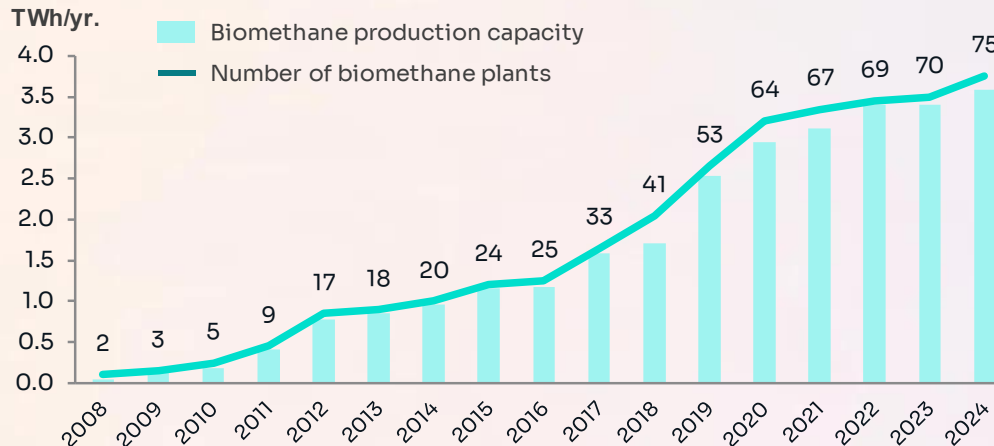
- / **GO registry** is managed by VertiCer and can be traded nationally or cross-border via AIB. GOs can be used in **EU ETS**.
- / **Quotas for renewable fuels in transport** are set at 18.9% in 2023, increasing to 28.4% in 2024 and 29.4% in 2025. The annual obligations are met via **HBE certificates**.
- / The **Green Gas Blending Obligation Act** will come into force in 2027, requiring gas suppliers to purchase **Green Gas Units (GGEs)** to meet their blending obligations. GGEs are linked to GOs, which serve as proof of renewable gas injection and consumption.

Feedstock mix



SIA

Biomethane production



Share in gas consumption



Long-term potential



Upgrading & injection

28%

% of biogas plants upgrading in biomethane

96%

% of biomethane plants injecting on the grid



Spain

State of play

Biomethane production is strongly developing in Spain, with a significant increase since 2021 and a surge expected in the coming years with many announced project investments. Spain has a substantial long-term AD potential not yet exploited. The country has a combined biogas and biomethane objective of 20 TWh in 2030. However, the regulatory support is still nascent and currently limited to some investment grants, the GO registry and biofuel quotas.

Key figures

Main feedstock used



Injected biomethane

0.4 TWh

Main support incentives

Incentives supporting production

- / **Investment grants** awarded for the 81 most competitive biogas projects, including biomethane projects. €76.5M provided for the scheme which is funded via the Recovery, Transformation and Resilience Plan (RTRP) of the EU Next generation funds.
- / **Investment support grants** are available at a regional level. **Cataluña has approved a biogas strategy** for 2024-2030 and a 3M€ budget to support unit developments injecting into the grid. **Andalucía** has approved a 13M€ budget to support bio industrial projects transforming olive pomace into biogas or biomethane for biofuels.
- / EIB and InvestEU have also **granted a loan** of €80M to finance Nortegas Group development of biomethane units.

Incentives supporting final use

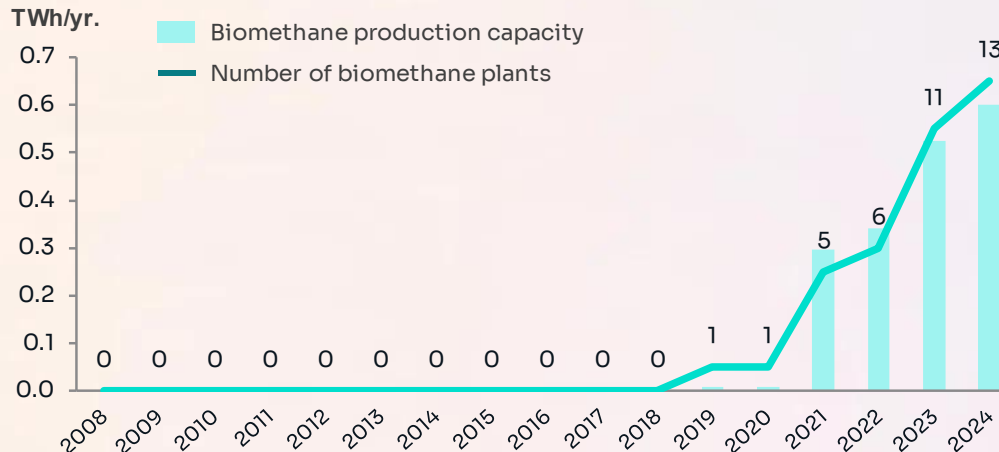
- / **GO registry** since 2023 is managed by Enagás and can be traded nationally or cross-border via AIB. There is no legislation covering the possibility to use GOs in the EU ETS.
- / **Quotas for biofuels in transport** are set at 10.5% in 2023, increasing to 11% in 2024, 11.5% in 2025 and 12% in 2026.

Feedstock mix

	0%
	37%
	59%
	2%
	2%

SIA

Biomethane production



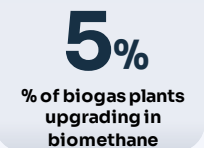
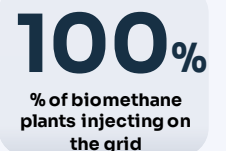
Share in gas consumption



Long-term potential



Upgrading & injection



Sweden

State of play

Sweden’s biomethane production has been stable for the past 3 years around 3.4 TWh/year. The country remains far from their 2030 biomethane production target set at 15 TWh, with 12 TWh aimed at the transport sector and 3 TWh for industrial and other uses. Sweden mainly supports biomethane via feed-in premiums and investment grants.

Main support incentives

- Incentives supporting production
- / **Feed-in-premium** since 2022 with 3 cumulative premiums, €0.04/KWh for biogas from manure, €0.03/KWh¹ for biomethane and €0.01/KWh for liquified biomethane.
 - / **Investment support** delivered through the Climate Leap (Klimatklivet) programme, covering 45-65% of project investment costs.
 - / Energy and CO2 **tax exemptions** for biomethane temporarily suspended early 2024 and reapproved in October 2024.

Main feedstock used



Injected biomethane

0.5 TWh

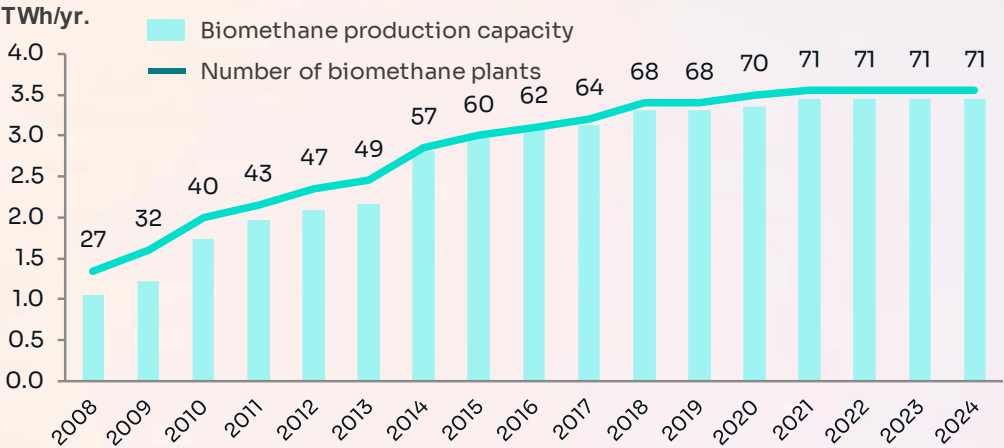
Key figures

Feedstock mix

	6%
	24%
	38%
	32%
	0%

SIA

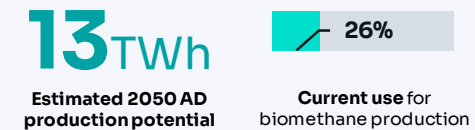
Biomethane production



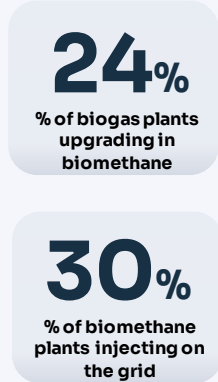
Share in gas consumption



Long-term potential



Upgrading & injection



Switzerland

State of play

Switzerland's biomethane production is stable at ~0.5 TWh/year. The country aims to inject 15% of renewable gas in the grid by 2030, 50% in 2040 and to fully decarbonise its gas supply by 2050. To support this objective, Switzerland has recently created a GO registry and introduced the CO₂ Act which provides investment grants for new biomethane or biogas upgrading projects. The new regulatory support is expected to stimulate production and the number of new units developed in the coming years.

Key figures

Main feedstock used



Injected biomethane

0.4 TWh

Main support incentives

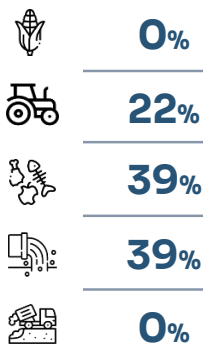
Incentives supporting production

- / **Feed-in premium** exists for electricity produced **from biogas only**.
- / **CO₂ Act coming into effect in 2025** will offer grants for new biomethane or biogas upgrading projects.

Incentives supporting final use

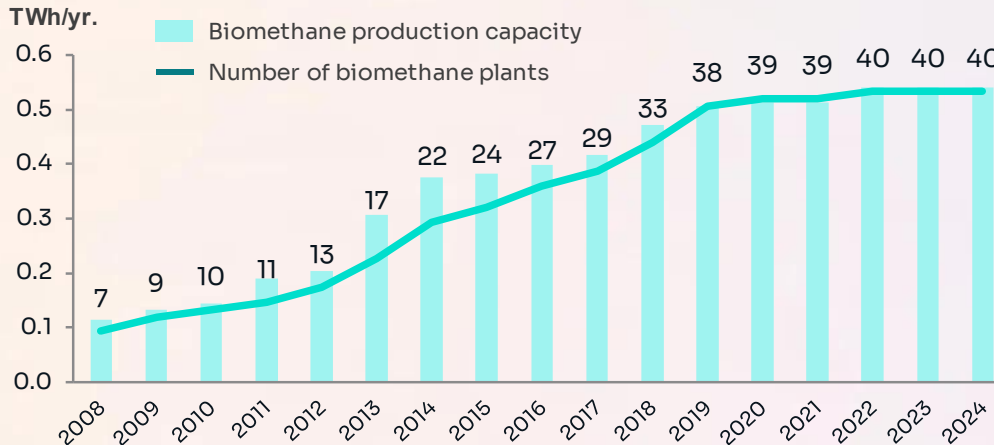
- / **GO registry** is operational since January 2025 and managed by Pronovo, allowing **export of GOs via ERGaR**. For imports, Switzerland has a **defined list of countries** they allow imports from, mainly depending on feedstock used and sustainability criteria.
- / Although no binding quota exists for renewable gas in transport, biomethane used as a transport fuel benefits from a **full exemption from the CO₂ taxes**, provided it meets strict sustainability and traceability requirements.

Feedstock mix



SIA

Biomethane production



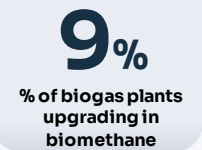
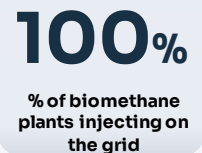
Share in gas consumption



Long-term potential



Upgrading & injection





United Kingdom

State of play

In the UK, biomethane production capacity is stable around 7.8 TWh/year since 2022. The UK has introduced several support schemes for biomethane production via both feed-in tariffs and fuel obligations. The non-recognition of UK GOs by the EU and the absence of integration between EU and UK ETS' are challenges for cross-border trade.

Main support incentives

Incentives supporting production

/ **Green Gas Support Scheme (GGSS)** provides a **tier tariff-based support** for AD biomethane and injected into the grid in GB. The scheme has been extended to November 2028 with annual price reviews. Participants receive payments for 15 years. Tariffs since October 2024 are €7.5 ct/MWh until 60k MWh, €4.8 ct/MWh for the next 60k-100k MWh and €4.2 ct/MWh for 100k-250k MWh.

Incentives supporting final use

/ The UK biomethane GOs called **RGGOs** are managed by GGCS. They are **not recognised by the EU and cannot be traded in EU ETS**. Although the UK and EU are considering working towards connecting the UK and EU ETS', RGGOs are also not recognised as GOs as they do not follow the 16325 standard for GOs according to EU Renewable Energy Directive.

/ **Renewable Gas Guarantees of Origin (RGGO)** are certificates for each kWh of biomethane injected into the grid.

/ **Renewable Transport Fuel Obligation (RTFO)** requires suppliers providing more than 450k litres of fuel per year to have 11.8% from renewable energy sources in 2024, increasing each year until 14.6% in 2032.

Main feedstock used

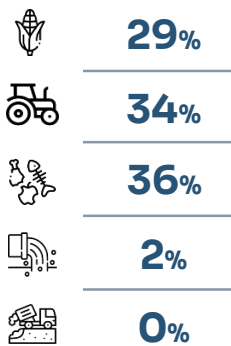


Injected biomethane

7.5 TWh

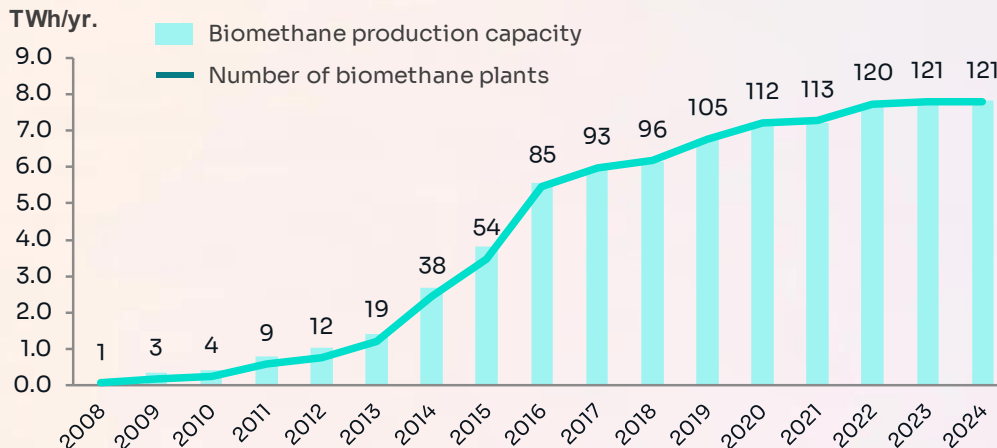
Key figures

Feedstock mix



SIA

Biomethane production



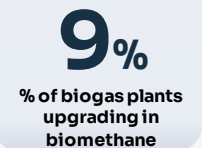
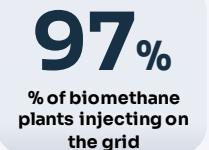
Share in gas consumption



Long-term potential



Upgrading & injection



Appendix

Appendix | Glossary

Acronyms	Signification
AIB	Association of issuing bodies – system issuing and trading biomethane / renewable gas certificates
AD	Anaerobic Digestion
bcm	billion cubic meters. 1 bcm = 9.8 TWh LHV and 10.6 TWh HHV of biomethane
BioCNG	Bio Compressed Natural Gas
BioLNG	Bio Liquified Natural Gas
CHP	Combined heat and power
CNG	Compressed natural gas
DSO	Distribution System Operator
ERGaR	European renewable gas registry – European association facilitating cross-border renewable gas certificate trade
EU ETS	European Union Emission Trading Scheme
FiP	Feed-in Premium
FiT	Feed-in Tariff
GHG	Greenhouse gas
GO	Guarantee of Origin
LNG	Liquid natural gas
NGV	Natural gas vehicle
Nm ³ /h	Normal cubic meter per hour
RED II / III	Renewable Energy Directive II / III
TSO	Transmission System Operator

Appendix| Scope, sources and methodology

Scope

This benchmark covers the 12 main biomethane producing countries in Europe at the end of 2024: **Austria, Belgium, Denmark, Finland, France, Germany, Italy, the Netherlands, Spain, Sweden, Switzerland and the United Kingdom**. Collectively, these countries represent 96% of the total number of biomethane facilities on the continent and of the estimated production by the end of 2024. The remaining producing countries possess only a limited number of biomethane production facilities: Norway, Czech Republic, Ireland, Latvia, Iceland, Hungary, Luxembourg, Poland, Estonia, Portugal, Serbia, Ukraine, Slovenia, Greece, Slovakia. Whilst they are included in the aggregated figures; they are not in the detailed country factsheets.

Sources

The data and information provided by Sia are the result of internal **analyses based on open public information**. Sia provides this material for informational purposes only and cannot be held responsible for the accuracy of the data. In the following order of priority, the sources used are official sources (government agencies, regulatory texts, regulators, etc.), sources from associations related to the biogas/biomethane sector and stakeholder organisations (in particular EBA, Gas for Climate and Regatrace), as well as TSO/DSO data, and finally, all open-access public data sources.

Methodology

Sia regularly updates its **internal database** of production units in Europe and their characteristics (feedstock sources, capacity, etc.). The data sources are verified to secure a reliable consolidation of the data and to ensure that the most up-to-date version of the data is available regarding the countries' production units.

Contacts & contributors

Contacts



Sébastien Zimmer
Partner Energy, Utilities &
Environment
*sebastien.zimmer@sia-
partners.com*



Charlotte Bouvet
Manager Energy, Utilities &
Environment
*charlotte.bouvet@sia-
partners.com*



Mathieu Barneto
Senior Manager Energy, Utilities
& Environment
*mathieu.barneto@sia-
partners.com*

Contributors



Philippine Tercinier
Associate Manager Energy
& Industry



Emma Darniche
Consultant Energy,
Utilities & Environment



Dennis Langelaan
Consultant Energy &
Industry



Louis Boyer
Senior Consultant Energy,
Utilities & Environment



Johann Breit-Boudroit
Consultant Energy,
Utilities & Environment

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