BIOENERGY EUROPE

STATISTICAL REPORT 2023

REPORT BIOGAS

Bioenergy EUROPE

EBA European Biogas Association

© 2023 Bioenergy Europe

All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the publisher. For permission requests, write to the publisher, addressed "Attention: Permission use Bioenergy Europe Statistical Report" at the address below, except in the case of brief quotations embodied in critical reviews and certain other non-commercial uses permitted by copyright law.

The full Statistical Report is intended for Bioenergy Europe members only. It is prohibited for non-members to read, copy, use, forward or disclose the reports or any associated attachments to others without consent from Bioenergy Europe. Any unauthorised disclosure, copying, distribution or use of emails or attachments sent in relation to the Statistical Report is strictly prohibited.

Bioenergy Europe

Place du Champ de Mars 2A
1050 Brussels
T : +32 2 318 40 34
info@bioenergyeurope.org
www.bioenergyeurope.org

Authors

Jérémie Geelen (lead author)
Jean-Marc Jossart (content & technical guidance)

Policy Guidance

Irene di Padua
Daniel Reinemann

Visuals & Promotion

Monika Lichá (statistical report promotion)
Gaia Weber (statistical report visuals)

Supported by:

SUREV
SUSTAINABLE RESOURCES
Verification Scheme GmbH

TABLE OF CONTENTS

Index

List of Figures

List of Tables

BIOENERGY EUROPE STATISTICAL REPORT 2023

ABOUT

THE STATISTICAL REPORT

Every year since its debut release in 2007, Bioenergy Europe's Statistical Report has provided an in-depth overview of the bioenergy sector in the EU-27 Member States.

Bioenergy Europe's Statistical Report has been enriched each year with new figures and information, collecting unique data on the developments of the European bioenergy market from a growing number of international contributors.

Bioenergy Europe develops detailed reports that aid industry leaders, decision makers, investors and all bioenergy professionals to understand the situation of bioenergy in Europe.

With more than 150 graphs and figures, readers of Bioenergy Europe´s Statistical Report can get accurate and up-to-date information on the EU-27 energy system such as the final energy consumption of biomass for heat and electricity, the number of biogas plants in Europe, the consumption and trade of pellets, the production capacity of biofuels and other key information to help break down and clarify the complexity of a sector in constant evolution.

In 2017, the Report was rewarded by the European Association Awards for being the 'best Provision of Industry Information and Intelligence', a recognition after a decade of collective work.

THE EUROPEAN ASSOCIATION AWARDS 2017

ABOUT

BIOENERGY EUROPE

A bit of history

Bioenergy Europe is the voice of European bioenergy.

It aims to develop a sustainable bioenergy market based on fair business conditions. Founded in 1990, Bioenergy Europe is a non-profit, Brussels-based international organisation bringing together more than 40 associations and 90 companies, as well as academia and research institutes from across Europe.

Our vision

Bioenergy Europe will be the leading player in ensuring that sustainable bioenergy is a key pillar in delivering a carbon neutral Europe.

Our mission

Bioenergy Europe facilitates the development of a sustainable, strong, and competitive bioenergy sector through:

- Promotion towards European policymakers and stakeholders for awareness, acceptance, and reputation of bioenergy.
- Promote the development of consistent, realistic, and sustainable bioenergy scenarios in the heat, electricity, and transport sectors.
- Pro-active proposals to develop more favourable European legislation.
- Market intelligence to support decision making.
- Services to members, including support to advocacy at a national level.
- Tools, including certification schemes, to sustain market growth and credibility.
- Industry collaboration throughout the entire supply chain.
- Promotion of efficient and innovative technologies within the bioeconomy.

2007
First Statistical Report published

2009
+ analysis on the National Renewable Energy Action Plan
+ (108 pages)

2010
89 pages

2011
+ pellet chapter
+ (108 pages)

2012
+ statistics on ENplus®
+ 2700 downloads
+ (124 pages)

2013
+ socio-economic indicators
+ 2600 downloads

2014
+ EPC European Wood Pellet
+ Overview + expert's view
+ 3000 downloads
+ 158 pages

2015
+ statistics on wood chip consumption
+ 200 page report on bioenergy support scheme in Europe
+ key findings report
+ 3500 downloads

2016
+ chapter on environmental impact of bioenergy
+ projections on bioheat & bioelectricity
+ awarded as 'the Best Provision of Industry Information & Intelligence'by the European Association Award
+ 4000 downloads

2017
+ updated information on bioelectricity / bioheat market & support schemes in all EU28 Member States
+ a seperate report on ENplus®

2018
+ report available to the public, free of charge
+ emphasis on providing transparent data & sharing knowledge to support private & public initiatives to promote bioenergy
+ 300 pages

2019
+ Bioenergy Europe publishes 7 focussed reports published throughout the year

2023

OUR ACTIVITIES

Bioenergy Europe carries a wide range of activities aimed at supporting its members on the latest EU and national policy developments. Bioenergy Europe works to voice their concerns to EU and other authorities, including, advocacy activities in key policy areas as well as the organisation of dedicated working groups.

Working Groups

Bioenergy Europe's working groups act as a platform for members to discuss common issues and exchange information on the state of play of bioenergy.

There are currently 9 active working groups:

- Agro-biomass;
- Competitiveness;
- Domestic Heating;
- Pellets;
- Sustainability;
- Wood Supply;
- Carbon Dioxide Removals;
- Task Force National Advocacy;
- Task Force Communications.

Certification Schemes

Thanks to the experience and authority acquired over the last 20 years, Bioenergy Europe has successfully established two international certification schemes to guarantee high quality standard for fuels, namely, EN*plus*®, as well as the latest edition in the certification for sustainable bioenergy: SURE.

Network

Bioenergy Europe is the umbrella organisation of the European Pellet Council (EPC). This network has been created thanks to the dynamics of Bioenergy Europe members. Today, this network brings together bioenergy experts and company representatives from all over Europe and beyond.

The European Pellet Council (EPC), founded in 2010, represents the interests of the European wood pellet sector. Its members are national pellet associations or related organisations from over 17 countries.

EPC is a platform for the pellet sector to discuss issues relating to the transition from a niche product to a major energy commodity. Issues include the standardisation and certification of pellet quality, safety, security of supply, education and training, and the quality of pellet-using devices. EPC manages the EN*plus*® quality certification.

EN plus®

SURE
SUSTAINABLE RESOURCES
Verification Scheme GmbH

EUROPEAN PELLET COUNCIL
A NETWORK OF BIOENERGY EUROPE

For further information on Bioenergy Europe's Networks & Certification Schemes visit www.bioenergyeurope.org

OUR

MEMBERS*

As the common voice of the bioenergy sector, Bioenergy Europe, aims to develop a sustainable bioenergy market based on fair business conditions and does so by bringing together national associations and companies from all over Europe – thus representing more than 5000 indirect members, including companies and research centres.

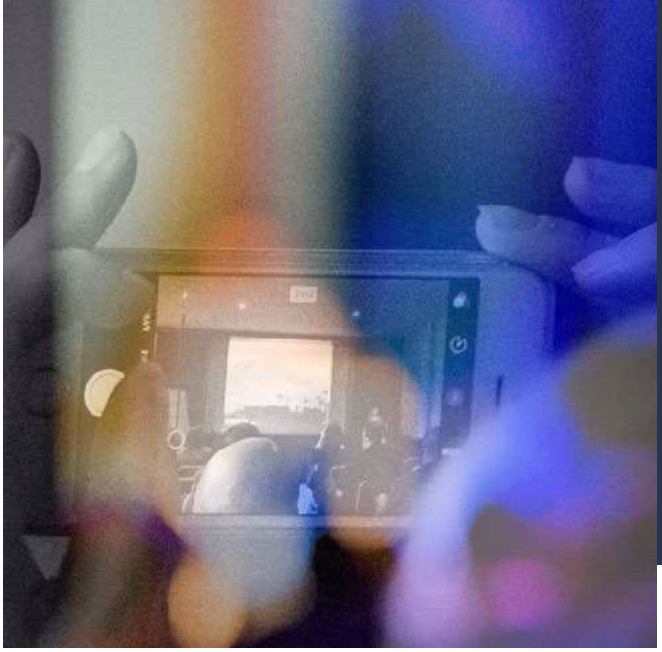
Associations

Academia

*Members as of June 2023.

Companies

ENHANCED VISIBILITY & SPONSORSHIP OPPORTUNITIES



Enhanced Visibility

(Exclusive to Bioenergy Europe Members)

This opportunity entails a free of charge promotion for Bioenergy Europe members only. This offer includes the chance to display your organisation's logo as well as a featured 100-word description, placed in 1 of the 7 annual statistical reports of your choice.

This enhanced visibility opportunity is limited and interested members are required to contact the team via info@bioenergyeurope.org

You can find further information about this opportunity on the Bioenergy Europe website.

Sponsorship

Bioenergy Europe offers a sponsorship opportunity for the Statistical Report where you will have the opportunity to have the highest level of visibility. In addition to having full page adverts in all 7 statistical reports, you will also have your logos placed on publications, policy briefs, and enjoy content-driven tweets, as well as Linkedin posts, amongst a variety of additional advantages.

You can find more information in regard to the sponsorship on our website or get in touch with our Team at info@bioenergyeurope.org

*Bioenergy Europe Members receive a 50% discount on this sponsorship package

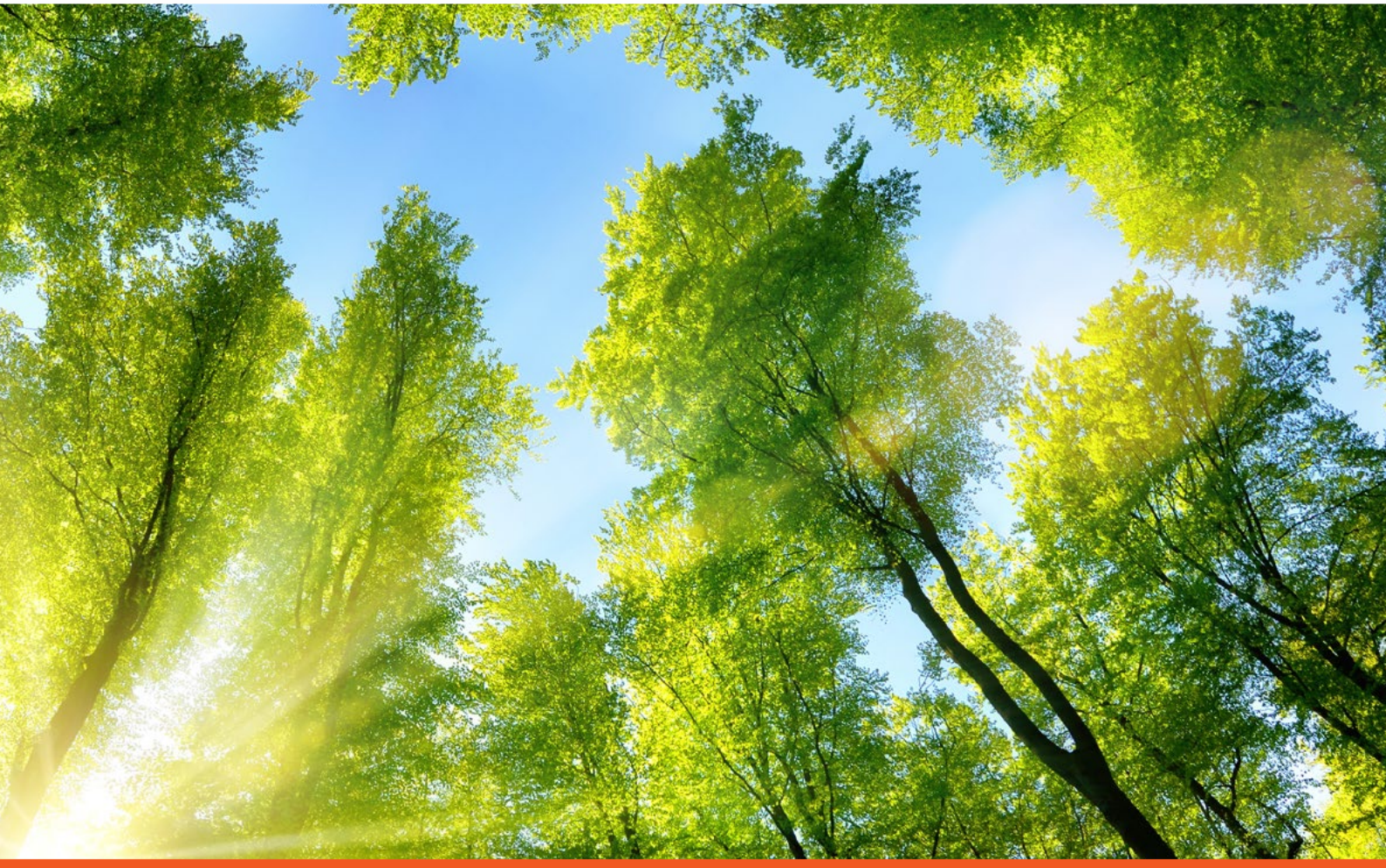
Bioenergy Europe
Place du Champ de Mars 2A
1050 Brussels
T : +32 2 318 41 00
info@bioenergyeurope.org

www.bioenergyeurope.org

SURE

SUSTAINABLE RESOURCES
Verification Scheme GmbH

Learn more here: https://sure-system.org/en/



enSURE compliance with RED II sustainability requirements.

SUSTAINABLE RESOURCES Verification Scheme is a worldwide certification scheme to ensure sustainable use of biomass and biogas for the production of electricity or heating and cooling in compliance with the REDII criteria.

SURE provides a solution to all economic operators within the bioenergy sector: agricultural and forest biomass producers, producers of biomass fuel from waste and residues, pellet producers, logistic operators, biomass fuel traders, biomass and biogas plants.

SURE offers certification solutions applicable to economic operators in all stages of the supply chain wishing to demonstrate their compliance with RED II criteria, so there's no need for other 'sustainability' certifications.

CPL
ACTIVATED CARBONS
Part of CPL Industries

CPL Activated Carbons, part of the CPL Industries Group, is a leading international supplier of purification solutions for biogas and biomethane operators. Activated carbons are used to remove siloxanes and other VOCs as well as hydrogen sulfide and other unwanted contaminants from biogas streams. As well as our range of high quality FiltraCarb® activated carbons, we can also supply our VOCSorber® mobile filter vessels, offering a convenient 'plug & play' solution to biogas companies. In most cases, spent carbons can be recycled via thermal reactivation at our UK facility. ISO9001 and ISO14001 registered, and EU/UK REACH compliant.

www.activated-carbon.com

EN*plus*® is the world-leading quality certification scheme for wood pellets that systematically certifies the entire supply chain, from the early stages of production to the delivery process. The EN*plus*® requirements go beyond those of the international standard ISO 17225-2 to guarantee optimum efficiency. In addition, all actors along the supply chain follow detailed guidelines to ensure consistent quality. In more than ten years of existence, the EN*plus*® scheme has certified more than 1200 companies in 50 countries and has become a widely recognized brand trusted by professionals and consumers alike.

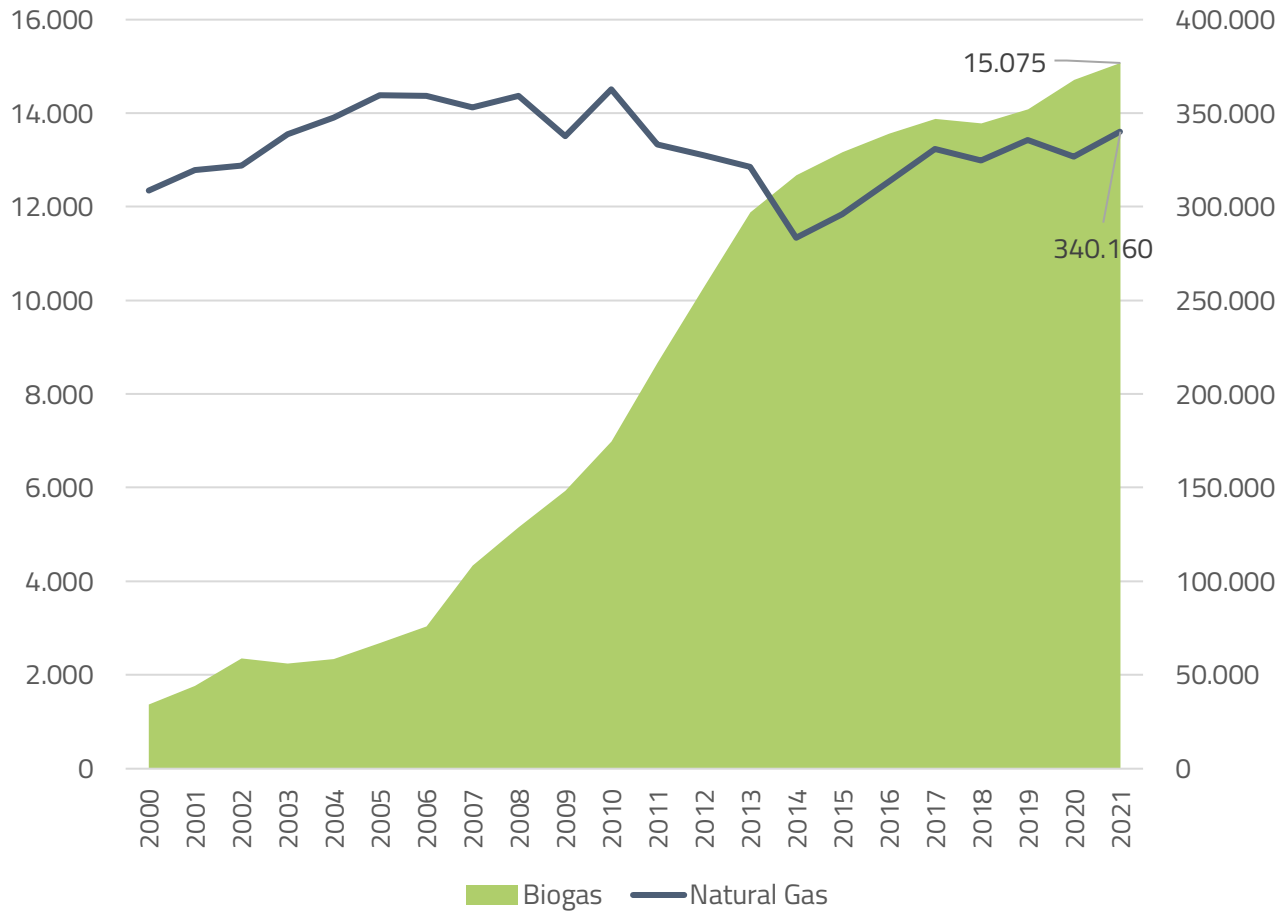
https://enplus-pellets.eu/

2. Biogas and biomethane in Europe

Biogas is an important renewable energy source that plays a significant and growing role in the transition to a low-carbon economy in Europe. It can be produced through several different pathways, the most common being the anaerobic digestion or fermentation of organic waste materials such as agricultural residues, food waste, and sewage sludge. Biogas can then be further upgraded to biomethane, which is compatible with the existing natural gas infrastructure and can be used for heat, electricity generation, or as a transportation fuel. This compatibility is possible thanks to the similar characteristics that biomethane and natural gas share, like the chemical structure (mostly composed of methane) and energy content. The process of upgrading biogas to biomethane involves removing impurities, primarily carbon dioxide (CO_2) and trace contaminants like hydrogen sulfide (H_2S) and moisture, resulting in high-quality biomethane that adheres to the standards. The environmental benefits of biomethane in existing natural gas infrastructures are significant. Its use substantially decreases the carbon footprint of gas consumption, as biomethane displaces fossil natural gas. Moreover, biomethane production from organic waste materials aids waste management and mitigates methane emissions, a potent greenhouse gas. This integration also creates market opportunities, as biogas producers can invest in upgrading facilities to produce biomethane. By utilizing organic waste streams, a circular economy is fostered, encouraging sustainable waste management practices.

As displayed by Figure 1 below, the growth of the biogas sector in Europe has been quite impressive in the last few decades, especially since the early 2010s. In 2006, the gross inland consumption of biogas was around 3.000 ktoe while in 2021 this value reached 15.075 ktoe, corresponding to a 5-fold increase. On the other hand, natural gas consumption was actually higher in 2006 (359.123 ktoe) than in 2021 (340.160 ktoe) highlighting the ongoing efforts to phase-out fossil fuels in the EU.

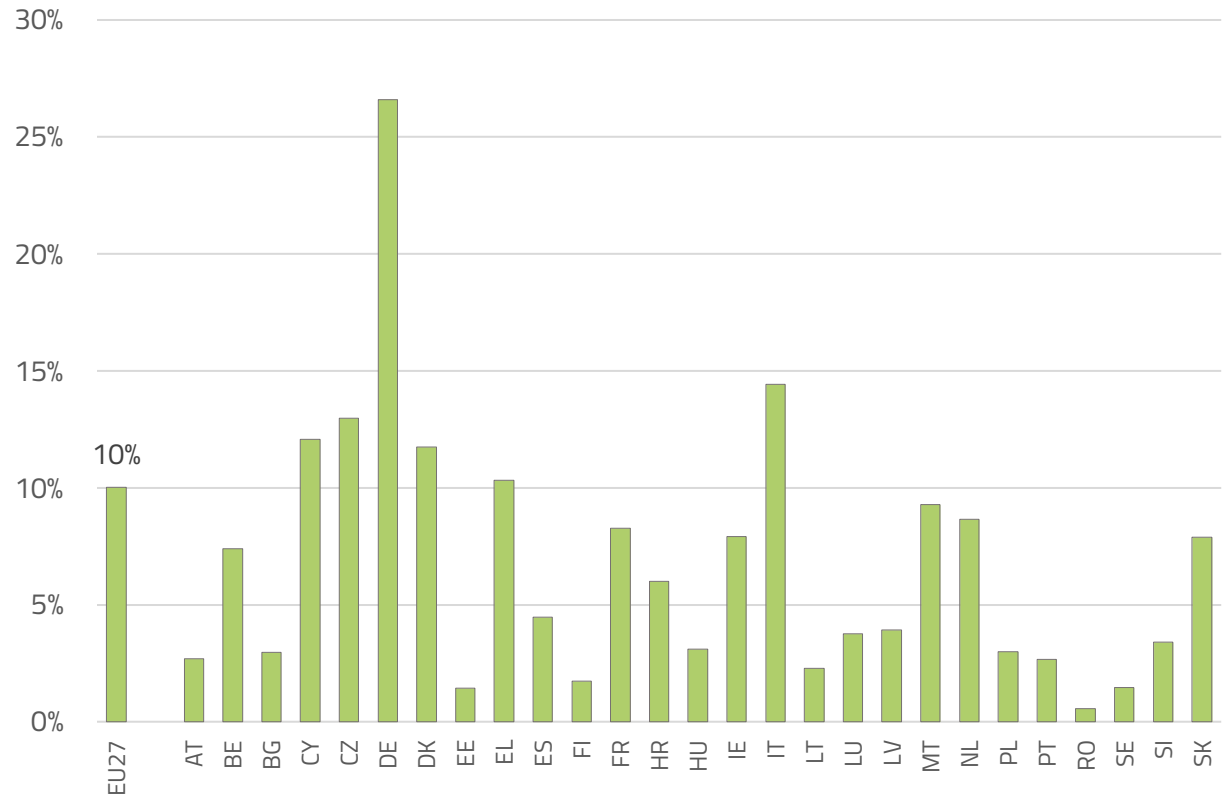
Figure 1 Evolution of the gross inland energy consumption of biogas (left axis) and natural gas (right axis) in EU27 (ktoe)



Source: Eurostat
Note: Possible discrepancies with other data sources like EBA due to methodological differences

This impressive growth in biogas consumption in recent decades has been accelerated by favourable political measures that have promoted its use in the EU's energy mix. Included among these measures, is the action plan developed by the European Commission, REPowerEU, created as a response to the Russian-Ukrainian war and aiming at reducing the EU's dependency on Russian natural gas.

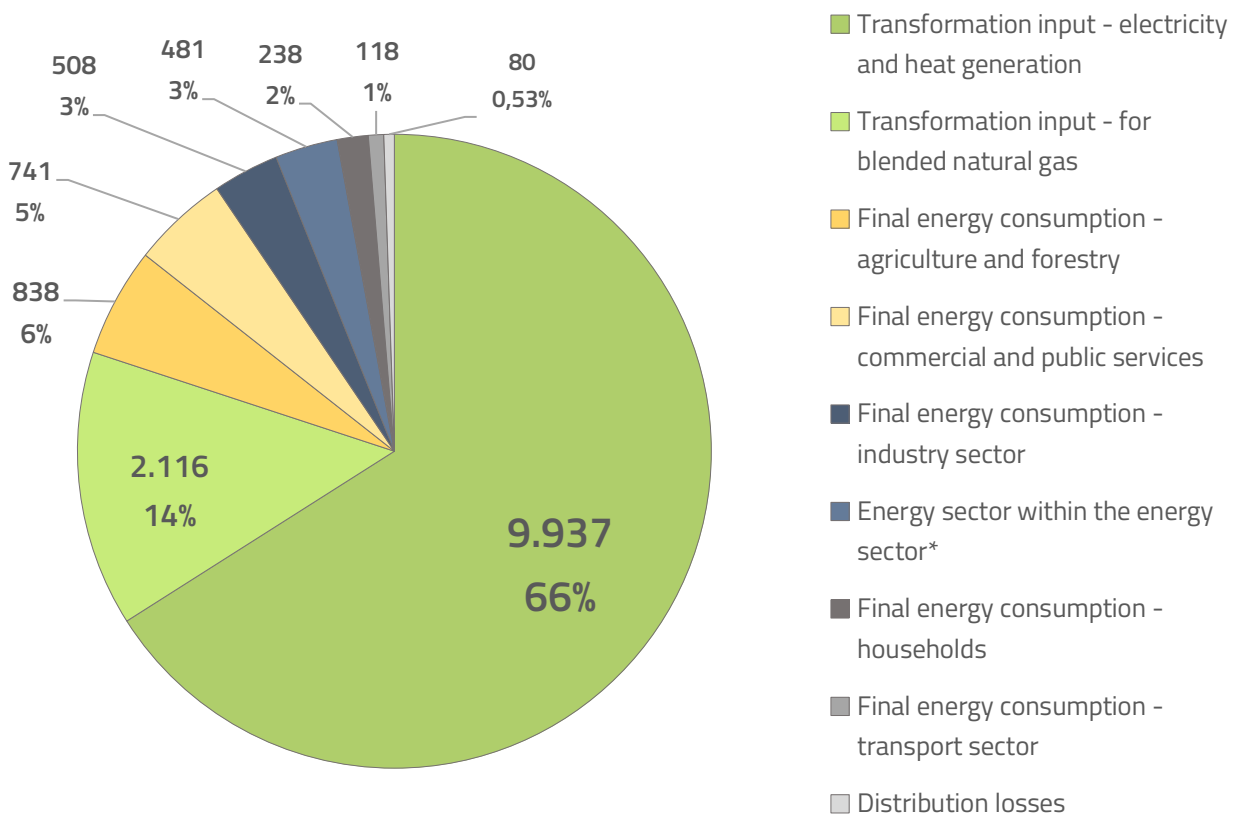
Figure 2 Share of biogas of the total bioenergy gross inland consumption in 2021 (%)



Source: Eurostat
Note: Possible discrepancies with other data sources like EBA due to methodological differences

Figure 2 above shows the importance of biogas when compared to the total bioenergy sector (solid, liquid, and gaseous forms of bio-based materials and waste) in each of the Member State. Germany leads both in terms of relative shares and absolute consumption, with 27% of their total bioenergy consumption being biogas which corresponds to an absolute consumption of 7.645 ktoe. The second largest consumer (also both in absolute and relative terms) is Italy with 14% or 2.078 ktoe. The significant difference in absolute consumption between the first and second country illustrates the importance of the biogas sector in Germany, whose consumption represents more than half of the entire EU's (50,7%). This is mostly due to strong support schemes from German authorities in the past, like a flexibility premium, biogas auctions to facilitate cost-effective development of the sector, biomethane feed-in tariffs, tax reduction for self-consumption of biogas-generated electricity, etc. It's important to note, however, that support schemes are currently less favourable than before in Germany, and biogas production has been stagnating in the recent years. Currently throughout the EU, support measures for the sector are mainly focusing on biogas upgrading (to biomethane) which will probably result in a switch of dominance in end uses in the years to come.

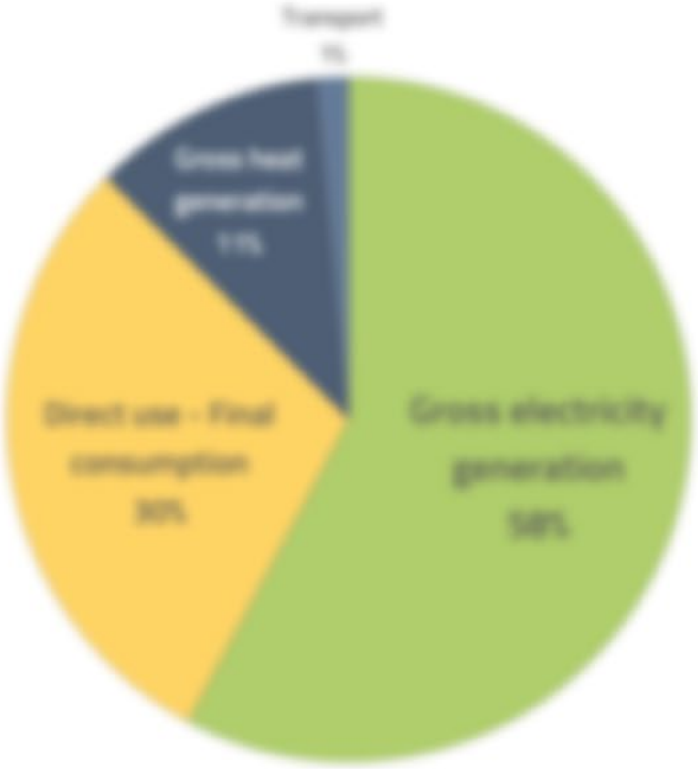
Figure 3 Biogas gross inland energy consumption by end-use in 2021 in EU27 (ktoe and %)



Source: Eurostat
Note: Possible discrepancies with other data sources like EBA due to methodological differences

When looking at the detailed shares of end-uses for biogas as displayed in Figure 3, it is clear that electricity and heat generation represents the majority, around two thirds, of biogas use. Looking at end-use from just a use perspective and ignoring the different sectors shows that, as illustrated by Figure 4 below, around a third of final biogas consumption is directly used (within different sectors: commercial and public services, agriculture and forestry, industry, residential) while around 1% is directly used for transport purposes, mainly as biomethane.

Figure 4 Gross final energy consumption from biogas by end-use in EU27 in 2021 (%)



Source: Eurostat

Table 1 below provides a detailed breakdown per Member State of the absolute final energy consumption from biogas per types of end-uses in 2021 (Electricity, centralized and decentralized heat, and transport).

More than two thirds of the biogas for transportation purposes is being used in Sweden, thanks to the country's well-established biomethane production allowing it to be used extensively in heavy duty vehicles (like waste collection) and buses. Furthermore, among all EU Member States, Sweden has set the most ambitious renewable transport target in its National Energy and Climate Plans (NECPs) with a share of 48% of renewables in the transport sector by 2030 mainly thanks to biomethane and the increased use of electric vehicles.

Table 1 Gross final energy consumption from biogas by end-use in EU27 Member States in 2021 (ktoe)

	Gross final energy consumption	Gross electricity generation	Derived heat generation	Direct use - final consumption	Transport
EU27	7.828	4.523	863	2.324	118
AT	82	52	5	25	0
BE	202	84	21	97	0
BG	33	19	4	10	0
CY	11	5	1	5	0
CZ	412	223	18	153	19
DE	3.969	2.579	260	1.131	0
DK	125	53	49	21	2
EE	17	1	2	3	12
EL	74	39	0	35	0
ES	187	84	0	103	0
FI	153	28	21	98	5
FR	612	271	86	255	0
HR	55	38	17	0	0
HU	42	25	3	14	0
IE	27	15	0	12	0
IT	1.025	699	291	35	0
LT	26	13	2	10	0
LU	9	5	3	1	0
LV	52	25	20	7	0
MT	1	1	0	0	0
NL	219	70	7	142	0
PL	223	112	23	88	0
PT	30	23	0	7	0
RO	14	6	5	3	0
SE	127	1	5	41	79
SI	15	9	4	3	0
SK	85	42	18	25	0

Source: Eurostat

Table 2 Relatives shares by end-use of the gross final energy consumption of biogas in EU27 Member States in 2021 (%)

	Gross electricity generation	Derived heat generation	Direct use - final consumption	Transport
EU27	57.8%	11.0%	29.7%	1.5%
AT	62.9%	5.8%	30.9%	0.4%
BE	41.5%	10.6%	47.9%	0.0%
BG	56.7%	11.7%	31.6%	0.0%
CY	45.2%	7.8%	47.0%	0.0%
CZ	54.1%	4.3%	37.0%	4.6%
DE	65.0%	6.5%	28.5%	0.0%
DK	42.3%	39.5%	16.7%	1.5%
EE	8.1%	9.0%	15.3%	67.6%
EL	53.2%	0.0%	46.8%	0.0%
ES	45.0%	0.0%	55.0%	0.0%
FI	18.5%	13.9%	64.1%	3.5%
FR	44.3%	14.0%	41.7%	0.0%
HR	68.5%	30.6%	0.8%	0.0%
HU	60.2%	6.5%	33.3%	0.0%
IE	54.5%	0.0%	45.5%	0.0%
IT	68.2%	28.4%	3.5%	0.0%
LT	51.7%	9.2%	39.2%	0.0%
LU	56.9%	30.3%	12.8%	0.0%
LV	48.7%	37.9%	13.4%	0.0%
MT	56.1%	0.0%	43.9%	0.0%
NL	32.0%	3.4%	64.6%	0.0%
PL	50.4%	10.3%	39.3%	0.0%
PT	76.1%	0.0%	23.9%	0.0%
RO	46.4%	34.2%	19.5%	0.0%
SE	0.8%	4.2%	32.6%	62.5%
SI	57.9%	24.3%	17.8%	0.0%
SK	49.5%	20.9%	29.5%	0.0%

Source: Eurostat

The figures below track the evolution of the number of biogas and biomethane production sites in the EU as well as in a select number of European countries (certain non-EU members are also included, like Norway, Serbia, Switzerland, Ukraine and the United Kingdom). Figure 5 records the evolution of the number of both biogas and biomethane plants in Europe and underlines quite an important trend currently underway in the sector: the conversion of biogas production plant to biogas upgrading facilities producing biomethane. Indeed, as stated previously in this report, there are multiple advantages to biomethane as opposed to other types of biogases (properties close to natural gas allowing to use existing infrastructure and therefore saving money in investments) and the EU has demonstrated its ambitions by announcing a 35 bcm (billion cubic meters) production target by 2030 in the REPowerEU plan developed by the Commission in response to the Russian-Ukrainian conflict. To support this, the number of biomethane plants are growing rapidly, and it's important to note that those are usually bigger when compared to regular biogas plants, and therefore provide a bigger contribution to the EU's increasing production capacity.

Figure 5 Evolution of the number of biogas and biomethane plants in Europe*

Source: EBA

*Europe includes the EU Member States as well as non-EU countries located on the continent (NO, RS, CH, UK, UA)

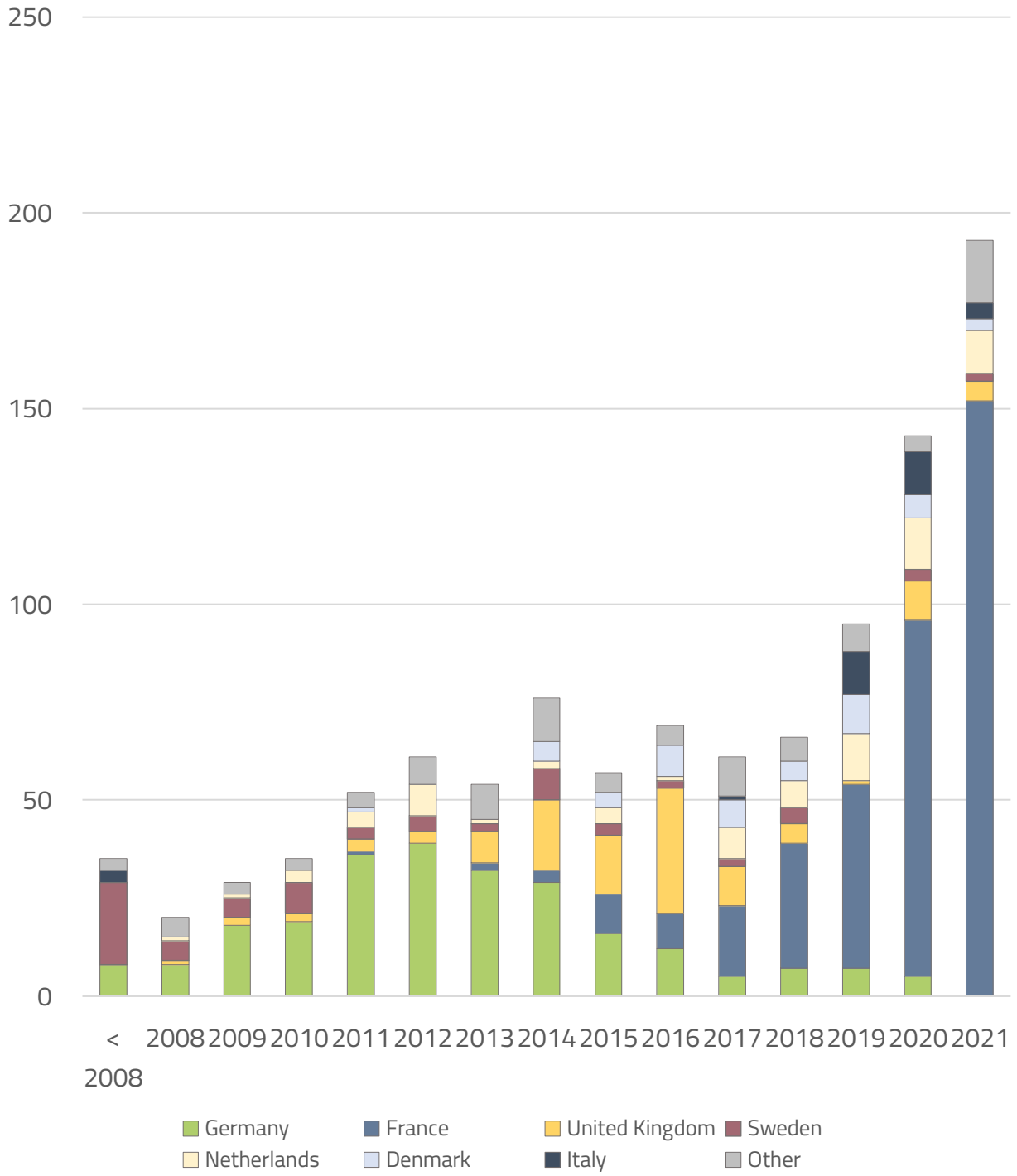
This is also confirmed by Figure 6, providing the development of the number of biomethane plants in Europe for the last 10 years. As can be seen in the chart, the absolute number of new installations is increasing faster than it used in 2012. Indeed, that year was marked by 61 new biomethane plants going online, while 2021 records 184 new ones entering operation.

Figure 6 Development of the number of biomethane plants in Europe

Source: EBA

Figure 7 below provides geographical information on those new biomethane plants entering operation. As can be seen on the chart, Germany used to be the most dynamic country in terms of biomethane facilities, reaching its peak in 2012 with 39 new production plants. However, it the recent years, France took the lead as fastest growing market for biomethane production, with an impressive 152 new plants being opened in 2021. Several different factors have driven this development, mainly a strong regulatory support including a Feed-in Tariff (FiT) system providing stable remuneration and incentivizing the injection of biomethane into the natural gas grid. France is also well known for its very developed agricultural sector, and biomethane production presents good opportunities for rural and agricultural development since the plants are mostly located close to the fields. This enables the use of by-products as well as improving the diversification of the farms' income and also providing high level jobs for local communities.

Figure 7 Number of new biomethane plants in Europe each year, 2008-2022 overall and per country



Source: EBA

Figure 8 also covers newly installed biomethane plants in Europe, but this time providing information on the feedstock involved rather than the geographical location. As can be seen, the ongoing trend is a shift from a dominant use of energy crops (until 2016)

Figure 8 Total number of newly installed biomethane plants in Europe each year, 2008-2022, overall and per feedstock type

Source: EBA

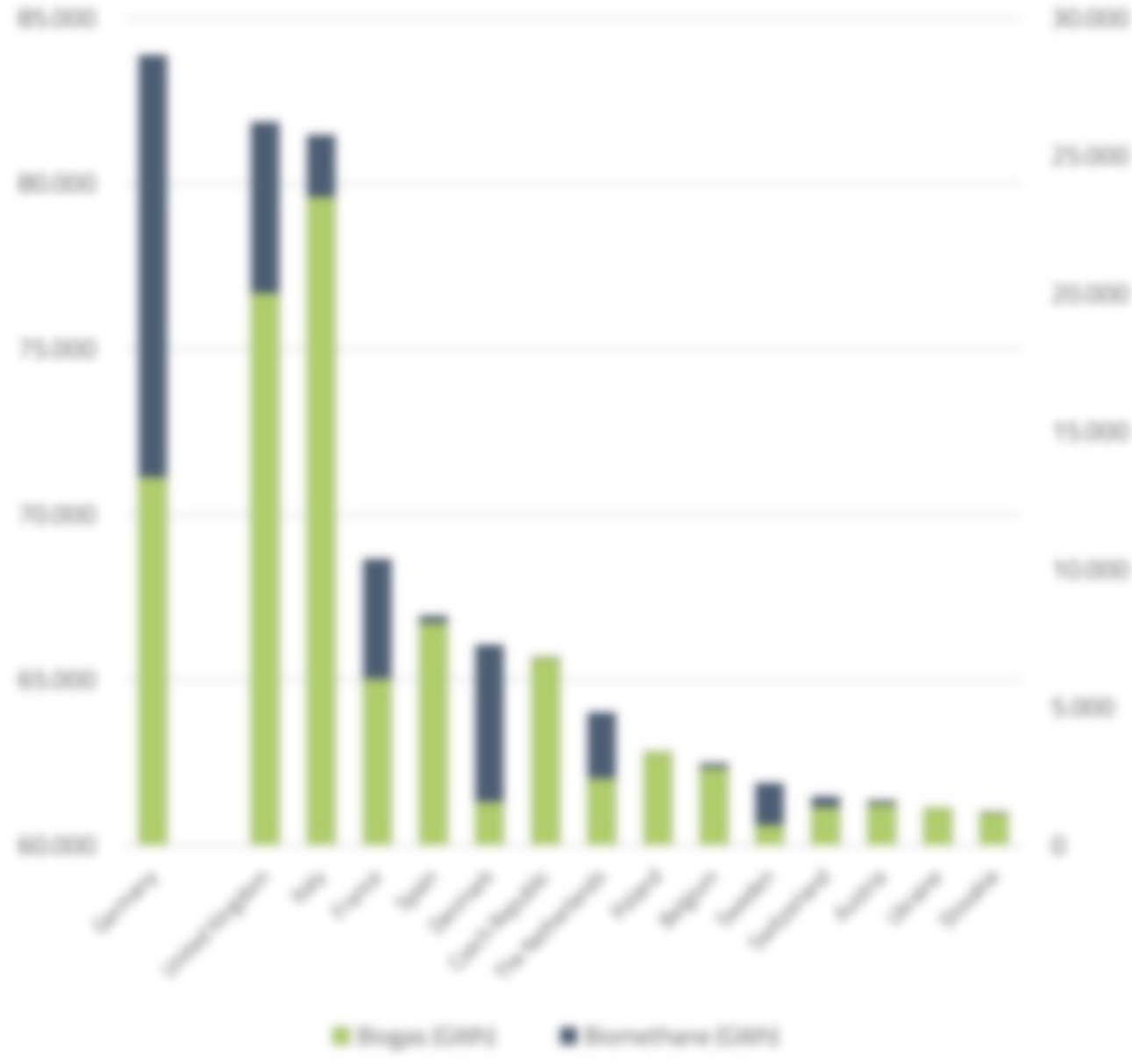
Figure 9 Evolution of Biogas and Biomethane production in Europe (bcm)

Source: EBA

Figure 9 displays the evolution of biogas and biomethane production in Europe and some interesting points can be noted. First, we see that biogas production has been stagnating since 2016. Indeed, the small fluctuations occuring between 2016 and 2021 regarding biogas production are more due to methodology changes (counting methods, new types of feedstocks being recorded, etc) than to actual drops in activity. On the other hand, biomethane production kept on increasing through every year displayed in the chart, going from around half a bcm in 2011 to 3.5 in 2021, corresponding to a seven-fold increase. When taking both into consideration, it's worth noting that production has never been higher than in 2021, with a total of 18.4 bcm of bio-based gases produced therefore underlying that most of the newly installed anaerobic digestion plants went for upgrading the biogas to biomethane. Furthermore, in some cases biogas plants are already being converted towards biomethane facilities.

Figure 10 below provides a similar kind of information, but at country level. This chart confirms the trend displayed by figure 7 regarding the launch of new biomethane plants. Indeed, Germany is by far the largest producer of biomethane as of today, thanks to the consequent number of production sites being opened from 2008 up until 2017. Based off this, it is relatively safe to expect an important growth in biomethane production in France in the upcoming years.

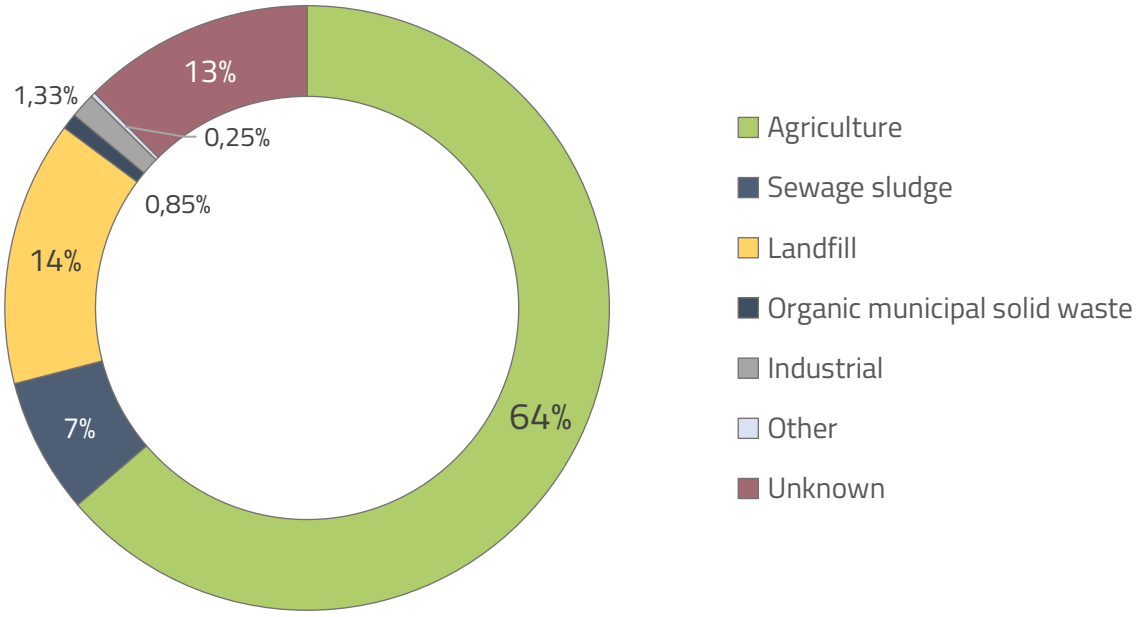
Figure 10 Combined biomethane and biogas production per country in descending order, top 15 countries (GWh), Germany on another axis



Source: EBA

Looking at Figure 11, most of the European biogas production comes from agricultural materials (64% of the total production), followed by landfill waste (organic) representing 14% of the production.

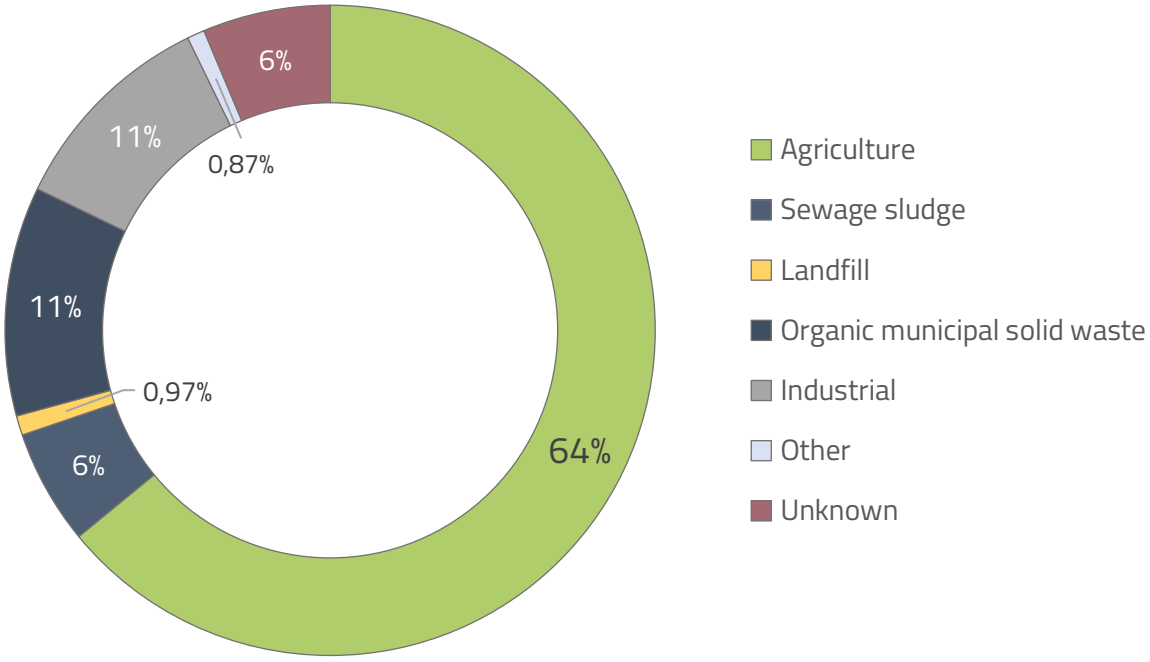
Figure 11 Percentage of European biogas production per plant type in 2021



Source: EBA

As seen in Figure 12 below, the structure is relatively similar for biomethane production, as a similar share is also coming from agricultural products (64%). However, it can be seen that biomethane production involves much more industrial waste (food and drink mostly) than for biogas (11% for biomethane vs 1,33% for biogas) and much less material from landfilling (0,97% for biomethane vs 14% for biogas).

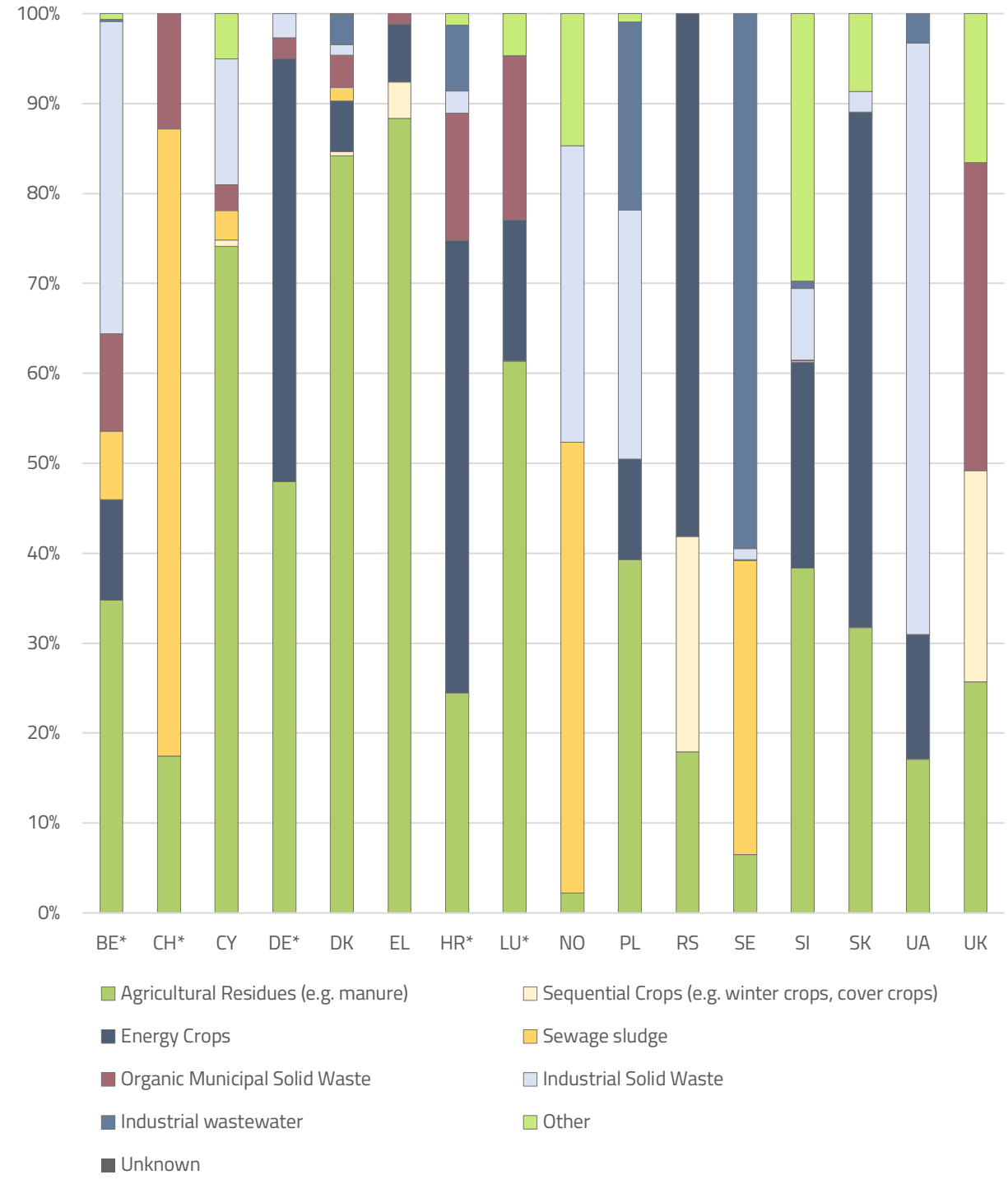
Figure 12 Percentage of European biomethane production per plant type in 2021



Source: EBA

Looking at Figure 13 below, the feedstock types involved in biogas production vary depending on the considered country. This is due to a variety of factors like geographical conditions, agricultural practices, policy frameworks or local resources availability. These variables influence the choice of feedstock for biogas production, with the goal of maximizing effectiveness, sustainability, and financial viability.

Figure 13 Relative use of different feedstock types for biogas production in selected European countries in 2021



Source: EBA

*Data for 2020

3. Annexes

Table 3 Country Codes

EU27	European Union (27 members)
AT	Austria
BE	Belgium
BG	Bulgaria
CY	Cyprus
CZ	Czech Republic
DE	Germany
DK	Denmark
EE	Estonia
EL	Greece
ES	Spain
FI	Finland
FR	France
HR	Croatia
HU	Hungary
IE	Ireland
IT	Italy
LT	Lithuania
LU	Luxembourg
LV	Latvia
MT	Malta
NL	Netherlands
PL	Poland
PT	Portugal
RO	Romania
SE	Sweden
SI	Slovenia
SK	Slovak Republic

Table 4 Symbols and abbreviations

Symbol	Meaning
,	Decimal separator
.	Thousand
N.A.	Data not available

Table 5 Decimal prefixes

10^{1}	Deca (da)	10^{-1}	Deci (d)
10^{2}	Hecto (h)	10^{-2}	Centi (c)
10^{3}	Kilo (k)	10^{-3}	Milli (m)
10^{6}	Mega (M)	10^{-6}	Micro (µ)
10^{9}	Giga (G)	10^{-9}	Nano (n)
10^{12}	Tera (T)	10^{-12}	Pico (p)
10^{15}	Peta (P)	10^{-15}	Femto (f)
10^{18}	Exa (E)	10^{-18}	Atto (a)

Table 6 General conversion factor for energy

to from	1 MJ	1kWh	1 kg oe	Mcal
1 MJ	1	0,278	0,024	0,239
1 kWh	3,6	1	0,086	0,86
1 kg oe	41,868	11,63	1	10
1 Mcal	4,187	1,163	0,1	1

BIOENERGY EUROPE STATISTICAL REPORT 2023

Supported by:

SUREV
SUSTAINABLE RESOURCES
Verification Scheme GmbH

In collaboration with:

EBA
European Biogas Association

Bioenergy Europe
Place du Champ de Mars 2A
1050 Brussels
T : +32 2 318 41 00
info@bioenergyeurope.org

www.bioenergyeurope.org