EBA
European Biogas Association

Technical analysis of the 2018 and 2021 ICCT reports on the role of biomethane as a renewable energy source

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Biomethane is a cost-efficient, carbon neutral – in some cases even carbon negative – renewable fuel that all countries will have to embrace as they move towards decarbonisation. In this publication, the EBA examines the arguments presented by the ICCT regarding the potential of biomethane in Europe. There is a need for clear, current and reliable information about the biogas and biomethane industry in Europe, in particular regarding production levels and expected development, to ensure that the data in circulation is accurate and valid.

The following two ICCT reports are analysed here:

1) Searle, S., Baldino, C., Pavlenko, N., (2018). What is the role for renewable methane in European decarbonization? The International Council on Clean Transportation (ICCT).
2) Searle, S., Baldino, C., Pavlenko, N., (2021). Factsheet: Biomethane potential and sustainability in Europe, 2030 and 2050. The International Council on Clean Transportation (ICCT).

In order to support this analysis, the arguments formulated in the two ICCT reports are set against data obtained from the studies listed below, among others (further references are given in the footnotes):

- European Biogas Association (EBA) (2021). Statistical Report of the European Biogas Association 2021.
- Gas for Climate Consortium (2019). The optimal role for gas in a net-zero emissions energy system.
- Cerre (2019). Future markets for renewable gases & hydrogen.
- International Energy Agency (IEA) (2020). Outlook for biogas and biomethane: Prospects for organic growth.
- Eurogas (2020). European Carbon Neutrality: The Importance of Gas.
- European Commission (2016). Optimal use of biogas from waste streams – An assessment of the potential of biogas from digestion in the EU beyond 2020.
- European Environmental Bureau (EEB) (2021). The Reference Environmental Standards for Energy Techniques (RESET) guidance.
- ENGIE (2021). Biomethane to support the energy transition: potential and cost in 2050.
- European Commission (2018). A Clean Planet for all. A European long-term strategic vision for a prosperous, modern, competitive and climate neutral economy. Communication COM (2018), 773.

Biomethane has the capacity to meet 30 – 40% of the projected EU gas demand in 2050

The ICCT estimates a technical potential of 14 billion cubic meters (bcm) of biomethane production in the EU-27 by 2030 and 21 bcm by 2050. The EBA Statistical Report of 2021,

however, shows that combined biogas and biomethane production in Europe had already reached 18 bcm by the end of 2020, with continuous growth expected in the short and long term. The EBA Statistical Report[1] compares data published by 5 different entities (Gas for Climate, the International Energy Agency, Cerre, UGhent and the EBA working group wastewater), all of which consider only sustainable feedstock supplies. According to the analysis carried out for the EBA report, the biogas and biomethane sectors combined can double production by 2030, reaching a projected total output of around 35 bcm. By 2050, production can be expected to increase at least fivefold, reaching approximately 95 bcm, with some estimates as high as 160 bcm.

One of the main differences between the EBA estimates and the figures presented in the ICCT reports is that the ICCT reports consider only biomethane from gasification, livestock manure and wastewater sludge. They do not take into account the biomethane potential of other sustainable feedstocks such as sequential crops, industrial wastewaters, municipal organic waste streams or food waste, which are widely used in Europe. Table 1 highlights the differences between the figures put forward in the ICCT reports and those calculated by the EBA, by setting out the contrasting projected values for biomethane potential per feedstock type in 2050. The full EBA analysis can be consulted in the EBA Statistical Report of 2021.

Feedstock type	Potential according to ICCT reports (bcm)	Potential according to EBA Statistical Report based on analysis of various studies (bcm)
Livestock manure	10	23
Wastewater sludge	1	3
Wood residues via gasification	10	36
Sequential crops	0	43
Agricultural residues	0	27
Food waste	0	11
Industrial wastewater	0	13
Total	21	158

Table 1: *Comparison of the ICCT and EBA figures for potential biomethane production per feedstock type in 2050 (bcm).*

The potential biogas and biomethane production for 2030, as calculated by the various studies included in the EBA's analysis, ranges between 35 and 42 bcm. The European Commission, for example, estimates that biogas production could reach 35 bcm by 2030[2]. This is considerably more than the 14 bcm predicted by the ICCT, which was surpassed by the actual combined biogas and biomethane production back in 2020. Even as far ahead as 2050, the predictions from Eurogas (95 bcm) and the Gas for Climate Consortium (95 bcm) are very similar; and 95

1 European Biogas Association (EBA) (2021). Statistical Report of the European Biogas Association 2021.
2 European Commission (2018). A Clean Planet for all. A European long-term strategic vision for a prosperous, modern, competitive and climate neutral economy. Communication COM (2018), 773.

bcm equates to 24% of the natural gas consumption of the EU in 2020. The International Energy Agency (IEA) considers Europe's overall biomethane potential to be 125 bcm. According to the IEA, this potential is reachable by 2040. When the average projected output per feedstock is considered, the total estimated potential for biogas and biomethane production reaches 160 bcm (ENGIE, EBA). **In conclusion, assuming that the EU's total gas consumption reduces according to predictions made by Gas for Climate[3], it is estimated that biomethane will be able to meet 30 – 40% of total EU gas demand by 2050. This, again, is considerably higher than the 12% of the projected 2050 EU gas demand that the ICCT sees potentially being met by biomethane.** Furthermore, the projected overall gas demand implicit in the ICCT reports is significantly lower than the predictions made in other studies (such as that by Gas for Climate). The ICCT estimate a biomethane potential of 21bcm in 2050: if that were to represent 12% of the gas demand in 2050, it would amount to a total projected EU gas demand of just 2000TWh (189 bcm). This is around 40 – 50% lower than figure posited in the Gas for Climate study cited above, which anticipates a 2050 EU gas demand in excess of 4000TWh (378bcm)[3].

Locally produced biomethane is a long-term solution

By 2050, biomethane will be able to meet 30 – 40% of the anticipated gas demand in the EU. **If both biomethane and hydrogen are embraced as renewable gas solutions, gas consumption in Europe can be fully decarbonised.** Biomethane is a renewable energy source that is already developed and ready to go: it is highly significant in both the short- and the long term and brings with it environmental benefits that no other renewable option can currently offer. For instance, the use of manure and sewage sludge to obtain biomethane avoids methane emissions that would otherwise be released into the atmosphere; digestates obtained can replace synthetic fertilisers and restore soils; and the carbon dioxide stream can be captured and stored or captured and used. All available renewable energies require a certain amount of investment. Biomethane is the cheapest decarbonising solution: it can be used without the need for any changes in transmission and distribution infrastructure or end-user equipment and is fully compatible for use in natural gas vehicles. Biomethane can deliver the energy system benefits of natural gas while being carbon-neutral or even carbon negative.

EU feedstocks allow for significant sustainable biogas growth in the coming decades

The ICCT reports state that in most countries, feedstock availability will eventually limit biomethane production. Feedstock availability is not an imminent issue, however, and will not limit biomethane expansion over the coming decades. The various studies analysed in the EBA Statistical Report put forward different scenarios for the growth of sustainable

[3] Peters, Daan, et al. (2020) Gas Decarbonisation Pathways 2020–2050: Gas for Climate.

feedstock supply over time. Improved waste management and collection programmes will increase the supply of food waste. Next, both the GfC and IEA studies consider the practice of sustainable sequential cropping. This is defined as the cultivation of a second crop before or after the harvest of the main food or feed crop on the same agricultural land during an otherwise fallow period[4]. Sequential cropping does not impact on existing food or feed supply as no food or feed is used for biogas production and sequential crops do not displace primary crops – they complement them. The implementation of sequential cropping schemes also results in soil enhancement (C-Farming and soil biodiversity), as well as supplying a significant amount of sustainable feedstock. Alongside sequential cropping, gasification opens up the possibility of using two additional sources of solid and sustainable biomass feedstock, namely forestry residues and wood processing residues, following a clear cascading principle of use.

The ICCT report of 2018 and the factsheet published in July 2021 both state that approximately half of the EU's current biogas production comes from silage maize, which is an energy crop. Actual data presented in the latest EBA Statistical Report, however, shows that, of the new biomethane plants built in the last five years (2017 – 2021), not one uses energy crops as the main feedstock. This is highlighted in Figure 2.21. Plants in the countries currently leading growth in the sector, such as France, operate principally on agricultural residues and to a lesser extent also on organic municipal solid waste and sewage sludge. This trend is expected to continue as several countries have set up regulations to incentivise or require biogas and biomethane production to use sustainable biomass[5,6].

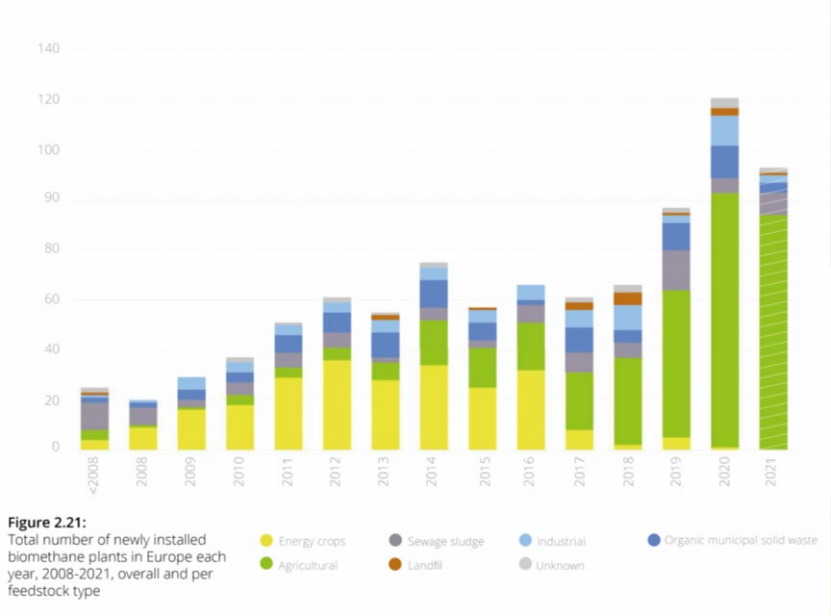

Figure 2.21:
Total number of newly installed biomethane plants in Europe each year, 2008-2021, overall and per feedstock type

Source: EBA Statistical Report

[4] Gas for Climate (2021). The future role of biomethane.
[5] Circular Economy: New rules will make EU the global front-runner in waste management and recycling (https://ec.europa.eu/commission/presscorner/detail/en/IP_18_3846)
[6] Audsley, Eric, et al. (1997). Harmonisation of environmental life cycle assessment for agriculture. Final Report, Concerted Action AIR3-CT94-2028. European Commission, DG VI Agriculture 139.

The infrastructure for biomethane deployment is already there

The ICCT reports argue that biomethane requires dedicated infrastructure, vehicles, and power and heat generators. All renewable energies require some level of investment, however. The advantage of biomethane is the scope for using existing gas infrastructure, such as pipelines, which allows the distribution of biomethane across Europe at a far lower level of investment than other renewable alternatives. The decarbonisation of the gas grid is urgent, and we should not wait for the development of new technologies or the adaptation of infrastructure when we already have solutions to hand. Biomethane is the sustainable alternative available now at the lowest cost.

According to recent data from the EBA Statistical Report, it can be estimated that approximately 87% of the biomethane plants currently active in Europe are connected to the grid, while 13% of European biomethane plants do not so far have a grid connection. This data shows that the sector is already making a very significant contribution to decarbonisation today, as well as having the capacity to play a still greater role in the long term.

The GfC published a study[7] comparing projections in a "minimal gas" scenario and an "optimised gas" scenario. In the "minimal gas" scenario, direct electricity use in the buildings, industry and transport sectors plays an important role in the decarbonisation of the EU energy system, but biomethane use is limited to high temperature industrial heat production. In the "optimised gas" scenario, on the other hand, the use of direct electricity in the buildings, industry and transport sectors, can be greatly increased because renewable and low carbon gas is used to provide flexible electricity production and deliver heat to buildings at times of peak demand – in addition to producing high temperature industrial heat and feedstocks, and fuelling heavy road transport and international shipping. The study allocates 1,170 TWh renewable methane and 1,710 TWh hydrogen to the buildings, industry, transport and power sectors under the "optimised gas scenario". This equates to the energy content of 272 bcm of natural gas. **Compared to the "minimal gas" scenario, the use of renewable gasses through gas infrastructure would save society €217 billion annually across the energy system by 2050.**

Biomethane can be used as Bio–CNG and Bio–LNG to sustainably fuel the transport sector

The ICCT reports argue that biomethane use in transport would require large–scale investment in the vehicle fleet and fuelling infrastructure. All renewable fuels require investment, however, and biomethane is the most cost–effective solution. It is true that a dedicated fuel station infrastructure is needed for Bio–CNG (compressed natural gas) and Bio–

[7] Gas for Climate Consortium (2019). The optimal role for gas in a net–zero emissions energy system.

LNG (liquified natural gas) vehicles, just as battery charging stations are needed for electric vehicles – but Europe is already well advanced in this regard. Contrary to the ICCT claims, a significant amount of suitable infrastructure for biomethane-based renewable transport fuels is already in place. Bio-CNG and Bio-LNG can replace conventional CNG and LNG derived from natural gas without any need for infrastructure changes or additional investment in the transport of the fuel. In addition, gas vehicles are less expensive than electric vehicles[8]; embracing the use of biomethane in the transport sector will therefore make green transport accessible to a greater range of European citizens.

As of December 2021, there were 4,101 CNG stations and 467 LNG stations in operation, according to NGVA Europe. Assuming a roughly estimated average cost (CAPEX) of 300.000 € for each CNG station, and 600.000 € for each LNG station, the European gas vehicle sector has already invested at least 1.5 billion Euros, and more CNG and LNG stations are under construction. The existing European infrastructure included 16 active Bio-LNG plants by mid-2021; once the data for 2021 is confirmed, this number is expected to have increased rapidly in the second part of the year (+ 7 plants), and to continue increasing in 2022 (+ 23 plants) and 2023 (+ 29 plants). Another 3 plants are already known to be due to begin operation in 2024. Taking account only of confirmed plants, the combined European Bio-LNG production capacity by 2024 adds up to 10.6 TWh per year. Of all 78 Bio-LNG projects known to the EBA, it is estimated that 83 % have a physical connection to a biogas upgrading unit, whereas 17 % purchase biomethane via Guarantees of Origin (GOs) and extract the gas from the gas network. The majority of the 78 plants use agricultural residues as feedstock.

Transport produces 27% of Europe's total GHG emissions, according to the European Environmental Agency. Despite current efforts to electrify transport, the sector has not seen the same gradual decrease in GHG emissions as other areas of society. Road transport is also a major contributor to air pollution, especially in cities. Total renewable energy in transport is 10,2% to date, including bioethanol, biodiesel and biomethane. The use of biomethane as a transport fuel provides an excellent, sustainable and readily available alternative to conventional transport fuels. For the heavy duty (HD) transport and maritime sectors in particular, Bio-LNG is the best currently available solution to reduce the GHG emissions.

Bio-LNG also represents a lasting solution for long haul transport. Companies such as IVECO, Scania and Volvo support the development of Bio-LNG, which is the only suitable renewable option for HD long haul transport and has a significant part to play in other modes of HD transport. In Sweden, where Europe's first bio-LNG plant opened in 2011, it has been shown that support from manufacturers and political incentives lead to excellent results in the decarbonisation of heavy-duty transport. The Swedish state provides investment subsidies and offers a premium for sustainable biomethane production. Refuelling infrastructure also receives investment support. Policymakers are equally dedicated to end user incentives, encouraging

[8] NGVA Europe (2021). Frontier Economics – CO2 Emission abatement costs of gas mobility and other road transport options. *Eu*

the purchase of vehicles running on sustainable gas for both regular and heavy-duty transport. The incentives include a climate premium for trucks, a purchase bonus for cars and vans and strict environmental zones in cities that only allow the use of electric and gas driven vehicles. By granting long-term tax exemptions for biomethane, Swedish politicians have secured its use as a fuel: as a result, 95% of the gas used in the Swedish transport sector is biomethane, making Sweden a world leader in this regard.

Implementing Biogasdoneright as a strategy to scale-up biomethane

The ICCT does not consider the biomethane potential of sequential crops planted as part of the implementation of the Biogasdoneright concept – despite the fact that this concept has already been successfully applied by hundreds of farmers in Italy and a growing number in France. Biogasdoneright focuses on producing biogas from a mix of agricultural wastes, residues and sequential crops. The implementation of sequential cropping in line with the Biogasdoneright concept has been demonstrated to have multiple environmental benefits in terms of soil quality, soil carbon and biodiversity. Biogasdoneright does not impact on existing food or feed markets as no additional land is used for biogas production. A wider application of Biogasdoneright is therefore an effective way of increasing sustainable biomethane production across Europe[9].

A recent study (Magnolo et al., 2021[10]) recognises the potential of sequential cropping for biomethane production in different climate zones such as the Mediterranean, Continental, Atlantic and Boreal regions of Europe. In the study's assessment of biomethane potential, different biogas yields (m3/ha) are associated with different types of sequential crops, according to the characteristics of the various regions. The biomethane potential found by the authors amounts to around 46 bcm in all regions, in a case study in which sequential cropping is only carried out on 20% of primary crop land. This is a feasible scenario by 2050 in Europe, even when different crop combinations and agroclimatic conditions limitations are taken into account. In other words, around 11% of projected European gas consumption in 2050 could be covered by renewable gas from sequential cropping. Magnolo et al. estimate an even greater biomethane potential of 185 bcm in a second scenario, in which 60% of arable land is used in all regions.
A recent study by ENGIE[11] finds similar results for biomethane potential from sequential cropping in Europe. The authors assume the crops to be cultivated between the main cultures of wheat, barley, maize, sunflower, sugar beet and rapeseed, and estimates a biomethane potential of 462 TWh (43 bcm) for the EU-27 + 10 in 2050.

[9] Gas for Climate (2021). The future role of biomethane.
[10] Magnolo, F., Dekker, H., Decorte, M., Bezzi, G., Rossi, L., Meers, E., & Speelman, S. (2021). The Role of Sequential Cropping and Biogasdoneright™ in Enhancing the Sustainability of Agricultural Systems in Europe. Agronomy, 11(11), 2102.
[11] ENGIE (2021). Biomethane to support the energy transition: potential and cost in 2050.

The above confirms the importance of considering biomethane produced from sequential crops as an essential component of renewable gas production and a significant contributor to the achievement of European decarbonisation targets.

Biomethane production sustainably captures atmospheric CO2

Biomethane production and use is a circular process. Atmospheric CO2 is sustainably captured during the growth of organic feedstocks; some of this CO2 is released again as biogenic CO2 when biomethane is used as sustainable fuel, only to be recaptured and returned to the cycle during the growth of subsequent organic feedstocks. This part of the atmospheric CO2 contained in the organic matter of the feedstocks is thus captured and recycled. The rest is removed from the cycle during the production process: after obtaining biogas and during the upgrading phase where methane is separated from CO2 and other impurities, residual CO2 can be collected and used in different industrial applications, displacing CO2 of fossil origin. This biogenic CO2 can also be stored, removing it from the atmosphere for an unspecified period of time. Further GHG reductions can be achieved because, being partly produced from waste or manure, biomethane makes it possible to reduce or avoid GHG emissions associated with waste management.

Methanisation also produces digestate, which can be used as a substitute for mineral fertilisers, thereby avoiding their energy-intensive production and associated GHG emissions. Certainly, there are emissions associated with the production of biogas and biomethane, as well as with the purification, injection and transport of biomethane, which need to be considered. Nevertheless, the production of biogas and biomethane results in significant GHG reduction overall, compared to fossil fuels. For instance, Bio-LNG, used initially as a drop in fuel, can have a major impact on GHG emissions relative to fossil LNG. A blend of 20% Bio-LNG can reduce GHG emissions by up to 18% on a tank-to-wake basis; for 100% Bio-LNG the reduction is of the order of 93% in the combustion cycle, with even further reductions possible on a well-to-wake basis, depending on the origin of the Bio-LNG. If the Bio-LNG is produced from domestic and agricultural waste, there is even the potential for negative emissions.

The ICCT report (2018) mentions that methane leakage adds considerable uncertainty to the GHG performance of renewable methane production. The biogas sector is proud of its already considerable positive impact on GHG emission reduction with its significant contribution to the EU environmental goals and to the circular economy. This has helped spur the sector on to continuous improvements in the avoidance of methane leakages, resulting in a still greater contribution to the achievement of European climate goals. The sector is aware of the importance of methane emissions and has been working on reduction measures for years. Due to the economic, safety and environmental significance of methane losses, biogas plants are planned, built and operated with the focus firmly on minimising such emissions.

Manufacturers of plant components strive continuously to improve their products. For example, the membranes of the gas holders have been optimised to such an extent that the previous permeation limit value of 1,000 ml/(m² d bar) has been already reduced by half [12]. Additionally, measures to reduce methane emissions have been included in technical regulations, such as the TRAS–120[13] in Germany, for example. On the engine side, great progress has also been made so that, to name one example, the newest type of ship engines using (bio)LNG produce almost no emissions[14].

Besides ongoing technical and organisational mitigation measures, voluntary schemes to reduce emissions from biogas plants have proved to be efficient and economically beneficial to plant owners. The first voluntary monitoring systems to reduce methane emissions were established in Sweden and Denmark. The systems include regular self–inspection, as part of which the plants commit to working systematically to identify and reduce their emissions, as well as to the taking of measurements by an external measurement company that quantifies the methane loss from identified leaks and sources at the plant. In Sweden, the implementation of the system has clearly been successful and has decreased methane emissions by creating awareness on the part of plant operators as well as providing useful data to demonstrate the credibility of the industry. In Denmark, the Danish voluntary methane monitoring programme set a sign–up success target of 90% participation and an overall goal of reducing the total methane loss from Danish biogas and upgrading plants to less than 1% nationally by 2020.

The sustainability and greenhouse gas emission savings criteria in the Renewable Energy Directive already cover methane leakage from biogas production. On top of that, the EBA supports the establishment in all European countries of a common standard in the biogas sector that takes account of the specifics of renewable gas and parallels the standard developed by the Oil and Gas Methane Partnership (OGMP) for the fossil fuel sector.

Power–to–X serves as a cheap way to store energy

The ICCT report (2018) states that using power–to–methane for power generation seems "counterintuitive". Although efficiency is indeed lost via this process, it does make sense as an easy way of storing and distributing energy. The daily and seasonal variability of other renewable energies such as wind and solar requires technologies that are more cost–effective than batteries for long–term energy storage. Power–to–methane technologies allow the synthesis of methane, which is an ideal means of storing the excess energy when the power supply exceeds the power demand. Power–to–methane is preferable to batteries because the investment costs are substantially lower and allow large scale storage over long periods of time.

[12] DWA– (2018). Technische Dichtheit von Membranspeichersystemen. Merkblatt DWA–M 375.
[13] Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit (20.12.2018 and 27.02.2019). TRAS 120.
[14] Wärtsilä Corporation (2020). Cutting greenhouse gas emissions from LNG engines. Wartsila.com.

Additionally, the methane produced can be distributed and used in several sectors, such as fuel for mobility, buildings and industry. It can also be traded and produced within Europe, ensuring the EU's security of supply, and avoiding dependence on external providers. The existing gas infrastructure is biomethane-ready, meaning that it requires less investment than other alternatives.

Biomethane reduces dependency on gas imports and creates price stability

The ICCT report (2018) argues that it is difficult for renewable methane to compete with inexpensive fossil gas and that substantial public incentives will be necessary to expand production. One of the key benefits of biomethane, however, is that it can be locally produced in Europe, reducing dependency on gas imports, creating price stability and providing green jobs. Today, the EU imports 90% of its fossil gas, which makes it dependent on external markets with unpredictable prices. The recent steep increase in natural gas prices is a case in point: the gas price in the EU doubled from 50 to 100€/MWh in September 2021[15]. Although the actual price is expected to decrease over the coming years as supply and demand levels in Europe stabilise, it will not necessarily return to previous levels. Biomethane production costs are expected to lie between €57 and €80/MWh in 2050[16,17,18]. Increasing carbon dioxide prices (from €25/tonne CO2 in January 2020 to €85/tonne CO2 in January 2022[19]) mean the price gap between renewable and fossil gas has been further narrowed, if not already completely eliminated. In addition, Gas for Climate gives the following reasons for the likely decline in the cost of biomethane production:

- Implementation of larger digester sizes and the feeding of upgrading units with biogas from different biogas plants.
- Innovative agricultural practices leading to the development of biogas digestate use as valuable natural fertiliser.
- Efficiency improvements in the conversion of biomass to biomethane.
- Reductions in feedstock costs based on the introduction of Biogasdoneright, which leads to an increase in biomass production per hectare and a lower average feedstock cost.

Biomethane production brings a range of other benefits to our society, alongside renewable energy production. The economic worth of the additional positive effects of biomethane production, such as waste processing, replacement of mineral fertilisers, increased agronomic value of soils through application of digestate, carbon storage in soils and capturing biogenic CO2 has thus far received very little attention.

[15] Gas for Climate (2021). Market state and trends in renewable and low-carbon gases in Europe.
[16] Gas for Climate (2021). The optimal role for gas in a net-zero emission energy system.
[17] ENGIE (2021). Biogas potential and cost in 2050.
[18] ADEME (2018). Un mix de gas 100% renouvable en 2050?.
[19] Sandbag. Carbon price viewer. Sandbag.be.

Technical analysis of the 2018 and 2021 ICCT reports on the role of biomethane as a renewable energy source

Biomethane is domestically produced gas with predictable production prices, and it creates local green jobs. The EBA Statistical Report 2021 calculated that the biogas and biomethane industries are already responsible for over 210,000 jobs in Europe today. Both sectors combined can be expected to create a total of around 420,000 jobs by 2030 and over one million jobs by 2050.

Recommendations for the future

Both biogas and biomethane are being produced in increasing quantities in Europe, but legislation can still be improved to facilitate the necessary expansion of this circular renewable solution. Security of gas supply should be based on increasing the role of green gas and maintaining affordable prices for consumers.
Based on the current status of implementation, associated societal benefits of biomethane production, and further potential for biomethane in Europe, we strongly recommend the following actions:

- Implement biogas and biomethane support scheme plans, specific to each European country state, which stimulate biomethane production and offtake in every sector.
- Support biomethane for transport, especially in the heavy duty and maritime sectors, where bioLNG represents the only decarbonisation solution available in the near future and at an affordable cost.
- Ensure that GO systems are implemented in such way that biomethane can be freely traded over the territories.
- Implement voluntary schemes to reduce methane leakages at biogas plants and set EU targets.
- Allow for the combination of sequential cropping and carbon farming.
- Allow REDII to include sequential cropping as an addition in ANNEX IXA.
- Develop a common vision and targets for the integration of the different renewable gases (biomethane and hydrogen).

Europe needs to decarbonise fast. There is no single solution. There is no time to lose and all solutions which can contribute to our goal should be embraced.
Biogas is in a unique position as the benefits it provides go beyond the supply of renewable energy. It is time to allow sustainable biogas to contribute its full potential to the achievement of our environmental goals.

Conclusions

- Biomethane has a long-term and significant role to play alongside other forms of renewable energy. By 2050, biomethane production can be increased at least fivefold, reaching over 95 bcm, with some estimates going as high as 160 bcm. This biomethane potential can be delivered using sustainable feedstocks.

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- Biomethane minimises societal cost as existing infrastructure can be used.
- Biomethane can deliver the energy system benefits of natural gas while being carbon–neutral or even carbon–negative.
- Biomethane brings important added value to our society, including but not limited to soil restoration, carbon farming, localised jobs, communities' income, promotion of investments, valorisation of waste and low value agricultural bioproducts, and nutrient recycling, among many other benefits.
- A mix of different technologies is the way to ensure a climate friendly, secure and economic energy supply. All renewable fuels available, especially those which bring additional benefits to society, must be recognised and supported today. It is careless to downplay the current performance and the future potential of biomethane. There is no time to waste. We must continue the growth of biomethane deployment to deliver sustainable decarbonisation.

EBA
European Biogas Association

EBA is the voice of renewable gas in Europe. Founded in February 2009, the association is committed to the active promotion of the deployment of sustainable biogas and biomethane production and use throughout the continent. EBA counts today on a well-established network of over 200 national organisations, scientific institutes and companies from Europe and beyond.

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