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The regulatory implications of biomethane

Who is paying for the future of gas networks?

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Summary

Biomethane production in Europe has seen significant growth in the last ten years, from 0.9 billion cubic metres produced in 2014 to 5.2 billion cubic metres (52 TWh) in 2024. This development has largely been driven by a shift in public support from biogas production for on-site cogeneration to production for injection into gas networks. [1,2]

While biomethane will be one of the solutions for decarbonising sectors that cannot be electrified, the current approaches for new biomethane connections are not helpful towards meeting climate ambitions. Rather they serve to redirect an energy resource that is scarce, expensive and of challenging sustainability,[3] towards end-uses that can be better decarbonised though electrification.[4] In the worst-case scenario, these investments will extend the economic life of more gas system components than necessary, which will need maintenance and upgrades until biomethane production stops or the guaranteed right to access to network infrastructure is no longer applicable. In both cases, biomethane is a barrier towards the eventual decommissioning of gas networks. What is more, the socialisation of the costs associated with biomethane injection means that existing gas network users are supporting continued investment into networks whose decommissioning they will likely have to pay for. As such, continued public investment also risks turning biomethane into another 'Trojan horse' of the energy transition that extends the economic life of gas networks.

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[2] Olczak, M. (2026). *Biomethane in Europe: Why scaling is harder than it looks*. https://www.oxfordenergy.org/publications/biomethane-in-europe-why-scaling-up-is-harder-than-it-looks/. Europe includes EU-27 and UK, Iceland, Norway, Switzerland, Ukraine. European Biogas Association. (2025). *Webinar EBA Statistical Report 2025*. https://www.europeanbiogas.eu/publication/eba-statistical-report-2025/

[3] IEA. (2025). *Outlook for Biogas and Biomethane: A global geospatial assessment,* p.19. https://www.iea.org/reports/outlook-for-biogas-and-biomethane

[4] REGEN. (2025). *Making the most of biomethane: An examination of biomethane's role in the energy transition.* https://www.regen.co.uk/insights/limited-biomethane-must-be-targeted-at-hard-to-decarbonise-sectors

Introduction

Production of biomethane in the EU-27 reached 4.3 billion cubic metres in 2024.[5] While this is only a small volume compared to the total fossil gas consumption of 334.14 billion cubic metres,[6] it is already impacting gas network regulation.[7] This increasing volume of biomethane injected into parts of gas systems not designed for this purpose prompts several questions on how to deal with the associated costs. Considering this, the aim of this brief is to build on recent surveys of cost-allocation models for biomethane connections and to explore their implications in the context of the impending decommissioning of gas networks.[8]

Biomethane production

Before exploring the impacts of biomethane on network regulation, it is important to have an overview of the biomethane value chain. The focus here is on anaerobic digestion as it is the predominant production pathway in Europe.[9]

Anaerobic digestion starts with a feedstock, which can be either biogenic waste (agricultural, wastewater, food industry or animal manure) or crop-based biomass (e.g. maize, cereals). Once collected and transported, the feedstock goes through some form of processing such as sanitation or mechanical breakdown, depending on its nature. It is then added to an anaerobic digester, where, under controlled conditions, bacteria break down the biomass to produce biogas and digestate (see Figure 1). The exact composition of biogas depends on the type of feedstock and production pathway, but methane is between 45% and 75% of the gas mixture by volume. Biogas can be used at this stage on-site to cogenerate heat and electricity. A by-product of this process is digestate, which can be further processed and used as biofertiliser.[10]

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[5] Olczak, 2025.

[6] Eurostat. (2026). *Supply, transformation and consumption of gas – Inland consumption of natural gas in million cubic meters.* https://ec.europa.eu/eurostat/databrowser/view/nrg_cb_gas__custom_20659901/default/table

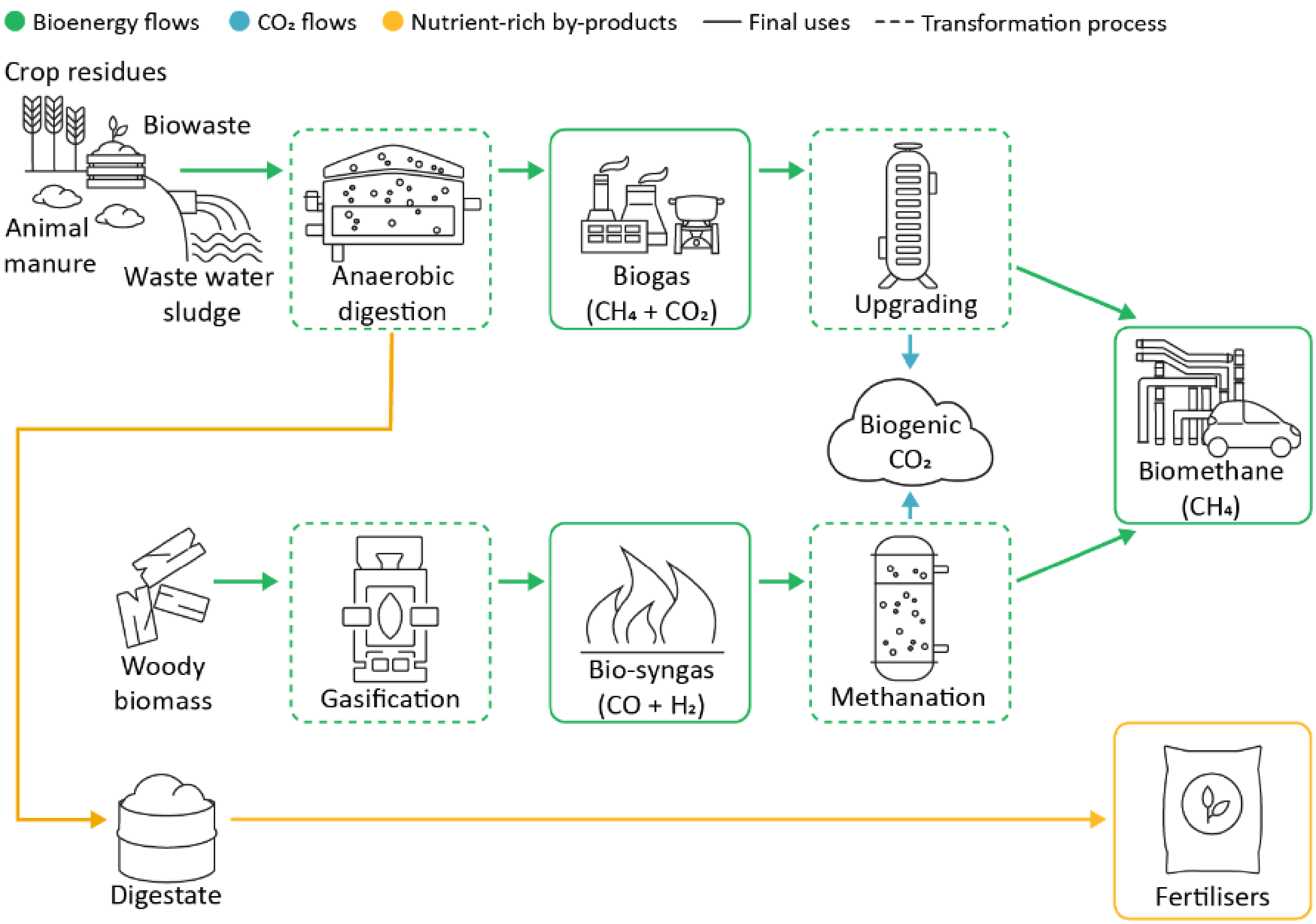
[7] The Spanish energy regulator has proposed a remuneration incentive to promote biomethane, as part of the new price control period for gas distribution system operators in CNMC. (2026). *La CNMC somete a audiencia pública la circular sobre la metodología de retribución de la distribución de gas* https://www.cnmc.es/prensa/circulares-retribucion-gas-20260326. The Italian regulator also recently adopted a decision implementing national legislation regarding the cost allocation of new biomethane connections: see ARERA. (2026). *Delibera 10 marzo 2026 67/2026/R/gas Avvio di procedimento e prima attuazione delle disposizioni normative previste dall'articolo 1, comma 933, della legge 199/25, in materia di connessione degli impianti di produzione di biometano alle reti del gas naturale.* https://www.arera.it/atti-e-provvedimenti/dettaglio/26/67-26

[8] CEER. (2025). *NRAs' Reflections on Enabling the Injection and Access to the Wholesale Market of Biomethane,* p.33. https://www.ceer.eu/publication/nras-reflections-on-enabling-the-injection-and-access-to-the-wholesale-market-of-biomethane/

[9] Výlupek, L., Barrio, L., Rajnoha, M., Zaradička, M. & Sova, J. (2023). *The Future of Biomethane.* Arthur D Little. https://www.adlittle.com/en/insights/viewpoints/future-biomethane; Gas for Climate. (2022). *Biomethane production potentials in the EU,* p.14. https://www.europeanbiogas.eu/publication/biomethane-production-potentials-in-the-eu/

[10] IEA, 2025.

Figure 1. Production pathways for biomethane



Source: IEA. (2025). *Outlook for Biogas and Biomethane*

Note: Woody biomass production is outside the scope of this brief. The original figure is presented here in deference to the source publication.

In order to be technically and safely injected into gas networks, biogas needs to be upgraded to match the gas quality specifications defined by system operators. Although there has been an effort to harmonise specifications across the EU,[11] they have been defined separately in each Member State depending on the type of fossil gas available from producers. Such specifications are needed to guarantee the safe operation of gas networks and consistent burning characteristics for end-users (Table 1).[12] Upgrading biogas involves desulphurisation, drying and the removal of CO_2, while also lifting the methane content up to 80–98%. Depending on the gas quality specifications, the addition of propane might be necessary.[13] Lastly, biomethane needs to be odorised, as this ensures it has the distinct smell of gas that allows leakages to be detected. Odorisation is performed at different levels across the EU: in

[11] Marcogaz. (2024). *Quality of biomethane required in European countries for injecting into natural gas grid.* https://www.marcogaz.org/publications/quality-of-biomethane-required-in-european-countries-for-injecting-into-natural-gas-grid/

[12] Long, D., Moore, G. & Wenban-Smith, G. (2003). *Gas Trading Manual*. https://www.sciencedirect.com/book/monograph/9781855734463/gas-trading-manual

[13] GreenMeUp. (2025). *Overview of production routes and end-uses of renewable gases and existing policy frameworks in advanced European and MI countries.* https://www.greenmeup-project.eu/?sdm_process_download=1&download_id=1066

Ireland, Greece and France for example it is odorised at both transmission and distribution levels, while in Belgium, the Netherlands and Denmark it is only odorised at the distribution level.[14]

Table 1. Gas quality requirements for biomethane in France, Germany and Spain

	France	Germany	Spain
Gross calorific value (kWh/m³)	9.5–10.5 (Low-calorific network) 10.7–12.8 (High-calorific network)	8.4–13.1	10.23–13.23
Wobbe index (kWh/m³)	12.5–13.06 (L) 13.64–15.70 (H)	11.0–13.0 (L) 13.6–15.7 (H)	13.368–16.016
Relative density	0.555–0.70	0.55–0.75	0.555–0.70
Water dew point (°C at 70 bar abs)	< -5 at maximum operating pressure	< 50 (MOP > 10 bar) < 200 (MOP < 10 bar)	< 2
Hydrocarbon dew point (°C at 1-70 bar abs)	< -2	< -2	< 5
Total sulfur (mgS/m³)	< 30	< 6 < 8 (after odorisation)	< 50
Hydrogen sulfide and carbonyl sulfide (mgS/m³)	< 5	< 5	< 15
CO_2 (% Mol)	< 2.5 (Exemptions exist for the DSO system: up to 3.5% (H)/up to 11.7% (L gas))	< 10 L < 5 H	< 2.5
O_2 (% Mol)	0.01 (Exemptions: up to 0.7% in the transmission grid/up to 0.75% in the distribution grid/up to 0.4% in the distribution grid for new projects > 2023)	< 0.001 (MOP > 16 bar) < 3 (MOP < 16 bar)	< 0.3 in transmission grid < 1 in distribution grid
Impurities (mg/m³)	Gas that can be transported, stored and marketed without undergoing further treatment	Technically free	Technically free
Odorisation	Requirement to deliver odorised gas to all customers, meaning that all gas is odorised at transmission level and at distribution	Odorisation required at only a few transmission systems and at distribution	Transmission and distribution

Data Sources: Marcogaz. (2023). *Natural gas odorisation practices in Europe* & Marcogaz. (2024). *Quality of biomethane required in European countries for injecting into natural gas grid*

[14] Butenko, A. (2014). *Stinky Business: Are the Differences in the Odorization of Natural Gas Across European Countries Hampering the Progress Towards EU-Wide Gas Market?* https://ssrn.com/abstract=2583878 and Marcogaz. (2023). *Natural gas odorisation practices in Europe.* https://www.marcogaz.org/publications/natural-gas-odorisation-practices-in-europe-2/

Biomethane costs

An important aspect of biomethane production is the cost. So far, subsidies have been fundamental for the development of the biomethane sector in Europe. While the support mechanisms are becoming more market-driven, there has been limited development of unsubsidised biomethane purchase agreements to date.[15] This is expected to continue as EU Member States have put in place support schemes in the form of contracts for difference and feed-in premiums that will provide support to biomethane production well into the 2040s and 2050s.[16]

The necessity for subsidies is unsurprising when the costs of biomethane production are examined. According to the Biomethane Industrial Partnership, these costs in Europe range from €54–91/MWh.[17] Similarly, the IEA puts the average cost of production in Europe in 2024 at €74/MWh.[18] Costs vary significantly, from an average of €54/MWh for producers of >1,200 cubic metres/hour to €87/MWh for producers of approximately 540 cubic metres/hour in 2021.[19] However, a study from the French energy regulator puts the median production cost of biomethane in France in 2024 at a much higher figure of €130/MWh.[20] For comparison, Figure 2 shows that unless there is a severe energy crisis, like the one experienced in 2021 and 2022, biomethane does not seem to be cost-competitive with fossil gas. Even during the recent closure of the Strait of Hormuz, as a result of the US and Israel's war on Iran, Dutch TTF prices peaked at €61.8/MWh in March 2026.[21] Still below the average costs of biomethane production in Europe.

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[15] IEA, 2025, p. 22 and Olczak, 2026, pp. 18–19.

[16] European Commission. (2021). *State aid: Commission approves prolongation and modification of German scheme to support electricity production from renewable energy sources.* https://ec.europa.eu/commission/presscorner/detail/en/ip_21_2042; European Commission. (2024). *Commission approves €1.5 billion French State aid scheme to support sustainable biomethane production to foster the transition to a net-zero economy.* https://ec.europa.eu/commission/presscorner/detail/en/ip_24_3986; European Commission. (2024a). *Commission approves €1.7 billion Danish State aid scheme to support the production of renewable gas.* https://ec.europa.eu/commission/presscorner/detail/en/ip_24_6464

[17] BIP Europe. (2023). *Insights into the current cost of biomethane production: from real industry data.* https://bip-europe.eu/download/insights-into-the-current-costs-of-biomethane-production-from-real-industry-data-full-study-slides/

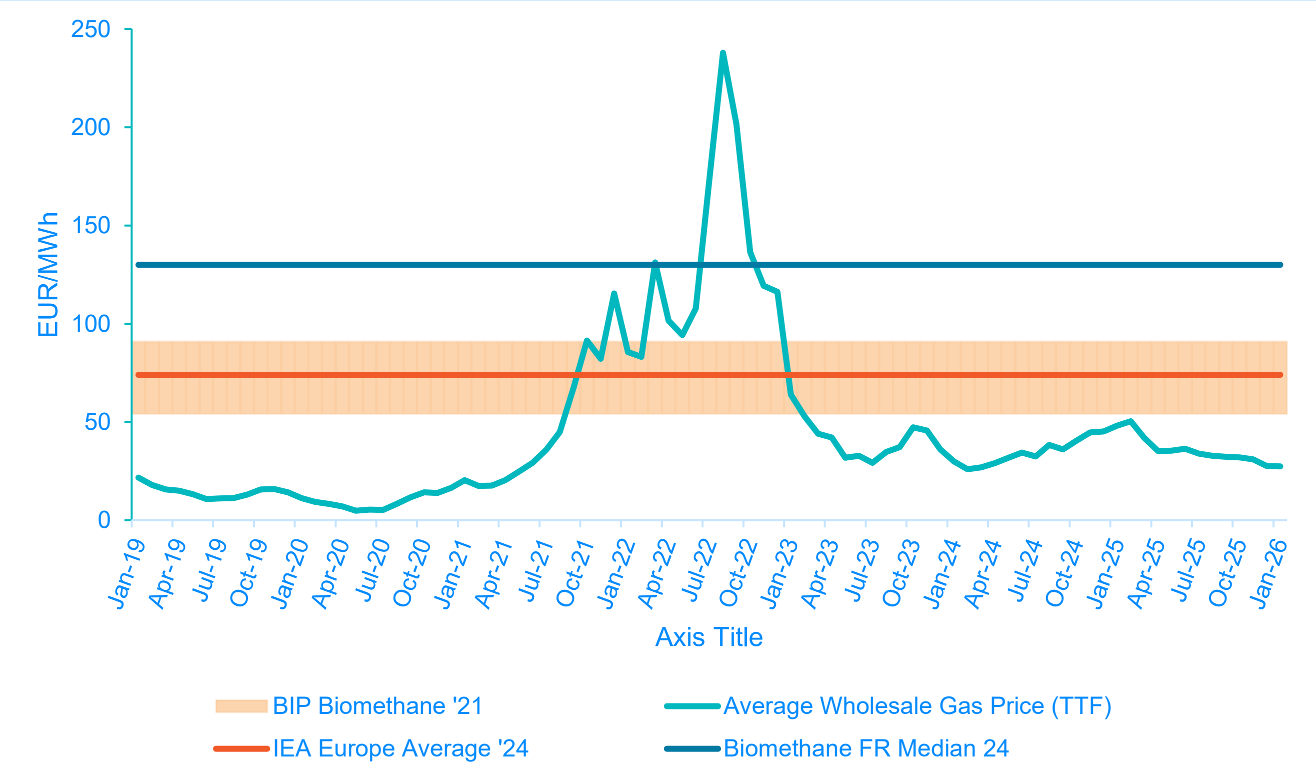
[18] IEA, 2025, p. 40.

[19] BIP Europe, 2023.

[20] Bouacida, I. & Aubert, P. (2025). *Le biométhane en France: enjeux et défis pour une production durable.* https://www.iddri.org/en/publications-and-events/study/biomethane-france-issues-and-challenges-sustainable-production

[21] Market Observatory for Energy DG Energy. (2025). *Quarterly Report on European gas markets Volumes 17–18.* https://energy.ec.europa.eu/data-and-analysis/market-analysis_en; Market Observatory for Energy and ICE. (2026). *Dutch TTF Natural Gas Futures: 3 April 2024 to 2 April 2026.* https://www.ice.com/products/27996665/Dutch-TTF-Gas-Futures/data?marketId=6187520&span=3

Figure 2. Average monthly wholesale gas prices and select biomethane production cost estimates in Europe (EUR/MWh)



Source: RAP, based on ACER. (2026). *Key developments in EU electricity and markets: 2026 Monitoring Report*. https://www.acer.europa.eu/monitoring/electricity-gas-key-developments-2026; IEA, 2025; BIP Europe, 2023; Bouacida et al., 2025.

NB: From 2023 onwards, biomethane in end-uses meeting the relevant sustainability and greenhouse gas emissions criteria does not incur emissions under the EU ETS scheme, while fossil gas does.[22]

The costs figures support the conclusion that biomethane is expensive and, due to low production in Europe, it has only a limited impact on the security of gas supplies. In addition, support for biomethane also comes with opportunity costs: the benefits that would otherwise be realised if public support were redirected towards electrification, energy efficiency or flexibility are lost. For reference, the value-adjusted, levelised cost of solar PV in Europe in 2024 was estimated at €51/MWh,[23] the average cost of saving one MWh of energy in 2022 was €27–31,[24] and the levelised cost of a utility-scale, long-duration battery energy storage system (when used to shift daytime solar to night-time hours with guaranteed revenues) is estimated at €55/MWh.[25]

22 European Commission. (2025). *Guidance Document: Biomass and other zero-rating under the EU ETS.* https://climate.ec.europa.eu/system/files/2022-10/gd3_biomass_issues_en.pdf

23 IEA. (2025). *World Energy Outlook,* pp. 453–454. https://www.iea.org/reports/world-energy-outlook-2025

24 European Court of Auditors. (2022). *Energy efficiency in enterprises: Some energy savings but weaknesses in planning and project selection,* pp. 33–38. https://op.europa.eu/webpub/eca/special-reports/energy-efficiency-in-enterprises-02-2022/en/

25 Rangelova, K. & Jones, D. (2025). *How cheap is battery storage?* https://ember-energy.org/latest-insights/how-cheap-is-battery-storage/ Calculated using ECB Exchange for 20 April 2026 of €1 = $1.176, available at https://www.ecb.europa.eu/stats/policy_and_exchange_rates/euro_reference_exchange_rates/html/eurofxref-graph-usd.en.html

Impacts of biomethane injection

According to the biomethane industry and gas network operators, the expected benefit of injecting biomethane into existing gas networks is that it replaces fossil gas, thereby decarbonising existing end-uses while minimising the total costs of the energy system by making use of well-developed gas transportation systems.[26] The European Biogas Association says that it would provide “comfortable adaptation of households to sustainable choices” in a way that is “financially attractive for users”.[27]

Biomethane is indeed mostly transported through existing gas networks,[28] being for the most part injected at the distribution level.[29] Larger production facilities can also be connected at the transmission level. However, despite being well developed, these systems have been designed to operate mainly as exit-only systems, where gas is transported from the transmission level to either large-scale industrial consumers or to the distribution level and subsequently to smaller consumers or households. While at low levels of biomethane injection, the adaptation required might be minimal in the form of new connections, large-scale injection can require network-wide upgrades to handle reverse flows. Both changes require legislative or regulatory decisions concerning which parties are responsible for the costs. If the costs are assigned to the network operator, changes are needed to agree a cost-recovery framework for the cost of new connections, additional operational costs, and the potential costs arising from injection above the system’s capacity. All of these things need to be addressed in the context of the impending decommissioning of gas networks.[30]

Biomethane connection costs and cost distribution

Connection costs will depend on the network to which the connection is made (see Figure 3) and the country in which it takes place, as each system has different legal and technical requirements.[31] In general, costs for the equipment for gas quality control, odorisation and metering range between €200,000 and €1,800,000 per injection unit. Compression or pressure control and the last-mile pipeline will entail further costs; these will depend on whether further compression beyond that provided by the upgrade process is necessary, and how far from the network the production facility is situated. The responsibility for these costs is defined through legislation or regulation; Demark, Estonia, Finland, Hungary, Lithuania, Luxembourg, Spain, Poland and Portugal attribute the costs to the producer, while in Austria,

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[26] IEA Bioenergy. (2022). *The role of biogas and biomethane in pathway to net zero, p. 2.* https://www.ieabioenergy.com/wp-content/uploads/2022/12/2022_12_12-IEA_Bioenergy_position-paper_Final2.pdf

[27] European Biogas Association. (2025). *8 powerful reasons to choose biogases*. https://www.europeanbiogas.eu/biogas-biomethane-in-a-nutshell/

[28] Alternative options to transport biomethane are to compress it, it thereby turning into bio-CNG, or to liquify it into bio-LNG.

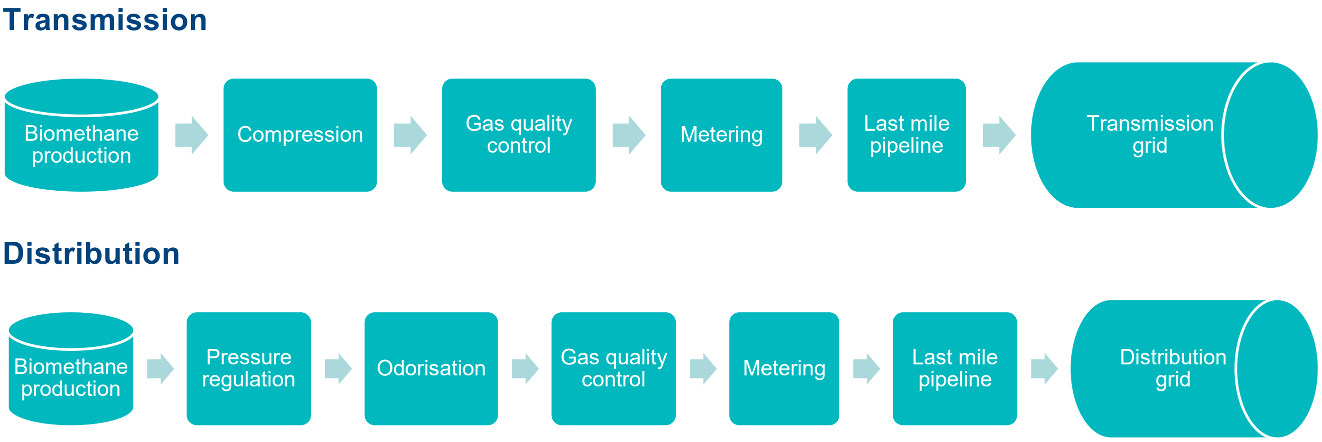
[29] In Europe, 58% of the active biomethane plants are connected to the gas distribution network, 17% are connected to the transmission, 9% do not have a grid connection, and the connection status of the remaining 16% is unknown. See GreenMeUP. (2024). *Variations in national regulations with respect to biomethane grid connection.* https://www.europeanbiogas.eu/wp-content/uploads/2024/02/GreenMeUp-Variations-in-Natl.-Grid-Connection.pdf

[30] Grote, D., Nunes, R., Steinborn-Cheng, W., Paletar, M. & Anton, D. (2022). *Future Regulatory Decisions on Natural Gas Networks: Repurposing, Decommissioning and Reinvestments.* https://www.acer.europa.eu/gas/decarbonisation-of-gas/regulatory-methods-and-best-practices

[31] Butenko, 2014. Peters, D., Gray, L., Brosschot., S. & Smit, E. (2025). *How costs to connect biomethane to gas grids are paid for: Analysis of financial and operational responsibilities of biomethane producers and grid operators in the EU.* European Biogas Association. https://www.europeanbiogas.eu/publication/how-costs-to-connect-biomethane-to-gas-grids-are-paid-for/

France, Italy, Latvia and the Czech Republic they are shared to different extents between the producer and the network operator.[32]

Figure 3. Typical components of biomethane grid connections at the transmission and distribution levels



Source: Regulatory Assistance Project

Cost allocation brings with it two key issues. First, any costs not paid by the producer and assigned to the network operator become part of the latter's regulated asset base.[33] This means that these costs are recovered through network charges, including any costs of financing these investments and an appropriate return on capital. This in effect socialises the costs across all existing network users. For an illustration of the size of these costs, in the UK's 2026–2031 price control period the gas transmission operator and each of the gas distribution operators can claim up to £2 million (2.32 million EUR) per new biomethane connection, capped at £20 million (23.32 million EUR) per network.[34] While in Germany, these costs are expected to easily reach €5 million.[35]

Second, the useful life of all gas system components between production and consumption will need to be extended, since they will need maintenance (and thus reinvestment) as long as there is biomethane production. This creates a lock-in effect for gas infrastructure that will prevent its decommissioning. This issue is further exacerbated by the remoteness of biomethane connections, which are more likely to take place at the end of the network and away from the main consumption centres. Rather than being a hypothetical, this is already a real-world problem in Denmark, where some of the sub-networks that are unprofitable to operate due to low gas demand cannot be considered for decommissioning because of their

[32] Peters et al., 2025, pp. 6–7. CEER, 2025, p. 23.

[33] BIP Europe. (2024). *Optimizing the cost of biomethane grid injection.* https://bip-europe.eu/2024/09/11/task-force-4-4-publishes-report-on-biomethane-grid-injection-cost-optimisation/

[34] Ofgem. (2025). *RIIO-3 Final Determinations for the Electricity Transmission, Gas Distribution and Gas Transmission sectors* https://www.ofgem.gov.uk/decision/riio-3-final-determinations-electricity-transmission-gas-distribution-and-gas-transmission-sectors.

[35] Baumer, A. (2026) *"Pseudolösung": Eon-Chef macht gegen Reiches Grüngasquote mobil.* https://www.zfk.de/politik/deutschland/eon-chef-birnbaum-gruengasquote-mobil

biomethane connections, as they are guaranteed third-party access to network infrastructure.[36] Moreover, the new European legislation for the gas sector further seems to entrench this, by enabling the disconnection of fossil gas users only, subject to the existence of a decommissioning plan and at the same time, by strengthening the right to access to the system for renewable and low-carbon gases under article 38(3) of the Gas Directive.

Impact on operational costs

Apart from the investment costs for new connections, there are also increased operational costs. These range from fixed costs associated with keeping the system technically safe and operational, such as maintenance, IT and administration, to variable costs that depend on the amount of biomethane injected, such as those related to odorisation, gas quality control and metering. The additional annual operational costs are estimated at 4% of the cost of the connection at the transmission level and 8% at the distribution level.[37] As to who is responsible for these costs, the new EU hydrogen and decarbonised gas regulation foresees a 100% tariff discount for biomethane injection on renewable gases, which means there is full socialisation across network users by default. However, national regulatory authorities can derogate from this rule if the renewable gas market is advanced or if there are alternative support mechanisms for scaling it up.[38] So far, Denmark and France have decided to use the derogation and apply full tariffs at biomethane entry points; Austria and the Czech Republic have very low entry tariffs; and in Portugal and Italy (distribution only) a complete tariff discount is being applied.[39]

Impact on network reinforcements

When considering the lock-in effects of biomethane, it is important to also address the need for network reinforcements. Since gas is mainly used for heating and for electricity generation, demand is highly variable both within the day and seasonally, depending on weather conditions.[40] Biomethane production, however, is relatively constant. This means that on summer days with low gas demand, production can outstrip demand in the local network. Long-term public support for biomethane production is expected to lead to an increase in biomethane, and if it is not consumed locally, it will need to be transported to other parts of the gas system. Moreover, the electrification of low-temperature heating, and especially household disconnections from the gas grid, will further amplify this phenomenon.

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[36] Stobbe, M., Hesse, T., Rosenow, J., Anderson, M., Braungardt, S., Bei der Wieden, M., Bürger, V., Loschke, C. & Claeys, B. (2024). *Planning and regulating Europe's gas networks: breaking up with fossil gas*. Regulatory Assistance Project. https://www.raponline.org/toolkit/gas-distribution-system-planning-regulation-europe/; Lowes, R. (2023). *Decompression: Policy and regulatory options to manage the gas grid in a decarbonising UK*. Regulatory Assistance Project. https://www.raponline.org/knowledge-center/decompression-policy-regulatory-options-manage-gas-grid-decarbonising-uk-2/; Yovchev, I. (2025). *Nationalisation and wind-down: Regulation of disconnections and decommissioning of the gas distribution grid in Denmark*. Regulatory Assistance Project. https://www.raponline.org/knowledge-center/nationalisation-wind-down-regulation-of-disconnections-decommissioing-gas-distribution-grid-denmark

[37] Gray, L., Smit, E., Peters, D. & van der Leun, K. (2024). *Using gas infrastructure for biomethane*, p. 54. https://www.commonfutures.com/en/projects/using-gas-infrastructure-for-biomethane

[38] European Parliament & Council of the European Union. Regulation (EU) 2024/1789 of the European Parliament and of the Council of 13 June 2024 on the internal markets for renewable gas, natural gas and hydrogen. https://eur-lex.europa.eu/eli/reg/2024/1789/oj/eng, art. 18.

[39] CEER, 2025.

[40] Long, 2003.

More network reinforcements will be required. These will either be in the form of grid-meshing, which involves connecting two distribution networks (or parts thereof) through new pipelines; or through building new compressors to establish reverse compression capacity to the transmission level.[41] The respective costs of each option will depend on the new pipeline distance between distribution networks (or parts thereof) and the number of compressors needed (based on the operating pressure and the expected quantities of biomethane).[42]

For the most part in the EU, capital costs for these network reinforcements are the responsibility of network operators and are fully socialised across all network users; the only exception is in Spain, where they are paid by the producer.[43] The operational cost for reverse-capacity, which is mainly the cost of electricity needed to operate the compressors, is the responsibility of the operator in Austria, the Netherlands and Germany; while in Spain, Denmark and France it is paid by the biomethane producer.[44] It is important to note that some Member States, such as Austria, France and Italy, have taken the first steps to minimise the costs associated with network reinforcements. They have done so by publishing network capacity maps that provide information to prospective biomethane developers on the best locations for access to their networks.[45] In essence, these capacity maps can be an effective tool to minimise the need for network reinforcements; they are not intended to prevent the lock-in effects of biomethane. For the latter to be achieved, a more comprehensive energy planning process is needed that can identify locations for network connections based not only on available network capacity, but also on the future consumption centres of biomethane.

Conclusion

Taking into consideration the high-costs and limited available quantities, using biomethane as a drop-in replacement for fossil gas is not a viable strategy in the long term. Policymakers have the opportunity to ensure that sustainably produced biomethane is targeted towards the sectors where it is most needed by prioritising end-uses in sectors with no alternatives, such as steel, cement and chemicals. This can be part of a more integrated approach towards network planning. It can also be achieved through better long-term planning for gas infrastructure that ensures investments into the gas network are minimised and biomethane production takes place as close as possible to future users of defossilised gas and not the current consumers of fossil gas. In this regard, special care should be taken to avoid blanket

41 BIP Europe, 2024.

42 Forsyningstilsynet. (2024a). *Afgørelse om godkendelse af Evidas metode for beregning af tariffer for brug af distributionssystemet [Decision approving Evida's method for calculating tariffs for use of the distribution system]*. https://afg.forsyningstilsynet.dk/h/42c520c9-70bc-4643-93f3-3f63bb755d28/837208117fd54d94ac9b6a0d85ebce16?showExact=true

43 Peters et al., 2025. CEER, 2025.

44 Peters et al., 2025. Yovchev, 2025.

45 AGGM. (2026). *inGRID: Die Einspeisekarte für erneuerbare Gase*. https://www.aggm.at/energiewende/ingrid/; CRE. (2019). *Délibération CRE du 14 novembre 2019 portant décision sur les mécanismes encadrant l'insertion du biométhane dans les réseaux de gaz*. https://www.cre.fr/documents/deliberations/mecanismes-encadrant-l-insertion-du-biomethane-dans-les-reseaux-de-gaz.html; SNAM. (2026). *Biomethane Plants Connections.* https://www.snam.it/en/our-businesses/transportation/business-information/biomethane-plants-connections.html

guarantees of access to gas networks for biomethane production,[46] as these only cement the lock-in effects of biomethane.

As to the costs of biomethane injection, while only a small part of the costs of upkeep of the entire system, they require a decision on allocation by regulators. This decision needs to consider whether it is equitable to depart from the principle of cost-reflectivity, by mandating the payment of costs by all network users while they are incurred by biomethane producers. This especially concerns household customers, who might end up subsidising a more expensive energy resource while their own decarbonisation can be better addressed through electrification. The question is becoming increasingly pertinent in light of the lock-in effects of biomethane production discussed above.

Most importantly, when deciding on cost-allocation, it is worthwhile examining whether it is equitable to make “society contribute to the goal of decarbonising the energy market” with biomethane,[47] by investing in network development that might need to be decommissioned in the next 15 to 20 years.

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[46] Deutsche Bundestag. (2026). *Gesetzentwurf der Bundesregierung Entwurf eines Gesetzes zur Änderung des Energiewirtschaftsgesetzes und weiterer energierechtlicher Vorschriften zur Umsetzung des Europäischen Gas- und Wasserstoff-Binnenmarktpakets.* https://www.bundestag.de/dokumente/textarchiv/2026/kw17-de-energiewirtschaftsgesetz-1165924

[47] BIP Europe, 2024.

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