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Can Romania Revive Its Domestic Methanol Production?

Key Challenges and Opportunities

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Policy Paper Title

Can Romania Revive Its Domestic Methanol Production?
Key Challenges and Opportunities

A study by

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About EPG

EPG is an independent, non-profit think tank focused on energy and climate policy in Romania and the European Union. Founded in 2014, EPG operates as a policy research institute primarily financed through competitive grants, philanthropic organisations and, to a limited extent, private sector projects. EPG aims to promote an evidence-based dialogue on how to balance decarbonisation, economic competitiveness and social fairness, engaging decision-makers, industry, and the public.

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Key findings

- Faced with structurally higher energy prices and increasing international competition, Europe's fossil fuel-based chemicals production is likely to remain under pressure.
- Although EU climate policies will drive demand for low-carbon products, there is no guarantee that this will be met through domestic production. Europe holds important advantages in technology, infrastructure, and policy, yet its competitiveness hinges on securing affordable clean energy and alternative feedstocks.
- Methanol is both a key chemical building block and emerging clean energy carrier. While there are some low-carbon production pathways, they face some significant challenges: e-methanol production faces key challenges in securing sufficient renewable energy and clean hydrogen, deploying CCUS technologies, and managing high conversion losses; biomethanol production is constrained by limited sustainable biomass availability and the need to partly redirect its current use from residential heating to chemical feedstock applications.
- Although alternative lower carbon methanol production methods involve higher costs, methanol's energy density and versatility make it a viable option for difficult to electrify sectors such as petrochemicals, heavy transport, maritime, and aviation.
- Romania exemplifies both the risks and opportunities: once a methanol producer, it now relies entirely on imports, raising concerns about industrial decline and security of supply. At the same time, Romania's renewable energy potential, port infrastructure, and history in the sector offer a platform for a low-carbon revival. Fossil-based production is unlikely to become viable. A forward-looking industrial strategy should instead focus on green methanol, produced from clean hydrogen, captured CO₂, and sustainable biomass. An e-methanol plant meeting the chemical industry's current demand would require 44 MW of capacity and 11,500 tonnes of hydrogen annually. Alternatively, green methanol could be produced on-site by its users, especially if lower quantities are required.
- Both e-methanol and biomethanol come with cost premiums and infrastructure challenges, underscoring the need for targeted support measures. The feasibility and competitiveness of green methanol production in Romania will depend on three main factors: better prioritisation of biomass use, stimulating demand, and lowering production costs. Achieving this will require better biomass processing, large-scale renewable energy deployment, access to clean hydrogen, the development of hydrogen and CO₂ infrastructure, and the modernisation and expansion of electricity grids.

Mesaje cheie

- Având în vedere prețurile ridicate la energie și concurența internațională tot mai mare, producția europeană de produse chimice pe bază de combustibili fosili va rămâne sub presiune.
- Deși politicile climatice ale UE vor stimula cererea de produse cu emisii reduse de carbon, nu există nicio garanție că aceasta va fi satisfăcută prin producție internă. Europa deține avantaje importante în ceea ce privește tehnologia, infrastructura și politicile publice, însă competitivitatea sa depinde de asigurarea unei energii curate la prețuri accesibile și a unor materii prime alternative.
- Metanolul este atât un element chimic de bază, cât și un vector emergent de energie verde. Totuși, modalitățile de producție cu emisii reduse de carbon se confruntă cu provocări semnificative: asigurarea unei cantități suficiente de energie regenerabilă și hidrogen curat, implementarea tehnologiilor CCUS și gestionarea pierderilor mari prin conversie; producția de biometanol este limitată de disponibilitatea redusă a biomasei durabile și de necesitatea de a redirecționa parțial utilizarea sa actuală de la încălzirea rezidențială către aplicații de materii prime chimice.
- Deși metodele alternative de producere a metanolului cu emisii reduse de carbon implică costuri mai mari, densitatea energetică și versatilitatea metanolului îl fac o opțiune viabilă pentru sectoare dificil de electrificat, cum ar fi petrochimia, transportul greu, transportul maritim și aviația.
- România prezintă atât riscuri, cât și oportunități: odată producător de metanol, acum depinde în totalitate de importuri, ceea ce indică declinul industrial și ridică întrebări despre securitatea aprovizionării. În același timp, potențialul României în materie de energie regenerabilă, infrastructura portuară și istoricul în acest sector oferă o platformă pentru o renaștere a producției de metanol, dar cu emisii reduse de carbon. Este puțin probabil ca producția pe bază de combustibili fosili să devină viabilă. O strategie industrială orientată spre viitor ar trebui să se concentreze mai degrabă pe metanolul verde, produs din hidrogen curat, CO₂ capturat și biomasă durabilă. O fabrică de e-metanol care să satisfacă cererea actuală a industriei chimice ar necesita o capacitate de 44 MW și 11.500 de tone de hidrogen pe an. Alternativ, metanolul verde ar putea fi produs la fața locului de către utilizatori, mai ales dacă sunt necesare cantități mai mici.
- Atât e-metanolul, cât și biometanolul implică costuri suplimentare și provocări în materie de infrastructură, ceea ce subliniază necesitatea unor măsuri de sprijin specifice. Fezabilitatea și competitivitatea producției de metanol verde în România vor depinde de trei factori principali: o mai bună prioritizare a utilizării biomasei, stimularea cererii și reducerea costurilor de producție. Pentru a realiza acest lucru, va fi necesară o mai bună prelucrare a biomasei, utilizarea pe scară largă a energiei din surse regenerabile, accesul la hidrogen curat, dezvoltarea infrastructurii pentru hidrogen și CO₂, precum și modernizarea și extinderea rețelelor de energie electrică.

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Future demand and production of methanol in the European Union

Methanol (CH_3OH) is a primary chemical found in many everyday products, such as plastics, paints, car parts, construction materials, as well as pharmaceuticals. It is the feedstock used by wood processing factories¹ to produce formaldehyde, which is then used as a binding agent in resins. The large refineries also use methanol as a blending component, while other chemical manufacturers would require it to produce amines, that are subsequently used by the defence industry in ammunition production. Methanol can also serve as a clean energy carrier for powering road and maritime transportation, fuel cells, boilers and cook stoves.² Methanol presents some advantages over ammonia or hydrogen. For instance, its energy density is higher compared to that of ammonia and therefore storage can be done in smaller spaces, and ships would not have to refuel as often.³ Methanol also has a head start within the technological emergence phase. More than 60 methanol-capable vessels are already on the water, with more than 300 on order, being in the initial scale phase as shipping fuel. By contrast, ammonia is in the proof-of-concept phase, having passed initial pilot tests.⁴ Furthermore, infrastructure already exists for methanol, as globally 100 ports already have methanol available and almost half of those also have storage capacity.⁵

Traditionally, methanol is produced from natural gas and coal,⁶ accounting for about 10% of global CO_2 emissions of the chemical and petrochemical sectors.⁷ To reduce its carbon footprint, it can also be synthesised from alternative feedstocks. These include captured CO_2 ⁸ combined with clean hydrogen⁹ – a process known as e-methanol (Figure 1) – or from biomass sources such as agricultural waste, forestry residues, and municipal solid waste, referred to as biomethanol (Figure 2). These alternatives to conventional fossil-based methanol are generally referred to as green methanol. Compared to conventional methanol, e-methanol using renewable electricity can reduce CO_2 emissions by up to 95%.¹⁰ Similarly, biomethanol derived from woody biomass can emit approximately 0.2 kg CO_2 /kg, significantly less than natural gas (1.6 kg CO_2 /kg) or coal-based (3.8 kg CO_2 /kg) production methods.¹¹

¹ Such as the one in Sebeş, Romania.

² Methanol Institute, 2025. [About Methanol](#)

³ Global Maritime Forum, 2025. [Zero-emission shipping fuels: A guide to methanol and ammonia](#)

⁴ Global Maritime Forum, 2025. [Zero-emission shipping fuels: A guide to methanol and ammonia](#)

⁵ Maritime Informed, 2025. [Methanol's role as a clean, sustainable fuel for the maritime industry](#)

⁶ Via catalytic conversion of syngas, a mixture primarily composed of hydrogen, carbon monoxide, and carbon dioxide.

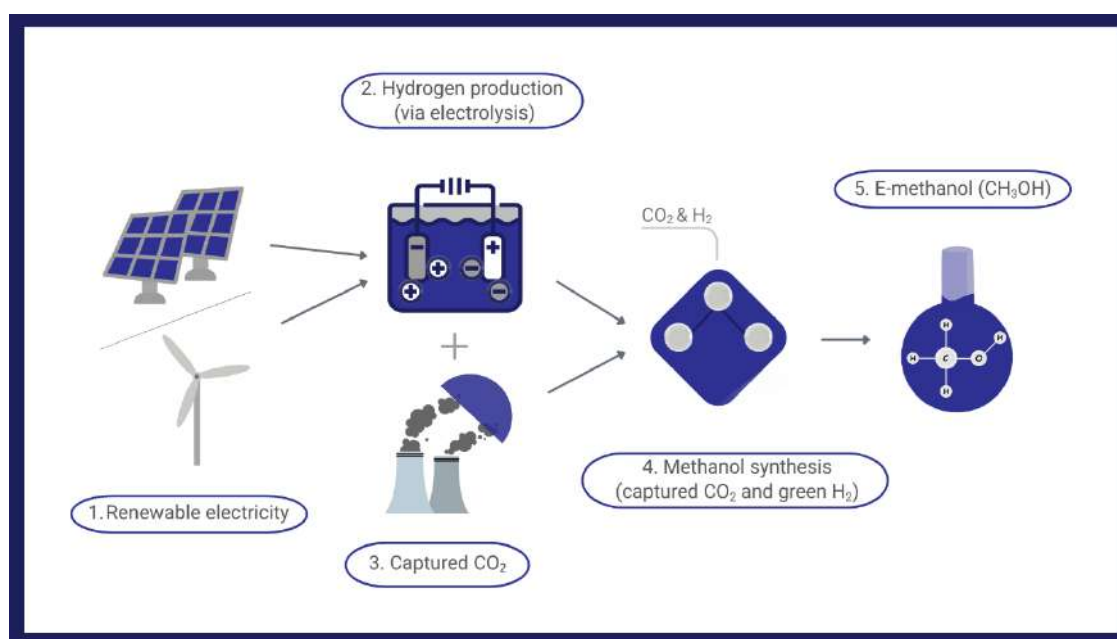
⁷ Tabibian & Sharifzadeh, 2023. [Statistical and analytical investigation of methanol applications, production technologies, value-chain and economy with a special focus on renewable methanol](#)

⁸ The captured CO_2 can come from biogenic sources, such as biogas plants and waste incineration, or from industrial processes such as cement, steel and petrochemicals production.

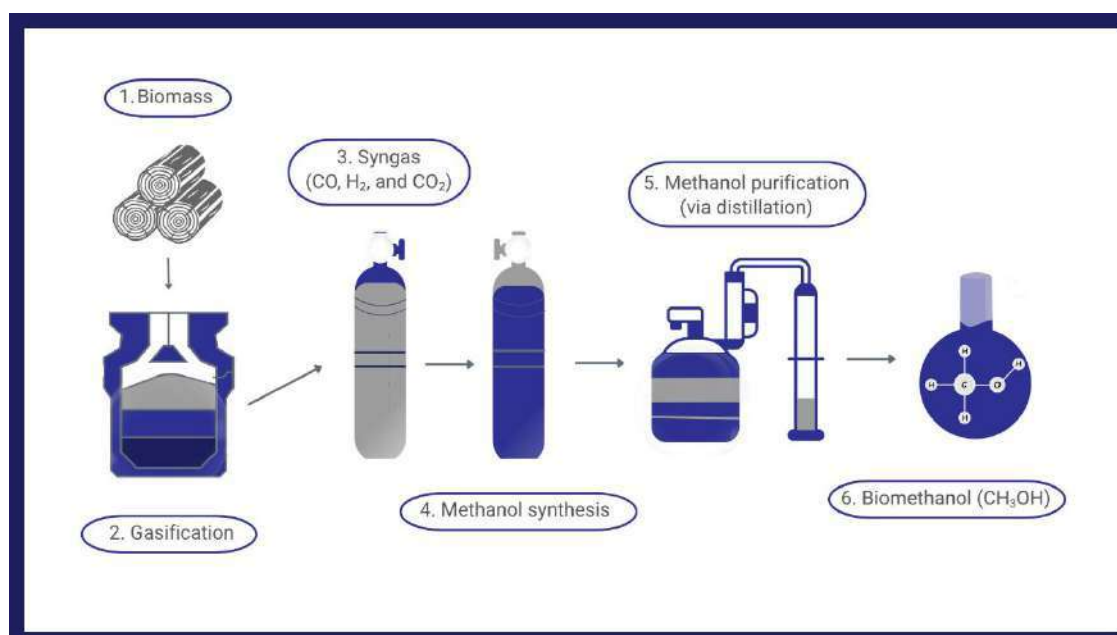
⁹ An electrolyser powered by renewable energy splits water molecules into clean hydrogen and oxygen.

¹⁰ Methanol Institute, 2024. [An Essential Actor of the Energy Transition in the EU](#)

¹¹ Tahir, 2025. [Bio-methanol: Fueling a Sustainable Future](#)

Figure 1. E-methanol production process

Source: Energy Policy Group

Figure 2. Biomethanol production process

Source: Energy Policy Group

These alternative production methods come at a premium cost and incur conversion losses, but the energy density and versatility of methanol do make it a potentially viable option in certain sectors that may struggle to electrify. In the transport sector, green methanol can be used as fuel for ships, cars, trucks or buses, either blended with gasoline or used in diesel. With further processing, it can also be converted into sustainable aviation fuel (SAF). In the chemical industry, green methanol can replace traditional fossil-based methanol and can be used in various applications, including the production of plastics.

For green methanol to become a genuine solution for European industries, production costs need to be driven down significantly, and the European Union (EU) needs to clarify its value proposition compared to production in other more resource-endowed geographies. Recent policy updates will improve the business case for domestic production. The rising carbon price under the revised EU Emissions Trading System (ETS)¹² will contribute to improving the business case for low-carbon production of industrial goods. Meanwhile, domestic manufacturing will be protected by import tariffs of emissions-intensive products coming from markets that lack a meaningful carbon price. This will be done through the Carbon Border Adjustment Mechanism (CBAM), which is replacing free-allocation as the main tool for preventing carbon leakage in multiple industrial sectors – including hydrogen production, a key step in e-methanol production.

Since July 2023, e-fuels – including e-methanol – have been officially recognised as renewable fuels of non-biological origin (RFNBOs).¹³ Under the revised Renewable Energy Directive (RED III), 42% of the hydrogen used in industry by 2030 and 60% by 2035 must be in the form of RFNBOs.¹⁴ In the transport sector, RED III sets a binding sub-target requiring at least 5.5% of fuels to come from advanced biofuels of which a minimum of 1% from RFNBOs – a target also adopted by Romania in its National Energy and Climate Plan (NECP).^{15,16}

Moreover, the EU Industrial Carbon Management Strategy highlights the potential to capitalise on captured CO₂ emissions.^{17,18} Besides ambitious storage targets in the Net Zero Industry Act (NZIA), captured CO₂ emissions can be repurposed as feedstock for a wide range of value-added products, including green fuels, chemicals, and construction materials.

All these policies constitute important building blocks for enabling low-carbon domestic production, but they may be insufficient to drive investments at the necessary scale and pace, especially at a time when the European chemicals industry is confronted with significant challenges and contraction. Faced with structurally higher energy prices, fossil fuel-based industrial production in Europe will continue to struggle. While EU climate policy will drive demand for low-carbon products, there is no guarantee that this will be met through domestic production. The EU's revival of industrial policy will prompt up certain manufacturing sectors, but any long-term subsidies should be carefully compared with the benefits that emerge from trade. Given the long history of its chemicals and petrochemicals industries, as well as its natural resource endowments, Romania could investigate pursuing an industrial policy aimed at reanimating its chemicals industry.

¹² Which was extended to maritime transport in January 2024 and will include road transport starting from 2027.

¹³ These represent mostly renewable hydrogen and hydrogen-based synthetic fuels.

¹⁴ European Hydrogen Observatory, 2025. [Renewable Energy Directive](#)

¹⁵ Although Romania has not yet transposed RED III (which [was due](#) by the end of May 2025).

¹⁶ European Commission, 2024. [Romania - Final updated NECP 2021-2030 \(submitted in 2024\)](#)

¹⁷ Specifically biogenic CO₂, which originates from biological sources and is released during the combustion of biofuels such as biogas or biomass.

¹⁸ EUR-Lex, 2024. [COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS Towards an ambitious Industrial Carbon Management for the EU](#)

Any revival of methanol production in Romania should prioritise low-carbon production

Historically, Romania had large-scale methanol production at the Viromet plant, which supplied the entire Romanian chemical industry for more than 70 years. Its financial struggles commenced in 1997 and were linked to the high price of natural gas, a number of political decisions, as well as accumulated debt.¹⁹ These culminated in its closure in 2015 and expropriation in 2025, as the factory will be replaced by a gunpowder producer.²⁰ Now Romania has no domestic production of methanol, so it relies on imports for its domestic consumption.²¹ Azerbaijan, Trinidad and Tobago and Venezuela are the countries from which Romania imported²² the largest quantities of methanol in 2023.²³ Since the Viromet plant can no longer be repurposed for green methanol production, there is no path dependency that would impede the pursuit of low-carbon options.

Romania has a strong foundation for developing green methanol production. The country's significant potential in renewable energy,^{24, 25} established industrial base and inherent possibility of capturing CO₂, together with its key position on the Black Sea, maritime infrastructure and Danube River corridor make it worthwhile to explore possibilities for domestic clean methanol production. As supply chain resilience and addressing import-related risks constantly increase in political salience, green methanol production could become a focus of Romania's industrial policy. It may be a good moment to focus on prompting up local demand, given the upcoming plans to invest in the modernisation of Romania's Danube ports.²⁶ The global shipping industry is sending some demand signals for green fuels²⁷ and port-anchored industrial clusters are critical to developing bunkering infrastructure for green fuels.²⁸ Several shipping companies currently have dual fuel ships operating on the water, with a few being run on e-methanol²⁹ supplied from the Kassø facility located in southern Denmark,³⁰ which is ten times larger than any other e-methanol plant built so far.³¹

¹⁹ Digi24, 2016. [ROMÂNIA FURATĂ. Victoria, oraşul îngropat de combinatul chimic](#)

²⁰ Bîrsan, 2025. [O fabrică din apropierea Sibiului dă afară toţi angajaţii. Va produce armament](#)

²¹ Energy Policy Group, 2024. [The Cost of Romania's Industrial Transition](#)

²² WTS, 2025. [Romania Methanol \(methyl alcohol\) imports by country in 2023](#)

²³ In addition to uncertain geopolitical developments that may affect the availability of methanol and its price, most of Romania's imports will soon be subject to the CBAM, which may translate into higher costs in the absence of carbon pricing in these countries. At the same time, even with carbon pricing in place, the costs may be passed through to consumers, including the importers.

²⁴ Romania's wind energy potential is deemed to be the highest in southeast Europe.

²⁵ Bankwatch Network, 2025. [The energy sector in Romania](#)

²⁶ Costea, 2024. [Porturile de la Dunăre, incluse în „Europa ESPO”. Investiții de 80 miliarde în modernizări și digitalizare](#)

²⁷ Hofman, 2023. [PODCAST: More please! Shipping's race to scale green fuels](#)

²⁸ World Economic Forum, 2024. [Why a multi-fuel infrastructure network is key to transport and heavy industry's energy transition](#)

²⁹ Early, 2025. [Shipping industry still at sea as it tries to navigate to net zero](#)

³⁰ European Energy, 2025. [European Energy produces first e-methanol at Kassø](#)

³¹ Meyer, 2022. [One giant leap for e-Methanol](#)

There are also some plans to start producing e-methanol in Romania³² with the hope to transform the country into a regional player,³³ envisioning the development of ‘energy islands’ that produce clean energy efficiently and cater to specific needs of local communities. These developments should be considered within a portfolio approach to clean fuels production, alongside other national-level plans such as the construction of the OMV sustainable aviation fuels unit at Petrobrazi.³⁴ Along these lines, the methanol infrastructure available in the port of Constanța could also be leveraged, with the Romanian subsidiary of the State Oil Company of Azerbaijan Republic (SOCAR) having storage capacities of up to 6 thousand tonnes.³⁵

³² European Industry Review, 2023. [European Energy Explores Construction of Green H2 and E-Methanol Plants in Romania](#)

³³ Dosko, 2023. [European Energy Set to Build World’s Largest E-Methanol and Green Hydrogen Plant in Romania](#)

³⁴ OMV Petrom, 2025. [OMV Petrom starts construction of sustainable fuels unit at Petrobrazi Refinery](#)

³⁵ SOCAR, 2025. [Methanol](#)

The feasibility of production is threatened by costs

The main challenges³⁶ to producing e-methanol revolve around sourcing sufficient renewable energy and clean hydrogen for the plant processes, deploying CCUS technologies, and managing the energy-intensive nature of production³⁷ due to high conversion losses,³⁸ primarily during electrolysis and fuel synthesis. Additionally, the relatively high production costs compared to its fossil-based counterpart translate into a premium attached to the end-product and into difficulties in securing demand. Meanwhile, the main challenges for biomethanol production are the limited resources of sustainable biomass³⁹ and the need to carefully redirect part of its current use from residential heating towards chemical feedstock applications,⁴⁰ even in Romania, which has important biomass potential.

On the production cost of e-methanol, an analysis by EPG⁴¹ shows the initial fixed costs arising from the purchase of equipment⁴² are significant, adding up to €300 (upfront payment) or €700 million (payment over 25 years with 8% interest rate) for a 44 MW plant capacity. The operational costs would add up to €70-€80 million per year, primarily driven by electricity consumption, along with expenses for wood chips, catalysts, land renting and insurance. No carbon cost savings would be incurred from decarbonising methanol production,⁴³ since the methanol demand is currently satisfied by imports rather than natural gas-based domestic production. There would be, however, benefits to the country's trade balance.

These costs indicate that e-methanol carries a premium compared to methanol produced with fossil fuels. However, the e-methanol production cost is projected to decline from up to €1,500 in 2020 to €350 per tonne by 2050,⁴⁴ but this value is still higher than the current production cost of conventional methanol (between €85 and €215 per tonne),⁴⁵ which is mostly tied to the price of natural gas. In the long-run, as CO₂ emissions costs under the EU ETS will rise,⁴⁶ e-methanol may become cost competitive with conventional methanol as early as 2040, regardless of the natural gas price.⁴⁷

³⁶ Meyer, 2022. [One giant leap for e-Methanol](#)

³⁷ Electricity costs account for 28% - 49% of overall production costs.

³⁸ Neuling & Berks, 2024. [E-fuels: Separating the substance from the hype](#)

³⁹ Gautam, 2020. [Bio-methanol as a renewable fuel from waste biomass: Current trends and future perspective](#)

⁴⁰ Belmans, 2025. [Thought experiment for a targeted European industrial policy based on electrification by 2050](#)

⁴¹ Energy Policy Group, 2024. [The Cost of Romania's Industrial Transition](#)

⁴² An electrolyser, the green methanol synthesis unit and the biomass combined heat and power plant with carbon capture.

⁴³ The decarbonisation of heavy industries could generally have cost savings due to the CO₂ abatement in the context of the 2034 phasing out of the Emissions Trading System free allocations.

⁴⁴ Fasihi & Breyer, 2024. [Global production potential of green methanol based on variable renewable electricity](#)

⁴⁵ Agyekum et al., 2025. [Research on biomass energy and CO₂ conversion to methanol: a combination of conventional and bibliometric review analysis](#)

⁴⁶ This holds for a CO₂ price of €150/t. However, a CO₂ price of €100/t would still make e-methanol competitive as long as the natural gas price of over 3.5 USD per MBtu.

⁴⁷ Fasihi & Breyer, 2024. [Global production potential of green methanol based on variable renewable electricity](#)

Similarly, biomethanol also carries a premium, with its production cost estimated between €800 and €1,200 per tonne in Europe.⁴⁸ This premium is heavily influenced by local production conditions, such as feedstock types and prices, the electricity mix and its cost, and investment cost.⁴⁹ For now, Romania has no credible strategy for shifting biomass consumption to higher value uses. There may also be competing demand sources for the feedstock, with biofuels and biomethane production also expected to increase in coming years. While this may change in the future once the necessary infrastructure will allow for the electrification of household heating in rural areas and create space for different uses for biomass, for now e-methanol represents a more likely option for decarbonisation compared to biomethanol.

⁴⁸ 24 Chemical Research, 2025. [Europe Biomethanol Market](#)

⁴⁹ IEA-ERSAP & IRENA, 2013. [Production of Bio-methanol](#)

Deploying clean energy, hydrogen, and CCUS technologies to unlock domestic production

The equivalent e-methanol plant capacity that would meet the consumption needs of the chemical industry in Romania is estimated to be of 44 MW and would require 11.5 thousand tonnes of hydrogen per year.⁵⁰ This is significant compared to the total demand for hydrogen in Romania, which added up to 194 thousand tonnes in 2021.⁵¹ Challenges also remain along the entire hydrogen value chain at EU-level, and the region is unlikely to meet its 2030 renewable hydrogen production and import targets (a total of 20 million tonnes per year at EU level)⁵². This is mirrored in Romania, where uncertainties remain regarding the development of the hydrogen infrastructure, which is currently lagging.⁵³ While the key role of clean hydrogen for decarbonising transport and industrial activity is reflected in the country's draft National Hydrogen Strategy⁵⁴, the required investment to reach the aimed clean hydrogen target⁵⁵ is estimated at €4.8 billion,⁵⁶ a potential challenge considering Romania's tight fiscal space and excessive deficit.⁵⁷

The deployment of carbon capture technologies also faces major barriers such as the lack of clear regulation and financing, uncertainties regarding the development of CO₂ infrastructure, as well as challenged public acceptance.⁵⁸ Romania's draft NECP includes commitments to develop a National Carbon Management Strategy, deploy CO₂ transport infrastructure, and co-finance at least three CCUS projects by 2027.⁵⁹ However, the long lead times associated with CCUS projects suggest that Romania is unlikely to have its first facility before 2033,⁶⁰ which may impede e-methanol production.

Nonetheless, Romania holds significant potential for geological CO₂ storage, with an estimated 514 million tonnes available in onshore hydrocarbon reservoirs alone.⁶¹ Under the Net Zero Industry Act, OMV Petrom and Romgaz will be required to ensure an operational CO₂ injection capacity of more than 10 million tonnes per year by 2030. While the strategies through which Romanian companies will meet these targets remain to be decided, the implementation of NZIA will represent a key driver in the domestic development of CCUS value chains. Given the scale that this industry will have to reach,⁶² combined with Romania's regional competitive advantage⁶³ in wind power and abundant solar and hydropower

⁵⁰ Energy Policy Group, 2024. [The Cost of Romania's Industrial Transition](#)

⁵¹ Bereschi, 2024. [National Hydrogen Strategy for Romania](#)

⁵² ECA, 2024. [Renewable hydrogen-powered EU: auditors call for a reality check](#)

⁵³ Energy Policy Group, 2025. [Ensuring the Long-term Competitiveness of Romania's Steel Industry](#)

⁵⁴ Romanian Government, 2023. [National Hydrogen Strategy and Action Plan 2023-2030](#)

⁵⁵ Of 152.9 thousand tonnes of clean hydrogen per year by 2030.

⁵⁶ Radu et al., 2024. [Hydrogen law, regulations & strategy in Romania](#)

⁵⁷ Strupczewski, 2025. [EU steps up disciplinary action against Romania over excessive deficit](#)

⁵⁸ Miu, 2023. [Carbon Capture, Utilisation and Storage: challenges and policy recommendations from the ConsenCUS project](#)

⁵⁹ European Commission, 2024. [Romania - Final updated NECP 2021-2030 \(submitted in 2024\)](#)

⁶⁰ Energy Policy Group, 2024. [High-Level Roadmap for Decarbonising Cement and Lime Production in Romania](#)

⁶¹ Energy Policy Group, 2022. [Decarbonising Romania's Industry](#)

⁶² Even if the vast majority of captured CO₂ will be stored instead of used.

⁶³ Energy Policy Group, 2024. [Modelling of the Romanian Electricity Sector, 2025-2040](#)

resources,⁶⁴ Romania may represent a good candidate for e-methanol production to supply both domestic and regional demand.

With Romania's renewable hydrogen production capacity expected in some estimates to reach 153 thousand tonnes by 2030,⁶⁵ the business case for producing e-methanol will become increasingly viable after 2035, as two of its key inputs – captured CO₂ and clean hydrogen – become more readily available.

⁶⁴ These are prerequisites for clean energy and clean hydrogen.

⁶⁵ Horvath, 2025. [România poate produce 153.000 de tone de hidrogen regenerabil până în 2030](#)

The way forward for Romanian methanol production

The feasibility and competitiveness of producing green methanol in Romania will depend on both stimulating future demand and reducing manufacturing costs. This requires large-scale deployment of renewable energy, access to clean hydrogen, development of hydrogen and CO₂ infrastructure, and the strengthening, modernisation and expansion of the electricity grids.

Decisive actions would be needed from both private and public actors to cover the cost premium of green methanol, while stimulating the investment appetite and demand. An example of private sector demand signalling comes from the maritime industry, where industrial early adopters like Maersk have signed offtake agreements. In Romania, the plans to launch projects such as an e-methanol initiative⁶⁶ alongside the construction of a sustainable fuels unit at the OMV Petrom Petrobrazî Refinery⁶⁷ are first steps and send a signal about the future importance of e-fuels.

Policy push instruments will also be a powerful lever to incentivise demand for e-fuels, particularly through the specific mandatory quotas for RFNBOs and SAFs. The early adoption at the Cluj-Napoca airport, where a 2% SAF⁶⁸ blend has already been introduced under the ReFuelEU Regulation,⁶⁹ demonstrates the potential of regulatory drivers. Yet, the lack of adequate infrastructure at other airports highlights the remaining barriers that must be addressed to ensure a broader and more consistent uptake.

⁶⁶ Energy Industry Review, 2023. [European Energy Explores Construction of Green H2 and E-Methanol Plants in Romania](#)

⁶⁷ OMV Petrom, 2025. [OMV Petrom starts construction of sustainable fuels unit at Petrobrazî Refinery](#)

⁶⁸ Green methanol serves as an intermediate product in SAF production.

⁶⁹ Aeroportul Internațional Avram Iancu Cluj, 2025. [COMUNICAT DE PRESĂ - Avioanele de pe Aeroportul Internațional Cluj încep să folosească combustibil sustenabil pentru aviație \(SAF\) furnizat de OMV Petrom - Aeroport Cluj](#)

Policy Recommendations

- Undergo a careful assessment of Romania's potential competitive advantage for green methanol production, taking into consideration aspects such as national and regional demand, access and prices for energy and feedstocks, access to funding, workforce availability, and infrastructure development.
- Develop the nation-wide industrial strategy to harness the country's vast resources and enable both the production of value-added goods and the training of specialised workforce needed to handle complex chemical production processes.
- Focus on horizontal enablers related to the deployment of infrastructure for electricity, hydrogen, and CO₂.
- Stimulate demand for green methanol consumption in key sector such as transport and chemicals, including by channelling public procurement instruments.
- Establish a framework for prioritising biomass use, in view of a gradual shift from household heating to higher value uses such as biomethanol, biomethane and biofuel production.

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