

**Renewable  
gas  
report**

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As Ireland accelerates its journey toward a decarbonised energy system, the transformation of the national gas network plays a critical role in delivering a cleaner, more secure energy future. David Kelly, Director of Customer and Business Development at Gas Networks Ireland, discusses the utility's vision to repurpose and decarbonise the country's €3 billion gas network infrastructure using renewable gases, biomethane, and green hydrogen.

## Gas Networks Ireland's David Kelly:

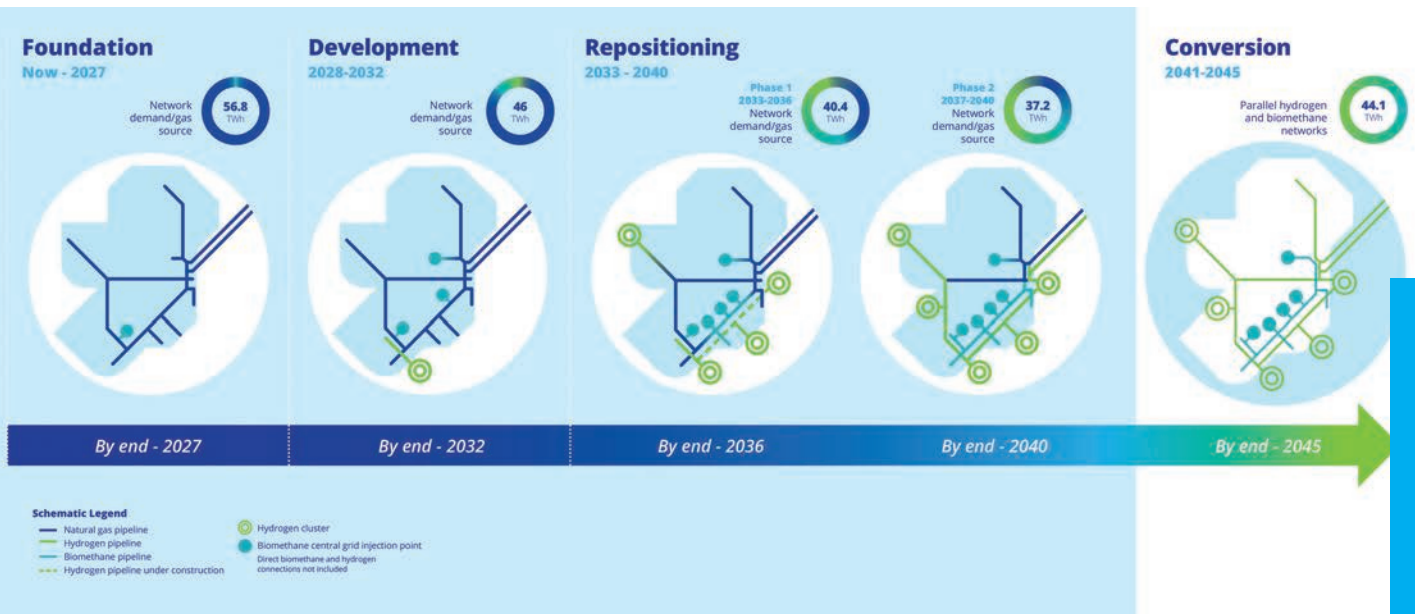
# Ireland's future with renewable gas

**Q: David, you have recently been appointed Vice President of Dublin Chamber for 2025. Congratulations. How does your new role align with your work at Gas Networks Ireland?**

Thank you. I am honoured to take on the role with Dublin Chamber and to support the business community through this important platform. There is a clear synergy between my role at the Chamber and my work at Gas Networks Ireland — both focus on long-term economic sustainability, innovation and supporting Irish enterprise through change. At Gas Networks Ireland, we are working on one of the biggest transformations in the history of Ireland's energy infrastructure: transitioning the gas network to carry 100 per cent renewable gas by 2045. That ambition goes hand-in-hand with the need to support businesses as they adapt and decarbonise.

**Q: Let us start with that vision — what is the *Pathway to a Net Zero Carbon Network*?**

The pathway is our strategic roadmap to fully decarbonise Ireland's national gas network by 2045. Right now, over 99 per cent of the gas in the network is natural gas. By 2045 we plan to replace that entirely with renewable gases; a third will be biomethane and two thirds will be green hydrogen. That means repurposing existing infrastructure and ensuring that the national network is capable of safely and efficiently transporting renewable gases. It is a bold but achievable vision, and one that is essential to Ireland achieving its national climate targets while maintaining energy security.



Gas Networks Ireland's *Pathway to a Net Zero Carbon Network* has four distinct phases in the journey to Ireland's carbon neutral gas network, outlining how the national gas network can transport 100 per cent renewable gas by 2045, playing an essential role in transitioning Ireland to a carbon neutral economy.

**Q: Why is renewable gas so important to Ireland's energy transition?**

Renewable gases – especially biomethane and green hydrogen – have unique advantages. Biomethane is a carbon neutral gas produced from organic waste and is already being injected into the gas network with little or no changes required to existing infrastructure. It is available today and can immediately displace natural gas in heating, transport and industry. Green hydrogen made from wind and solar on the other hand is a longer-term solution that will play a central role in decarbonising sectors that are hard to electrify, like heavy industry and high temperature manufacturing.

The gas network also provides critical backup for Ireland's electricity grid, especially during periods of low wind generation. In 2024, gas generated a total of 41 per cent of electricity used in the country, reaching up to 83 per cent of our electricity needs at times of peak demand and low wind energy generation. Replacing natural gas with renewable gas in that role means we can deliver clean, secure, and flexible energy for all customers – something that is essential for a net zero future.

**Q: Biomethane seems to be the immediate opportunity. What progress has Gas Networks Ireland made in this space?**

We have made great strides in the last few years. Gas Networks Ireland's new

Central Grid Injection (CGI) facility in Mitchelstown represents a key step in supporting Ireland's transition to renewable energy. This €32 million investment will enable the injection of biomethane into the national gas network, providing an essential connection point for producers located remotely from existing gas infrastructure.

Once fully operational, the facility is expected to reduce Ireland's CO<sub>2</sub> emissions by approximately 130,000 tonnes annually. Biomethane injected through the Mitchelstown CGI will contribute around 12 per cent of the Government's 2030 target of 5.7 TWh. Market interest remains very strong, with estimated biomethane volumes from 22 interested producers exceeding the CGI's total capacity by more than two and a half times. Commissioning of the first phase is expected in early 2026.

We have also signed a significant gas network connection agreement with Bia Energy, who are building a €60 million anaerobic digestion plant in Huntstown. Once operational, the plant will inject large volumes of biomethane directly into the national network.

There is strong market appetite as well. We received 176 expressions of interest from potential biomethane producers in response to a recent national Request for Information process – almost triple the current 2030 target. Ireland has the highest per capita biomethane potential in Europe, and we are working to unlock

that. It is not just about emissions reduction, biomethane has huge potential to support the rural economy potentially creating new income streams for farmers and supports circular agriculture.

**Q: How is Gas Networks Ireland enabling the growth of Ireland's biomethane sector?**

Gas Networks Ireland is facilitating connections to the gas network and constructing its first central grid injection point in County Cork for those renewable gas producers that are not located close the gas network. We are working closely with developers, customers, and policymakers. Our role is also about de-risking the market and creating confidence that renewable gas projects can connect, sell their output, and operate sustainably over the long term.

**Q: What are you hearing from biomethane developers and customers on the ground?**

There is definitely appetite in the market, but there are also some headwinds. Developers are working hard to progress projects, but until the Government's Renewable Heat Obligation (RHO) is published and challenges with the planning system are overcome, we will see some investor uncertainty.

Customers, particularly in the agri-food and industrial sectors, are telling us they want to move to renewable gas,



Gas Networks Ireland's Director of Customer and Business and incoming Dublin Chamber Vice President, David Kelly, photographed at Dublin Chamber's 2025 AGM dinner in February, with incoming Dublin Chamber President Eoghan Quigley.

helping to unlock projects, and build investor and customer trust in the sector.

**Q: Are there recent developments or partnerships you are particularly excited about?**

Yes, as well as announcements from CycleØ, Bia Energy, and Nephin Renewables, we are seeing new market entrants come forward, such as Greengate Biogas, which has announced plans to develop a 250 GWh anaerobic digestion plant in Carlow. They are actively engaging with the local community and have hosted a public information event. These kinds of projects demonstrate both ambition and a real commitment to collaboration – something that is essential to success in this space.

**Q: Large energy users (LEUs) are increasingly being linked to renewable gas. What is the significance of this trend for the development of biomethane in Ireland?**

We are seeing large energy users expressing an interest in renewable gas as a decarbonised energy solution and signing long-term gas purchase agreements with anaerobic digestion (AD) developers, which is helping to underpin the commercial viability of new biomethane projects.

The National Biomethane Strategy identifies industry investment as one of the three core pillars – alongside capital grants and the RHO – to put Ireland on a trajectory to meet its 5.7 TWh biomethane target by 2030. What we are

seeing now is industry stepping up with LEUs playing a key role. Their early commitment sends a strong signal to the market.

**Q: Green hydrogen is a longer-term ambition. What is Gas Networks Ireland doing to prepare for it?**

Hydrogen is absolutely critical to achieving net zero. But producing it at scale in Ireland will require a significant buildout of offshore wind to power electrolyzers. That will take time but we are getting ahead of the curve by ensuring our network is hydrogen-ready now.

We are already conducting green hydrogen trials, including a successful project at Daltons Chancellors Mills in Athy, where a local family business is taking advantage of its connection to the gas network to blend green hydrogen to power their industrial processes, which is working seamlessly.

We are also investing in hydrogen research working with UCD and other partners and preparing our interconnectors with Britain for future hydrogen imports. Britain is likely to begin blending hydrogen into its network in the next few years and we need to be ready for that.

**Q: What is the role of hydrogen clusters in your strategy?**

Clusters are a smart way to build out the hydrogen economy incrementally. These are regions where hydrogen production, use and storage are all co-located, typically around large industrial users. Our first major project in that regard is the Celtic Hydrogen Cluster in east Cork. It leverages existing infrastructure and industrial demand, and is a blueprint for other clusters around the country.

Over time we will connect these clusters into a national hydrogen backbone, which could then integrate with the European Hydrogen Backbone, allowing for international trade and energy resilience.

**Q: How is Gas Networks Ireland supporting industrial customers during this transition?**

We are very focused on partnership and innovation. Many businesses want to decarbonise but need help figuring out how. We have established a dedicated Customer Solutions team to provide a key support to our largest customers.



Photographed in October 2024, then-Tánaiste Micheál Martin TD turns the sod to launch construction of Gas Networks Ireland's €32 million Mitchelstown Biomethane Central Grid Injection facility, pictured with David Kelly and Gas Networks Ireland colleagues Brian Sheehan, Edwina Nyhan, and Cathal Marley.

This team provides proactive, regular, collaborative engagement, to inform and empower large customers to facilitate their transition to renewable gas solutions.

For biomethane, we are working closely

with energy suppliers, energy traders, and the wider energy ecosystem to ensure there is a clear and simple pathway for large customers to procure renewable gases. Through our Innovation Fund, we co-fund projects that trial

renewable gas solutions for high heat customers. We have also published a Hydrogen Technical Guide to help industrial customers assess their compatibility with hydrogen.

**Q: How does this all tie into energy security?**

A decarbonised gas network does not just support climate goals, it also strengthens our energy independence. By using indigenous biomethane and producing green hydrogen from Irish wind and solar, we will reduce our reliance on fossil fuel imports. Our gas network is also a strategic asset valued at €3 billion, it provides vital energy backup and system flexibility.

In 2024 when wind generation dropped, gas generated up to 83 per cent of Ireland's electricity needs. By replacing that gas with renewable alternatives we are ensuring both security and sustainability.

**Q: Looking ahead to 2045 – what does success look like for Gas Networks Ireland?**

Success is a fully decarbonised gas network that enables Ireland to meet its climate targets, supports economic growth and provides clean, secure energy for homes and businesses. It is a network that carries 100 per cent renewable gas – split between biomethane and hydrogen – and integrates seamlessly with electricity and transport systems.

It also means Ireland is recognised as a European leader in renewable gas, with strong domestic supply, export capability, and thriving rural and industrial economies built on clean energy.

The energy transition is a once-in-a-generation challenge, and opportunity. At Gas Networks Ireland we are proud to be doing our part. Our team is passionate about delivering practical, scalable solutions that work for Ireland. The future is renewable – and it is already underway.

## Gas Networks Ireland's Pathway to a Net Zero Carbon Network is structured into four key phases:

1. **Foundation (to 2027):** This phase is underway. The groundwork is being laid; injection points are being established, biomethane delivery is being enabled and the network is being prepared to safely accommodate renewable gases. A key milestone is the new Central Grid Injection (CGI) facility in Mitchelstown, County Cork, which will inject up to 700 GWh of biomethane per year.
2. **Development (2028–2032):** This phase will see scaling of operations. The aim is to meet the Government's 5.7 TWh biomethane target and initiate hydrogen blending into the network. By the end of this period, renewable gases will account for 17 per cent of the network gas mix.
3. **Repositioning (2033–2040):** Large sections of the network will be repurposed, and hydrogen clusters will be deployed around key industrial hubs. By 2040, biomethane and hydrogen will together comprise over 80 per cent of the gas mix.
4. **Conversion (2041–2045):** The final transformation phase. Two parallel renewable gas networks will be operated: one for hydrogen and one for biomethane. Natural gas will be fully phased out by 2045.



# Navigating the EU's energy transition

Speaking to *eolas Magazine*, Katja Yafimava, Senior Research Fellow at the Oxford Institute for Energy Studies, offers a deep dive into the European Union's decarbonised gas and hydrogen package.



"The future EU gas system will look very different," Yafimava says. "There will be much less natural gas to transport as the system decarbonises."

With the adoption of the Recast Gas Directive and Regulation, the EU is laying the groundwork for an energy system increasingly defined by decarbonised gases and pure hydrogen. "Existing gas networks will face a massive challenge, transitioning to accommodate more low-carbon gases, and some will inevitably need to be repurposed or decommissioned," Yafimava states.

## Building hydrogen networks

Central to the legislation is the vision of a dual system: one network transporting lower-carbon gases such as biomethane, and another dedicated to high-purity 'green' hydrogen. However, as Yafimava notes: "The topology of the future hydrogen networks is very uncertain. There is a big uncertainty about both supply and demand."

Yafimava further stresses the risks of investing in infrastructure prematurely: "You do not want to build infrastructure and then find there is neither supply nor demand at either end of the pipeline."

Regulation will play a critical role in managing this uncertainty. Flexibility, Yafimava emphasises, is paramount: "The regulation must be sufficiently flexible to allow small-scale, no-regret networks to start and to scale up if needed."



The EU's current hydrogen infrastructure is minuscule by comparison to the gas network, with just 2,000 kilometres of hydrogen pipelines confined largely to industrial clusters. "It is a huge difference in scale," she said, warning that ambitions for a European hydrogen backbone, largely championed by transmission system operators (TSOs), may not materialise at the projected size. "Most of the proposed hydrogen backbone relies on repurposing existing gas pipelines because it is less expensive," she adds, "but whether that will happen at the projected scale remains to be seen".

Yafimava also points out the pragmatic steps being taken: "The first PCI [project of common interest] list for hydrogen and electrolysis projects confirms that hydrogen infrastructure will initially build on existing industrial clusters, predominantly in western Europe."

Despite the legislative ambition, she cautions that "there is no hydrogen market in Europe as such". Legislators, she explains, face a "tabula rasa" when drafting rules for hydrogen, opting to largely "cut and paste" natural gas market models, including unbundling provisions and regulated third-party access. Whether this will prove too rigid for a nascent market remains an open question: "It is valid to ask whether such regulation might stifle market development."

Nevertheless, Yafimava acknowledges that flexibility has been integrated into the framework. "There is a transition period until 2033 for regulated access to hydrogen infrastructure," she says, a compromise reached after initial proposals for immediate implementation faced resistance. Furthermore, the framework allows "all sorts of exemptions and derogations for both existing and new hydrogen networks", offering critical breathing space for market evolution.

## Phasing out LNG

On natural gas, Yafimava says the EU's energy package was "hijacked" by the energy crisis of 2022. Emergency measures such as storage mandates, tariff discounts for LNG imports, and a now-expired wholesale price cap were introduced. However, she says: "The fundamental

provisions governing the natural gas market have been preserved. There are no groundbreaking changes."

A key focus going forward, she argues, must be on coordinating the development and repurposing of networks. "The legislation requires national network development plans to identify infrastructure that can be decommissioned or repurposed," Yafimava explains. However, she highlights a troubling inconsistency: "There is currently a huge gap between national plans and the EU *Ten-Year Network Development Plan*, particularly regarding low-carbon gas infrastructure."

Implementation will determine the success of the framework. "It is critical to ensure that the natural gas phase-out and hydrogen phase-in are done in a coordinated manner without jeopardising security of supply," she warns. Gas will remain important during the transition: "Although the role of gas is fading, it is still crucial for security, especially on low-wind, low-sun days."

Further regulatory evolution is inevitable. Yafimava outlines several pressing challenges: the fate of emergency measures inherited from the crisis, increased tariff uncertainty due to regulators' discretionary powers on discounts, and the urgent need to update capacity allocation rules to reflect changing gas flow patterns. "Flexibility and efficient provision of capacity will be crucial," she says.

On LNG, Yafimava outlines a growing need for reform: "Given the increased role of imported LNG, changes are needed to allow more flexible secondary capacity trading and avoid hoarding."

## Path forward

In conclusion, while the decarbonised gas and hydrogen package sets the stage for a transformed European energy system, much depends on the details of implementation. "The package is not the end of the journey," Yafimava reflects.

"A roadmap will be necessary to ensure consistent and efficient implementation, particularly for financing the move from natural gas to hydrogen infrastructure." She reiterates that if rigidity hampers market development, "flexibility could and must be added as needed".

# France's plans for hydrogen and biomethane

Ines Bouacida, a senior researcher at the International Sustainability Standards Research Institute (ISSRI), speaks to *eolas Magazine* about France's plans for biomethane and hydrogen; a cornerstone of its energy transition.

France has set ambitious targets for biomethane, aiming for it to comprise between 10 per cent and 15 per cent of the gas network by 2030, up from just 3 per cent today. "The goal for biomethane was raised from 35 TWh to 44 TWh by 2030," Bouacida says, referring to a graph which asserts that fossil fuel-sourced gas will "nearly disappear" from France's energy mix.

The policy leans heavily on feed-in tariffs, which have driven significant investment. "In the past two years, support for biomethane amounted to €1 billion annually," she says. Unlike Germany, where biogas production initially focused on combined heat and power (CHP), France prioritises injection into the gas grid. "The injection sector is growing extremely fast – it is where the policies are focusing."

However, France's approach is distinct in

its emphasis on sustainability. "The idea was to avoid the German model, where large-scale energy crops dominated," Bouacida explains. Instead, France limits energy crops to 15 per cent of feedstock and promotes small-scale digesters to support farmers. "Intermediary crops, which are grown to protect soil, can also feed digesters, creating a win-win for agriculture and energy."

"Environmental impacts vary wildly depending on farming practices," she says. While some digesters enable organic farming, others reinforce intensive agriculture. "We can project instances where digesters push farms toward even higher productivity, with trade-offs like nitrogen pollution from digestate spreading."

With France targeting a four-times increase in biomethane production by 2030,

# *“If we want 150 TWh by 2050, do we sacrifice sustainability or affordability?”*

**Ines Bouacida, International Sustainability Standards Research Institute (ISSRI)**

Bouacida raises fundamental questions: “Are we just scaling up current challenges, or will new problems emerge? Competition for crop residues is already driving up costs in some regions.”

## Hydrogen

France’s hydrogen strategy, launched in 2020, is highly ambitious but faces delays. “The goal is 6.5GW of electrolysis by 2030, backed by €9 billion in public funding,” Bouacida says. However, progress lags: “Only 300 MW have been built so far, so targets may need revising.”

Hydrogen’s role in decarbonisation is clear, but Bouacida stresses it will not replace fossil gas outright. “In France’s scenarios, gaseous fuels shrink in volume but become critical for security of supply – backing up renewables, heating hard-to-decarbonise buildings, and fuelling heavy transport.”

The challenge, according to Bouacida, is that “hydrogen is expensive and scarce”, meaning that “we must ask where will it add the most value”. She points to steelmaking, where alternatives are few, and warns against inefficient uses like hydrogen cars: “Battery electric vehicles are far more energy-efficient.”

## Biomethane trilemma

Bouacida frames France’s biomethane policy as a trilemma: balancing low cost, low environmental impact, and large-

scale availability. “Policymakers hoped to achieve all three, but trade-offs are inevitable,” she says.

For example, strict sustainability rules such as digestate spreading plans can increase costs. “Farmers face conflicting incentives: minimise expenses or reduce pollution? Without the right equipment, digestate spreads at the wrong time, harming soils.”

The looming question is whether France’s 2030 targets are realistic. “If we want 150 TWh by 2050, do we sacrifice sustainability or affordability? These debates are already stalling France’s long-term climate strategy.”

## Optimising scarce resources

To optimise scarce resources, Bouacida proposes a hierarchy of end uses for both biomethane and hydrogen. “We need sectoral mandates, like the EU’s Renewable Energy Directive, which prioritises hydrogen for industry.” Contracts for difference (CfDs) are another potential solution: “Germany and the Netherlands use them to de-risk industrial decarbonisation and now France is starting to follow.”

However, redirecting biomethane from buildings to industry requires phasing out gas heating. “Today, injected biomethane mostly heats homes – a low-priority use. Without phase-out policies, we will struggle to shift it to sectors like heavy transport or chemicals.”

Biomethane and hydrogen are at the heart of France’s energy transition and its political tensions. “Biogas is so controversial that it is blocking climate policy discussions,” Bouacida observes. Nevertheless, she remains pragmatic: “By defining clear priorities, we can align conflicting interests and optimise limited resources.”

For now, France’s path forward rests on scaling up sustainably. “The next five years will show whether this model works or if ambition outpaces reality,” Bouacida concludes.



## The future of gas in Ireland

A new research report published by the National Economic and Social Council (NESC) examines four key aspects of Ireland's energy transition which are important for national economic resilience: enterprise opportunities, the reliability of power supply, energy costs, and energy exports.

Published in April 2025, the *Future of the Gas Sector in Ireland* report asserts that Ireland's energy future hinges on a profound transformation of its gas sector. The report states: "Natural gas is one of Ireland's primary fuels for energy generation," with over 60 TWh delivered to more than 720,000 users in 2023. However, this dependency presents vulnerabilities: "80 per cent of the natural gas used in Ireland is imported directly from the United Kingdom," a fact that raises "energy security risks due to limited source diversity".

Despite its significance, the gas sector must undergo a radical overhaul. Natural gas combustion accounted for roughly 20 per cent of Ireland's annual greenhouse gas (GHG) emissions in 2023. The *Climate Action Plan* (CAP) sets out decarbonisation targets of a 51 per cent reduction in GHG emissions by 2030 and full net zero emissions (NZE) by 2050. Achieving this in the gas sector, NESC notes, requires "a shift to NZE while at the same time maintaining affordable energy for consumers".

### 1. Renewable gas

The report states that Ireland's biomethane production target of 5.7 TWh by 2030 will necessitate "the delivery of an average of between 20 and 30 mid-sized plants each year by 2030". This is a substantial undertaking given that, currently, Ireland has only two operational biomethane facilities with a combined capacity of 75 GWh.

Gas Networks Ireland (GNI) estimates a national biomethane production potential of 14.8 TWh, based on responses from 176 potential producers. Feedstock is anticipated to come predominantly from "animal slurries (38 per cent), forage (28 per cent), and other crop residues (14 per cent)". However, the report highlights critical infrastructure needs, including reverse compression facilities and cluster-based connections to enable cost-effective grid injection.

Hydrogen, meanwhile, is cast as a longer-term solution. The *National Hydrogen Strategy* foresees



domestic hydrogen demand ranging from 4.6 TWh to 39 TWh by 2050, potentially rising to 74.6 TWh when including aviation and shipping. The report warns, however, that these timelines “could be delayed without regulatory frameworks, research and early-stage projects to enable hydrogen technology deployment”.

Despite the challenges, hydrogen’s role is vital in sectors difficult to electrify – industrial heat, heavy-duty transport, and dispatchable electricity generation. Its deployment hinges on the successful delivery of dedicated offshore wind capacity, with 2GW already earmarked for hydrogen production between 2031 and 2035.

## 2. Infrastructure pressures and market uncertainty

Transitioning the gas grid is as much a logistical challenge as a policy one. Ireland’s gas infrastructure, comprising “2,476km of transmission pipelines, 12,188km of distribution pipelines and two sub-sea interconnectors”, currently lacks the adaptability for hydrogen integration or large-scale biomethane injection.

Furthermore, the report identifies a looming cost conundrum: “A challenge arising from the potential disconnections from the gas network might be the reflection of the gas network charges onto the smaller number of customers.” Without new regulatory mechanisms, decarbonisation could disproportionately burden remaining users, particularly in rural or economically disadvantaged areas.

The financial landscape for renewable gases also remains uncertain. According to the report, “the levelised costs of biomethane and hydrogen require financial incentives and regulatory frameworks to provide clear guidance on project development procedures and timelines, reduce the risk for investors, and create demand”.

## 3. Delays and risks

NESC’s report cautions that Ireland is already falling behind. While the CAP outlines a 15–20 per cent reduction in gas use by 2030, actual progress is stalling. “The recent number of annual energy retrofits was considerably lower than the required levels for the climate action plan targets,” the report finds. Moreover, the 2.7 TWh district heating target by 2030 faces “significant uncertainties in support mechanisms”.

This sluggish progress raises the spectre of “natural gas lock-in”, particularly if infrastructure for hydrogen and biomethane is delayed. As the report warns: “Delaying the delivery of biomethane and hydrogen infrastructure... increases the risk of Ireland’s continued reliance on natural gas imports.”

## 4. Opportunities

Despite the technical challenges, the report also underscores opportunities particularly for rural and farming communities. The biomethane rollout envisions a decentralised production model “on agricultural-based feedstock and involving local farmers’ communities”. With the right supports, this could foster local economic development, job creation, and energy self-sufficiency.

However, NESC stresses that the green gas transition lacks coherence: “The current planned actions and guidance documents do not provide a clear pathway for the development of the green gas sector in Ireland.” Without integrated planning, Ireland may need to import renewable gases just to meet its climate obligations.

On the publication of the report, Larry O’Connell, Director of NESC, said: “The Council believes there is an urgent need to address the strategic gaps identified in this report in a way that reinforces both the energy transition and economic resilience, while moving Ireland forward.

“NESC’s recommended actions represent an agenda for the policy system to work through immediately to make transition in Ireland’s power sector more likely, and more likely to be successful.”

# Driving the energy transition in rural Ireland: Calor's commitment to renewable solutions



As a leading provider of energy solutions in Ireland, Calor is at the forefront of the nation's energy transition, particularly in rural areas.

The company's strategy is focused on delivering lower carbon and renewable liquid gas energy solutions to replace higher carbon fuels like kerosene for home heating and diesel and heavy fuel oil for industrial applications.

Calor has been actively contributing to Ireland's decarbonisation efforts since the launch of its certified renewable liquid gas, BioLPG, in 2018. It is made from a blend of renewable vegetable oils and sustainably sourced waste materials. As a chemically identical alternative to LPG, BioLPG can be blended seamlessly with conventional LPG without requiring any changes to existing equipment, facilitating a smooth

transition for customers. A further advantage for users is that they have the opportunity to choose from a range of blend options, offering them flexible renewable energy solutions that enable them to gradually reduce their carbon footprint at a pace which meets their sustainability goals.

At the heart of Calor's mission is the continuous research and development of additional production pathways for BioLPG, as well as the advancement of hybrid energy solutions incorporating renewable ready gas boilers. By collaborating with other renewable energy companies and integrating multiple renewable technologies such as

hybrid heat pumps and solar PV, Calor is ensuring that cleaner, more sustainable energy sources become increasingly accessible across rural Ireland.

## Innovation in sustainable fuels

Calor's parent company, SHV Energy, is further advancing the production of sustainable fuels. One key innovation is rDME, a low-carbon liquid gas produced through gasification and catalytic synthesis of feedstocks like municipal waste, forest residues, and energy crops. rDME can be blended with LPG or BioLPG, working with existing infrastructure, offering an affordable, flexible solution for off-grid homes and businesses. With applications in domestic and industrial heating, cooking, and transport, rDME represents a significant step forward in carbon reduction. Calor has also integrated a local research strategy to examine the development of an indigenous fuel source in the future.

Calor remains committed to leading the way in renewable energy innovation, ensuring that rural communities across Ireland have access to cleaner, more sustainable energy solutions. Through continued investment in research and collaboration, Calor is not only addressing today's energy challenges but also paving the way for a greener future.

W: [www.calorgas.ie](http://www.calorgas.ie)





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\*CO<sub>2</sub> savings calculated for 100% BioLPG blend compared to the CO<sub>2</sub> emissions from conventional LPG.  
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# Hydrogen in the Programme for Government

Containing specific aims for hydrogen and evidence of application of the *National Hydrogen Strategy* published in 2023, the 2025 Programme for Government (PfG) demonstrates a clearer picture of the future for renewable hydrogen than the 2020 PfG.

While hydrogen was mentioned in the 2020 PfG, it lacked reference to specific actions to be taken for its development, arising from the nascence of the technology at the time. It stated that the Government wanted to remain “at the cutting edge” of hydrogen development to meet climate targets by introducing a “transformational programme of research and development”.

Similar to the 2020 PfG, the 2025 PfG asserts that the Government will support “cutting-edge research and development in renewable energy”, including hydrogen. However, in the 2025 document, there is no mention of a “transformational programme of research and development”.

In the 2020 PfG, the Government outlined intentions to invest in the research and development of green hydrogen for use in power generation, manufacturing, energy storage, and transport.

One specific aim included in the 2020 PfG was the development of a long-term plan to capitalise on the “massive potential of offshore energy on the Atlantic Coast”. Amongst many potential benefits of the plan, the 2020 PfG traced how it could be used to develop “innovative transmission and storage technologies” including hydrogen.

## National Hydrogen Strategy

Following the 2020 PfG, the *National Hydrogen Strategy* was published in 2023 to provide a framework for developing the renewable energy with three aims: to decarbonise the economy, enhance energy security, and develop industrial opportunities.

Decarbonisation was a key priority identified in the 2020 PfG in order to reduce reliance on fossil fuel, cut greenhouse gas emissions by 51 per cent by 2030, and achieve net zero emissions by 2050. In the 2025 PfG, the Government reiterated these commitments. The Strategy says “indigenously produced renewable hydrogen can play a significant role” to deliver on these objectives as a zero-carbon substitute for fossil fuels.

Energy security was one of the main drivers of the *National Hydrogen Strategy*, and it identifies the opportunity to harness Ireland’s sea area for hydrogen production to achieve this. This aligns with the long-term plan of tapping into the potential of the Atlantic outlined in the 2020 PfG. However, this plan is not mentioned in the 2025 PfG.

The opportunity to develop industrial opportunities is identified as the third key priority of the strategy. It states that there is a demand for renewable and low-carbon hydrogen imports in many European countries, adding that “Ireland could be well-placed to supply these markets”. This is pinned as a way to stimulate economic growth and create “highly skilled” jobs.

The 2025 PfG combines the priorities of energy security and the opportunity to develop industrial opportunities. In it, the Government lays out its objective to leverage its position as a “leader in renewable energy” to “secure the advantages of our industrial base”. The document states: “We want to achieve energy independence by harnessing our untapped renewable energy resources.”

## Actions

The Strategy set out 21 actions to be fulfilled by 2030 to develop hydrogen in Ireland, and five of these actions are referenced in the 2025 PfG. It dictates that commercial business models be developed between 2023 and 2030 to support the scale up of renewable hydrogen via 2GW of offshore wind from 2030. Although not specifically mentioned this is referred to in the 2025 PfG as the Government details intentions to unlock “at least 5GW of offshore wind by 2030”.

Another action sets out that hydrogen-powered heavy duty vehicles will be rolled out along with refuelling infrastructure between 2024 and 2030. In the 2025 PfG the Government traces its intention to support the decarbonisation of road freight by replacing fossil fuel with hydrogen, biomethane, and hydrotreated vegetable oil. Although refuelling infrastructure is not mentioned in the PfG, hydrogen refuelling stations are due to be deployed across Dublin, Galway, Limerick, and Cork from 2027.

The Strategy sets out objectives to create strategic hydrogen clusters between 2024 and 2026. While the 2025 PfG does not make specific reference to hydrogen clusters, it does detail plans to establish “renewable energy clusters”.

Planning processes of energy systems are also due for review between 2024 and 2026 in line with the Strategy. It recommends changes that would “support a more integrated long-term approach to planning across the network operators”, including hydrogen amongst other renewable energy sources. In the 2025 PfG, the Government says a plan will be formed “to accelerate energy generation, connectivity, and planning processes”.

The Strategy also stipulates that the future skills needs of the offshore wind and renewable hydrogen sectors be supported through the expert advisory group established under the Offshore Wind Delivery Task Force. This is addressed in the 2025 PfG, with the Government vowing to expand the taskforce to include IDA Ireland. It also details intentions to “focus on attracting and retaining capital investment to drive offshore wind development”.

# The role of municipal anaerobic digestion plants in meeting the 2030 biomethane targets



As part of Ireland's commitment to reduce emissions by 51 per cent by 2030, the Government's Climate Action Plan sets a target of 5.7 TWh of biomethane to be generated from an estimated 200+ agri-based anaerobic digestion (AD) biogas plants to be constructed and commissioned over the next five years, writes John G Devlin, Pre-Contract Director at Celtic Anglian Water Ltd.

Although much of the focus is currently on the development of agri-based AD plants the municipal wastewater treatment sector has been successfully generating Biogas (c.60 per cent Biomethane) from AD processes for decades. Currently, there are c.16 municipal AD plants located across the Island of Ireland generating an estimated 16.5 million Nm<sup>3</sup> of Biogas annually with an approximate energy content of 100 GWh.

The single biggest Municipal AD Plant in Ireland is located at the Ringsend Wastewater Treatment Works (WwTW) in Dublin. The Ringsend WwTW is operated and maintained by Celtic Anglian Water Ltd (CAW), as part of the ABA Consortium, on behalf of Uisce-Éireann, The AD plant, comprising four 4,500m<sup>3</sup> mesophilic digestors, generates approximately 11.5 million Nm<sup>3</sup> of biogas

annually, with a biomethane content of c. 60 per cent (vol/vol), equivalent to approximately 70 GWh of energy.

The biogas is stored on-site in a gas holder and used to fuel combined heat and power (CHP) units and/or two steam boilers at the WwTW. There are currently four CHP units operational at the Ringsend WwTW, each with an electrical output capacity of 1 MWe. A fifth CHP unit is currently being commissioned and once operational, the combined electrical output of all five units will be approximately 100 MWh per day, sufficient to meet c. 45 per cent of the WwTW's electricity demand.

Additionally, each CHP unit is fitted with heat recovery steam generators that capture waste heat from exhaust emissions, producing low-grade steam for use in the sludge pre-treatment

process. The residual biosolids from digestion are pathogen-free and suitable for use as a Class A fertiliser in agriculture, further enhancing the environmental benefits of the AD process.

Elsewhere, other AD plants operated by CAW generate c. 1.1 million Nm<sup>3</sup> (6.6 GWh) of biogas annually from municipal wastewater sludge digestion.

At CAW we believe that expanding the utilisation of wastewater-derived biogas could complement agri-based AD projects. By integrating wastewater-derived biomethane into the broader renewable energy mix, Ireland can move closer to its 2030 emissions reduction target while enhancing sustainability and energy security.

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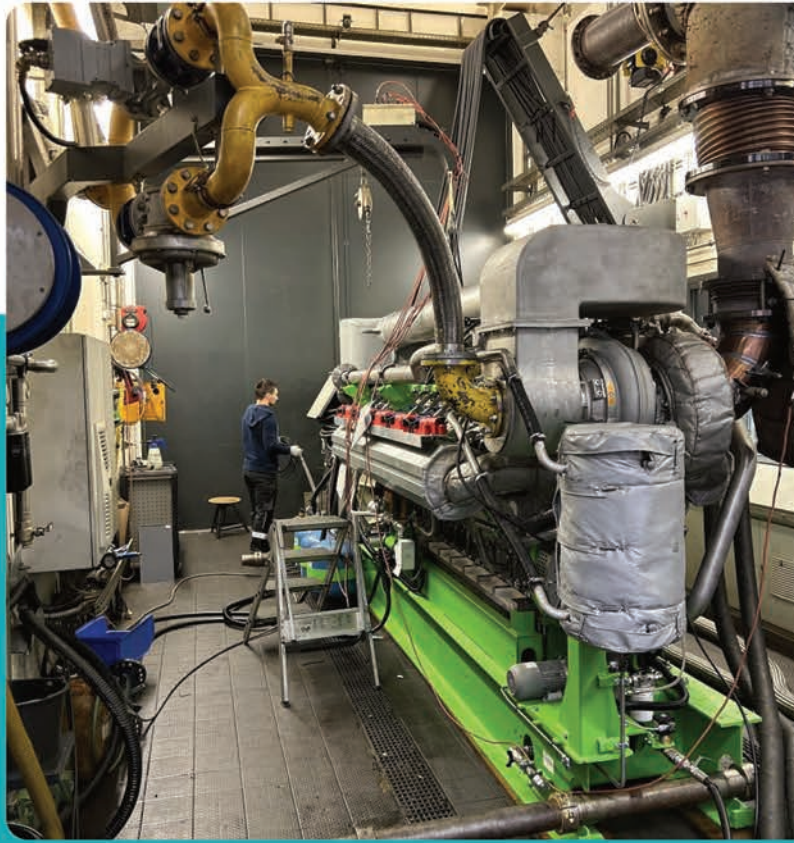
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# What *Climate Action Plan 2025* means for the gas sector

renewable gas report

*Climate Action Plan 2025* (CAP25) has not changed any of the overriding statutory or strategic targets for the production and integration of green hydrogen or biomethane into the Irish gas grid system.

## Biomethane

To further support the decarbonisation of the heat sector, the Government has agreed to the introduction of the Renewable Heat Obligation (RHO), with scheme parameters now being finalised for approval.

CAP25 states that the RHO will obligate suppliers over a certain threshold to ensure a proportion of the energy they supply is renewable, and it will incentivise the production of indigenously produced biomethane, in line with the National Biomethane Strategy published in 2024.

In addition to the delivery of multi-annual programmes, 2024 saw the publication of the National Biomethane Strategy and the launch of grant aid towards development of the sector. This is expected to drive expansion of the anaerobic digestion sector towards the target of 5.7 TWh by 2030.

CAP25 asserts that the reopening of the Organic Farming Scheme and the implementation of the Forestry Strategy have "significant potential to create

opportunities for Irish farmers to diversify their farming enterprises".

The National Biomethane Strategy was launched and funding of €40 million was secured to further the ambition of the sector. As energy policy lead, CAP25 says that the Department of Environment, Climate and Communications (DECC) will "take responsibility for this second round of capital funding from 2026".

The Government says it will "encourage the use of renewables in the petroleum refining process, investigate further the use of biomethane as per the Biomethane Strategy, and encourage the reduction of the use of petroleum-based fuel".

## Hydrogen

The National Hydrogen Annual Work Programme has been updated for 2025. The programme will further develop an understanding and put in place appropriate regulatory arrangements to support future scale-up of the sector as it evolves. A Hydrogen Task Force will oversee the delivery of the Hydrogen Annual Work Programme, and emerging

relevant actions.

The National Policy Framework for Alternative Fuel Infrastructure Regulation (EU) 2023/1804 (AFIR) on the deployment of alternative fuels infrastructure sets out mandatory minimum levels of alternative fuels infrastructure to be deployed by EU member states on the TEN-T network, across land transport, maritime, and aviation sectors.

CAP25 says that the Regulation will require a significant programme of infrastructural deployment to support EV charging and hydrogen refuelling station deployment for LDVs and HDVs in urban nodes and on the TEN-T core network, as well as the provision of onshore electricity supply for large vessels at berth; and electricity supply for stationary aircraft in the State's TEN-T airports.

The only other mention of hydrogen in CAP25, reaffirms how, in 2024, the Department of Transport "undertook public and stakeholder consultation to update the National Policy Framework prior to submission to the Commission".



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# Solutions for a sustainable agriculture industry

Green Growth Deputy Director at the North's Department of Agriculture, Environment and Rural Affairs, Jonathan McFerran, talks about the steps the Northern Ireland agriculture industry is taking to safeguard its future while meeting climate targets.

McFerran asserts that, similar to the Republic of Ireland, the agriculture industry is the "bedrock" of the Northern Ireland economy, saying: "We punch above our weight in terms of agriculture in Northern Ireland."

Illustrating this, he says Northern Ireland produces enough protein to feed 10 million consumers despite its total population of 1.9 million, adding that the agri-food sector employs 113,000 people. However, he indicates that this level of agricultural activity has "a negative impact on the environment".

McFerran says Northern Ireland produces 10 million tonnes of slurry, and 6,000 tonnes of phosphorus every year. He explains that this poses risk to waterways and the environment, demonstrated by the findings of the Lough Neagh Report published in July 2024. McFerran says: "62 per cent of the problem in Lough Neagh is caused by agriculture."

## Generational change

Two approaches to tackling the problem have been identified, the first of which is to reduce livestock numbers to produce less waste. However, McFerran insists: "If you reduce the agriculture industry, it would be horrendous for Northern Ireland."

Therefore, the agriculture industry needs to become sustainable and McFerran says this will require "a generational change", adding: "I believe the agriculture industry is up for it."

Creating a sustainable agriculture industry is one of the priorities set out by the Department of Agriculture, Environment and Rural Affairs (DAERA), along with decarbonisation, and net zero targets. McFerran claims that biomethane is the answer to achieving these priorities, but points out that the Northern Ireland Executive does not have a biomethane strategy.

He underlines the importance of this strategy as companies put pressure on the Executive to replace fossil fuel gas with biomethane so they can comply with sustainability standards. Biomethane will also be essential for Northern Ireland to meet climate goals under the Climate Change Act, which McFerran says are "incredibly difficult for Northern Ireland to achieve". McFerran also points out that the Department for the Economy (DfE) is responsible for producing a biomethane strategy.

However, DAERA recently published its Green Growth Strategy which sets out a long-term vision for climate action and commitment to net zero targets. McFerran outlines its mission to reduce emissions and create green jobs in a "strong circular economy".

For agriculture development of anaerobic digestion (AD), biomethane production, and the management of excess nutrients will be central to this. Regulation will also be key, as highlighted in the Lough Neagh report which identifies education, investment, regulation, and enforcement as the drivers for a sustainable agriculture industry.

## Actions

In 2023, DAERA launched the Small Business Research Initiative competition under the Sustainable Utilisation of Livestock Slurry Project to find solutions to nutrient separation from slurry and digestate. Under phase one, six companies were awarded £100,000 each to investigate proof of concept models with this aim.

In phase two, £12 million of Executive funds will be awarded to three of these companies progress their concept. Two companies have already been awarded the contract, the first of which County Down-based firm, Blakiston Houston Estate Ltd for their project, Farm2 Export.

McFerran explains that the project reduces excess phosphorous in slurry by separating it into liquid and solids using a mobile separator. Liquid slurry created in this process produces less emissions and adheres to crops more effectively than untreated slurry.

Solids derived from the process are used to produce feedstock, which is then converted to digestate, but McFerran explains that this digestate cannot be spread on fields. A biofertiliser plant is needed to convert digestate to exportable firms, but no such plant currently exists in Northern Ireland.

Under the second project, a conglomerate of companies in Mid Ulster aim to construct a 10 MW biorefinery to produce biomethane to be injected directly into the grid. McFerran says they will also produce biochar to be used in cement making in order to capture phosphorous in concrete products, so it can be locked away. He indicates the importance of this, explaining that Mid Ulster is where many of Northern Ireland's water quality problems arise.

"This will help develop our circular bio economy while reducing nutrients in Lough Neagh and other catchment areas. Improving our water quality in our rivers, loughs, and lakes," he claims.

Producing a biomethane strategy will be key to building on the Sustainable Utilisation of Livestock Slurry Project. This will require collaboration between DfE and DAERA, with support from the Executive. McFerran claims: "It will improve our water quality, it will improve our nutrient management, and it will provide a sustainable agriculture sector."

He adds: "I want to see this thrive for Northern Ireland, for the agriculture community, and for the good of the environment. The opportunity is there, we just need to grasp it."



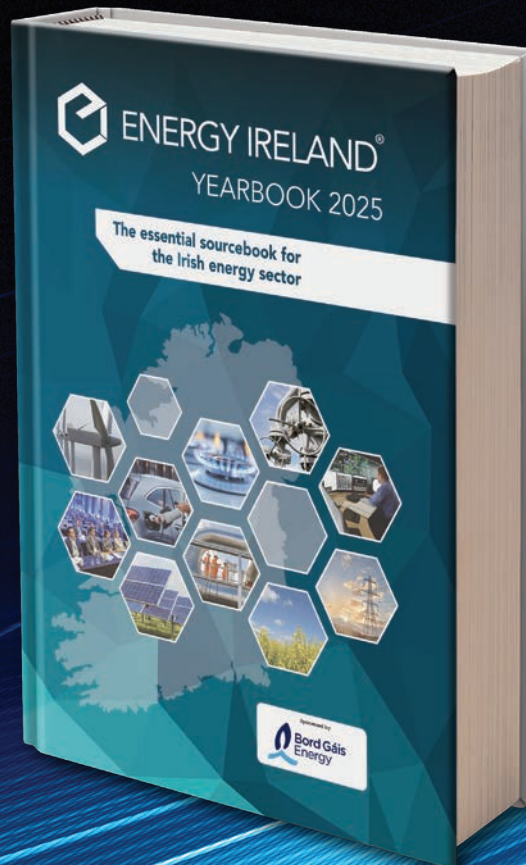
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