

# A dangerous distraction: 'renewable' gas keeps us on the fossil fuel path



## PART 1 → The 7 myths industry uses to sell us so-called renewable gas

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**PART 1** dissects some of the key myths about renewable gas being promoted by industry and shows why they shouldn't be believed.

**PART 2** gives a first glimpse into the tactics and strategies used by the renewable gas lobby to influence Brussels decision makers.

### INTRODUCTION

The gas industry is currently hyping so-called 'renewable gas' and its low-carbon potential. But the industry hype does not live up to reality: this newfound enthusiasm for renewable gas is really an attempt to paint the gas industry green. The result of falling for this dangerous distraction will be to keep all kinds of gas, particularly fossil gas, on the energy menu, and help the industry stave off being rendered obsolete by more climate-friendly renewable energy and electrification.

The latest report from the UN's Intergovernmental Panel on Climate Change (IPCC) calls for deep and urgent emissions cuts if we are to keep average global temperature rise below 1.5°C,<sup>i</sup> which governments signed up to under the Paris Agreement. So can the gas industry, whose primary product is fossil fuels – the very thing driving climate change – really be part of the solution?

While industry sees renewable gas as their ticket to addressing climate change while keeping their business model – and their gas infrastructure – intact, the reality is not so clear. If created from truly sustainable, renewable sources, the gases industry claims it can create (hydrogen from excess renewable electricity or biomethane from sustainably-sourced biomass), would still be in incredibly short supply even by 2050. Moreover, producing biomethane unsustainably could lead to the same land-grabs and competition with food crops seen when the EU tried to stimulate biofuel production.<sup>ii</sup> So while small potential quantities of renewable gas may be suitable for a few hard-to-

decarbonise industrial activities or for local heat and electricity generation, they will fall far short of projected 2050 gas demand.

Gas companies are fully aware of this. In reality industry's core vision is about pumping fossil gas for the foreseeable future, with some small renewable gas capacity giving them a cover of sustainability. Also included under the umbrella of supposed sustainability is what industry calls 'decarbonised' or 'low-carbon' gas, which is fossil gas that in the future will possibly – through unproven, experimental and extremely expensive technology – have its CO<sub>2</sub> emissions captured (known as carbon capture and storage technology).

**For all its green talk, the gas industry's basic plan is to continue extracting and transporting fossil gas, building new infrastructure and transferring large sums of public money into corporate wallets in the process, rather than making the urgent shift in energy infrastructure now.**

This spells disaster not just for the climate, but also for communities and ecosystems all along the gas supply chain. So-called 'renewable' gas and its 'low-carbon' bedfellows are therefore a dangerous distraction, a false solution engineered by the gas industry to keep itself in business but utterly inconsistent with the "rapid and far-reaching transition" demanded by the IPCC.<sup>iii</sup>

The gas industry is not going to plan for its own demise, which makes it imperative that governments do so, and in a way that protects workers.

## Myth 1: We all know what renewable gas is and it's great!

"Gas - natural, decarbonised and renewable - can help to achieve more ambitious emissions reductions by 2030"  
 - Eurogas

"SMART USE OF RENEWABLE GAS TO MEET CLIMATE TARGETS CAN SAVE EUROPE €140 BILLION PER YEAR"  
 - SNAM

"The importance of the potential role that low carbon gases might play is reflected in the Government's latest thinking on the future of UK energy."  
 - National Grid

"Natural gas - cleaner and better energy for the future"  
 - E.On

"Zero Carbon Natural Gas: Is This The Solution We Have Been Searching For?"  
 - Forbes Magazine

"Innovative gas solutions, such as the development of renewable and decarbonised gas towards 2050, would enable..." - Eurogas

"Clean Energy and BP to Expand Renewable Natural Gas Supply Agreement"  
 - Businesswire.com

"GREEN GAS INITIATIVE launches initiative to reduce the carbon footprint of the gas system"  
 - Ontras

**Industry spin:** According to industry, 'renewable gas', 'green gas', 'clean gas', 'decarbonised gas', 'low-carbon gas' and, why not, 'natural gas', are all pretty similar. Moreover, say the gas lobby, they're all going to help us tackle climate change. Just don't look too closely at the details....

**Reality:** The convenient confusion and lack of public understanding around the different forms of gas is being exploited by industry, allowing polluting fossil fuels to shelter under renewable gas's sustainable-

**sounding umbrella.** For example there are important differences between renewable gases, 'green hydrogen', and biomethane, both in terms of the sustainability of their production as well as their consumption (**see glossary of gases**). Serious worries have been raised about the high cost, limited availability and questionable sustainability of renewable gas, but these worries drastically worsen when considering the climate impacts of the other 'low-carbon' or 'decarbonised' fossil gases industry has hiding under the umbrella.

## BOX 1: Gas glossary

Corporate Europe Observatory has done its best to give the most common industry definitions of different types of gases, but it will not be perfect as they are sometimes used interchangeably (**see myth 1**).

### NON-FOSSIL FUEL-BASED GASES:

**Renewable gas:** should be from renewable sources, so either biomass (to produce **biomethane**) or renewable electricity (to produce **green hydrogen**).

**Green hydrogen:** produced from supposedly excess renewable electricity via electrolysis in a power-to-gas plant (P2G). Can be stored and then combusted to produce extra electricity when needed, or can go to hard-to-decarbonise heavy industries like steel. Can also be injected in limited quantities into existing fossil gas grids.

**Synthetic methane:** **green hydrogen** with CO<sub>2</sub> added to it that has been captured from industrial processes or, theoretically, directly from the air.<sup>iv</sup> Has the same properties as fossil gas so can be injected into the existing gas grid.

**Biogas:** produced through anaerobic digestion of biomass like manure, sewer sludge, or energy crops. Currently 89 per cent of biogas production is used locally to generate either heat or electricity.<sup>v</sup>

**Biomethane:** produced by removing extra CO<sub>2</sub> from **biogas**. Can also be created through 'pyrogasification' of dry woody matter, exposing it to high-temperatures without burning, and then converting into biomethane.<sup>vi</sup> Sometimes called **green gas**. Can be injected into the grid or used locally to generate electricity.

### FOSSIL FUEL-BASED GASES:

**Blue hydrogen:** produced from fossil gas using 'steam methane reforming', hypothetically capturing the CO<sub>2</sub> with carbon capture and storage. Sometimes referred to as **decarbonised** or **low-carbon gas**.

**Grey hydrogen:** produced from fossil gas using 'steam methane reforming', without capturing the CO<sub>2</sub>. Around half of hydrogen is currently produced this way.<sup>vii</sup>

**Decarbonised gas:** can refer to '**blue**' **hydrogen**, or a synonym for **low-carbon gas**

**Low-carbon gas:** appears to refer to **fossil gas** hypothetically combined with carbon capture and storage when it is burnt in power stations or by heavy industry. Has also included **blue hydrogen**.

**Natural gas:** the industry name for **fossil gas**, which produces CO<sub>2</sub> when burnt, but is often erroneously called '**clean**' (in contrast to 'dirty' coal).

## Myth 2: Renewable gas is good for the climate and will help us achieve our Paris Agreement commitments

*Renewable and low carbon gas can play an important role to meet the Paris Agreement target*

- GAS FOR CLIMATE

**Industry spin:** Industry is desperate to have us believe that renewable gas doesn't have a carbon footprint. 'Green hydrogen' will only be made using excess renewable electricity; biomethane, if produced sustainably, could even be 'carbon negative' as it uses trees and crops that have sucked CO<sub>2</sub> out of the atmosphere. Renewable gas will therefore help us meet our agreed Paris Agreement commitments, industry claims. In fact, according to industry, all gas will.

**Reality:** Renewable gas is unlikely to be carbon neutral, let alone carbon negative, and betting on it to 'green our energy system' will ensure the EU blows its Paris commitments completely. Hydrogen is unlikely to come from renewable sources and even then it is unlikely to be as climate friendly as its proponents claim, while fuels from biomass can have a worse carbon footprint than coal,<sup>viii</sup> potentially making biomethane not so climate-friendly either. Considering the shaky climate credentials of 'renewable gas' (**see Box 2**), how little is available (**see myth 3**), and the fossil fuel-based substitutes sneaking in under the 'renewable gas' umbrella (**see myth 4**), industry's claim that "Renewable and low-carbon gas can play an important role to meet the Paris Agreement target"<sup>ix</sup> appears hollow at best. But it knows that if it isn't at least *appearing* 'Paris compliant', it will be out of business.

Methane leakage is a major threat from fossil gas production and transportation, as it is more than 100 times worse for the climate than CO<sub>2</sub> over a ten year period.<sup>x</sup> While reduced, there is still a big risk of leakage during the production and transportation of biomethane and synthetic methane. The IPCC singled out methane emissions as something that needed to be tackled urgently to stay below 1.5°C,<sup>xi</sup> but both renewable and fossil-based gas are only going to exacerbate the problem. (**See Box 2** for the climate credentials of each renewable gas).

## BOX 2: Climate credentials of renewable gas

Below are the climate credentials of gas from renewable sources, ie not from fossil fuels.

**Green hydrogen:** when burnt, hydrogen produces water rather than CO<sub>2</sub>. However, for it to be 'green' it would need to be made from excess renewable electricity, ie only when too much was produced. But given how expensive the 'power-to-gas' (P2G) technology is, that just isn't profitable. Therefore the P2G plant would either need its own dedicated renewable electricity source (which would mean it was still renewable, but would compete with wider decarbonisation efforts for electricity), or it would need to be connected to the grid. Until all grid electricity is from renewable sources, this could mean 'green' hydrogen could actually be made from fossil fuels. And even when it is made from electricity from wind turbines or solar panels, the emissions from producing the hardware can mean 'power to gas' has a much bigger carbon footprint than claimed when looking at the entire lifecycle.<sup>xii</sup>

**Synthetic methane:** mixing green hydrogen with CO<sub>2</sub> creates synthetic methane, which allows industry to carry on using it in the same infrastructure we have today. However, not only is this incredibly costly and energetically inefficient,<sup>xiii</sup> it would also bring with it many of the climate dangers associated with fossil gas. When methane is burnt it produces CO<sub>2</sub> while leaks along the gas supply chain are a serious threat as synthetic and non-synthetic methane are more than 100 times worse for global warming than CO<sub>2</sub> over a ten year period.<sup>xiv</sup> Until all our electricity comes from renewable sources, it could also produce the ridiculous situation which sees electricity generated from fossil gas (ie methane) fed into the grid, which is then used to make hydrogen, only to be mixed with CO<sub>2</sub> to make methane again. A monumental waste of energy and CO<sub>2</sub>, but one that would keep the gas industry in business.

**Biomethane:** produced by 'scrubbing' the CO<sub>2</sub> from biogas (**see Box 1**), which is currently released into the atmosphere. It also produces CO<sub>2</sub> when it is burnt, as well as being extremely dangerous for the climate when it leaks, as methane is a potent greenhouse gas (**see 'synthetic methane'**). But as some sources include trees or energy crops, which suck CO<sub>2</sub> out of the atmosphere when they grow, claims have been made that biogas or biomethane would be carbon neutral as they put back into the atmosphere what the biomass had taken out. The Shell-sponsored Sustainable Gas Institute (SGI) goes as far as claiming biomethane could be carbon negative, if the emissions from producing and burning the biomethane were captured and stored using the unproven and very costly carbon capture and storage technology (**see myth 4**).<sup>xv</sup> Both labels of carbon neutral and carbon negative are highly contested, even if we assume the technology can be successfully deployed. Much depends on how sustainable the biomass is, and whether the entire lifecycle of biomethane is considered. Studies show fuel from biomass can have a bigger carbon footprint than coal,<sup>xvi</sup> while driving land grabbing, displacing land used for food or deforestation.

## Myth 3: Renewable gas will replace fossil gas and meet most of our gas needs

*From the 2050s onwards, natural gas could be 100% green, which means that it will be produced from a renewable and inexhaustible source that imposes no environmental impact.*

- ENGIE

**Industry spin:** Many parts of the gas industry want us to believe that by 2050 gas will be 'decarbonised', thanks in large part to renewable gas. Eurogas claims 70 per cent of our gas will be renewable by then.<sup>xvii</sup> So we won't need to reduce our gas consumption and we could even increase it by using gas in transport; we can keep using the same infrastructure and we could even build more – or so industry is trying to convince us.

**Reality:** Producing large quantities of sustainable renewable gas in the EU is a non-starter due to lack of sustainable biomass for biomethane and the lack of renewable electricity and power-to-gas technology for green hydrogen. Therefore instead of identifying new markets for gas such as transport (**see Myth 5**), which only serve to increase industry profits, we should be focusing on rolling out genuinely renewable energy (wind, sun, and waves), demand reduction, smart energy storage solutions and phasing out gas entirely by 2035-

40 if we want a chance to stay "well below" 2°C, let alone 1.5°C.<sup>xviii</sup> The Gas for Climate (G4C) industry coalition commissioned a study claiming the EU could sustainably produce 122 bcm (billion cubic metres) of renewable gas by 2050, approximately a quarter of today's demand.<sup>xix</sup> However, the independent International Council on Clean Transportation (ICCT) conducted their own study, concluding that **the EU could produce 36bcm of sustainably produced renewable gas by 2050, which would cover a mere 7 per cent of today's demand.**<sup>xx</sup> Even this is optimistic, as they assume the vast majority comes from biomethane made using manure from today's large indoor cattle farms. Adapting agriculture and our meat consumption to keep temperatures below 1.5°C will mean moving away from industrial farming towards agroecology, which would severely limit sources of sustainable biomass.<sup>xxi</sup> In any scenario, don't expect much renewable gas before 2030. Although this hasn't stopped industry using it to push for more infrastructure to accommodate their forecasted flood of renewable gas.

*Whilst largely renewable, gas demand levels would still be important in 2050, justifying continuing investment in gas infrastructure.*

- EUROGAS

## Myth 4: Even if it's not strictly renewable, it will still be low-carbon

*Whether natural gas, biomethane or hydrogen, gas has unique features needed to green our energy system.*

### - GAS INFRASTRUCTURE EUROPE

**Industry spin:** Renewable gas will obviously be important in reducing emissions, say the gas industry, but it might not cover all needs by 2050.... So they want us to believe that we can keep using fossil gas as a source for both hydrogen and methane but without the associated emissions, by deploying carbon capture and storage technology (CCS). It's a bit behind schedule, they claim, but should be ready in the future – and even if it's not, well, gas is cleaner than coal. They're urging us to switch to gas now to keep industry in profit and think about fixing the climate later.

**Reality:** Given the almost non-existence of renewable gas and the non-existence of commercially viable CCS at scale, fully-carbonised fossil gas will continue to be used for heat (industrial and residential), in gas-fired power plants, and in creating hydrogen. Despite hydrogen being pushed as a 'renewable gas', half of current production is 'grey hydrogen', produced from fossil gas, which produces large amounts of CO<sub>2</sub> that escape into the atmosphere (**see Box 1**).<sup>xxii</sup> CCS technology has been promised by industry for decades, but despite generous public subsidies and

numerous pilot projects, even the EU admits it has never taken off.<sup>xxiii</sup> According to the consultants DNV-GL, **uptake of CCS technology will still be limited by 2050**,<sup>xxiv</sup> and there are big concerns over the safety, efficacy, and cost of transporting and storing the captured carbon dioxide.<sup>xxv</sup> Therefore CCS is another dangerous distraction, used to justify the continuation of business as usual while painting it green.

In the UK an EU-funded pilot project intends to make 'decarbonised' hydrogen from fossil gas combined with CCS (so-called 'blue hydrogen'), storing the CO<sub>2</sub> offshore.<sup>xxvi</sup> It remains to be seen if it will work, but the likelihood is that if demand for methane and hydrogen increases over the next decades, it will be met by fossil fuels without CCS rather than a 'renewable' alternative. The continuing dependence on fossil fuels is not just a disaster for the climate (from methane leakage and CO<sub>2</sub> emissions), but for the communities and their ecosystems along the supply chain, from extraction sites like the Niger Delta or shale gas fields in the US, to contested pipeline routes and the areas surrounding polluting facilities that burn the gas. That's less of a concern to industry, as long as gas keeps flowing through the pipes, underpinning their enthusiasm for switching from coal to gas rather than renewable electricity. Eurogas told the European Commission that switching to gas rather than renewables "would allow the EU to postpone costly investment until the economy has reached a more stable, positive growth rate."<sup>xxvii</sup>

The promise of decarbonised or low-carbon gas by 2050 is as credible as the claim there will be significant quantities of renewable gas by mid-century... and that pigs will fly.

## Myth 5: Renewable gas can decarbonise transport

*With g[as]-mobility, carbon neutrality and increasing air quality are possible.*

- NATURAL AND BIO GAS VEHICLES EUROPE

**Industry spin:** By 2030, so says the Natural and bio Gas Vehicle Association (NGVA) Europe and European Biogas Association (EBA) roadmap, 30 per cent of road vehicles will run on renewable gas (biomethane or synthetic methane). If we reach 80 per cent, they add, then "complete carbon neutrality can be achieved".<sup>xxxviii</sup> Fossil gas is already more climate friendly than petrol and diesel, they say, so why not reduce transport emissions via gas.

**Reality:** The NGVA Europe / EBA claim makes bold assumptions that renewable gas is carbon negative (see Box 2), whilst wildly overestimating the scale of future renewable gas production, its availability for transport, and the potential uptake of gas-powered vehicles.

According to Brussels NGO Transport & Environment, the roadmap "is an unrealistic attempt to greenwash the use of gas".<sup>xxix</sup> Even industry's own studies show the roadmap is unfeasible. The Gas for Climate coalition, which actually includes EBA, concluded that it would only make economic and climate sense to give 5 bcm out of their predicted 122 bcm of renewable gas to transport by 2050 – around half of what the roadmap is asking for already by 2030.<sup>xxx</sup> Meanwhile the ICCT study shows renewable gas could meet a mere six per cent of transport fuel demand by 2050 if all production was used exclusively for transport.<sup>xxxi</sup> In their new study, Transport & Environment conclude that **"A wider shift to methane will almost certainly lead to a transport sector powered by fossil gas, not renewable methane."**<sup>xxxii</sup> Of course, this would make the gas industry equally happy, creating a new market for the continued use of gas. However, despite industry claims, using fossil gas in the form of compressed or liquified natural gas (CNG/ LNG) has no meaningful climate nor air quality benefits compared to conventional vehicles.<sup>xxxiii</sup> Despite this, the European Commission continues to give the fuels tax breaks and pump tens of millions into industry LNG transport projects.<sup>xxxiv</sup>



## Myth 6: Renewable gas will enhance energy security

*Significant volumes of renewable gas can be produced within the EU, reducing Europe's import dependency.*

- GAS FOR CLIMATE

**Industry spin:** Renewable gas will lessen the EU's need to import fossil gas from authoritarian regimes like Russia (current foe) or Azerbaijan (current friend), and make it more resilient to global price shocks. If the securest energy is home grown, and with the Netherlands closing Europe's biggest gas field, renewable gas hasn't come a moment too soon, claims the industry.

**Reality:** EU production of renewable gas will be so insignificant until well beyond 2050 (see **Myth 3**) that it won't be solving any security of supply issues, and nor will its bed-fellows, 'low-carbon' or 'decarbonised' gas, as they rely on imported fossil gas. The best way to ensure energy security is moving away from fossil fuels altogether,

rolling out renewable electricity, reducing energy demand and focusing on smart storage. Yet the main players behind the push for renewable gas are lobbying against rolling out renewable electricity (see **Part II**), undermining their credentials as guardians of energy security.

Some have suggested importing hydrogen produced from solar power in North Africa, but **past experiences show the local population will be the ones left bearing the cost.**<sup>xxxv</sup> Green hydrogen production won't just require vast renewable electricity installations but also large quantities of water, an increasingly scarce resource in all desert regions. Like previous attempts to import renewable electricity from North Africa and the Middle East by covering the desert in solar panels, the attempt to green Europe's gas network will only perpetuate the familiar and unjust relationship between old colonial masters and subject, extracting valuable resources and leaving behind environmental degradation. It would also be in direct competition with domestic efforts at moving away from fossil fuels in countries like Algeria, which is a heavy fossil gas user. Importing biomethane – or the biomass to create it – will likewise have predictable negative consequences, creating the same scandal that emerged around biofuels with land-grabbing, competition between food and fuels and deforestation that will undermine climate or sustainability credentials.<sup>xxxvi</sup>

## Myth 7: Renewable gas will make the energy transition cheaper, easier and more socially acceptable

### *Gas infrastructure increases acceptance of the energy transition*

- FRONTIER ECONOMICS, FOR FNB GAS E.V.

**Industry spin:** Having enough renewable electricity to meet energy demand is going to be really expensive, says industry, especially on very cold or very hot days. Instead they want us to rely on renewable gas, assuming the public subsidies keep flowing. This means they can keep using their pipes and we can keep using our gas boilers. Combined with fewer mega electricity cables needing to be laid, people will be more accepting of the wider energy transition, or so the industry story goes.

**Reality:** Renewable gas is anything but cheap, and getting even small quantities into the grid is going to require significant subsidies. The EU has always bankrolled the gas industry through infrastructure support and research and development funding, but industry wants a lot more. French studies into biomethane show it costs up to five times more than fossil gas,<sup>xxxvii</sup> while according to the ICCT, France would need to more than double its current biogas subsidy if it wanted production to reach anywhere near its technical potential.<sup>xxxviii</sup> Green hydrogen is not commercially viable, particularly not when it only uses excess renewable electricity, and won't be for a few decades.<sup>xxxix</sup> If we do decide the future is based on green hydrogen, then we will likely have to build large

amounts of additional dedicated renewable electricity, and if we want to use it for residential heating it would mean refurbishing grids and appliances. That contradicts the aim of increasing social acceptance, as well as being very expensive. Adding CO<sub>2</sub> to hydrogen would also be extremely costly and problematic (where would it be captured from? How would you transport it?), not to mention its energy inefficiency. Decarbonising transport with gas would mean huge new investments when car companies are putting their money behind electric vehicles. Decarbonising fossil gas via CCS would likewise be extremely expensive, if at all possible given the ongoing failings of the technology.

When we talk about cost, it's worth bearing in mind who pays. If it is the gas industry left to pay, it will go with the cheapest option, which is continuing with fossil gas in heating, power generation, and hydrogen, all without CCS.<sup>xl</sup> If it is taxpayers who foot the bill, through tax breaks, subsidies, research grants, maybe renewable gas could reach its meagre technical potential while CCS pilots could be funded once more. However, this is not likely to be a politically popular move, particularly as support schemes for renewable electricity have been cut.<sup>xli</sup> Either way, committing to industry's renewable gas vision to 2050 is a one-way ticket to continued use of fossil gas. **European governments are already forking out €14bn per year dealing with the impacts of climate change<sup>xlii</sup> while the fossil fuel industry continues enjoying tax breaks. Deepening the EU's addiction to fossil gas is only going to make that bill grow.** What will make people more willing to accept the energy transition and its cost is their involvement in it and them benefiting from it, rather than public money going to the same multinational corporations responsible for causing the climate crisis.

## CONCLUSION

The gas industry has jumped on the idea of 'renewable gas' in order to promote its green credentials and appear 'Paris Compliant'. However, a closer look reveals that the EU's capacity to sustainably produce renewable gas is negligible. Small quantities may continue to help local farms and villages generate heat and electricity, while some hard-to-decarbonise heavy industries could eventually move away from fossil fuels (at great expense). But even then there are risks it is not zero-carbon, and it will be produced at nowhere near the scale industry is claiming. Instead the narrative of so-called renewable gas is being used to provide cover for 'decarbonised' or 'low-carbon' gases, which are in fact just fossil gas with the future hope of applying the still-not-developed and exorbitantly expensive carbon capture and storage. The recent IPCC report underlines the need to tackle emissions, particularly from methane, while communities and their environments along gas supply chains attest to the need to end fossil fuel extractivism. Renewable gas is at best a distraction, at worst a gateway to chaos for the climate, local communities, and all those countries the EU extracts resources from – renewable or otherwise.

To find out how much effort the gas industry is putting into lobbying Brussels on renewable gas, read [Part 2](#).

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