

Hiding in Plain Sight—European Gas Pipeline Companies’ Greenhouse Gas Emissions

The ESG Reporting Loophole Helping Incumbents Misdirect Investors

Executive Summary

This report describes how European gas pipeline companies are exploiting a weakness in carbon reporting rules to market themselves as low-carbon, potentially diverting billions of euros from less carbon-emitting investments. In so doing, they are missing an opportunity to use emissions reporting as a tool to demonstrate how quickly they are aligning with a low-carbon transition. The report finds that the unreported emissions of five of these companies are at least 100 times greater than their reported emissions. In addition, unreported emissions appear to be rising while reported emissions are falling.

Gas pipeline companies, known in Europe as transmission system operators (TSOs), transport and store natural gas, a fossil fuel (referred to in this report as “fossil gas”). Fossil gas is principally composed of methane, a powerful greenhouse gas. When burned, it releases another greenhouse gas, carbon dioxide, into the atmosphere. Burning fossil gas is less carbon-emitting than burning coal, and so gas companies frequently market gas as a “bridge” to a zero-carbon future. To survive in the long term, they will have to adapt their pipeline infrastructure to transport zero-carbon gases, such as “green hydrogen,” which might be produced at scale in the future by electrolysis using renewable power. For now, however, the TSOs remain fossil fuel companies, with infrastructure designed specifically for fossil gas.

European gas pipeline companies are exploiting a weakness in carbon reporting rules to inaccurately market themselves as environmentally benign.

Investors and regulators widely acknowledge that the financial sector will play a critical role in driving our transition to low-carbon energy. Investors need reliable emissions data for companies if they plan to allocate capital to low-carbon activities.

Thus, carbon accounting methods and targets have acquired great significance in determining whether companies are aligned with a low-carbon transition.

According to one of the most common reporting standards, the Greenhouse Gas Protocol (GHGP), carbon emissions are divided between Scope 1, 2 and 3, according to whether they are direct emissions from a company's activities (Scope 1), indirect emissions from energy purchased and used for a company's activities (Scope 2), or all other indirect emissions from up and down the value chain, including downstream use of a company's products (Scope 3). In the case of a gas power plant, Scope 1 will be the biggest, because it burns fossil gas to produce electricity, emitting carbon dioxide in the process. For a gas production company, Scope 3 will typically be the biggest, because the downstream use of the gas it produces will release carbon dioxide. However, ambiguous definitions in the GHGP mean that TSOs, which only transport and store the gas, currently do not have to consider emissions from downstream or "final" use of the gas they handle, despite the fact that they form the indispensable "midstream" part of the fossil gas value chain, connecting producers with consumers. TSOs are using this loophole to present themselves as near zero-carbon enterprises, when in reality they are as responsible for fossil gas consumption as the upstream and downstream companies they connect.

We find that CDP (an international non-profit organisation formerly known as the Carbon Disclosure Project) has an influential position when it comes to emissions reporting, helping companies with GHGP disclosures and ranking them in league tables. When it comes to company performance relative to Environmental, Social and Governance (ESG) metrics, ESG-led investment analysts often rely on guidance from CDP. However, the weakness in CDP's reporting guidance for TSOs means that this loophole is kept open, allowing them to completely ignore the climate impact of the fossil fuel they transport. The guidance allows TSOs to ignore final use emissions, because technically gas is not their 'sold product'—even though it is, arguably, their *raison d'être*. Instead, TSOs typically only report Scope 3 emissions relating to their supply chain or employee business travel, which are much smaller.

The status quo makes it much easier for TSOs to market themselves as ESG leaders that are aligned with European Union emission reduction targets. It also means they can tap billions of euros in sustainable financing, diverting investor funds from less carbon-emitting energy value chains. This slows Europe's energy transition and increases the financial risks posed by climate change. With ever-greater amounts of capital flowing into ESG-led funds, much is at stake for companies and investors alike.

As an example, one of the largest European TSOs, Italy-based Snam, recently described its plans to reduce its reported emissions to zero by 2040 as a "net zero" target—when it would, in fact, still be transporting fossil gas. The term "net zero" was coined under the 2015 Paris Agreement on climate change, referring to the global goal of reaching zero net greenhouse gas emissions in the second half of the 21st century, in a post-fossil fuel economy. In this context, it is inappropriate for a company that is still transporting fossil fuels as a major part of its business to refer

to its activities as “net zero”. Snam’s statement highlights the weakness of carbon reporting rules for gas TSOs today.

Main Findings

Gas TSOs are using a weakness in greenhouse gas reporting rules to appear much ‘greener’ than they actually are:

- Unreported Scope 3 emissions associated with final use of the gas transported by five European midstream gas companies are at least 100 times greater than their total reported emissions.
- These unreported emissions have risen more than 13% in the past two years, while total reported emissions have fallen almost 2%.
- In 2019, the unreported emissions were equivalent to more than half of all carbon emissions from gas in Europe that year.

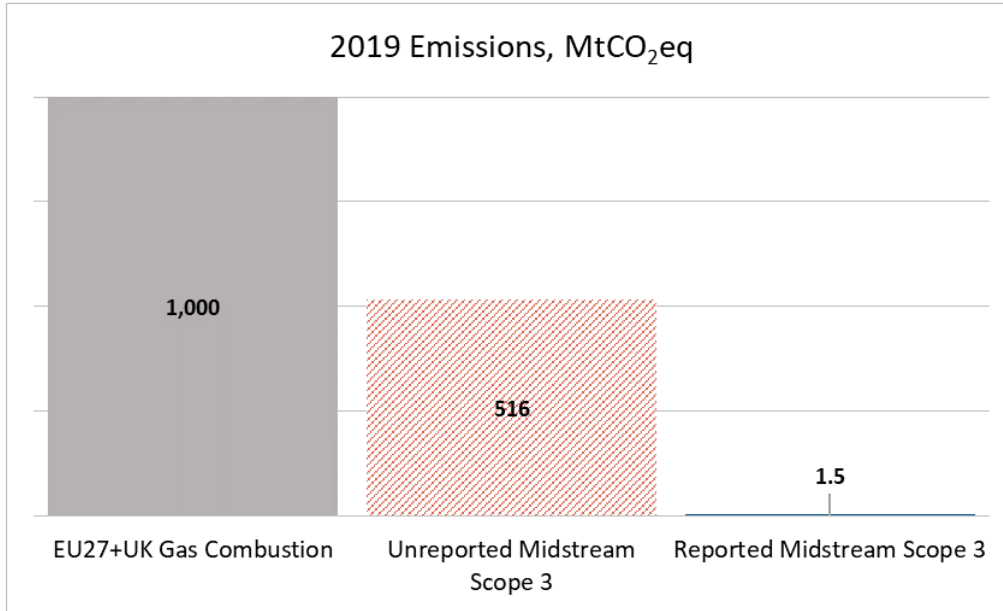
Conclusions and Recommendations

IEEFA urges CDP and other sustainability index providers to update their rules so full emissions are disclosed by midstream gas companies, providing parity with upstream and downstream counterparts in the fossil gas value chain, and enabling ESG analysts to properly evaluate TSOs’ carbon risk exposure.

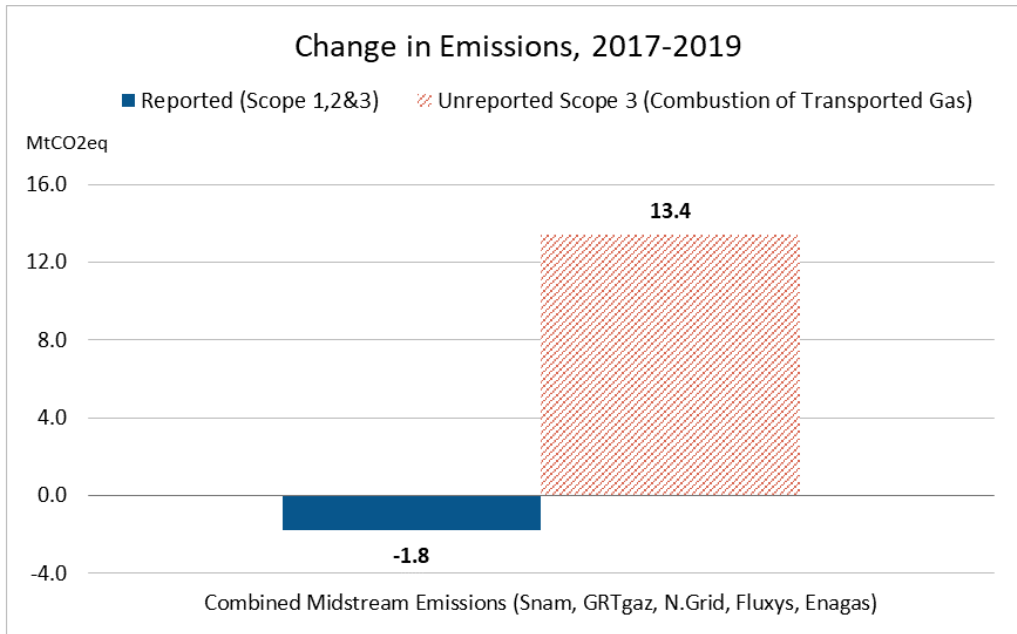
By broadening the definition of “sold products” to include final use emissions in their Scope 3 reporting, TSOs will be able to demonstrate the progress of their investments into sourcing and integrating zero-carbon gases, such as “green hydrogen,” and refitting their grids to transport such gases. Reporting of final use emissions will help investors establish which TSOs are most advanced in adapting their pipeline assets for a real net-zero carbon economy. ESG investors will also have better visibility of the emissions impact and associated financial risks of the value chain where they invest. This will more evenly spread the responsibility for decarbonisation along the fossil gas value chain, ensuring all participants (upstream, midstream and downstream) are suitably aligned.

ESG investors need better visibility of the emissions impact and associated financial risks.

Emissions From Burning Gas Versus the Carbon Content of Transported Gas, 2019



Change in Total Reported and Unreported Emissions, 2017-2019



Source: GCP Carbon Budget 2019, Company information, IEEFA Estimates. Unreported means emissions from final combustion of transported gas. Midstream includes five European TSO companies: Snam, Enagas, Fluxys, GRTGaz and National Grid. National Grid's reported emissions from downstream operations in the U.S. have been excluded.

Context

It is widely accepted that the participation of global financial institutions is vital to achieve net-zero emissions targets and limit the effects of climate change. The evolving plethora of ESG reporting initiatives and metrics are meant to help investors—wherever they sit on the risk spectrum—make more informed decisions. The goal is greater transparency, making it easier to identify companies that lead (and are set to gain from) our transition to a low-carbon economy, versus those more exposed to climate-related financial risks.

There is growing demand for ESG-led investment, and the pandemic has accelerated this trend. Global ESG/socially responsible investment (SRI) assets under management rose to more than \$1 trillion this year, with net flows of \$71 billion in the second quarter.¹ Green bonds and loans are also booming, with global issuance rising from less than \$50 million in 2015 to more than \$250 million in 2019.² In November, the United Kingdom announced it will join other nations in issuing sovereign green bonds to help fund environmentally friendly projects.

Such rapid growth means it is easier for standards to slip, in the rush to allocate capital. Metrics can be confusing and misleading to investors. Many investors simply do not have the time to conduct their own detailed due diligence on environmental issues, relying instead on the endorsements and guidance of multiple organisations and sustainability index providers.³

High sustainability rankings assigned by these providers carry weight. This is no different when it comes to European gas transmission system operators (TSOs), as highlighted by the following extract from Italy-based TSO Snam's Climate Bond Report:⁴

a positive range of responses regarding eligibility for broader SRI strategy funds. **Investors noted Snam's strong rankings in terms of ESG ratings, which are a helpful external validation of the company's strategy.**

Polluting companies might still rate highly for a number of reasons. For example:

- ESG index providers may avoid downgrading entire sectors, instead preferring to pick winners and losers;
- ESG index providers may focus on relative carbon intensity versus absolute emissions for more polluting fuels; and

¹ Morningstar Global Sustainable Fund Flows Report. [Global ESG Flows | Morningstar](#). July 2020.

² Climate Bonds Initiative. [Green Bonds Global State of the Market 2019 | Climate Bonds Initiative](#). July 2020.

³ For example CDP, DJSI, ECPI, FTSE, ISS ESG, MSCI, Stoxx, Sustainalytics, Vigeo Eiris, etc.

⁴ Snam. [Climate Action Bond Report](#). February 2020.

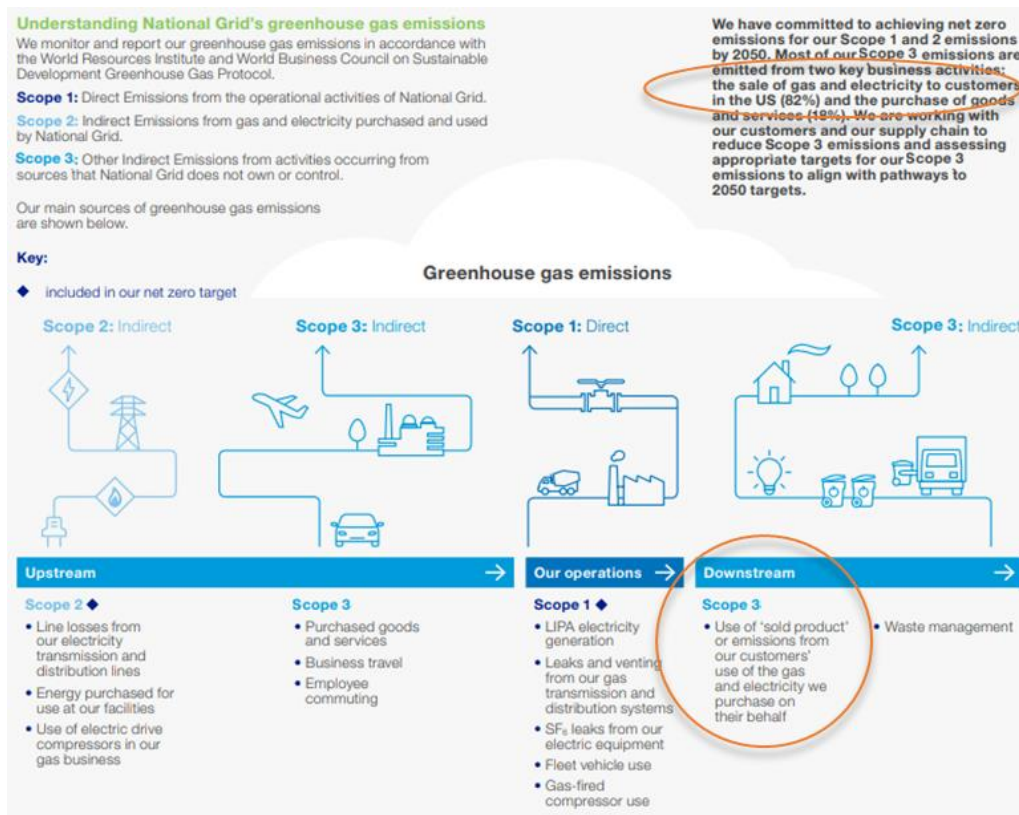
- Other considerations beyond emissions may be given greater weight, such as the perceived quality of company management.

These factors aside, European TSOs are benefitting from a major weakness in emissions reporting. Under current conventions, they completely ignore the huge carbon impact from the final combustion of the gas they transport and store as their core business. By contrast, their upstream and downstream counterparts are increasingly expected to disclose customers' gas combustion emissions in "Scope 3 GHG emissions" reporting. We note that two of the five TSOs covered in this report did not report Scope 3 emissions (One of them, Fluxys, provided us with an estimate for 2019, which had not made it into their annual report). The remaining three TSOs report Scope 3, but make no mention of final use emissions from transported volumes of gas, instead focusing on purchased goods and services, as well as business travel.

Under current conventions, they completely ignore the huge carbon impact from the final combustion of the gas they transport and store.

National Grid, interestingly, does report some final use emissions, but only for its downstream activities in the United States—which underscores exactly how this loophole is functioning. Figure 1 shows that National Grid does not report the Scope 3 emissions associated with final use of its product, as a midstream gas company in the U.K., but it does report such Scope 3 emissions as a downstream gas supplier in the United States.

Figure 1: National Grid Infographic of Emissions Sources in 2019



Source: Infographic from the National Grid Annual Report 2019/20, highlighting that final use or 'sold product' emissions are only included for its downstream activities in the US.

This approach is indirectly supported by the GHGP, which is open to interpretation when it comes to defining exactly what should be considered as a sold product. Figure 2 visualises the three scopes of emissions across the value chain, including the 15 defined categories of Scope 3 emissions.

Category 11, "use of sold products," is where the problem lies. While it is clear that companies producing and/or selling fossil gas to users should calculate and report the emissions resulting from its final use (burning), the rules are less clear for "midstream" companies, which only transport, store and handle the fuel (e.g., handling via compressor stations to control pipeline pressures, or regasification stations for conversion of LNG). In its technical guidance, GHGP describes Category 11 emissions as "end use of goods and services sold by the reporting company in the reporting year." But this does not recognise that transport services are integral to final use of this particular product because specific infrastructure transports fossil gas from production to consumption.⁵ By unbundling their organisations from any legal ownership or sale of the gas (see Table 1 below), TSOs claim that final use emissions are well outside the scope of their activities—that they are one step removed and therefore not responsible for emissions that may result from use of

⁵ Greenhouse Gas Protocol. *Scope 3 Calculation Guidance*. 2013.

the gas that they handle.

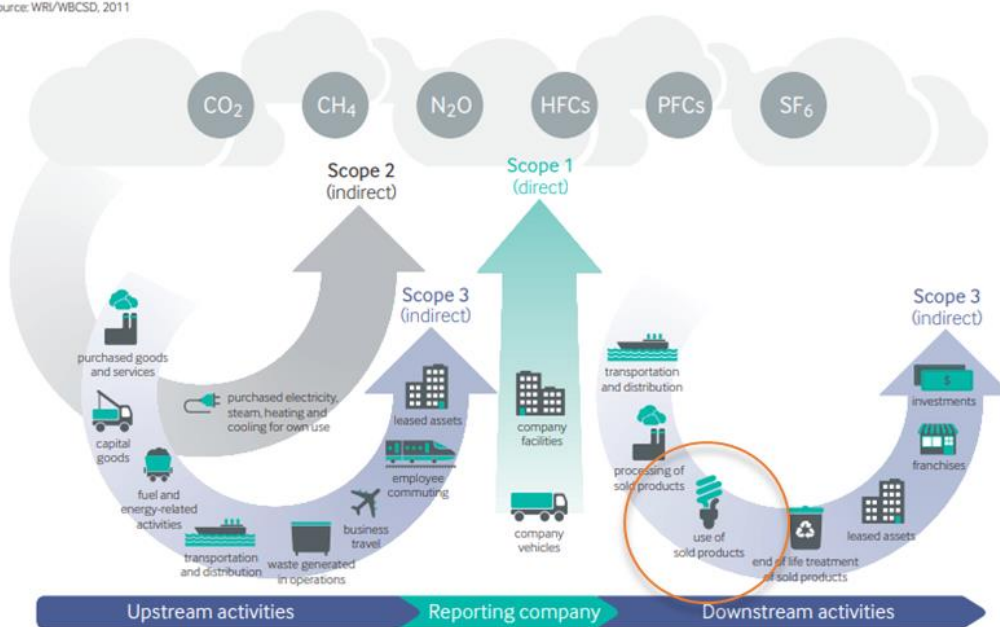
This position is completely at odds with public TSO plans to invest in more environmentally friendly fuels. TSOs are clearly tied to the specific molecule that flows through their pipes, and therefore should share some responsibility for its carbon content and final use emissions.

We find that CDP has an influential position when it comes to emissions reporting, providing detailed questionnaires to help companies disclose relevant information, and publishing industry-specific reports that rank companies. For oil and gas companies, CDP has published a 33-page technical note specifically to provide guidance on estimating Scope 3 Category 11 emissions, given its significance for the sector.⁶ However, this note is aimed only at companies that actually produce oil and gas, indicating that “oil and gas pipelines and storage are excluded.” The CDP oil and gas industry report confirms this; it shows 24 upstream companies, and none of the TSOs.⁷ Thus, when considering TSOs, we find a weakness in CDP’s reporting rules, which currently support the ambiguity in GHGP’s definition of Scope 3 emissions. To date, this has enabled the large, influential gas TSOs in Europe to market themselves as almost zero-carbon companies, relative to their upstream peers.

Figure 2: Greenhouse Gas Protocol Infographic Defining Emissions Scope

GHG Protocol scopes and emissions across the value chain

Source: WRI/WBCSD, 2011



In an example of the perverse outcome of this approach to greenhouse gas emissions reporting, one of the largest TSOs recently announced its plans to be net-zero by 2040. Net-zero is a term increasingly used by companies and countries,

⁶ CDP. [Guidance for companies](#). 2020.

⁷ CDP. [Beyond the cycle](#). November 2018.

intended to demonstrate alignment with the 2015 Paris Agreement on Climate Change. Under the agreement, all countries agreed collectively to reduce net greenhouse gas emissions to zero in the second half of this century, moving beyond burning fossil fuels. It is widely expected that wealthier countries would take the lead, as well as sectors of the economy where zero-carbon alternatives are already widely available and competitive, such as power generation.

In November 2020, Italy-based Snam committed to be net-zero by 2040, in its latest “strategic plan.”⁸ However, it was only referring to the scope 1, 2 and 3 emissions as defined by GHGP and CDP. It is clear that Snam has no intention to stop transporting fossil gas by 2040. Indeed, Snam does not even present a target for reducing fossil gas as a proportion of the gas it transports. The company’s initial investments indicate how low that number might be. In its latest “strategic plan,” it describes “hydrogen-ready” investments in its fossil gas pipelines, including the ability to make “up to 2% blending (of hydrogen) feasible” in its fossil gas storage infrastructure and the installation of a single new hybrid compressor turbine at Istrana, suitable for an “up to 10% hydrogen blend”.

Gas TSOs companies only provide transport, storage and handling/terminal services. They do not own the fossil gas that they transport or sell. However, their infrastructure is almost exclusively used to transport fossil gas. Their pipelines are not immediately available to transport other goods. Gas TSOs are intrinsically fossil fuel companies, not mere transport companies. By not reporting end-use emissions, they are effectively saying that they do not care which gas flows through their network, or how the gas is used—including whether it is burned, emitting carbon dioxide, or used in other ways that might result in lower scope 3 emissions. Such a position seems at odds with the energy world that we live in today.

Methodology and Findings

By taking reported domestic gas flows and consumption, applying conversion factors for energy content (*10.6-11.3 Terawatt-hours per billion cubic metres (TWh/bcm)*), emissions intensity (*1.9 million tonnes of carbon dioxide per billion cubic metres (MtCO₂/bcm)*), and conservatively assuming 100% combustion into carbon dioxide,⁹ we estimated the magnitude of unreported Scope 3 emissions by five European midstream gas companies.¹⁰ The results are at least 100 times greater than those reported.

⁸ Snam. *2020-2024 Strategic Plan*. November 25, 2020.

⁹ Methane, the main component of fossil gas, has ~80x higher global warming potential than carbon dioxide over a 20-year period. If partial combustion led to unreacted methane being released, this would lead to higher CO₂ equivalent emissions.

¹⁰ In the case of National Grid, we remove the reported emissions relating to downstream sales in the U.S. (reported to be 82% of the total) and factor the result by segmental contribution to EBIT (12% of total).

Figure 3: Actual Emissions From Burning Gas Versus the Carbon Content of Transported Gas, 2019

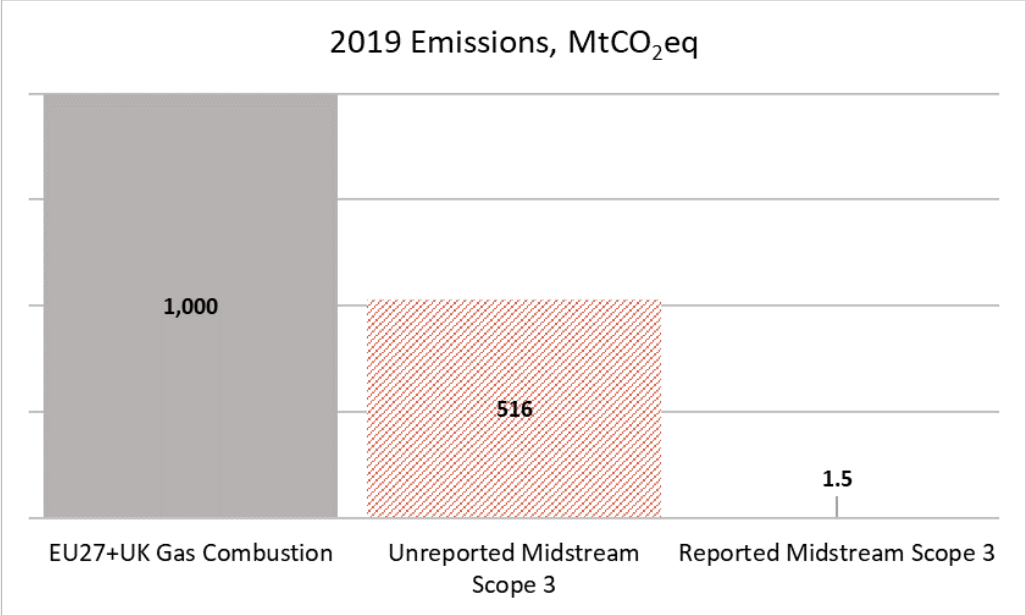
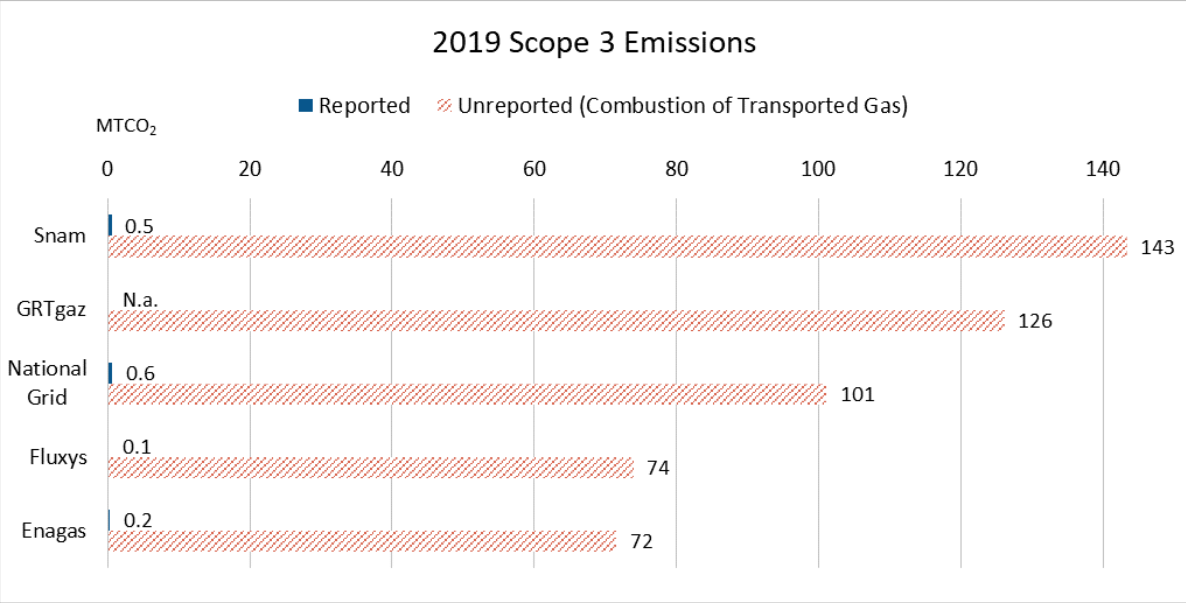
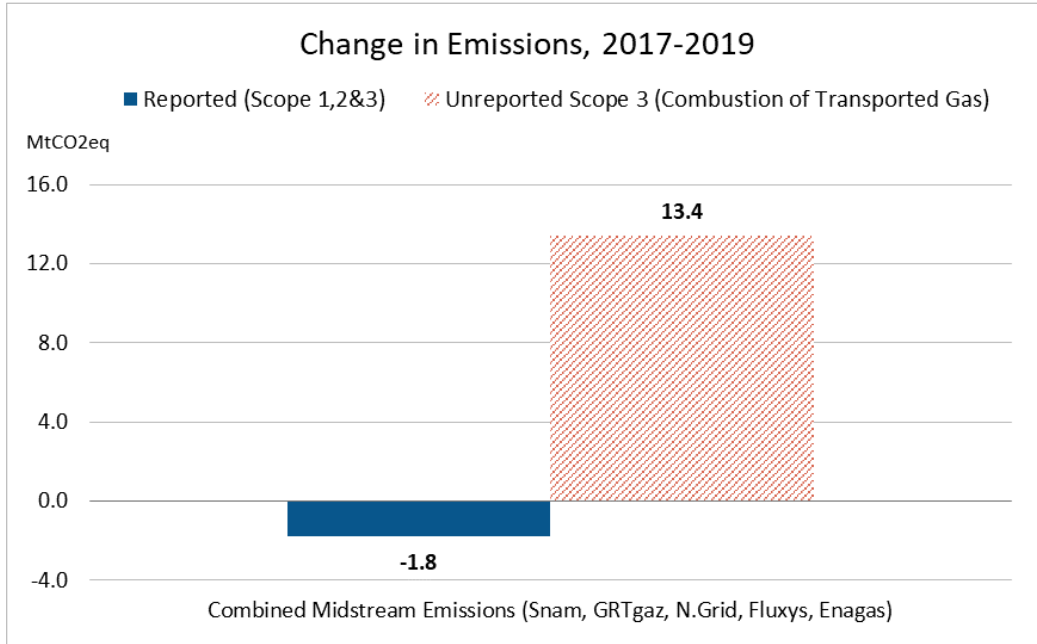


Figure 4: Scope 3 Emissions in 2019: Five Midstream European Gas Companies



Furthermore, we find that these unreported Scope 3 emissions have risen since 2017, while total reported emissions have fallen (see Figure 5).

Figure 5: Change in Total Reported and Unreported Emissions, 2019 vs 2017



Regardless of whether overall emissions from fossil gas are increasing or decreasing, it is important that the companies along this value chain are labelled as fossil fuel companies so that investment risks can be allocated. One of the main arguments supporting the status quo is that companies providing transport services cannot be held accountable for the emissions from final use of their “cargo.” This might make sense for, say, a shipping company like Maersk, which is largely agnostic to the contents of its shipping containers. However, the entire business of European TSOs is built around fossil gas, the main component of which is the greenhouse gas methane. Their infrastructure is designed around the specific properties of this fuel. To say they have no responsibility or risk exposure to the future use of that fuel is simply not true. Yet this is effectively being signalled to the market when almost no Scope 3 emissions are reported.

To say they have no responsibility or risk exposure to the future use of that fuel is simply not true.

To further emphasize this point, we note that all five TSOs began life as vertically integrated fossil gas companies (see Table 1).¹¹

Table 1: The Five European Gas TSOs Considered in This Report and Their Origins as Vertically Integrated Gas Companies

TSO	Domestic Market	Network, km	Market Cap., €bn	Prior Integration	Spin-off year
Snam	Italy	41,000	15	Eni	2012
GRTgaz	France	32,500	-	-	Still owned by Engie
Enagas	Spain	12,000	5	Gas Natural (Naturgy)	2002
National Grid	UK	7,630	33	British Gas plc	1994
Fluxys	Belgium	4,000	2	Distrigas	2001

Source: Company information, S&P Market Intelligence as of 30 November 2020.

TSOs appear to be fully aware of their risk exposure, given they are actively moving to bring in alternative fuels such as biomethane and hydrogen. These efforts are usually well publicised and include investing or acquiring relevant companies, implementing pilot projects that mix low proportions of hydrogen with methane, and publicly touting how much of their network is built with “hydrogen-ready” pipes.

Why would TSOs not want to include final use emissions in their Scope 3 reporting? It could become a key indicator of their success as they progress with decarbonisation. Gas TSOs certainly talk the talk concerning a transition to a low-carbon economy, with frequent references to “green gases” that are still a tiny part of their business. Snam, for example, generated only 5% of revenue and 0.3% of EBITDA from “New Businesses” (an umbrella term it uses to describe bio-methane, compressed gas for road transport, energy efficiency and hydrogen) in the first nine months of 2020. The best way for TSOs to inform the market about successful management of the transition would be to report Scope 3 emissions associated with their transported gas, which none of the TSOs currently do. Here, the contrast with upstream exploration and production companies is telling. Bloomberg recently reported that eight of the largest 39 oil and gas companies now have Scope 3 emissions reduction targets, noting that Scope 3 comprises about 80% of their total GHG emissions.¹² Though far from ideal, eight is better than zero, as in the case of gas TSOs, and further progress depends on continued improvements in emissions reporting, upon which targets can be set and performance measured.

Another argument supporting the current reporting norm is that *customers* should take responsibility for using these fuels in the first place, and that European TSOs are simply responding to popular demand for gas heating. That might hold true if customers had significant choice in the matter. However, in many cases, particularly regarding domestic heating, gas is the incumbent fuel. A switch is not possible without substantial personal investment, making gas the only affordable option. The

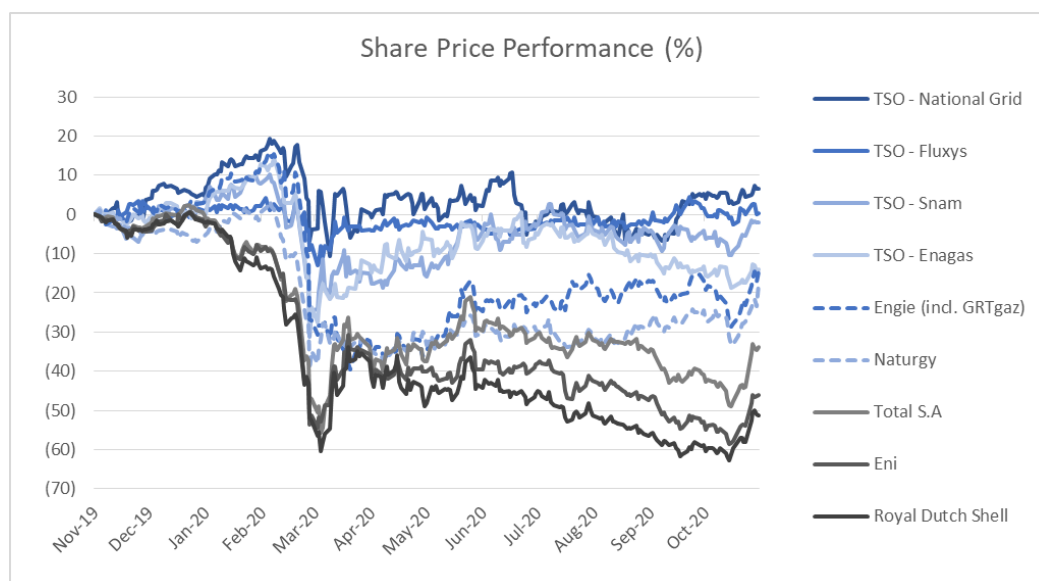
¹¹ GRTgaz is an operating subsidiary of Engie, which reports Scope 3 emissions at the group level.

¹² Bloomberg. [Big Oil Has a Long Way to Go on Setting Emissions Targets](#). November 11, 2020.

infrastructure investment and financing decisions that create this environment are made far from the consumer. In Europe, these have been driven by the European Network of Transmission System Operators for Gas, or ENTSO-G, as reported by campaign group Global Witness.¹³ Other gas groups are also influential, such as Gas Infrastructure Europe and Gas for Climate 2050. We note the five companies referenced are all members of these three groups, except National Grid, which is not in Gas for Climate 2050.

Regulated Returns – A Side Note

As regulated companies, TSO revenues are driven by regulated returns, usually set over multi-year periods by applicable national regulators and generated through rates and tariffs that are ultimately borne by end users. The appropriateness and effectiveness of existing regulatory payment mechanisms are beyond the scope of this study. However, we highlight the risk that these do not sufficiently align TSO incentives with National Energy and Climate Plans (NECPs) or, ultimately, the Paris Agreement. Along with hampering decarbonisation, this decreases value for end-users. They also shield TSOs from demand and price risks. We expect the role of the regulator to come under increased scrutiny as decarbonisation becomes a higher priority for European gas grids. We note, for example, the resilience of TSO market valuations when compared to integrated/upstream majors as the global pandemic sunk energy demand this year.



¹³ Global Witness. [Pipe Down](#). June 18, 2020.

About IEEFA

The Institute for Energy Economics and Financial Analysis (IEEFA) examines issues related to energy markets, trends and policies. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy. www.ieefa.org

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