

European gas TSOs: one pipeline to transport them all

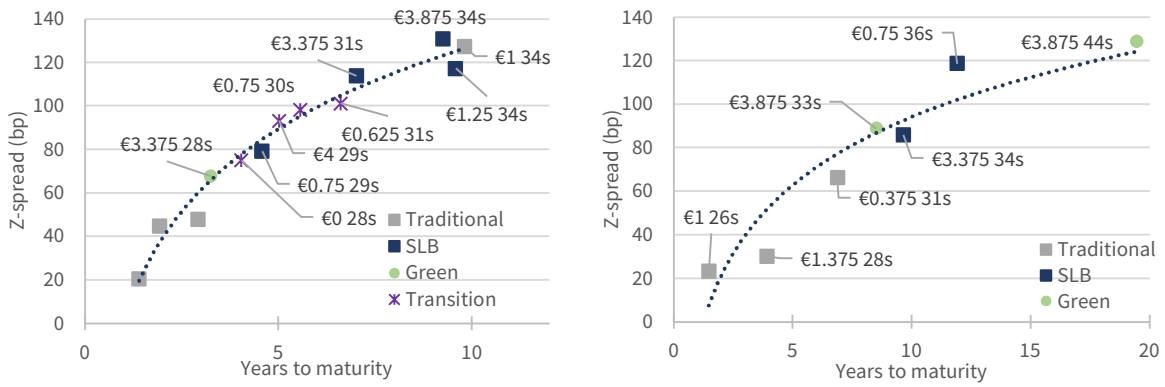
Josephine Richardson (*)

Gas Transmission System Operators (TSOs) manage the transportation of gas, which is burnt to generate energy. Operational decarbonisation is focused on reducing leaks, and more sustainable methods to propel gas along pipelines. Complete decarbonisation, however, would require TSOs to upgrade their infrastructure to transport more sustainable products, including biomethane and hydrogen. The pipelines may also play a role in transporting CO_2 for storage.[1]

Two European TSOs, Italian Snam and Dutch Gasunie, have used the ESG-labelled debt market to support their decarbonisation journeys. This month, Snam issued two Sustainability-Linked Bonds (SLBs) and Gasunie released its first sustainable finance report. In this note, we analyse these two companies and inspect their bond curves to understand the pricing of their debt. We incorporate a SLB option pricing assessment so that investors can gauge the relative value of these issuers.

- **Snam's** five SLBs use three KPIs, including targets on reported Scope 3 emissions, which does not include emissions from transported gas, over which Snam cites that it has no control. This omission is a missed opportunity to increase transparency and accountability.
- The older bonds (1.25% 34s and 0.75% 29s) use an outdated, but more ambitious, target for Scope 1 + 2 emissions reductions. **By pricing these bonds at tighter spreads, the market is implying these targets may be missed.**
- **Gasunie's** recent reporting shows its Scope 1 + 2 emissions KPI are off-track. This appears driven by a decision to purchase fewer Guarantee of Origin certificates, rather than an increase in location-based emissions. The 34s seem to be pricing some expectation of receiving a step-up coupon, which would happen if Gasunie's targets were missed.
- Despite strong book size for its green bonds, the 33s seem to trade wider than an SLB with slightly longer maturity. **By pricing ambitious SLBs tighter in the secondary market, this can encourage more issuance as borrowers seek to optimise their cost-of-capital.**

Figure 1. Snam (LHS) and Gasunie (RHS) bond spreads. Source: Bloomberg, accessed 21 Nov 2024.



[1] "2050 Roadmap for Gas Grids", ENTSOG, accessed 21 Nov 2024.

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Snam

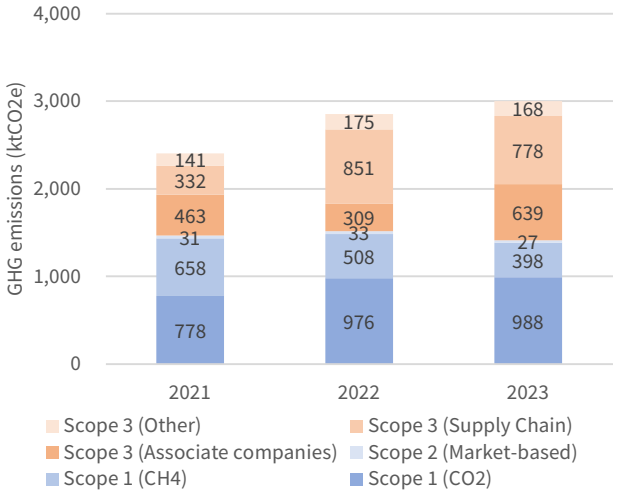
Snam SpA (ticker SRGIM), a publicly listed Italian gas pipeline operator, priced two SLBs on 19 Nov 2024,[2] including its first GBP issuance. Earlier AFII analysis suggested interesting market pricing across its curve, and highlighted potentially incomplete emissions reporting.[3]

Here, we look to update our analysis with information from the new bond issuance.

Emissions reporting

Figure 2 shows Snam's reported emissions for Scope 1, 2 and 3.

Figure 2. Snam reported emissions. Source: Snam, accessed 19 Nov 2024.



The main soures of Scope 1 emissions are gas leaks from its pipelines, and gas burnt to fuel the compressors that propel gas along the pipelines. In 2023, Scope 1 represented 46% of reported emissions, and had reduced 6.6% since 2022.

Snam's reporting assigns the majority of Scope 3 emissions to its associate companies and supply chain. These emissions show an increase of 18.7% since 2022.

Snam's reported Scope 3 emissions do not include the emissions generated when the gas it transports and stores is burnt. Its 2023 CDP reporting gives the following (unchanged from 2022) justification for not including Scope 3 Category 11 "Use of sold products" in its measure: *"With reference to the Scope 3 category 'Use of sold products' Snam is responsible for the management of the infrastructure. However, we are not a gas distributor, since we do not purchase or sell gas, we do not have any contact with the final users or any commercial contact with gas producers."*[4]

This is inconsistent with CDP oil & gas sector guidance, which calls for the 'Throughput' method to be used – one that includes emissions from transported gas:[5] *"Companies which handle oil and gas products but do not own the products themselves should calculate their Scope 3 category 11 emissions based on the throughput of these products through their operations."*[5] Having looked at the reporting of the largest four TSOs (Snam Enargas Fluxys and GRTgaz) we are not aware of any reporting which includes these figures.

[2] "Snam successfully launched £600 million GBP 12 years and €750 million EUR 7 years Sustainability-Linked Notes marking key milestones in sustainable finance and funding diversification", Snam, 19 Nov 2024.
[3] For earlier analysis please see "The Forensic Carbon Accountant: Snam SpA SLB", AFII, 26 Feb 2024.
[4] "Climate Change Report 2023", CDP, accessed 19 Nov 2024.
[5] "CDP Technical Note: Guidance methodology for estimationg of Scope 3 category 11 emissions for oil and gas companies", CDP, 28 Jun 2024.

The Institute for Energy Economics and Financial Analysis (IEEFA) estimated that the downstream emissions released by combusting Snam's transported gas totalled 143 $MtCO_2e$ in 2019,[6] around 144x its reported Scope 3 emissions for 2019. Snam's injected gas volume in 2023 was -15% compared to 2019,[7] which would estimate emissions for that year of 121 $MtCO_2e$ – 40x its reported emissions for 2023.

Outstanding bonds

Table 1 shows Snam's outstanding bonds. Since Jun 2020 all issuance has been in ESG-labelled debt form, apart from a short-dated Floating Rate Note (FRN) and a Perpetual bond.[8,9]

Table 1. SNAM outstanding bonds. Source: Bloomberg, accessed 21 Nov 2024.

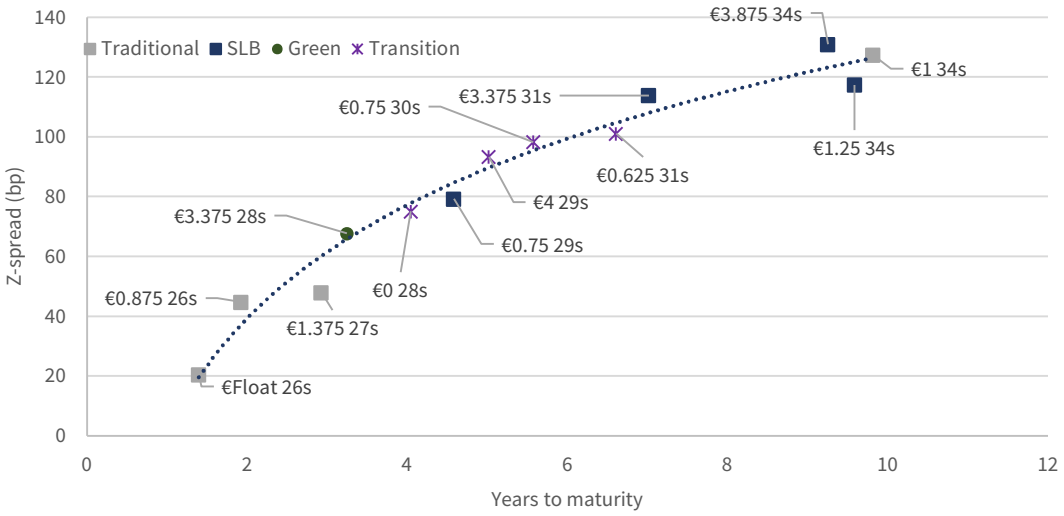
Description	ISIN	Issue Date	Maturity	Currency	Amount Outstanding	ESG Label
SRGIM €0.875 26s	XS1505573482	25-Oct-16	25-Oct-26	EUR	1,250,000,000	
SRGIM €1.25 25s	XS1555402145	25-Jan-17	25-Jan-25	EUR	266,816,000	
SRGIM €1.375 27s	XS1700721464	25-Oct-17	25-Oct-27	EUR	552,469,000	
SRGIM €1.25 25s	XS1957442541	28-Feb-19	28-Aug-25	EUR	500,000,000	Transition
SRGIM €1.625 30s	XS2005658781	07-Jun-19	07-Jan-30	EUR	250,000,000	
SRGIM €1 34s	XS2051660509	12-Sep-19	12-Sep-34	EUR	600,000,000	
SRGIM €0.75 30s	XS2190256706	17-Jun-20	17-Jun-30	EUR	750,000,000	Transition
SRGIM €0 28s	XS2268340010	07-Dec-20	07-Dec-28	EUR	600,000,000	Transition
SRGIM €0 25s	XS2300208928	15-Feb-21	15-Aug-25	EUR	500,000,000	Transition
SRGIM €0.625 31s	XS2358231798	30-Jun-21	30-Jun-31	EUR	500,000,000	Transition
SRGIM €0.75 29s	XS2433211310	20-Jan-22	20-Jun-29	EUR	850,000,000	SLB
SRGIM €1.25 34s	XS2433226854	20-Jan-22	20-Jun-34	EUR	650,000,000	SLB
SRGIM €3.375 26s	XS2562879192	05-Dec-22	05-Dec-26	EUR	300,000,000	Transition
SRGIM €3.25 28s	XS2693301124	29-Sep-23	29-Sep-28	EUR	500,000,000	Transition / Convertible
SRGIM €4 29s	XS2725959683	27-Nov-23	27-Nov-29	EUR	650,000,000	Transition
SRGIM €3.875 34s	XS2767499945	19-Feb-24	19-Feb-34	EUR	1,000,000,000	SLB
SRGIM €3.375 28s	XS2767499275	19-Feb-24	19-Feb-28	EUR	500,000,000	Green
SRGIM €Float 26s	XS2802190459	15-Apr-24	15-Apr-26	EUR	750,000,000	
SRGIM €4.5 PERP	XS2896350175	10-Sep-24	Perp	EUR	1,000,000,000	
SRGIM €3.375 31s	XS2944871586	26-Nov-24	26-Nov-31	EUR	750,000,000	SLB
SRGIM £5.75 36s	XS2944872121	26-Nov-24	26-Nov-36	GBP	600,000,000	SLB

[6] P10 of "Hiding in Plain Sight – European Gas Pipeline Companies' Greenhouse Gas Emissions", IEEFA, Dec 2020.
[7] 75.37 bn cubic metres in 2019 and 64.07 bn cubic metres in 2023, sourced from Annual reports on "Annual Reports", Snam, accessed 19 Nov 2024.
[8] For more details on Perpetual bonds please see "Developments in Sustainability-Linked Perpetuals", AFII, 12 Nov 2024.
[9] We saw a similar dynamic in Ahold's Mar 2024 deal where it issued a green, SLB and short-dated FRN. This could be because short-dated debt is ill-suited to ESG labels where there is limited duration to either make the correct capital allocation and reporting, or achieve a sustainability target. The Ahold deal is discussed in more detail in "Relative value is in the eye of the Ahold-er", AFII, 18 Mar 2024.

Market pricing

Figure 3 shows market pricing for Snam's EUR bonds, including the new SLB 3.375% 31s.

Figure 3. Snam EUR bond pricing for bullet bonds >$0.5bn and maturity longer than one year. Source: Bloomberg, accessed 21 Nov 2024.



There seem to be limited areas of disjointed pricing. The majority of traditional, green, and transition bonds are priced close to the curve. However, the SLBs are more differentiated, with the 29s and 1.25% 34s appearing tighter and the 31s and 3.875% 34s pricing wider.

Before analysing the specific KPIs and option values for the bonds, it is interesting to note that the lower coupon bonds are tighter, despite having below par cash prices. Low prices can sometimes make bonds less desirable and so trade at a wider spread, as a higher portion of their return comes from capital return rather than coupon payments. However it can also make them more desirable as less capital is needed to achieve the same exposure, and so trade at tighter spreads.

We will now look at the specific details and option value of the SLBs to analyse more closely the pricing of those bonds.

SLB details

Snam has issued five SLBs. The company published two Sustainability-Linked Financing Frameworks (SLFF), one in 2021 and another in 2024, which guided their structuring.[10] The five bonds reference some or all of the same three KPIs, but differ in the selection of dates and targets. Details are given in Table 2.

The first KPI, which is used only in the 0.75% 29s, relates to natural gas emissions. The target for this bond is a 55% reduction of these emissions by 2025, relative to a 2015 baseline. Snam's 2023 Annual Report revealed actual emissions fell 56.5% below this mark, meaning the target is currently met.[11] The 2024 SLFF provides updated targets to 2027/2030/2032 but these have not yet been used in any bonds.

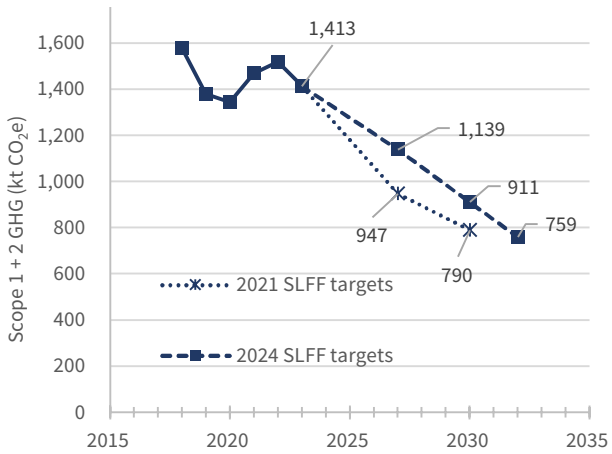
[10] Both documents can be downloaded from "Sustainable Finance", Snam, accessed 21 Nov 2024.
[11] As downloaded from "Snam Annual Reports", Snam, accessed 21 Nov 2024.

Table 2. Snam SLBs with SPT details. Source: Bloomberg.

Description	ISIN	Maturity	Step-up	SLFF	SPT1	Years of step-up paid	SPT2	Years of step-up paid
SRGIM €0.75 29s	XS2433211310	20-Jun-29	0.25%	2021	-40% Scope 1+2 in 2027 (2018 baseline)	1	55% Natural Gas emissions in 2025 (2015 baseline)	3
SRGIM €1.25 34s	XS2433226854	20-Jun-34	0.25%	2021	-50% Scope 1+2 in 2030 (2018 baseline)	3	n/a	
SRGIM €3.875 34s	XS2767499945	19-Feb-34	0.25%	2024	-40% Scope 1+2 in 2030 (2022 baseline)	3	n/a	
SRGIM €3.375 31s	XS2944871586	26-Nov-31	0.25%	2024	-25% Scope 1+2 in 2027 (2022 baseline)	3	-30% Scope 3 in 2030 (2022 baseline)	1
SRGIM £5.75 36s	XS2944872121	26-Nov-36	0.25%	2024	-50% Scope 1+2 in 2032 (2022 baseline)	4	-35% Scope 3 in 2032 (2022 baseline)	4

The second KPI, Scope 1 + 2 emissions (market-based), has been referenced in all bonds. However, the target levels were updated in the 2024 SLFF to be less ambitious. Details are shown in Figure 4. Scope 1 + 2 emissions reduced 6.9% from 2022 to 2023, after two successive annual increases, though they are still above the 2020 figure. Historic volatility in this KPI makes it uncertain whether the targets will be achieved, but certainly the targets in the latest three bonds are more likely to be met than in the older two bonds.

Figure 4. Snam Scope 1 + 2 emissions figures plus targets. Source: Snam.



The third KPI is reported Scope 3 emissions from a 2022 baseline. This means only one additional data-point has been released since the KPI was inaugurated. This showed a 4% reduction from 2022 to 2023.[11]

The two most recently issued bonds reference targets linked to this KPI – a 30% and 35% reduction against the 2022 baseline by 2030 and 2032, respectively. A linear reduction of 4% per year is on-track to achieve a the targets.

As shown in Table 2, even though all step-up coupons are 25bps, the materiality of these potential increases vary by bond, since each has a different amount of time over which these additional amounts could apply. For example, the £5.75% 36s potentially pays 50bps for four years. This almost qualifies it as a 'greenback SLB', our term for when the discounted value of the step-up, using an illustrative 50% probability, is greater than 1%.[12] In comparison, the 1.25% 34s could pay only 25bps for two years, meaning it has one-quarter of the materiality. In the next section, we will price the SLB options, and see how this materiality, as well as the probability of targets being achieved, impacts the bond pricing.

[12] "Greenback SLBs: an impact standardisation proposal", AFII, 10 May 2023.

SLB option pricing

AFII uses an option pricing approach to consider the value of SLB step-up options.[13]

The Snam bonds present an interesting situation, in that each Sustainability Performance Target (SPT) is used only once (as shown in Table 3), and so hypothetically it should be possible to infer the relative probabililties of their being achieved from market pricing.

Table 3. Snam SLB SPTs. Source: Blooberg.

SPT	KPI1: Natural Gas emissions	KPI2: Scope 1 + 2 emissions (2021 SLFF)	KPI2: Scope 1 + 2 emissions (2024 SLFF)	KPI3: Scope 3 emissions
2025	SRGIM €0.75 29s			
2027		SRGIM €0.75 29s	SRGIM €3.375 31s	
2030		SRGIM €1.25 34s	SRGIM €3.875 34s	SRGIM €3.375 31s
2032			SRGIM £5.75 36s	SRGIM £5.75 36s

The two bonds structured using the 2021 SLFF seem to have the tightest spread, which implies the highest option value. The SPT for KPI1 is currently achieved, so we interpret the pricing as implying a high probability of the 2021 SLFF Scope 1 + 2 emissions targets being missed. Assigning a 10% miss probability for KPI1 and 90% for KPI2 gives an option value of 6.3bps for the 29s and 6.5bps for the €1.25 34s.

The two EUR bonds structured using the 2024 SLFF seem to be wide of the curve, implying zero option value as well as potentially some residual new issue premium.[14]

If the market is pricing a high chance of the more ambitious Scope 1 + 2 emissions targets being missed, it is hard to assign a very low probability for the less ambitious targets, given they are linked to the same KPI – especially considering that one of the targets is eight years away, and this longer observation period will increase the uncertainty. We consider ratcheting higher the probabilities that the 2024 SLFF targets will be missed to 10% in 2027, 20% in 2030, and 30% in 2032. For the Scope 3 target, where there is limited historical data, the market pricing suggests we use a low probability of 25% for both SPTs.

These numbers give an option value of 0.9bps for the 3.875% 34s, 1.8bps for 3.375% 31s and 3.4bps for the £5.75 36s. The increased value for the GBP bond is driven by the higher materiality of the structure; i.e. because the coupons are paid for a longer period of time after SPT observation.

The probabilities we have used are illustrative to understand what ranges of value are possible for the different SLB structures.

Summary

Snam has issued several ESG-labelled bonds to support its transition journey. These are focused on reducing its disclosed Scope 1, 2, and 3 emissions. However, this measure does not include the downstream emissions of the gas it transports.

Its five outstanding SLBs all use distinct SPTs. Combining analysis of the structures with the current market pricing allows us to imply achievement probabilities for each target. The initial

[13] For full details please see "Sustainability Linked Bond Handbook", AFII, 12 May 2024.
[14] Although we identified the wide spread on the 3.875% 34s close to issuance and it seems to have persisted. The earlier analysis is available at "The Forensic Carbon Accountant: Snam SpA SLB", AFII, 26 Feb 2024.

SLFF from 2021 included more ambitious targets, and the market seems to be considering these as significantly less likely to be achieved.

The bonds issued under the 2024 framework seem to be trading wider. The two EUR bonds are wide of the curve. Because one was priced in February, this cannot be attributed to potential new issue premium. The recent bond deal also included Snam's first GBP bond. This being the sole GBP issuance, there are no bechmarks for comparing the SLB option pricing. However, this structure has a very material step-up with a non-discounted maximum step-up of 2%, and so we would expect SLB dynamics to be stronger for this security.

Gasunie

Gasunie (ticker NEGANV) is a state-owned Dutch pipeline operator. It released its latest sustainable finance report in November 2024, complete with updates on its previously issued green bonds and SLBs.[15]

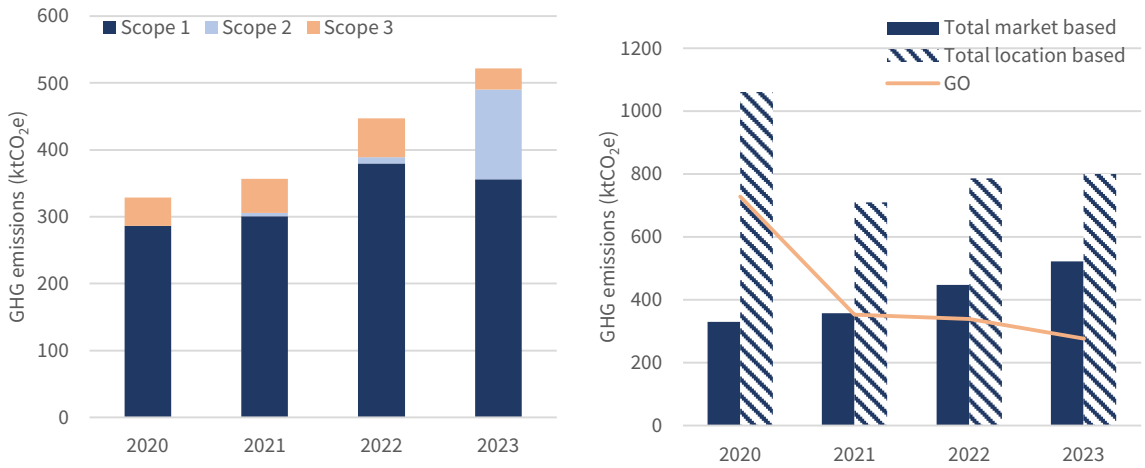
It is therefore timely to review the pricing and impact of its outstanding instruments.

Emissions reporting

Gasunie currently reports its emissions for Scope 1, Scope 2 (market-based), and Scope 3 – although the latter only covers business travel, commuting, and the production of nitrogen. Data on these metrics for the past four years are shown in Figure 5.

Gasunie is transparent about its use of Guarantees of Origins (GOs) for reducing its Scope 2 emissions. In 2023, these represented 277 ktCO2e. Interestingly, the size of its purchased GOs has reduced over the past four years. The company explains that *"[the requested] volumes were not yet available on the market on reasonable terms"*.[16] In fact, the overal increase in reported market-based emissions over the time period is driven by this reduction in purchased contracts, and actually underpinned by a very modest rise in location-based emissions, as shown in Figure 5 (RHS).

Figure 5. Gasunie reported emissions and Guarantees of Origins puchased. Source: Gasunie.



[15] "Sustainable Finance Report 2024", Gasunie, Nov 2024.
[16] "Emissions 2023 Annual Report", Gasunie, accessed 21 Nov 2024.

Gasunie concedes that its historical Scope 3 reported emissions includes *"limited activities"*.[17] In October 2023 it released an updated climate action plan, with increased reporting in Scope 3 activities for 2023, amounting to 45% of the total.[18] Assuming figures for Scope 1 and 2 are unchanged, this implies an increase of reported Scope 3 emissions of over 12.5x to 400kt.

However, emissions from combustion of the transported gas are not included: "*Gasunie is in the business of transporting natural gas, not burning natural gas. […] Emissions from end users' burning of natural gas occur beyond Gasunie's direct scope of influence and are, therefore, excluded from the target."*[18] These emissions are estimated by Gasunie to be 197 megatonnes in 2023, or over 200x its reported emissions.

Outstanding bonds

Table 4 shows details of Gasunie's outstanding bonds. Its labelled debt issuance began in 2021 with an inaugural SLB, followed by a second in 2022. In 2023 and 2024 it issued green bonds. What is interesting about these is their high Cover Ratio (the ratio of the order book to final issuance). For the green bonds in particularly the ratios were very high. For example, in 2024 the average for EUR corporate deals in was 3.3x, whereas the 44s were oversubscribed 7.1x.[19]

Table 4. Gasunie outstanding bonds. Source: Bloomberg, accessed 19 Nov 2024.

Description	ISIN	Issue Date	Maturity	Currency	Amount Outstanding	ESG Label	Cover Ratio
NEGANV €1 26s	XS1409382030	11-May-16	11-May-26	EUR	650,000,000		not available
NEGANV €1.375 28s	XS1892117919	16-Oct-18	16-Oct-28	EUR	300,000,000		5.3
NEGANV €0.375 31s	XS2060691040	03-Oct-19	03-Oct-31	EUR	500,000,000		3.4
NEGANV €0.75 36s	XS2393539593	13-Oct-21	13-Oct-36	EUR	300,000,000	SLB	not available
NEGANV €3.375 34s	XS2498042584	11-Jul-22	11-Jul-34	EUR	500,000,000	SLB	2.4
NEGANV €3.875 33s	XS2716710756	22-Nov-23	22-May-33	EUR	300,000,000	Green	5.8
NEGANV €3.875 44s	XS2806495896	29-Apr-24	29-Apr-44	EUR	500,000,000	Green	7.1

Market pricing

Figure 6 LHS (overleaf) shows market pricing of Gasunie's outstanding bonds.

For the five longer-dated bonds, with maturities between 2031 and 2044, the pricing does not seem to fit a smooth curve. Notably, there is an inversion between the 3.875% 33s (green) and the longer-dated 3.375% 34s (SLB).

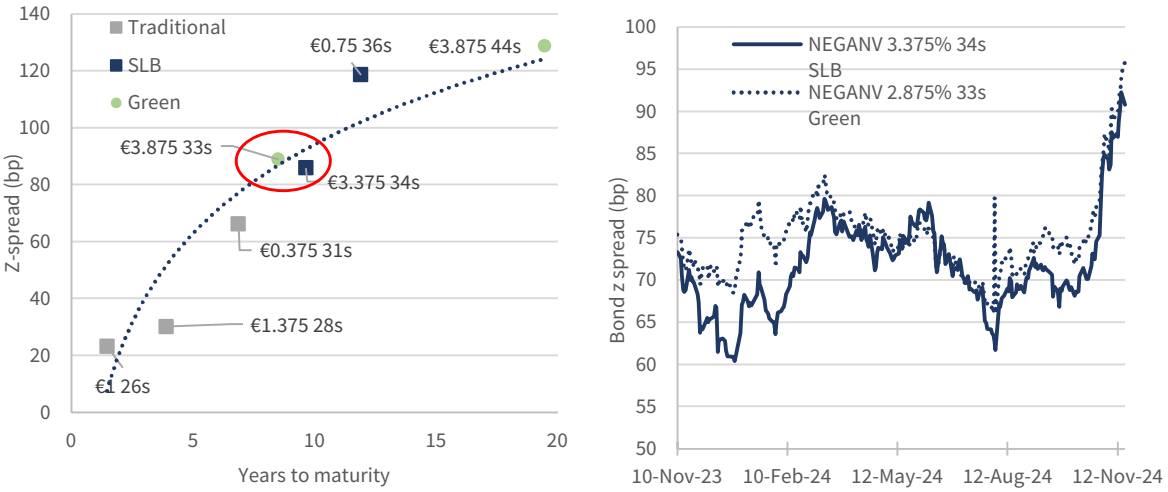
Figure 6 RHS (overleaf) describes the historic pricing of these two bonds, showing that the curve in question has nearly always been inverted, widening to around 10bps in Jan 2024. It is now around 5bps. Considering the tighter bond is an SLB, with the potential to receive a step-up coupon, this may indicate the market is actively pricing the option in that bond.

The spread between the two SLBs also appears steep; around 32bps for 2 years and 3 months of additional maturity. The longer SLB has a low coupon, 0.75%, which gives it a current trading price around 73%. This can sometimes create demand dynamics different to a par bond, depending on

[17] "Emissions 2024 Half Year Report", Gasunie, accessed 21 Nov 2024.
[18] "Gasunie Climate Action Plan", Gasunie, Oct 2024.
[19] Data from Bloomberg using all EUR deals of size larger than $0.5bn priced between 1 Jan 2024 and 31 Oct 2024.

investors funding costs. We note the low coupon bond trading at wider spreads is the opposite of what is observed in Snam's bond curve, where the lower coupon bonds have tighter spreads.

Figure 6. Gasunie bond pricing, current (LHS) and historic (RHS). Source: Bloomberg, accessed 21 Nov 2024.



In the next section, we will explore the SLB option pricing to see if that can explain the differences in spread.

SLB details

Figure 7 (overleaf) shows historical data for Gasunie's two KPIs.

KPI1 is relatively straightforward; it is total methane emissions in CO_2 equivalent. Gasunie's reporting is clear that it uses a methane conversion factor of 25, taken from the Intergovernmental Panel on Climate Change's (IPCC) fourth assessment report. This differs from the factor of 28 used in its annual reports from 2022, a number in-line with the IPCC fifth assessment report.[15] Use of a static factor essentially means the KPI is really a measure of absolute methane emissions, but communicated as CO_2 equivalent.

Notwithstanding the impact of a different conversion factor, methane emissions have been steadily falling over the period. Gasunie therefore appears on track to achieve its 2030 target, a reduction of just under 50% from a 2020 baseline.

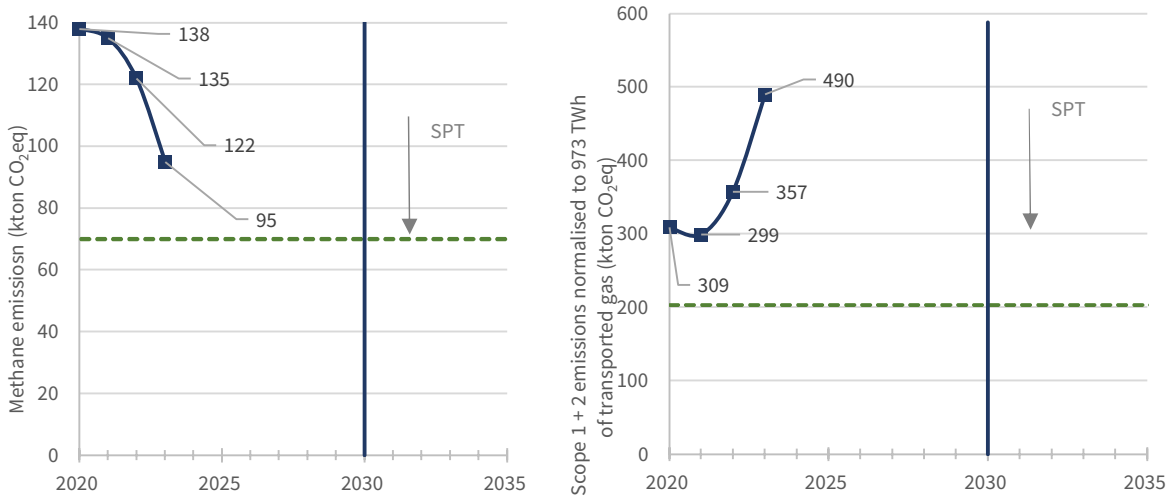
KPI2 is more complex. This covers Scope 1 + 2 emissions (market based), however the target is 70 + (0.137 * total transported gas). Put simply, the target is concerned with the emissions intensity of the volume of gas transported, plus the 2030 target level for methane emissions. This means the 0.137 is the targeted level of other Scope 1 + 2 emissions. However, if methane emissions are reduced significantly below the target of 70 (as an extrapolation of Figure 7 LHS suggests could be likely), then even with a higher residual emissions intensity, this target could still be achieved.

It is hard to show past figures on a comparable basis, so in Figure 7 RHS we have recalculated equivalent implied emissions, removed methane emissions from the total reported, and then applied the reported intensity factor to 973 TWh worth of gas, which was the total transported for 2023. We then added back in the methane.

Gasunie reports it is *"not … on track to reach our scope 1 and 2 emissions [target]"*. Additional energy used in compression was cited as the main factor. Given the extended period of time before the target will be observed, and the high volatility in the KPI historically, there is significant

uncertainty over this outcome. As Figure 5 earlier shows, another factor to consider in the context of this target is the lower volume of GOs contracts that Gasunie has purchased. This is an additional lever to consider depending on the financial cost.

Figure 7. KPI1 historical figures and target (LHS) and KPI2 implied historic figures and target using total 973 TWh of transported gas (RHS). Source: Gasunie, AFII.



SLB option pricing

Figure 6 shows that the SLB 3.375% 34s seems to trade tigher than a shorter-dated green bond, and that there is a very steep curve between the two SLBs, the 3.375% 34s and 0.75% 36s. We analyse the SLB step-up coupons to see if this can explain the different pricing.

The two bonds reference the same KPIs and targets. By virtue of its longer maturity, the 36s will potentially pay a step-up coupon for five years compared to just three for the 33s. The 36s, however, have a lower step-up of 10bps compared to 12.5bps for the 33s.

Table 5 shows some hypothetical option prices using two probability scenarios. Considering KPI1 is achieved, and using a 50% probability of KPI2 being achieved, gives a value of 2bps for the 36s and 1.8bps for the 34s. When using a 10% probability for KPI1 and 90% for KPI2, this rises to 3.9bps for the 36s and 3.6bps for the 34s. In both scenarios, the 36s value is slightly higher, but only by 0.2-0.3bps, as it seems the extra duration for the step-up coupon is roughly offset by its lower value.

Table 5. Gasunie SLB details and AFII option pricing. Source: Bloomberg, AFII.

ISIN	Bond details	Step-up Coupon	Years step-up is paid for	Running option value using 0%/50% probability	Running option value using 10%/90% probability
XS2393539593	NEGANV 0.75% 36s	0.100%	5	0.020%	0.039%
XS2498042584	NEGANV 3.375% 33s	0.125%	3	0.018%	0.036%

Given KPI2 is off-track, and we expect some volatility around its performance in the six years until observation, it seems reasonable to apply at least 50% probability of this target being missed, which does suggest significant option value in the SLBs. Even though GOs have historically been used by Gasunie to reduce these emissions, the lower purchases in 2023 demonstrate that Gasunie is sensitive to the financial cost of this strategy, and so is not expected to use these contracts to

guarantee target achievement. This uncertainy could explain the 3.375% 34s trading tight to non-SLB bonds, in expectation of receiving a step-up coupon.

However, when analysing the structures of the two SLBs, it seems unlikely that the option price difference could be material enough to explain the steepeness of the curve between these two bonds. They have the same probability of receiving a step-up coupon, which is of roughly the same value when considering the size of the step-up combined with the length of time that it applies for.

Summary

Gasunie has embraced the sustainable debt market, having used labelled structures for all of its issuances in the past three years. It has recently extended the scope of its emission reporting, however not to include the end users' emissions from gas combustion.

From a pricing point of view, it is interesting to see that high demand for its most recent green bond issuance, as evidenced by the high book sizes, has not translated into a tighter yield; the 33s in particular seem to have a wider spread than the slightly longer-dated 34s.

Conclusions

Gas TSOs have an important role to play in Europe's energy transition, and ESG-labelled debt issuance can support raising the capital needed for investment.

In this paper we reviewed issuance from two TSOs, Italian Snam and Dutch Gasunie, and analysed the pricing of the bond curves for investors.

- Snam's SLBs all reference separate targets. The older bonds, with more ambitious targets, are trading at tighter spreads, which validates the option pricing approach.
- Gasunie's green bonds received high levels of interest at issuance, as evidenced by book size. However, the SLBs seem now to be trading at tighter levels, perhaps driven by recent reporting shows the Scope 1 + 2 emissions KPI could be off-track.

The existing pipeline infrastructure will be needed to transport lower carbon fuels as we transition away from fossil gas. By not reporting the emissions of the transported gas, it is hard to monitor the full decarbonisation of the sector, which investors may want to provide capital to support.

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