

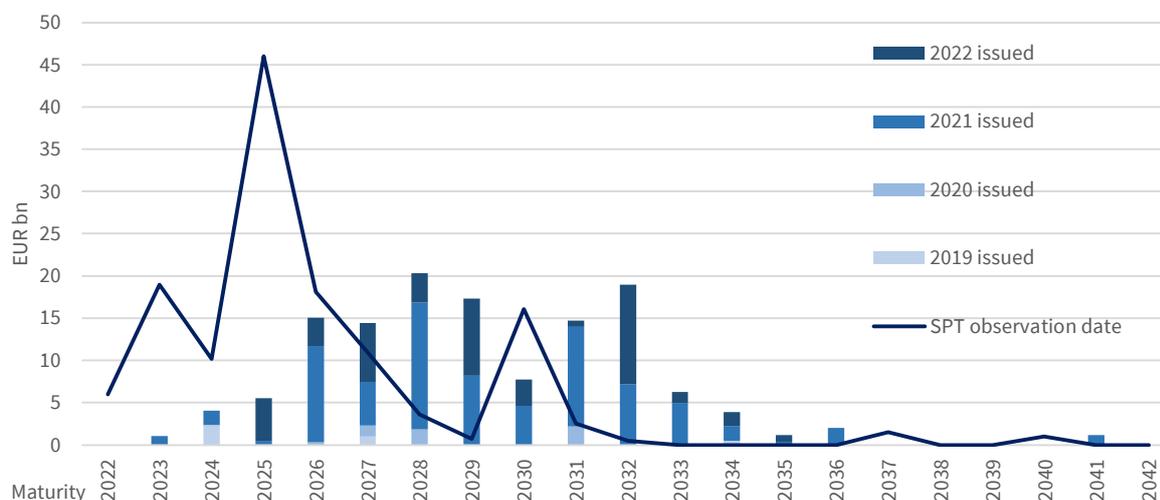
A review of Sustainability-Linked Bonds approaching KPI observation dates

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This note examines how Sustainability-Linked Bonds (SLBs) can be expected to behave as they go through their “trigger” dates, when the sustainability performance of the issuer will be assessed. The observation process could represent both opportunities and risks for investors, which we illustrate by analysing two current cases: Italian utility company, Enel and PPC, a Greek energy producer. Both have adjusted their generation strategy due to the macro energy situation of 2022.

- **Price volatility is to be expected when expectations change around the issuer achieving its Sustainability Performance Targets (SPTs).** Coupon step-ups observed in the market today may be too small to fully mitigate negative price influences from potentially deteriorating credit and technical flows.
- **Enel’s 2022 renewables target appears achievable but there are greater risks to its emissions target in 2023 due to changing government energy policy.** A coupon step-up, potentially accompanied by technical selling from green funds, could present an attractive opportunity to increase exposure if investors believe in the company’s long-term sustainability performance.
- **PPC has stated that it believes its emissions target in 2022 is at risk and that this could impact its future funding environment.** In combination with relatively poor recent financial performance, the SLB performance should be closely monitored.

Figure 1. Sustainability-linked bond benchmark issuance (>EUR 250mm). Trigger date is known for 78% of issuance or estimated by rounding up the mid-point between issuance and maturity. Source: Bloomberg accessed 28 Oct 2022.



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SLBs – directly linking sustainability with financing spreads

SLBs are a relatively new entrant to the sustainable debt market. Italian utility Enel issued the first in September 2019 and issuance has grown significantly since then (see Figure 2).¹ As the market matures, larger volumes of debt will reach their observation dates (see Figure 1); hence it becomes important to understand how the securities will perform through this process.

In an SLB, the issuer is making a future commitment to improve a sustainable indicator, and there is a financial adjustment to the coupon on the bond depending on its success. Step-up SLBs will increase their coupon if the target is missed, and step-down SLBs will decrease their coupon if the target is achieved. In general, an issuer will be rewarded with lower financing spreads on achieving their target or pay a penalty on missing their target.

This alignment to sustainability targets is important for issuers.

While improvements in a company's performance might impact its secondary yields, in a traditional financing, this will only affect its funding costs when issuing new, primary debt. In the SLB structure, sustainability performance can impact the paid coupon on *existing* financing.

This could be thought to create an undesirable lack of alignment between investor and issuer with regards to sustainability performance, unless one considers the relationship between sustainability and credit worthiness.² For investors who believe sustainability drives strong credit fundamentals, a coupon step-up can be considered to compensate an investor for the associated deterioration in credit, rather than a windfall gain. (Indeed, the market may evolve to calibrate the step-ups to such a deterioration). An investor is therefore expressing a view on whether the step-up adequately compensates for a sustainability miss.³

SLBs – improving transparency

A key benefit of SLBs is that the structure generates sustainability data, which is not only useful to SLB investors but the market as a whole. Once an SLB is issued and a target is set, a KPI will be measured and analysed, and sustainability becomes part of the discussion with regards to an issuer.

We are very supportive of transparency around transition plans, which gives investors the information they need to make informed decisions. While there are criticisms of the terms of some SLBs,⁴ the product offers a tool that is accessible for all to generate financing towards net zero.

Figure 2. Sustainability-linked bond issuance. Source: Bloomberg accessed 12 Oct 2022.

Year	Total SLB Issuance (USD bn)
2019	4.3
2020	7.3
2021	98.5
2022 YTD	63.2
TOTAL	173.2

¹ For a full background on the product, please see "[An option pricing approach for sustainability-linked bonds](#)", AFII, 8 Nov 2022.

² This is covered in more detail in "[Notes on risk-neutral pricing of SLBs and step-down structures](#)", AFII, 26 Oct 2022.

³ The market standard is a 25bp step, which may not be adequately flexible. For further discussion, please see "[Do sustainability-linked bonds have a step-up problem?](#)", Federated Hermes, 23 Mar 2022

⁴ It remains a point of contention, in that KPIs are often criticised for lack of relevance or materiality. ICMA published [SLB principles](#) in 2020, and in 2022 they were updated to include a list of example KPIs by industry, to aid structuring bonds which are relevant and material. Nevertheless, some recent vocal criticism of the SLB market includes "[Empty ESG Pledges Ensure Bonds Benefit Companies, Not the Planet](#)", Bloomberg, 4 Oct 2022.

Even a poorly structured SLB promotes greater transparency on an issuer than would otherwise be available.

However, as the process of reaching SPT observation dates becomes prevalent, investors may demand more current and continuous information on KPIs. Often reporting is only annual and in arrears, and so changes in direction can surprise the market. In terms of SLBs as a tool of transparency, seeing larger volumes going through the observation process should also improve the quality and timeliness of KPI reporting.

What happens once a target is observed?

Is it most common for SLBs to have a single observation period around half-way through the structure (Figure 3). After the observation date, there is no ongoing exposure to any sustainability target.

There is a question as to whether an SLB should be considered sustainable debt once the target is no longer relevant to the performance of the security. We suggest that if an issuer has successfully used SLB funding to transition and met its target, the company and debt could be considered sustainable.

The observation date creates a trade-off for investors when structuring SLBs. On the one hand, investors may desire an observation date to be as early as possible, to increase the materiality of the coupon step (which only applies after that date). On the other, having an observation date as late as possible will increase the period during which the issuer has exposure to the company's sustainability performance.

Our view is that ambitious targets should be set within an observation period close enough that the steps can be financially material for the issuer. By meeting an ambitious target, the issuer will be on a firm footing to have its debt considered sustainable following the observation date.

A second question is whether observations and coupon steps should be made more continuous. This could both improve the length of time under which sustainability targets are monitored and reduce the high exposure to a single observation point for issuers. However, it would add complexity to the pricing of the product, which - in a nascent market - may impede growth. There are challenges around the pricing and operations of this product and, while variability might improve it in theory, we feel it would be too complex to deliver at this stage.

What happens if a target is hit – sustainability outperformance?

If a step-up SLB target is hit with commensurate outperformance in terms of sustainability, the coupon will remain unchanged and not step up.⁵ The issuer monetises the option value of the SLB, and the investor loses it, which represents a gain for the issuer as a reward for meeting their target, and a potential loss for the investor.

Figure 3. Sustainability-linked bond issuance by point of SPT observation.
Source: Bloomberg accessed 28 Oct

Observation date / Maturity date	Percentage of benchmark issuance
0% - 25%	5%
25% - 50%	48%
50% - 75%	32%
75% - 100%	16%

⁵ In step-down SLBs, the dynamics of the economics are the same. The coupon will step down, which means there is a transfer of value from investor to issuer in reward for meeting the targets.

In previous work⁶ we have explored the correlation between meeting sustainability targets and improved credit worthiness, and so the potential improvement in credit would compensate the investor for lost coupon. Observing SLB trading around events that increase the probability of targets being met should give us the ability to calibrate this correlation.

If the associated improvement in credit is sufficient, it may present refinancing opportunities for the issuer. This may be economically justified alongside a debt extension or post-trigger calls could be introduced to facilitate this, which might limit the upside for the investor.

What happens if a target is missed – sustainability underperformance?

If a target is missed, i.e. there is sustainability underperformance, a coupon will step-up.⁷ Here, the issuer loses the option value of the SLB, and the investor monetises it, which is manifested as a penalty to the issuer for missing their target, and a gain for the investor. If there is a correlation between sustainability and credit, an associated downgrade in credit could counterbalance the increase in coupon. This relationship would need to be considered on a case-by-case basis. Watching SLBs as they go through their triggers should give pricing information that can be used for this purpose.

We find it useful to view this as a ‘thematic default’, i.e. not a credit default but a material change in sustainability performance such that the debt is no longer considered consistent with the sustainability objectives of an investor. SLB targets are often accredited by independent certification bodies,⁸ and so a target miss could impact an issuer’s warming-alignment categorisation. Given our understanding that many SLBs are held in designated green capital funds⁹, it is expected that a miss will be associated with downward pressure on spreads.

Figure 4. Sustainability-linked bond issuance by rating. Source: Bloomberg accessed 25 Oct

BB Composite Rating	Total SLB Issuance (USD bn)
AA+	0.0
AA	1.4
AA-	0.7
A+	2.8
A	4.0
A-	8.1
BBB+	40.1
BBB-	17.8
BBB	13.2
HY	44.9
NR	40.9
TOTAL	173.9

Figure 4 shows that the bulk of SLB issuance has come lower down the rating spectrum, with just over 40% having a BBB+/BBB/BBB- rating. This highlights one of the key advantages of SLBs - they allow smaller, riskier issuers to access a market with incentives for sustainability alignment.¹⁰

⁶ “Notes on risk-neutral pricing of SLBs and step-down structures”, AFII, 26 Oct 2022.
⁷ This is for a step-up SLBs. In a step-down SLB the dynamics of the economics are the same in that the coupon will remain unchanged, and so a lost opportunity of paying a lower financing cost for the issuer.
⁸ Such as [Science Based Targets Initiative](#).
⁹ There is incomplete data on the SLB investor base but - since [ICMA’s guidance](#) suggests that SLBs are particularly relevant for responsible- and ESG-tilted investment - it seems reasonable to assume that a meaningful source of investment in SLBs derives from sustainable investment mandates.
¹⁰ One can also make the point that investors in the lower end of the rating spectrum are much more comfortable with various covenants within bond structures, as this is common in HY but less so in IG.

Figure 5. 5y yields for benchmarks by rating. Source: Bloomberg, accessed 25 Oct 2022.

Bloomberg composite rating	5y mid yield	Impact of 1 notch downgrade
A+	3.71%	-0.02%
A	3.72%	-0.02%
A-	3.74%	-0.21%
BBB+	3.95%	-0.54%
BBB	4.49%	-0.38%
BBB-	4.87%	-1.45%
BB+	6.32%	

Figure 5 shows average spreads for ratings, which suggests that a 1 notch downgrade is associated with 25-50bp of widening within the A-/BBB- range, but a much more significant move when associated with a downgrade to High Yield. This does not necessarily include the technical widening coming from investor selling, as these are spot levels and not levels for securities that have just had their rating adjusted. This suggests the widening can be more than the usual 25bp step-up, so there could be losses for the

investor that are not compensated for by the coupon step-up.

Case Study – Enel

Italian utility company Enel issued the first SLB in 2019 and has subsequently published three sustainability-linked financing frameworks.¹¹ It is the most prolific issuer of this product; since its inaugural bond all non-perpetual issuance has been in SLB format, which now represents over 40% of its outstanding debt.¹²

Figure 6 shows the outstanding debt and its SLB triggers. One GBP 500mm issue has an observation at 31 Dec 2022 and will step 25bp if renewable capacity is below 60%. Ten issues totalling EUR 5.75bn and USD 4.75bn each have a 25bp step if direct GHG emissions are not below 148 g/kWh by 31 Dec 23.

Figure 6. Enel SLB framework KPI target and outstanding issuance referencing each target. Source: Enel & Bloomberg & JPMorgan.

SLB framework	Oct-20 Direct GHG emissions	Oct-20 Renewable Capacity	Jan-21 Direct GHG emissions	Jan-21 Renewable Capacity	Jan-22 Direct GHG emissions	Jan-22 Renewable Capacity
2021		55%				
2021 actual	227	57.5%	227	57.5%	227	57.5%
2022		60%				
2023			148	65%		
2024					140	66%
2030	125		82			80%
2040					0	100%

¹¹ All available on [Enel's website](#).

¹² For a full discussion of Enel's use of SLBs, see "[Enel – A case study in transition finance using SLBs](#)", AFII, 25 Jul 2022.

31 Dec 2022 SPT – Renewable installed capacity above 60%

Enel’s first sustainability-linked finance framework was released in October 2020, which detailed its two KPIs. The first is direct greenhouse gas emissions (scope 1), measured in grams of CO₂ per kWh. The second is renewable installed capacity as a percentage to total installed capacity. It is this KPI against which SLBs have been issued with observation date 31 Dec 2022. The threshold is 60%.

Figure 7 shows Enel’s capacity in 2021 and 2022. The target given for 31 Dec 2021 was 55%, and this was beaten quite significantly with a level of 57.5% (of 87.1 GW total installed capacity).¹³ Interim reporting¹⁴ at Q1 and H1 show that progress is being made, but compared to an increase of 0.7% in H1, Enel needs another 1.8% to in H2 to meet its target for the end of the year.

Figure 7. Enel generation capacity. Source: Enel.

	FY 2021		Q1 2022		H1 2022	
	MW	Percentage	MW	Percentage	MW	Percentage
Hydro	27,847	32.0%	28,384	32.2%	28,351	32.0%
Wind	14,903	17.1%	14,981	17.0%	15,256	17.2%
Geothermal	915	1.1%	915	1.0%	915	1.0%
Solar & Other	6,401	7.4%	6,860	7.8%	7,040	8.0%
Nuclear	3,328	3.8%	3,328	3.8%	3,328	3.8%
Oil & Gas	11,715	13.5%	11,694	13.3%	11,689	13.2%
Coal	6,910	7.9%	6,910	7.8%	6,910	7.8%
CCGT	15,039	17.3%	15,039	17.1%	15,039	17.0%
TOTAL	87,058	100.0%	88,111	100.0%	88,528	100.0%
TOTAL Renewables	50,066	57.5%	51,140	58.0%	51,562	58.2%

This may be achievable given Enel has announced several projects with target capacity increases before the end of this year. In September, Enel Chile disconnected its final coal-power plant, Unit II of Bocamina, and report that it expects to connect 500 MW of new renewable capacity.¹⁵

In Spain, Enel Green Power has many projects under development.¹⁶ In Extremadura there are five solar projects of approximately 49.5 MW each, which will come into operation before the end of the year, adding another 250 MW. Another 50 MW is hoped to be in production by year end coming from the Sedeis V solar plant. In Castilla La Mancha, there are five/seven¹⁷ solar and three wind plants under construction, contributing just under 500 MW by the end of the year.

In October, Enel finalised the sale of its entire stake in PJSC Enel Russia (announced 16 Jun 2022). As a result of this transaction, Enel has disposed of all of its Russian power generation assets, which included approximated 5.6 GW of conventional capacity and around 300 MW of wind

¹³ “[2021 Sustainability Report](#)”, Enel.

¹⁴ See “key figures” file for each period in “[Reports and Financial Statements](#)”, Enel.

¹⁵ “[Enel becomes the first company in Chile to stop using coal for electricity generation](#)”, Enel, 30 Sep 2022.

¹⁶ “[Enel Green Power is building more than 1,130 MW of new renewable projects in Spain that will create 4,200 jobs](#)”, Enel, 12 Jul 2022.

¹⁷ The press release is contradictorily written.

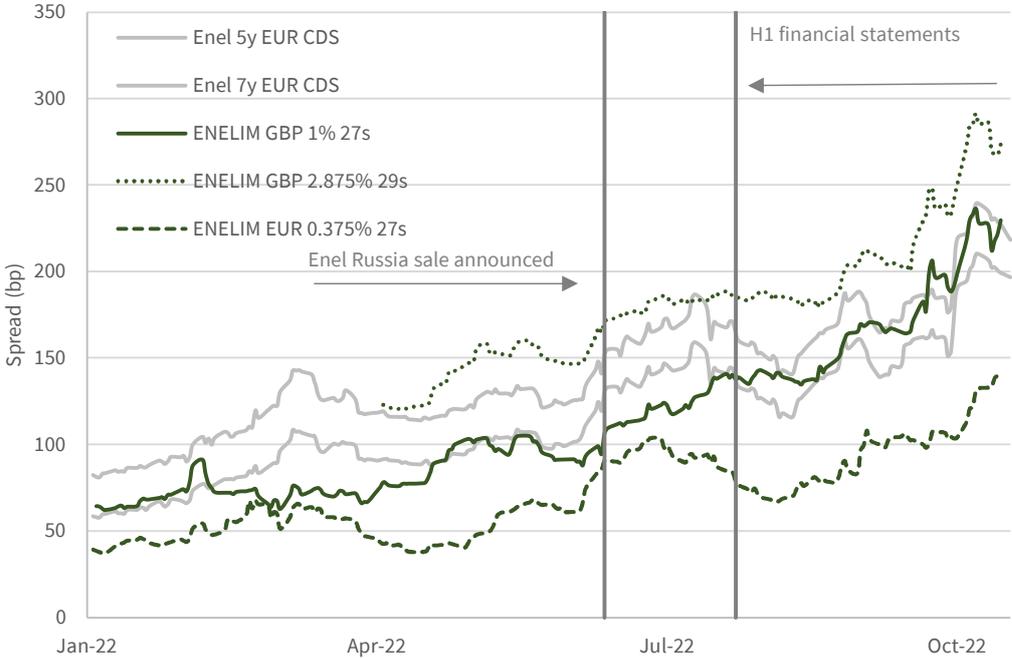
capacity at different stages of development.¹⁸ While this does not reduce emissions, it does effectively adjust the denominator of the KPI ratio.

A combination of these adjustments could increase renewables to 52.6 GW compared with a total of 83.9 GW, a percentage of 62.6%. While exact completion dates of the European renewables projects are always uncertain, the most material adjustment comes from the sale of Russian assets which has already settled, and so it looks like there is sufficient headroom remaining.

The financial impact of missing this target is confined to the GBP 500mm of ENELIM 1% 27s (XS2244418609), which would pay an extra 25bp for the remaining 5 years, equal to GBP 6.25mm in total or GBP 1.25mm per year. For FY 2021, Enel reported EBITDA of EUR 16.4bn and EBIT was 7.7bn, and an interest cover of 3.2x.¹⁹ This would be an increase in its interest cost of approximately 0.05%.

Figure 8 shows how the bond in question was trading around the two key announcements, firstly the sale of Enel Russia and, secondly, the release of interim financial statements showing perhaps less progress towards the target than expected.

Figure 8. Enel CDS and bond spreads. Source: Bloomberg accessed 24 Oct 2022.



The GBPs have been volatile compared to EUR bonds and EUR CDS.²⁰ There is some underperformance of the GBP 27s compared to CDS after the announcement (news which cemented the lack of a step-up coupon). The basis has gone from roughly 25bp positive basis to 30bp negative basis currently, whereas the EUR 27s have remained at a significant positive basis, if

¹⁸ “[Enel finalized the sale of its entire stake in PJSC Enel Russia](#)”, Enel, 12 Oct 2022.

¹⁹ Source Bloomberg accessed 25 Oct 2022.

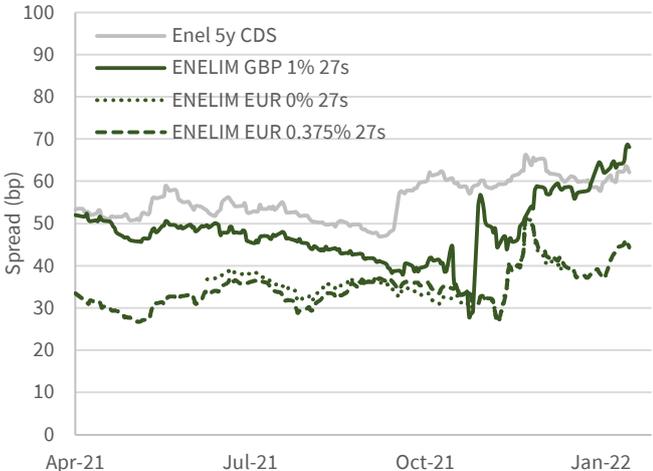
²⁰ The graph is showing the bond in question GBP 1% 27s (XS2244418609), plus the only other outstanding longer dated GBP SLB that was issued in Apr 22, GBP 2.875% 29s (XS2466363202). EUR CDS and EUR 0.375% 27s (XS2066706909) are also shown for comparison.

not slightly wider. The GBP 29s have widened compared to CDS, moving from a basis of -20bp to -45bp today (using 7y CDS), which is a less material underperformance.

This graph does potentially indicate some isolated underperformance of the GBP 1% 27s following the news suggesting a likelihood of meeting its SPT, but it is not clear-cut.

If the market implied probability of receiving the coupon was 50%, then roughly a 12.5bp widening would be expected to compensate for missing 25bp. However, there has been a much more significant underperformance than this on basis. Figure 9 shows Enel spreads the previous year when the EUR 0.375 27s reached their KPI (55% renewables at 31 Dec 2021). This shows no material difference in performance between those and the EUR 0 27s (with an SPT in 2023), but ongoing volatility between the EUR and GBP paper.

Figure 9. Enel CDS and bond spreads. Source: Bloomberg accessed 24 Oct 2022.



31 Dec 2023 SPT – GHG emissions below 148 g/kh

In Jan 2021, Enel published its second sustainability-linked finance framework, where it tightened its targets on scope 1 GHG emissions. The target of 148 g/kWh at 31 Dec 2023 is the most significant SPT in their program with 10 SLBs referencing this level, totalling USD 4.75bn and EUR 5.75bn. With maturities between Jun 2025 and Jul 2031, the financial impact of missing this target is more material, estimated at slightly over EUR 100mm in total (full details in Figure 10), or EUR 26.3mm for the first year. This is much larger than the impact of missing its 2022 KPI, but still only an increase of 1.1% on their interest cost.

Figure 10. Enel SLB with SPT of reducing direct GHG emissions intensity below 148 g/kWh by 31 Dec 2023. Source: Bloomberg & Enel

Bond	ISIN	Currency	Amount Outstanding (mm)	Coupon	Issue Date	Maturity	Estimated EUR impact of SPT miss
ENELIM 0% 27s	XS2353182020	EUR	1,000	0.000%	17-Jun-21	17-Jun-27	8,777,778
ENELIM 0.5% 30s	XS2353182293	EUR	1,250	0.500%	17-Jun-21	17-Jun-30	20,486,111
ENELIM 1.375% 26s	US29278GAM06	USD	1,250	1.375%	12-Jul-21	12-Jul-26	8,110,044
ENELIM 1.875% 28s	US29278GAN88	USD	1,000	1.875%	12-Jul-21	12-Jul-28	11,620,885
ENELIM 2.25% 31s	US29278GAP37	USD	1,000	2.250%	12-Jul-21	12-Jul-31	19,309,628
ENELIM 0% 26s	XS2390400633	EUR	1,250	0.000%	28-Sep-21	28-May-26	7,630,208
ENELIM 0.375% 29s	XS2390400716	EUR	1,000	0.375%	28-Sep-21	28-May-29	13,715,278
ENELIM 0.25% 22s	XS2432293673	EUR	1,250	0.250%	17-Jan-22	17-Nov-25	5,963,542
ENELIM 4.25% 22s	USN30707AN87	USD	750	4.250%	15-Jun-22	15-Jun-25	2,801,651
ENELIM 6.8% 25	US29278GAZ19	USD	750	6.800%	14-Oct-22	14-Oct-25	3,438,869

The KPI₁ being observed in Dec 2023 is scope 1 GHG emissions intensity, i.e. emissions per unit of electricity generated. There is a key difference between this being actual generation mix, compared to KPI₂ discussed above, which is the installed generation mix. Progress appears to have been made towards bringing new renewable capacity online, but to understand the impact on emissions, we need to see the renewable capacity being used.

Figure 11. Enel scope 1 GHG emissions intensity & renewables installed percentage, reported and targeted. Source: Enel.

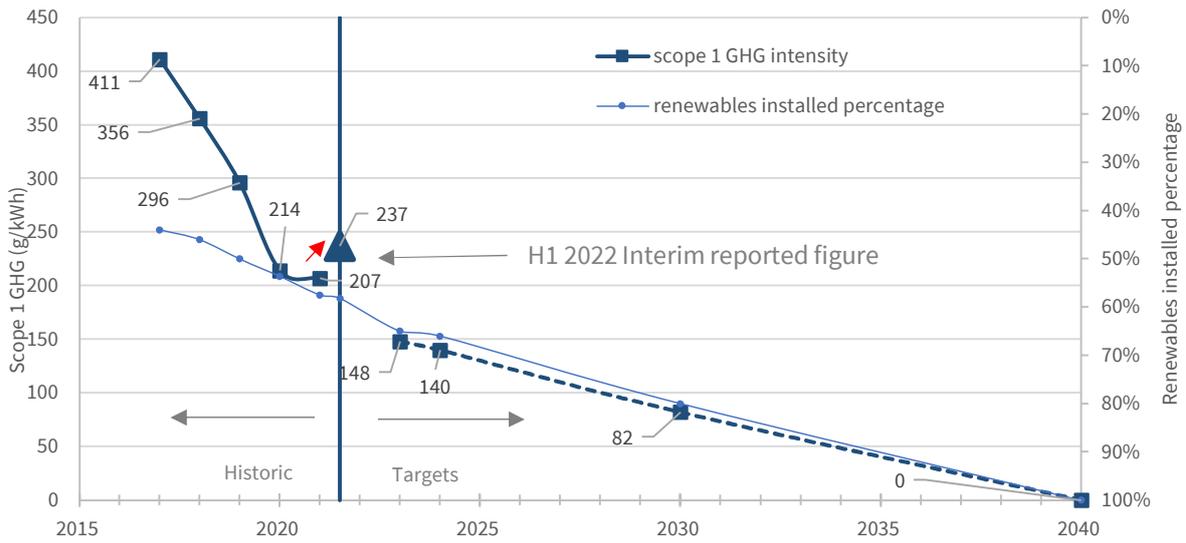


Figure 11 shows Enel’s scope 1 emissions intensity, both historic reported numbers and future targets to which SLB performance is linked. It shows dramatic reductions since 2018 which have flattened since 2020, and an increased figure reported in H1 2022 interim report of 237. This is overlaid with the renewables installed percentage on an inverted scale, which shows the lack of consistent correlation in the historic period. It is reported that actual renewables generation is 47.4%, i.e. significantly below the 58.2% installed capacity. The increase in emissions in H1 2022 is attributed to “an increase in thermal generation compared with the previous period, including an increase in coal-fired thermal generation”,²¹ which can also be seen in Figure 12.

It is reported that due to ongoing gas supply concerns from the Russian conflict, Enel is ending plans to convert coal-fired plants to gas.²² Longer-term this may be a positive for emissions as gas is not an emission-free solution²³ but shorter-term, as coal produces 82% more emissions per unit of energy,²⁴ this will inevitably hinder Enel’s emission reduction efforts.

Given the headwind around retaining local coal-generation, it is reasonable to consider whether a reduction to 148 g/kWh in 18 months is achievable.

The sale of Enel Russia would reduce the headline 237 g/kWh to 194 g/kWh on a pro-forma

Figure 12. Enel installed and production generation mix. Source: Enel.

	FY 2021 Installed Capacity	Actual Generation	H1 2022 Installed Capacity	Actual Generation
Hydro	32.0%	25.6%	32.0%	21.0%
Wind	17.1%	17.0%	17.2%	19.1%
Geothermal	1.1%	2.7%	1.0%	2.7%
Solar & Other	7.4%	3.6%	8.0%	4.6%
Nuclear	3.8%	11.5%	3.8%	11.6%
Oil & Gas	13.5%	10.2%	13.2%	11.3%
Coal	7.9%	6.2%	7.8%	8.6%
CCGT	17.3%	23.2%	17.0%	21.1%
TOTAL	100.0%	100.0%	100.0%	100.0%
TOTAL Renewables	57.5%	48.9%	58.2%	47.4%

²¹ “Half-Year Sustainability disclosures at June 30, 2022”, Enel, p20.

²² “Italy Could Revive Coal Plants to Break Russia Energy Dependence”, Bloomberg, 25 Feb 2022.

²³ “Italy’s biggest coal plant to swap one fossil fuel for another – ClientEarth reaction”, ClientEarth, 11 Jun 2021.

²⁴ “Carbon Dioxide Emissions Coefficients”, EIA, 5 Oct 2022.

basis,²⁵ so a meaningful reduction in FY 2022 reporting is expected. Within the 2022-2024 renewables CAPEX plan, 68.6% is committed to solar,²⁶ and solar in particular tends to have a lower generation capacity factor (generation / maximum capacity) as the sun doesn't always shine. Therefore, with no reduction or reallocation within fossil generation, no increase in nuclear, an increase of renewables installed capacity to 72% is needed to meet the 2023 emissions intensity target.²⁷

In terms of the expected bond performance if Enel did miss its 2023 target, we return to the discussion ideas at the start of this piece. Given the government intervention influencing the short- and medium-term strategy for Enel, it should be queried whether this miss would be associated with a meaningful change in their sustainability performance.

The target from Enel, which is SBTi certified as being 1.5C aligned, is the 2030 emissions intensity of 82 g/kWh.²⁸ In our view, more than just a miss in 2023 would be needed for the alignment of this issuer to be re-evaluated, and so this would not necessarily constitute a full thematic default. If there is no change to the longer-term outlook for the sustainability of the company, no correlation between credit and sustainability targets is expected, and a miss could hypothetically represent a good opportunity to buy debt with a higher coupon. It is reasonable to expect spread tightening on this name as a miss looks more likely, which would support this view.

Case study – Public Power Corp

PPC, a Greek energy supplier, issued two SLBs in 2021, both linked to a reduction in the company's scope 1 absolute emissions, which accounts for the vast majority of its total emissions. The first SLB in question, PPCGA 3.875% 26s (ISIN XS2314265237), was issued in Mar 2021 with maturity Mar 2026 and has an SPT observation date in 31 Dec 2022. The second SLB, PPCGA 3.375% 28s (ISIN XS2359929812), was issued in Jul 2021 with maturity Jul 2028 and has an SPT observation date in 31 Dec 2023. Indeed, these are its only two outstanding bonds.

Figure 13. PPC scope 1 emissions. Source: PPC.

Year	Scope 1 emissions		Figure
	(Mtons CO2)	Reduction	
2019	23.15		Actual
2020	15.53	-33%	Actual
2021	15.80	-32%	Estimated
2022	13.89	-40%	Target
2023	9.95	-57%	Target

Focusing on the first SLB, the bond has a coupon of 3.875% and will pay a 50bp coupon step-up if emissions are not reduced by 40% by Dec 2022 (baseline 2019). Figure 13 shows its reported figures since 2019, with 2021 figures only estimated as they are sourced from the 2021 annual report²⁹ with no 2021 sustainability report having been published. Significant reductions are needed to meet the 2022 target.

²⁵ Using GHG emissions intensity for Enel Russia of 449 g/kWh from [Enel Russia 2021 annual report p15](#) and consolidated production coming from Russia of 8.81% from [Enel key figures H1 2022](#).
²⁶ "[Strategic Plan 2022-2024 Enel Green Power Key Figures](#)", Enel.
²⁷ This is very unlikely scenario, as the full power mix could be adjusted, but it serves to emphasise how large an investment in renewables is needed to offset retention of coal generation in Europe.
²⁸ "[Enel boosts its 2030 greenhouse gas emission reduction target to 80% from 70%. SBTi-certified](#)", Enel, 30 Oct 2020.
²⁹ "[Annual report 2021](#)", PPC, p.132.

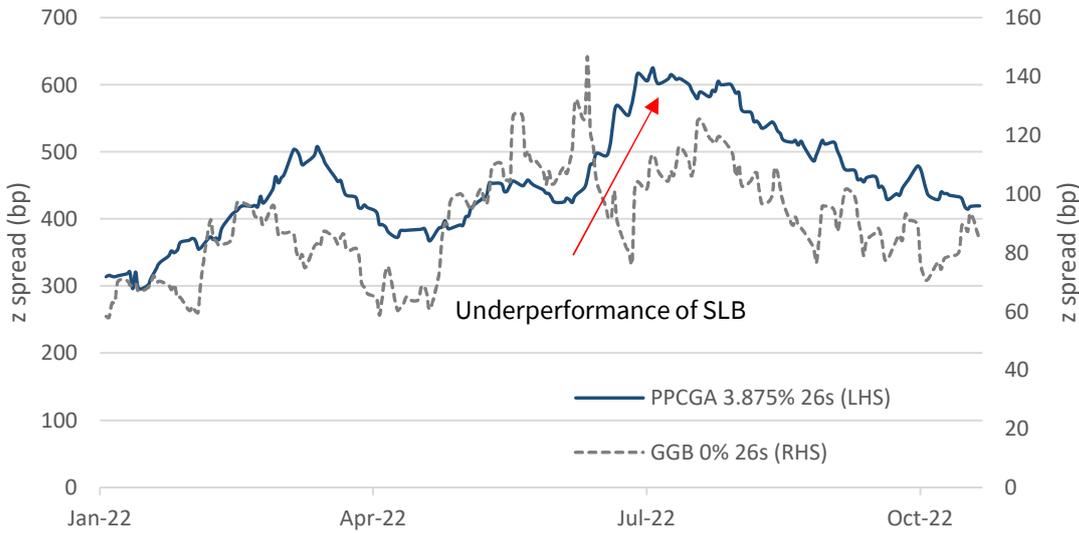
Within 2022, also in response to ongoing concerns around gas supplies in Europe, the Greek government has signalled to PPC that it should change its policy on coal generation. The government is reported to have instructed PPC to increase the share of electricity generated by lignite from 5% in 2021 to 17-20%.³⁰

PPC’s lignite phase-out strategic plan originally targeted a decommissioning of Units 1-4 of Agios Dimitrios³¹ in 2022 which would likely have brought the company’s emissions below the 2022 SLB target, but those plus plants in Meliti and Meglopolis will now continue to be operated. The H1 2022 annual report states “a temporary increase in lignite production is predicted, resulting in an increase in CO2 emissions”.³² It also adds that it targets increasing the proportion of renewable capacity, and “intend(s) to satisfy the Sustainability Performance Target in respect of the year ended 31 December 2023”,³³ which is the observation date for its second SLB. No mention is made of the target at end 2022.

Given PPC’s KPI is on absolute emissions and not emissions intensity, and its acknowledgment that emissions will rise in 2022 compared to 2021, it seems virtually impossible that it will hit its target at the end of this year. Depending on the exact magnitude of increased emissions, it could also be a very challenging journey to meet the SPT in 2023.

Figure 14 shows the performance of the bond over 2022, compared to Greek Government Bonds (GGB) of similar maturity. There has been some underperformance compared to GGB in Jun when the edicts to use coal were issued, but it is not material over the full year.

Figure 14. PPCGA 26s and GGB 0% 26s bond z spreads. Source: Bloomberg, accessed 25 Oct 2022.



Looking at the broader financials of PPC, the extra coupon is potentially significant. In 2021, its interest expense was EUR 125.7mm (EUR 134.4mm in 2020) with a total loss of EUR 149.8mm for the year (gain of EUR 46.3mm in 2020).³⁴ The step-up on this bond would generate an extra EUR

³⁰ “[Plan B on energy: Back to Ignite](#)”, ekathimerini.com, 13 Jul 2022.
³¹ Our readers will note that Agios Dimitrios plant was at some point the most polluting power station in Europe. See “[Dirty Thirty - Ranking of the most polluting power stations in Europe](#)”, WWF, May 2007
³² “[Financial report H2 2022](#)”, PPC, p12.
³³ “[Financial report H2 2022](#)”, PPC, p15.
³⁴ “[Annual report 2021](#)”, PPC, p. 325 and p. 255.

3.88mm per annum, or an increase of 3.1%, not necessarily significant in changes to interest cover, but material for a company operating at a loss.

It also highlights in its H1 2022 the consequential financial risks associated with missing an SPT: “Given that an increasing number of financiers incorporate sustainability-linked requirements in their financing arrangements, the Group and Parent Company’s inability or failure to meet such requirements could make it more difficult for them to obtain financing on favourable terms”.^{35,36}

Our view on Enel is that even if an SPT is missed, it does not necessarily represent a detrimental adjustment to its sustainability targets, and should not be accompanied by a downgrade in credit. With PPC, its self-disclosed concerns are that missing an SPT will deteriorate its funding arrangements, and that could create poor credit performance.

An increased chance of paying the coupon step could explain the small spread widening, however there is certainly scope for further widening if missing the target leads to a more challenging funding environment. The reported figures at the end of 2022 will give information of the scale of improvements needed to meet the target in 2023 and could also bring further widening if that SPT is considered at risk. An increase of 50bp to the coupon may not adequately compensate an investor for the deterioration in the ability of PPC to raise funds.

³⁵ [“Financial report H2 2022”](#), PPC, p. 15.

³⁶ For another case-study on the efforts a company will go to avoid missing their SLB targets see [“Sembcorp: Carbon footprint arbitrage of a lifetime”](#), AFII, 6 Nov 2022.

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