Financing Methane Abatement: Presentation on sustainable finance instruments

Introduction to Sustainable Debt for Methane Abatement

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ACTIONABLE INSIGHTS FOR A DECARBONIZING WORLD

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NOTE REGARDING TERMINOLOGY

In this presentation, the terms '**sustainable finance**' and '**sustainable debt**' refer to the universe of instruments that target environmentally or socially beneficial outcomes. This universe includes green bonds and loans, sustainability-linked bonds and loans, transition debt and blended financial products. As this presentation shows, some of these products have been used by the oil and gas industry. Use of the terms sustainable finance and sustainable debt does not imply that all entities issuing sustainable debt, or the issuances themselves, are sustainable.

The authors adhere to the guidance provided by the International Capital Markets Association (ICMA) to characterize the emerging category of instruments and transactions described in this presentation. This usage is consistent with that of other bodies including the United Nations Principles for Responsible Investment (UNPRI), the Organization for Economic and Cooperative Development (OECD) and the London School of Economics. However other taxonomies have been developed that adopt varying definitions and implications for the terms 'sustainable finance' and 'sustainable debt'.

The term '**methane abatement**' refers to a wide range of investments, activities, and practices with the result of reducing methane emissions associated with the oil and gas industry. Stakeholders may have differing views on whether certain activities fall under sustainable finance frameworks. The authors believe that reducing methane emissions is essential to achieving climate goals, and the ideas developed here are meant to foster discussion into how these activities may fit into sustainable finance frameworks.

The authors support initiatives to define how sustainable finance and methane abatement terminology should be used towards the goal of achieving standardization and clarity across global markets and all stakeholders.

THE ENERGY TRANSITION, SUSTAINABLE FINANCE, AND METHANE

The energy transition needs capital

→ The IEA estimates that it will require $4.5 trillion in annual clean energy investment by the early 2030s to be in line with net zero pathways – well beyond the $1.8 trillion invested globally in 2023.

Sustainable financial markets can help support the energy transition

→ Sustainable finance products have grown rapidly, with green bonds alone reaching $575 billion in 2023 (more than doubling since 2019).

While many of these tools promote low-carbon investments, they are often not designed to support emissions reductions from the oil & gas (O&G) industry – which are necessary to achieve climate goals

→ Most sustainable financing takes the form of "use of proceeds" instruments – such as green bonds or green loans -- that must be used for select low-carbon investments.

Methane abatement could be an attractive use case for sustainable finance instruments

→ Channeling financing towards resource-constrained companies, including national oil companies (NOCs), is key to achieving rapid emissions reductions – since 50% of the industry's methane emissions can be avoided at no net cost.

This presentation and accompanying report provide an introduction to sustainable debt, with an eye to methane abatement at NOCs

→ We explore some of the properties of these markets and investigate what has – and hasn't – worked in sustainable debt to encourage conversation about potential financing solutions for methane abatement in the oil and gas industry.

Source: IEA, S&P

FINANCE FOR METHANE ABATEMENT AT NATIONAL OIL COMPANIES

National oil companies (NOCs) lag publicly traded peers on cutting methane pollution.

→ Of the top 20 publicly traded O&G companies, 19 have set methane targets, covering 98% of their production. By contrast, of the top 20 NOCs, just 12 have set methane targets, covering around 60% of their production.

The financial and technical capabilities of NOCs vary dramatically, but many NOCs need outside support and resources to rapidly cut emissions.

→ The IEA estimates that just $12bn would suffice to cut most methane emissions from facilities owned by NOCs in low- and lower-middle-income countries.

Sustainable financial instruments could be powerful tools to enable methane abatement

→ Developing scalable finance mechanisms for NOCs could be a valuable tool to accelerate methane abatement: deploying measurement technology, upgrading infrastructure, installing gas capture capacity, etc.

Channeling finance for methane abatement at NOCs requires well-designed instruments that capture the specific features of this challenge.

→ Leadership from issuers, facilitators and investors is needed to build and scale high-integrity financial mechanisms attuned to the requirements for methane abatement at resource-constrained NOCs.

Source: IEA, EDF analysis

WHAT DOES A "GOOD" SUSTAINABLE DEBT DEAL LOOK LIKE?

Sustainable debt transactions can both achieve positive outcomes and support financial performance – *if* the parties align on developing and supporting a robust and credible transaction.

Well-intentioned sustainable debt transactions can be undermined by flaws in transaction design.

- → Weaknesses in accountability or transparency can often be addressed through straightforward changes to the deal structure.
- → Improving the integrity and transparency of sustainable debt transactions could lead to a rapid increase in their uptake as a financing mechanism.

Successful sustainable debt deals display four key ingredients:

1. **Opportunity**
   Identify an appropriate and material use case, where all parties are well-aligned
2. **Due Diligence**
   Carefully vet the operational, financial and governance elements of the transaction
3. **Instrument Design**
   Ensure that the financial product enables genuine outcomes
4. **Reporting and Review**
   Require rigorous verification of relevant elements to maximize stakeholder confidence

A CLOSER LOOK AT THE 4 KEY INGREDIENTS

1. Opportunity

Seek opportunities where all parties are well aligned

Create a material opportunity for parties, where:

- ✓ Issuer is credible, motivated, and financially/technically capable of achieving sustainability goals
- ✓ Underwriter is credible and supportive of sustainable finance to drive real-world impact
- ✓ Investors are actively engaged in an opportunity for strong returns and sustainable outcomes
- ✓ Verifiers with credible expertise provide independent and comprehensive assessment(s)

2. Due Diligence

Ensure a credible, beneficial, and robust transaction

Ensure that the terms of the transaction clearly align with:

- ✓ Issuer's material financial and climate strategy
- ✓ Relevant (climate) science
- ✓ Current and emerging policies and regulations
- ✓ Market standards and relevant benchmarks
- ✓ Real-world sustainability outcomes

Ensure that discrete risks are identified and mitigated, including:

- ✓ Infrastructure & technology
- ✓ Commercial & transactional
- ✓ Political & regulatory
- ✓ Environmental & social

3. Instrument Design

Balance integrity, rigor, and outcomes in transaction design

Design the mechanism to enhance transaction rigor:

- ✓ Clearly define terms of finance
- ✓ Use industry-agreed labelling criteria (ICMA, LSTA, LMA, etc.)
- ✓ Align with relevant frameworks
- ✓ Disclose appropriate exclusions
- ✓ Design to best serve transaction goals and stakeholder needs

***Choose KPIs that:**

- ✓ Use a consistent, standardized, and science-based methodology
- ✓ Materially align with issuer strategy to drive positive outcomes

***Choose sustainability performance targets (SPTs) that are:**

- ✓ Additional (beyond BAU), ambitious and achievable
- ✓ Well-scoped and time-bound

4. Reporting and Review

Emphasize granularity, transparency, and verification

Provide consistent, comprehensive, regular, and public reporting on:

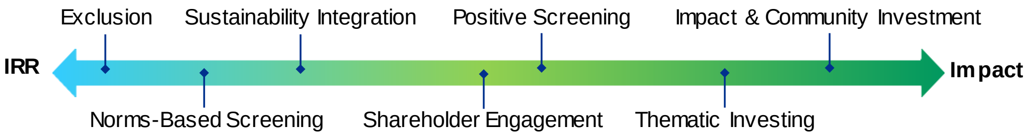
- ✓ Granular qualitative and quantitative details on project activities
- ✓ Relevant financial indicators
- ✓ *Progress on KPIs against SPTs
- ✓ Challenges and opportunities
- ✓ Expected impacts and overall project status
- ✓ Assessments/audits by verifiers on transaction outcomes

*Only applies to sustainability-linked instruments.

SUSTAINABLE DEBT 101

What is sustainable debt? Sustainable debt refers to debt raised through a variety of financial instruments that explicitly includes a purpose of funding environmentally or socially beneficial projects and/or meeting sustainability goals.

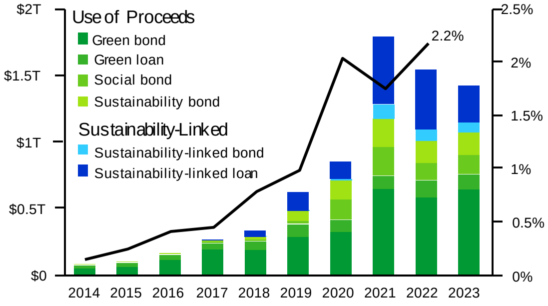
Sustainable investing is diversified. Financial institutions (FIs) have supported a range of financing instruments with differing mechanisms and sustainability goals.



Sustainable debt has grown rapidly. Annual issuance of sustainable debt has grown 60x in the past decade, despite a slowdown in 2022-23, as more organizations seek to drive sustainability outcomes through financial links.

Developed markets	67%
Emerging markets	23%
Supra-nationals	9%

Sustainable debt issuance & its share* of total bond market



Sustainable financing is a potential pathway to accelerating the energy transition. Expressly directing funds towards low-carbon goals and activities could move companies towards net-zero faster.

Energy, buildings & transport dominate flows through use-of-proceeds bonds in 2021.

Industry	Issued Entities	Share of 2021 UoP Bonds By Sector
Energy	Power/utilities Oil and gas Renewables developers	35%
Building	Auto companies Sub-sovereign/municipals	30%
Transport	Real estate developers and REITs Corporates (e.g., IT) Sub-sovereign/municipals	18%
Water	Water utilities Sub-sovereign/municipals Corporates	6%

Source: Bloomberg New Energy Finance, Climate Bonds Initiative
*Includes green bonds, social bonds, sustainability bonds, sustainability-linked bonds, and transition bonds.

KEY PLAYERS NEED TO IMPROVE SUSTAINABLE DEBT INTEGRITY

Parties must collaborate to better harness benefits and address integrity challenges of current sustainable debt transactions

	Issuer	Underwriter	Investor	Verifier	Others
Role	Borrows capital, pays interest and principal, reports progress	Arranges financing for fee and advisory for issuer	Lends capital, receives interest and principal	Supports issuer with auditing and/or tracking progress	Support implementation, risk mitigation, etc.
Examples	Financial institutions (international, regional, private), sovereigns, corporates	Financial institutions (almost always private sector banks)	Global asset managers, on behalf of asset owners (pension funds, sovereign funds, retail investors)	NGOs, auditors, independent consultants, etc.	Project developers, coordinators, development financial institutions, sovereign governments, etc.

Key Benefits of Sustainable Debt:

→ **Lower sustainability risks:** Invest systematically in organizations and projects explicitly managing sustainability risks

→ **Unlock positive impact across sectors:** Deploy capital to areas traditionally under-financed (e.g. energy efficiency, affordable housing, etc.)

→ **Align and engage on global sustainability goals:** Engage with issuers to achieve goals within bond term with capital dedicated to specific uses

→ **Build visibility across a range of new investors:** Attract new, stable debt holders across firm types and geographies

→ **Scale financing and reduce cost of capital:** Deals in high demand support reduced coupon costs and enable increased financing

Major Critiques of Sustainable Debt:

→ **Low ambition:** Issuers get favorable financing without raising or possibly while lowering ambition

→ **Low transparency:** Disclosures exclude key, relevant KPIs (e.g. only emissions intensity, not absolute emissions)

→ **Tangential to core transition strategy:** Issuers grow core business/ BAU with limited strategic investment for climate

→ **Weak decarbonization strategy:** Pathways and strategies set out by issuers lack needed detail, credibility, or clarity

→ **Mismatch of term and changes:** Issuers pledge actions that lie beyond the debt term, receive benefits while showing little progress

WELL-DESIGNED SUSTAINABLE FINANCE MECHANISMS MUST BE DEPLOYED TO TRANSITION AWAY FROM FOSSIL FUELS

Five core forces shaping the financing of the energy transition

1. Reducing emissions as fast as possible will require financing diversification, decarbonization, and phaseout
2. As it stands, FIs are likely to continue to fund the O&G industry in the near-term
3. FIs and O&G are also seeking to improve their sustainability performance
4. Many sustainable debt transactions have significant flaws – leading to calls to improve the integrity of such financing
5. Regulators and institutions are rapidly improving efforts to police sustainable finance

Key goal: Improving sustainable finance integrity

→ Sustainable debt transactions must genuinely support the achievement of positive outcomes, driving broader deployment in the energy transition.

→ Understanding sustainable debt case studies is key to deploying sustainable finance mechanisms that are scalable and high-integrity.

Key priority: Reducing methane emissions from National Oil Companies (NOCs) by unlocking finance

75%

Reduction in O&G methane emissions required by 2030 to limit near-term warming per Paris Agreement

50%

Share of the world's O&G production from NOCs, but many lack access to outside resources that support emissions reductions

$15-20BN

IEA's estimate of the financing gap for cutting O&G methane emissions in low- and middle-income countries

Source: IEA, Rystad

SUSTAINABLE DEBT CASE STUDIES

- 3.1 **Use-of-Proceeds (UoP):** EIB, Bank of China
- 3.2 **Sustainability-Linked Bonds (SLBs):** Eni, Enel, Enbridge
- 3.3 **Sustainability-Linked Loans (SLLs):** Shell, Petrobras, Diversified
- 3.4 **Transition Debt:** EBRD, Snam, Repsol, BapCo
- 3.5 **Blended Finance:** Blue Bond, Rhino Bond, Forest Resilience Bond
- 3.6 **Unlabeled and Alternative Debt:** Nordea, Enel

SUSTAINABLE DEBT ISSUANCE OCCURS ACROSS A SPECTRUM OF INSTRUMENTS, WITH DIFFERING BENEFITS AND COSTS

3.1 Use of Proceeds (UoP)

Green, Social, and Sustainability Bonds and Loans (GSSB+)

- Funds raised are directed to specific purposes meeting eligibility criteria
- Financially identical to vanilla bonds with additional impact reporting – but limited to clearly eligible uses with quantifiable sustainability goals

3.2 Sustainability-Linked Bonds (SLBs)

- Often general purpose bonds issued with no/ few conditions over how proceeds are used – but often calls for a step-up in coupon payment if sustainability performance targets (SPTs) are not achieved
- Enables issuance towards sustainability goals, but frequently lack consistency, ambition, and transparency

3.3 Sustainability-Linked Loans (SLLs)

- Like SLBs, but as general purpose loans linked to achieving sustainability targets
- Offers greater flexibility, but typically even more limited transparency than SLBs

3.4 Transition Debt

- Aimed at financing the transition of carbon-intensive companies, adopting UoP and/ or sustainability-linked approaches
- Creates a pathway for transition finance for industries with typically lower climate credibility – but a lack of agreed frameworks and green standards have limited investor interest

3.5 Blended Finance

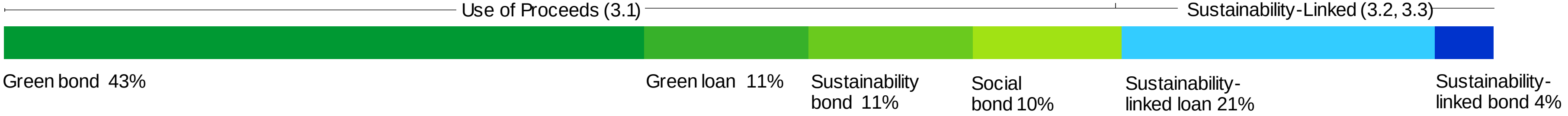
- Leverages public/ philanthropic funding and stakeholder support to channel greater investor financing for publicly beneficial causes
- Provides critical public causes with significant private funding, but complex deal structures have limited scale

3.6 Unlabeled/Alternative Debt

- Refers to debt issued under other (or no) labels, with some reference to driving sustainability outcomes
- Conceptualizes different financing approaches, though these are rare and minimally align with existing frameworks

Issued Sustainable Debt *$7T total between 2014-2023*

Source: Bloomberg New Energy Finance



Note: Transition debt issuances are included in the chart above as either UoP or sustainability-linked issuances (depending on their structure) and came to $3.5b in 2022 according to CBI. Blended finance, which is not included in this chart, has mobilize $213b cumulatively through 2023, according to Convergence, of which 10% represents notes, bonds and impact bonds. Alternative and unlabeled debt is not clearly tracked.

3.1 | USE OF PROCEEDS

USE OF PROCEEDS ARE DEPLOYED AT SCALE FOR ELIGIBLE GREEN ACTIVITIES, BUT LESS APPLICABLE FOR COMPLEX BROWN INDUSTRIES

Made up of green, social and sustainable bonds/loans (GSSB+), use-of-proceeds instruments allocate financing to specified, eligible activities:

- Renewable Energy
- Energy Efficiency
- Clean Transport
- Pollution Prevention Control
- Green Buildings
- Natural Resources, Land Use, Biodiversity
- Water & Wastewater Management
- Circular Economy

GSSB+ Issuers → 2nd & 3rd Party Review

Use of Proceeds	Project Selection	Management of Proceeds	Reporting	External Review
✓ Clear description ✓ Eligible categories ✓ Quantified benefits ✓ Financing/re-financing ✓ Assets identified	✓ Sustainable objectives ✓ Project evaluation ✓ Risk management ✓ Taxonomy alignment ✓ Strategy alignment ✓ Do no harm/risk	✓ Ringfenced proceeds ✓ Formal tracking ✓ Audit/verification	✓ Projects & allocations ✓ Expected impact ✓ Qual/quant indicators ✓ Methodologies ✓ Accessible summary	✓ Pre-issuance review ✓ Post-issuance review

Opportunities:

→ Well-developed, commercial, at scale
→ Issuance potential for emerging markets
→ Directs funds to eligible uses

Challenges:

→ O&G issuers often not considered credible on clean energy transition/initiatives by the market
→ Most GSSB+ frameworks exclude fossil fuels activity
→ Lacking external review undermines credibility
→ Incomplete, inconsistent or infrequent reporting
→ Unclear or misaligned use of proceeds

Source: International Capital Markets Association

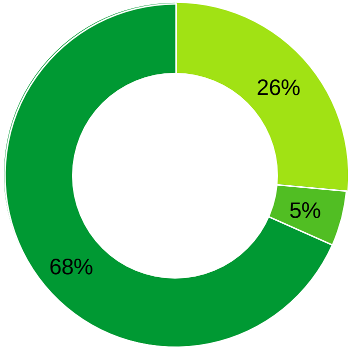
3.1 | USE OF PROCEEDS CASE STUDY

EIB'S CLIMATE AWARENESS BONDS SET A HIGH STANDARD

Context: The European Investment Bank (EIB) raised €70bn across 2007-22 for a variety of projects across industries using independently labeled bonds, in a move widely seen as successful and driven by leading transparency.

Type	Amount	Underwriter(s)	External Reviewer(s)
Own labels: Climate and Sustainability Awareness Bonds (ICMA aligned)	€70bn, across 2007-22 in 22 currencies	Bank of America, Barclays, Commerzbank, HSBC, Natixis, etc.	Audit by KPMG

2022 Issuance by Environmental Objective



Enabling:
Electricity transmission/distribution, infrastructure for low carbon road, public transport and rail

Low carbon:
Energy, heat, cooling from renewables

Transition:
Building renovation, urban and suburban transport, road passenger transport

Strengths:

- ✓ Exceptional transparency (covering issue, project, country, activity)
- ✓ Alignment with EU Taxonomy
- ✓ Early demonstration and engagement across market participants

Concerns:

- → External auditor validating KPIs narrowly with "reasonable assurance" instead of obtaining a second party opinion on framework and impact
- → Limited impact reporting

Source: European Infrastructure Bank

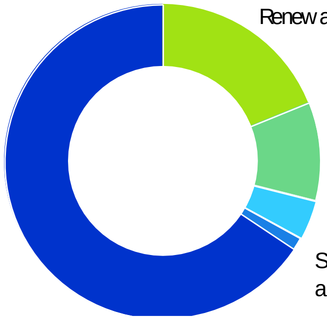
3.1 | USE OF PROCEEDS CASE STUDY

BANK OF CHINA IS THE COUNTRY'S TOP GREEN BONDS ISSUER

Context: The Bank of China raised $489bn across 2016-22, using a variety of ICMA-aligned green bond labels, in 9 global markets for diverse projects (clean transport, renewable energy, green buildings, etc.).

Type	Amount	Underwriter(s)	External Reviewer(s)
Green, green covered, sustainability-linked, transition and blue bonds (all ICMA aligned)	$489bn across 2016-22, in USD, EUR, JPY, RMB	Self	Assurance by EY, CBI certified 2017-2019 issues

Use of proceeds through Dec. 2022
¥30B CNY total



Strengths:

- ✓ Consistent, regular reporting
- ✓ External assurance

Improvement Areas:

- → Limited project transparency due to portfolio-level reporting
- → Unclear distinction whether bonds were providing new investment or refinancing existing funding

Source: Bank of China

SUSTAINABILITY-LINKED BONDS PROVIDE FLEXIBILITY, BUT MANY HAVE LACKED AMBITION AND INTEGRITY

Sustainability-linked bonds provide capital for achieving organizational sustainability goals, generally with a penalty (e.g. a step-up in interest rate) for not achieving them.

SLB issuers				2nd & 3rd party review
KPI Selection	**Performance Targets**	**Issue Description**	**Reporting**	**Verification**
✓ Core, relevant, material ✓ KPI(s) link to strategy ✓ Sector specific KPIs ✓ Ambition to perform ✓ Consistent methodology ✓ Able to verify and benchmark	✓ Links to strategy ✓ Calibrated to better-than-BAU ambition ✓ Benchmarked and external reference ✓ Science-based ✓ Predetermined timeline for change	✓ Bond structure and changes with regards to failure to achieve goals ✓ Trigger events ✓ Meaningful consequences	✓ Regular KPI publication ✓ Assurance of SPTs and impacts ✓ Enable investor/ market monitoring ✓ Regular disclosures as per ICMA list	✓ Independent qualified external reviewer ✓ Post-issuance review critical

Opportunities:

- → Strong unmet investor interest
- → Finances whole organization transformation
- → Supports general corporate purpose financing
- → Easier for issuers (no need to assemble pipeline of specific projects)

Challenges:

- → Lack of best practice on organization-wide sustainability strategy (specifically for fossil fuel sector)
- → Lack of ambition, low-relevance KPIs, targets already achieved at issue
- → Inadequate penalties and incentives
- → Missing transparency, inadequate reporting
- → Difficulties benchmarking due to lack of standardization

Source: International Capital Markets Association

3.2 | SUSTAINABILITY-LINKED BONDS — CASE STUDY

ENI – THE FIRST O&G COMPANY TO ISSUE AN SLB

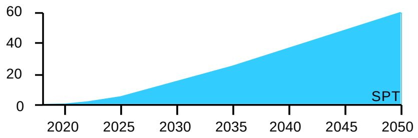
Context: Eni, the Italian supermajor, completed raising €2bn in January 2023, through an ICMA-aligned sustainability-linked 5-yr bond in public markets, followed shortly by a sustainability-linked convertible and credit line (not discussed here).

Type	Amount	Maturity	Penalty	Underwriter(s)	External Reviewer(s)
Sustainability-linked bond (ICMA aligned)	€1bn (June 2021), completed at €2bn (Jan 2023)	Feb 2028 (7yrs from initial, 5yrs from reopening)	+0.5% for not achieving both goals	Credit Agricole, Goldman Sachs International, UniCredit	Moody's ESG (SPO), PwC (verifier)

Sustainability Performance Targets

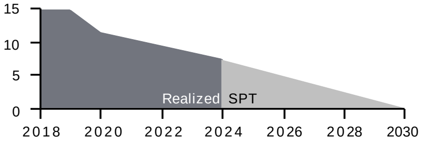
- 5GW renewable energy by end-2025

Renewable installed capacity, GW



- Reduce upstream emissions to 7.4mn tons CO2e by end-2024

Net Carbon Footprint Upstream, $MtCo_2e$



Strengths:

- ✓ Issue penalty raised to 0.5% from 0.25% in June 2021
- ✓ High retail investor demand: 10x oversubscribed
- ✓ Moody's SPO: material improvement vs BAU for renewables target, strong transparency and verification

Concerns:

- → Long-term SPTs for Scopes 1, 2, 3 set but not linked to financing
- → Moody's SPO: limited impact, low relevance of upstream emissions (3% of value chain), strategy to achieve long-term targets is not sufficiently credible

Source: Eni, Credit Agricole, IEEFA

3.2 | SUSTAINABILITY-LINKED BONDS CASE STUDY

ENEL'S SLB USES TARGETS WITH EU TAXONOMY ALIGNMENT

Context: Enel's Feb 2023 SLB drew in substantial interest with the mechanism's EU Taxonomy capex alignment, building on multiple earlier SLB issuances. Enel issued a new €1.75bn SLB in Jan 2024, under functionally similar terms (adding 2026 targets) to the 2023 SLB described here.

Type	Amount	Maturity	Penalty	Underwriter(s)	External Reviewer(s)
Sustainability-linked bond (ICMA aligned)	€1.5bn (Feb 2023), in two tranches	8yrs (2031) and 20yrs (2043)	+0.25% for not achieving both goals	BNP Paribas, Citi, ING, JPMorgan, etc.	Moody's on framework, KPMG as auditor on target achievement

Sustainability Performance Targets		2022 Value
Tranche 1 (2031) *Achieve SPTs by end-2025*	□ 80%+ EU Taxonomy-aligned capex across 2023-25	81.9%
	□ Reduce Scope 1 power generation emissions intensity to ≤ 130gCO_2eq/kWH	229gCO_2eq/kWH
Tranche 2 (2043) *Achieve SPTs by end-2040*	□ Zero Scope 1 and 3 emissions intensity for integrated power	218gCO_2eq/kWH
	□ Zero absolute Scope 3 for retail gas	22.9MtCO_2eq

Strengths:

- ✓ High investor interest: almost 3x oversubscribed
- ✓ 2023 revised framework added interim targets
- ✓ A market first: linking performance with EU Taxonomy
- ✓ Among few utilities to use SBTI-certified net-zero target

Concerns:

- → Suggestions that Enel may not achieve Scope 1 power emissions intensity SPT due to Italian government's extension of coal generation, increasing Enel's interest costs
- → Small downward revision of renewables investment (in absolute terms)
- → Certain narrower KPIs are less relevant (such as relating to Scope 3 retail gas)

Source: Enel, Natixis, Moody's, Anthropocene Fixed Income Institute

3.2 | SUSTAINABILITY-LINKED BONDS CASE STUDY

ENBRIDGE ISSUES SLB AFTER TRANSITION BOND DIFFICULTIES

Context: Unable to develop a transition bond approach, Enbridge (a US midstream gas company) used a narrower SLB that combines environmental performance with social SPTs, drawing both investor interest and critiques.

Type	Amount	Maturity	Penalty	Underwriter(s)	External Reviewer(s)
Sustainability-linked bond (ICMA aligned)	$1bn (June 2021)	12yrs (June 2033)	+0.5% for not meeting emissions goal	Bank of America, Citi, Credit Suisse, JPMorgan Chase, Sumitomo Mitsui	ISS ESG

Sustainability Performance Targets	2018 Baseline	2022 Progress
□ Reduce Scope 1 and 2 emissions intensity by 35% by 2030 (545 tCO_2e/PJ)	835	27% or 562 (2022)
□ Achieve 40% representation of women on the Board of Directors by 2025	31%	36% (2022)
□ Achieve 28% representation of racial and ethnic diversity in the workforce by 2025	16%	25% (2022)

Strengths:

- ✓ Strategy mentions investments in renewables and alternative energies, along with reducing methane and fugitive emissions
- ✓ High investor demand: 3.4x oversubscribed
- ✓ Considered ambitious versus peers in the sector

Concerns:

- → No evidence of science-based SPTs
- → Current SPTs do not specifically incentivize renewables capacity growth or absolute emissions reductions

Source: Enbridge, ISS, Bloomberg

SUSTAINABILITY-LINKED LOANS OFTEN LEVERAGE BANKING RELATIONSHIPS, BUT LACK PUBLIC DISCLOSURE

O&G companies can also undertake financing via private loans with lower requirements

O&G companies, especially those in emerging markets, have hesitated to tap public sustainable bond markets for a variety of reasons (low payoff, higher disclosure requirements, low sustainability credibility, etc.).

However, they can continue to seek funding via private market channels (commercial banks and private credit investors), with lower requirements and expectations.

NOTE: *Given the private, bilateral nature of loans, issuers are not required to disclose the terms of SLLs and have typically refrained from doing so. However, to ensure the integrity of SLLs, we believe both parties should disclose the sustainability features and performance of these instruments to allow for public scrutiny.*

Typical SLL Characteristics

Project flexibility: Allocate proceeds across many projects, including those that aren't green

Sector flexibility to SMEs: Available to wider range of sectors, including to smaller companies

Term & structure flexibility: Revolving credit facility, short-term loans, extension options

Flexibility in reporting: Monitoring under the lender's umbrella and self-reporting

Less transparency: Generally lower transparency as per confidentiality and lender practice

Opportunities:

→ Flexibility, ability to deploy to general corporate purposes
→ Lower profile, confidentiality of private company financing
→ Open to smaller transactions and companies

Challenges:

→ Issuers referencing corporate targets but not explicitly linking to credit terms
→ No public disclosure required and often missing
→ Weak alignment with accepted industry guidance
→ Justifying higher cost of private credit

Source: Loan Syndications and Trading Association

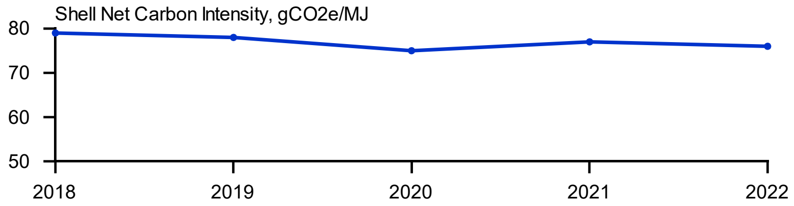
LARGE SHELL REVOLVING FACILITY HAS UNCLEAR SPT LINKS

Context: Shell reported linking its revolving credit facility to a corporate carbon intensity target – though the transaction lacks transparency over the SPTs and whether a penalty exists.

Type	Amount	Maturity	Penalty	Underwriter(s)	External Reviewer(s)
'Sustainability-linked' revolving credit facility	$10bn (December 2019)	1yr ($2bn) and 5yrs ($8bn)	No penalty disclosed	Barclays, Bank of America and more	Audit by Lloyds Register Quality Assurance on SPT

Sustainability Performance Targets (*LIKELY*)
□ Reduce 'Net Carbon Footprint' (NCF) by 2-3% by 2021 (vs 2016), per press release

Shell reportedly achieved its 2021 and 2022 (3-4%) NCF targets



Strengths:

✓ Lloyds audits Shell's progress against its Net Carbon Footprint intensity target

Concerns:

→ Limited public disclosures make it difficult to evaluate the transaction's sustainability features

Source: Shell

3.3 | SUSTAINABILITY-LINKED LOANS | CASE STUDY

PETROBRAS SLL DISCLOSES NO TERMS, SPTs MET AT ISSUE

Context: Petrobras, the Brazilian national oil company, issued a sustainability-linked loan in 2022 – but neither the banks nor the company provided sufficient disclosure as to the specifics of pricing, penalties, and SPTs.

Type	Amount	Maturity	Penalty	Underwriter(s)	External Reviewer(s)
Sustainability-linked loan	$1.25bn (July 2022)	5yrs (July 2027)	No penalty disclosed	Bank of China, MUFG, Bank of Nova Scotia	N/A

Sustainability Performance Targets (*LIKELY*)	
□ Reduce emissions intensity in E&P and refining	Petrobras reports achieving its corporate emissions intensity targets for E&P and refining in 2022.
□ Reduce upstream methane emissions intensity	Petrobras reports achieving its corporate methane emissions intensity target in 2022.

Strengths:

✓ Increased transparency on methane emissions reduction when Petrobras achieves Gold Standard reporting under OGMP 2.0

Concerns:

→ Limited public disclosures make it difficult to evaluate the transaction's sustainability features

→ Corporate targets (which align with public wording of SPTs) were reportedly met in 2022 – unclear when this development will be reviewed

Source: Petrobras

3.3 | SUSTAINABILITY-LINKED LOANS CASE STUDY

DIVERSIFIED ENERGY CONVERTS 70% OF FINANCE TO 'SUSTAINABLE'

Context: Diversified Energy, an American oil company, converted existing financing and asset-backed securitization to be sustainability-linked in 2022, but limited deal information is largely only available through Fitch, the external reviewer.

Type	Amount	Maturity	Penalty	Underwriter(s)	External Reviewer(s)
Existing credit facility becomes SLL and sustainability-linked asset-backed securitization (ABS)	$1.2bn total ($300mn SLL + $900mn across 4 ABS)	2026 for SLL, 2030 for ABS	Only +0.25% disclosed for ABS	KeyBank (facility)	Moody's ESG Solutions, later Sustainable Fitch

Sustainability Performance Targets
□ Reduce Scope 1 methane emissions intensity by 30% by 2026 (vs 2020)
□ Reduce Scope 1 and 2 emissions intensity by 25% (vs 2020)
□ Asset retirement targets above current levels
□ Decrease Total Recordable Incident Rate (TRIR)

Strengths:

✓ Increased transparency on methane emissions reduction when Diversified achieves Gold Standard reporting under OGMP 2.0

Concerns:

→ Limited public disclosures make it difficult to evaluate the transaction's sustainability features

Source: Diversified, Bloomberg, Fitch

3.4 | TRANSITION DEBT

TRANSITION DEBT SEEN AS THE ROUTE TO FINANCING THE TRANSITION OF HARD-TO-ABATE SECTORS

Transition debt proposed as a solution for brown-to-green transition

Objective: Financing the low-carbon transition of carbon-intensive companies and hard-to-abate sectors

Method: Uses UoP or sustainability-linked financing approaches

Challenge: Transition debt relies heavily on the credibility of a carbon-intensive issuer's emissions reduction strategy and achievements. Consequently, transition debt:

- Requires robust climate transition strategy, plans, and investments
- Has seen slow uptake
- Early-stage vs UoP and SLBs
- Relies on less-developed green standards and frameworks

Per frameworks and case studies, transition debt activities identified for hard- to-abate sectors include:

- Upstream & downstream emissions reductions
- CCUS
- Increased material recycling
- Fuel switching (coal/diesel > gas)
- Land use to reduce deforestation

ICMA Climate Transition Finance Handbook 2023 Guidance

Key Elements	Issuer Disclosure Expectations
Climate Transition Strategy and Governance	Issue itemized transition strategy, along with governance and incorporation of 'just transition' considerations
Business Model Environmental Materiality	Address materiality of climate-related projects/KPIs and incorporate materiality into climate transition strategy activities
Science-Based Climate Transition Strategy and Targets	Be transparent on short/medium/long-term emissions targets, scenarios and methodologies used, etc.
Implementation Transparency	Provide capex timelines, phaseout plans, assessments of corporate and activity Paris-alignment, adverse impacts, etc.

Opportunities:

→ COP28 has boosted global interest in transition finance
→ Recognizes need to finance the low-carbon transition of "brown" industries
→ Major market size if done well
→ Strong support from Japan in developing this market

Challenges:

→ Unclear issuer willingness to embrace transition best practice
→ Often fails to educate, consult, and/or negotiate with stakeholders to develop and pursue best practice
→ Often labeled without broad investor support

Source: Environmental Finance, Financial Times, International Capital Markets Association

3.4 | TRANSITION DEBT CASE STUDY

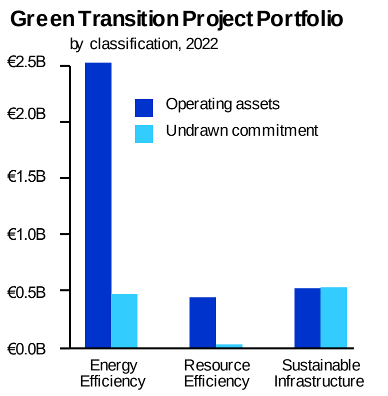
LAUDED EBRD TRANSITION BOND TRANSPARENT ON ELIGIBILITY CRITERIA

Context: The European Bank for Reconstruction and Development (EBRD) raised €1.1bn for green use-of-proceeds projects for hard-to-abate sectors that contribute to national Paris alignment but excludes direct associations with fossil fuels.

Type	Amount	Maturity	Underwriter(s)	External Reviewer(s)
Green transition bond (ICMA aligned)	€1.1bn across 2021-23 in EUR, USED, AUD, SEK	Various, across 11 transition bonds	Barclays, Bank of America, Citi, HSBC, etc.	None identified

Use of Proceeds
□ Energy efficiency
□ Resource efficiency
□ Sustainable infrastructure
□ Steel, cement, chemicals, mining, etc.
□ Food and agriculture

Exclusions
× Fossil fuel production
× New standalone fossil fuel-based electricity
× Transportation of thermal coal and oil



Strengths:

- ✓ Projects must contribute to national Paris alignment
- ✓ No support for projects that harm mitigation objectives or that lock in carbon-intensive assets/processes
- ✓ Decarbonization/efficiency must exceed industry average

Concerns:

- → No external review, only internal assurance
- → No transparency into specific projects or the share that are refinanced (citing confidentiality)

Source: EBRD

3.4 | TRANSITION DEBT CASE STUDY

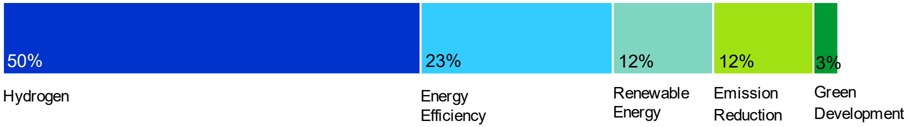
SNAM TRANSITION BOND ADDRESSES CREDIBILITY, ALIGNMENT GAPS

Context: The most recent transition bonds from Snam, an Italian energy infrastructure firm, benefit from a clearer transition framework and greater corporate climate ambition, after concerns were raised about earlier issues. Key strategy elements are still missing, according to IEEFA.

Type	Amount	Maturity	Underwriter(s)	External Reviewer(s)
Transition bonds (ICMA, EU Taxonomy aligned)	€650mn (Nov 2023)	8yrs	BNP Paribas (lead), many banks on past transition bonds	DNV on transition framework

Use of Proceeds
□ Operational emissions reductions (boiler replacement, network electrification, leak detection, valve replacement)
□ Renewables (biomethane acquisition and biogas upgrading)
□ Energy efficiency (facilities, supply chain, industrial product)
□ Green construction in own buildings
□ Transmission network retrofit for low carbon gases

Allocation of proceeds



Source: Snam, IEEFA, ISS

Strengths:

- ✓ High investor interest: 4x oversubscribed
- ✓ Alignment with EU Taxonomy and OGMP 2.0 targets (cut absolute CH_4 emissions by 55% by 2025 vs 2015)
- ✓ New Sustainable Finance Framework and SBTI-guided net-zero Scope 1 and 2 by 2040 (and interim) targets
- ✓ Excludes gas network expansion

Concerns:

- → Concerns raised around Paris-alignment of earlier bonds (Climate Action, SLBs) due to investments in existing gas infrastructure
- → IEEFA: No Scope 3 reporting/targets, slow and limited capex deployment, energy transition strategy is unclear

3.4 | TRANSITION DEBT CASE STUDY

REPSOL'S TRANSITION SLB, AFTER FAILED GREEN BOND

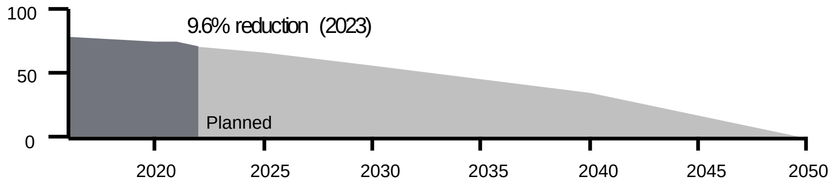
Context: Repsol, a Spanish O&G major with industry-leading climate ambition, issued a transition SLB after a failed green UoP bond in 2017 – though the SLB is only linked to a proprietary emissions intensity indicator.

Type	Amount	Maturity	Penalty	Underwriter(s)	External Reviewer(s)
Sustainability-linked transition bond (ICMA aligned)	€1.25bn (July 2021)	Two tranches: 8yrs and 12yrs	+0.25% and +0.375% for each tranche	HSBC and Natixis (structuring advisors), and many other banks	ISS (2021), Vigeo Eiris (2017)

Sustainability Performance Targets

- Reduce 'Carbon Intensity' by 12% by 2025 (vs 2016)*

Repsol Carbon Intensity, gCO_2e/MJ



Strengths:

- ✓ Includes Scope 3 in SPTs – first O&G transition bond to do so
- ✓ Strong sustainability ratings and climate commitments, relative to peers

Concerns:

- → SPTs use proprietary, non-transparent emissions intensity indicator
- → Not science-based, with no disclosed framework alignment
- → Low investor demand due to sector (as per market commentary)
- → Does not include links to future decarbonization investments

Source: Repsol, Climate Bonds Initiative, Natixis, ISS

3.4 | TRANSITION DEBT CASE STUDY

BAPCO ENERGIES DEMONSTRATES RISING NOC INTEREST

Context: The Bahraini NOC issued a Sustainability-Linked Finance Framework (SLFF) for the $2.2bn it raised in Dec 2023. Its Jan 2024 Transition Finance Framework will be the basis for future UoP bonds to finance its low-carbon transformation.

Type	Amount	Maturity	Penalty	Underwriter(s)	External Reviewer(s)
Sustainability-linked loan (ICMA and LMA aligned)	$2.2bn (Dec 2023)	7yrs	Yes, but not specified	19 regional banks (Mashreq, Gulf International, etc.)	ISS

Sustainability Performance Targets

- ◻ Reduce net Scope 1 and 2 emissions intensity by 15% by 2025 (vs 2017)

  Further SPTs relating to this indicator include reducing net Scope 1 and 2 emissions intensity by (vs 2017 baseline):

25% by 2030	*75% by 2050*
50% by 2040	*100% by 2060 (Net zero Scope 1 and 2 emissions)*

- ◻ Reduce absolute Scope 1 and 2 emissions by 30% by 2035 (vs 2017)
- ◻ Reduce domestic Scope 3 GHGs by 30% by 2035 (vs 2017)

Source: BapCo Energies

Strengths:

- ✓ NOC leadership on setting SPTs that cover absolute and intensity emissions targets, including Scopes 1, 2 and 3
- ✓ Project-level impact reporting plan and plans for external review
- ✓ Experienced external advisors (Standard Chartered, BCG) and verifier (ISS)

Concerns:

- → Scope 3 target limited to domestic border (40% of total emissions)
- → Lack of disclosure on financing terms (including penalty)
- → Reported data only till 2021 (despite end-2023 issuance)
- → Little/unclear evidence of interim targets, whether targets are science-based, and external review of transition strategy

BLENDED FINANCE ENABLES INNOVATION, BUT COMPLEXITY LIMITS SCALE AND APPLICATION

Blended finance emerges as a new impact financing tool

Objective: Enable investment in projects considered too risky for "finance-first" investors by combining public and philanthropic support to catalyze increased private investment.

Method: Institutions provide catalytic capital (accepting longer investment horizons, lower returns, and higher risks) to secure greater private investment, typically towards projects that include a focus on creating positive impact

Catalytic Capital

Providers	Forms	Recipients
Governments	First equity/loss, anchor debt issue	Emerging market institutions
Multilateral development banks	Political risk insurance	Innovative impact-oriented enterprises
Development finance institutions	Credit guarantee	Experts on project implementation
Philanthropies	Junior debt and equity	Project collaborators

Opportunities:

- → Integration of technical assistance, financial support, data, tools, NGO verification, etc.
- → Pipeline for innovation and pilot projects, especially for emerging technologies and scaling projects in emerging markets
- → Oriented around mobilizing private finance at scale for large projects for sustainable development
- → Emphasis on transparency and measurement of impacts and outcomes

Challenges:

- → Complex structures require more stakeholders, leading to higher costs and longer development time
- → Limited pipeline of bankable investments
- → Requires large-scale institutional push and sponsorship to draw in investor demand
- → Redundant for investments that are already planned and sufficiently capitalized

3.5 | BLENDED FINANCE CASE STUDY

BELIZE BLUE BOND DRAWS INVESTORS FOR MARINE CONSERVATION

Context: In a unique blended finance transaction, The Nature Conservancy provided catalytic capital to help reduce Belize's debt burden while issuing 'blue bonds' to support ocean conservation.

Type	Amount	Maturity	Parties
Blended finance 'blue bonds'	$364mn issuance (Nov 2021)	20yrs	BBIC (issuer), Credit Suisse (underwriter/arranger), US DFC and TNC (catalytic capital), WTW (insurance)

30% Ocean Area Protection Target	
Existing areas under protection (prior to issuance)	16.5%
New areas under protection (after issuance)	3.8%
Remaining areas to protect	9.7%

How It Works

→ The Nature Conservancy used donor funding to set up the Belize Blue Investment Company (BBIC) subsidiary, which helped the Government of Belize repay existing debt (worth $553mn) at an earlier date, at a sizable discount (45%).

→ Credit Suisse underwrites blue bonds issued by the BBIC ($364mn), where the repayment depends on Belize paying back the underlying blue loan to BBIC.

→ The incorporation of a commercial parametric catastrophe insurance and political risk insurance - financed by the US DFC and underwritten by WTW – generates greater investor confidence.

→ With a reduced debt burden and strengthened stakeholder support, Belize has freed up increased capital to pay for ocean conservation.

Source: The Nature Conservancy (TNC), US Development Finance Corporation, IMF

Strengths:

- ✓ Mobilizes conservation funding ($180mn) while reducing Belize's debt (12% reduction in debt to GDP) and committing Belize to a marine protection target (30% of Belize's oceans)
- ✓ Transparent transaction governance and grant allocations
- ✓ Belize on track for all conservation and payment milestones
- ✓ US DFC insurance bolsters credit rating and interest

Concerns:

→ Depends on strong fiscal performance from Belize, which continues to struggle with its debt burden

→ No external review of on-the-ground outcomes

→ Difficult to scale (original Belize debtholders accepted restructuring despite significant cut in repayment)

3.5 | BLENDED FINANCE | CASE STUDY

RHINO BOND PIONEERS PAY-FOR-SUCCESS FOR CONSERVATION

Context: The 'rhino bond' outcomes-based issuance aims to help South Africa increase rhino populations by leveraging institutional capital to fund and bolster the capacity of conservation organizations.

Type	Amount	Maturity	Parties
Blended finance 'rhino bonds'	$150mn issuance (March 2022)	5yrs	World Bank (issuer), Conservation Alpha and ZSL (independent verifiers), GEF (catalytic capital), Credit Suisse (structurer), Nuveen (lead investor)

Outcome-Linked Success Payments		
Annual Rhino Growth Rate	Success Payment (%)	Annual Bond Yield
>= 4%	9.173%	2.83%
<= 4% and > 2%	7.338%	2.49%
<= 2% and > 0%	3.669%	1.79%
<= 0%	0%	1.06%

How It Works

→ The Global Environment Facility, using donated funds, pledges to pay a single success payment to investors in year 5, dependent on rhino conservation efforts.

→ The World Bank is the issuer of the rhino bonds, providing assurance that funds will be effectively deployed.

→ Investors direct $150mn towards the bonds, foregoing regular coupon payments for the outcome-based conservation success payment.

→ External parties (Conservation Alpha and ZSL) act as independent trackers and verifiers of conservation outcomes.

Source: World Bank, GEF

Strengths:

✓ Hinges payments upon independently measured success (increase in rhino populations), with greater payments for greater success

✓ Strong progress across most indicators in Dec 2023 update: rhino growth rate is ~7.3%, significantly reduced rhino mortality rate, 92,000 hectares under improved management, etc.

✓ World Bank issuance bolsters credit rating and interest

Concerns:

→ Unclear how rhino pop. growth will be sustained post-transaction

→ Dependent on donor funding to pay investors (no directly generated source of income within the transaction)

→ Difficult to structure/replicate, given many involved parties

→ Unclear whether robust processes exist to mitigate risks beyond the parties' boundaries of control

3.5 | BLENDED FINANCE CASE STUDY

FOREST RESILIENCE BONDS HELP ACCELERATE CALIFORNIA FOREST RESTORATION

Context: Stakeholders developed the forest resilience bonds (FRBs) issuance to unlock capital for forest restoration faster through impact-oriented investors and California fire and water agencies committing to repay them.

Type	Amount	Maturity	Parties
Blended finance 'forest resilience bonds'	$4mn in Nov 2018, $25mn in Oct 2021	5yrs (first tranche)	Blue Forest (project lead), National Forest Foundation (implementation), WRI (technical support), Yuba Water and CAL FIRE (beneficiary agencies), Moore Foundation, Rockefeller Foundation and Calvert Impact Capital (catalytic capital)

Selected 2022 FRB Impacts	
Funding deployed	$2,569,000
Ecosystems protected	1,160 acres
Water supply protected	3,990 acre-feet
Jobs created	51

How It Works

→ Philanthropic donors (through a private grant transaction) provide capital to Blue Forest, the project lead, to manage the FRBs.

→ Using funds from the FRBs, Blue Forest makes a loan to the National Forest Foundation to implement forest restoration activities.

→ California's Yuba Water pays for forest restoration services, which lower the agency's costs and support investor repayments. The fire agency CAL FIRE makes a grant to support implementation.

→ Other parties (World Resources Institute, US Forest Service, Stanford, etc.) provide support with research, data, and project development towards ensuring outcomes.

Source: Blue Forest Conservation, World Resources Institute, Green Finance Institute

Strengths:

- ✓ Gathers high-credibility stakeholders in appropriate roles to accelerate forest restoration funding
- ✓ 2021 issuance points to largely successful original transaction, with plans for further expansion in place
- ✓ Guarantees payments through CA agencies that materially gain from outcomes of forest restoration

Concerns:

→ High wildfire risk across California threatens durability

→ Requires impact-oriented stakeholders to make up for reduced returns

ALTERNATIVE AND UNLABELED DEBT CASES ARE RARE, BUT RELEVANT

Alternative Debt

Objective: Offer flexibility for specific, nuanced transactions that incorporate sustainability elements in ways that differ from other existing instruments.

Method: Range of financing approaches available.

Unlabeled Debt

Objective: Provide lighter reporting requirements and thresholds, often as swift options for inherently green companies or those with high credibility.

Method: General corporate purpose bonds and loans, with some link to driving sustainability outcomes.

Opportunities:

→ Enables flexible and faster approaches to sustainability-oriented financing
→ Potentially more attractive to non-traditional institutions looking to raise/deploy sustainability-backed financing
→ Conceptualizes new potential approaches to sustainable debt issuance

Challenges:

→ Unlikely to be deployed at scale
→ Reliant on existing credibility of issuer
→ Little to no alignment with existing frameworks and best practice
→ Low reporting, review, and verification requirements

3.6 | ALTERNATIVE AND UNLABELED DEBT CASE STUDY

NORDEA UNLABELED BOND IS TIED TO SLL PORTFOLIO

Context: The issuance from Nordea, a Scandinavian financial institution, provides it with proceeds to deploy for SLLs it undertakes (aligned with SLB Principles) – though with limited public visibility into the SLLs the proceeds are enabling.

Type	Amount	Maturity	Penalty	Underwriter(s)	External Reviewer(s)
Unlabeled bond issued to fund SLL portfolio	€400mn (Sept 2022)	3yrs and 5yrs (4 tranches)	None disclosed	Self	ISS on framework and SLL assets

Criteria for Inclusion in SLL Portfolio
✓ Aligned with SLL principles for the issue year by relevant organization (LMA, APLMA, LSTA)
✓ Positive contribution to at least one mitigation-related impact objective
✓ Material and ambitious KPIs and SPTs as assessed by external reviewer

Exclusions
× Excludes financing of nuclear or fossil fuel energy generation or operations

Strengths:

- ✓ First-of-its-kind deal by a bank linked to Sustainability-Linked Loan Funding Framework, but bond itself is neither UoP nor SLB
- ✓ SPTs, risk assessment, eligibility, and evaluation are all specific to underlying clients and projects

Concerns:

- → Proceeds earmarked by Nordea to SLLs aligned with SLB Principles but not included in green loan portfolio and subject to general critiques of SLLs
- → Unclear visibility (including for penalties) into underlying loans

Source: Nordea

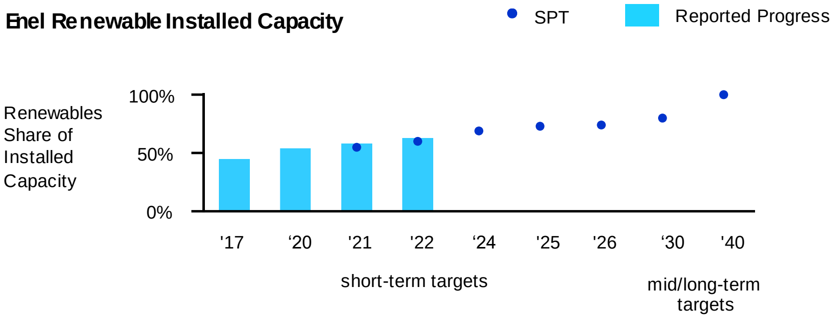
ENEL ISSUES WORLD'S FIRST SDG-LINKED BOND

Context: Enel added to its list of sustainability-linked financing by issuing the world's first general corporate purpose bond linked to Sustainable Development Goals (SDGs), the global sustainable development targets promulgated by the United Nations.

Type	Amount	Maturity	Penalty	Underwriter(s)	External Reviewer(s)
Unlabeled SDG-linked bond	$1.5bn (Sept 2019)	5yrs	+0.25% for not meeting SPT	Bank of America, Citi, BNP Paribas, etc.	DNV audit of energy capacity

Sustainability Performance Targets
□ Increase renewable energy as share of installed capacity to 55% by end-2021 and 60% by end-2022 *(both achieved)*

Enel Renewable Installed Capacity



Source: Enel

Strengths:

- ✓ First-of-its-kind issuance
- ✓ High investor demand: almost 3x oversubscribed
- ✓ Aligned with Enel climate and energy ambitions

Concerns:

- → Only one SPT referencing SDGs
- → No alignment with existing frameworks (such as ICMA), leading to low requirements
- → Highly dependent on existing credibility of Enel sustainability strategy

RECAP: SUSTAINABLE DEBT CASE STUDIES

Issuer Type	Case Study Issuer	Size	First Issuance	Strengths	Concerns
Use-of-Proceeds	EIB	€70bn	2007	Exceptional transparency, aligned with EU Taxonomy	Less external assurance than peers
	Bank of China	$489bn	2016	Consistent and regular reporting, external assurance	Limited project transparency and unclear distinction on new or refinancing investment
Sustainability-Linked Bonds (SLBs)	Eni	€2bn	2021	High investor demand, issue penalty raised, material improvement vs BAU	Target choices and timelines, not aligned with major investments
	Enel	€1.5bn	2023	High investor demand, aligned with EU Taxonomy, SBTI-certified net-zero target	Suggestion that SPT will be missed, narrower KPIs are less relevant
	Enbridge	$1bn	2021	High investor demand, disclosed sustainability strategies	No absolute emissions or renewable capacity SPTs
Sustainability-Linked Loans (SLLs)	Shell	$10bn	2019	Externally verified, reportedly linked to Shell corporate target	Low transparency as SLL
	Petrobras	$1.25bn	2022	Separate commitment to OGMP 2.0	Low transparency as SLL and corporate targets reportedly achieved at issue
	Diversified	$1.2bn	2022	Separate commitment to OGMP 2.0	Low transparency as SLL
Transition Debt	EBRD	€1.1bn	2021	Criteria for Paris alignment and exclusion	No external review and limited project-specific transparency
	Snam	€300mn	2022	Alignment with EU Taxonomy and OGMP 2.0, improved framework ambition	No Scope 3 reporting/targets, slow and limited capex deployment, unclear energy transition strategy
	Repsol	€1.25bn	2021	Includes Scope 3 in SPT, strong climate ambition relative to peers	Low investor demand, non-transparent KPI and no framework alignment
	BapCo	$2.2bn	2023	NOC leadership on transition finance, external experts	Limited coverage of Scope 3 target, limited disclosure on financing terms and strategy
Blended Finance	Blue Bond	$364mn	2021	Debt-for-conservation innovation, insurance	Highly complex structure, dependence on Belize fiscal health
	Rhino Bond	$150mn	2022	Payments contingent upon certified success (on track)	Highly complex structure, unclear risk mitigation
	Forest Bond	$29mn	2018	Further expansion expected, strong state agency buy-in	Limited transaction size, highly complex structure
Alternative and Unlabeled	Nordea	€400mn	2022	First-of-its-kind to fund SLLs	Unclear visibility into underlying loans
	Enel (SDG)	$1.5bn	2019	High investor demand, corporate alignment	Only one SPT referencing SDGs, no framework alignment

TAKEAWAYS:

FIRST STEPS FOR FINANCING METHANE ABATEMENT

TAKEAWAYS FOR METHANE ABATEMENT

This introduction to sustainable debt is intended to inform forthcoming work on how sustainable debt structures might be used for methane abatement, particularly at resource-constrained NOCs.

→ Follow-up research will explore methane abatement finance structures in greater detail.

Each of the major sustainable debt categories have advantages and shortcomings.

→ The following slide summarizes these features, which should be considered when evaluating approaches to methane abatement structures.

Methane abatement at NOCs presents a unique set of challenges.

→ Designing an instrument to do this will require further innovation that incorporates the four key ingredients for successful issuance (noted above as opportunity, due diligence, design, and reporting).

Key elements to consider for financing methane abatement include:

1. Importance of near-zero methane emissions ambition
2. Elevated risks often associated with emerging markets issuers
3. Challenges around methane measurement, reporting, and verification
4. Ensuring funds are directed towards desired uses
5. Scaling demand to reach necessary deal size and structure
6. Credible stakeholder engagement

SUITABILITY OF FINANCIAL INSTRUMENTS FOR NOC METHANE ABATEMENT

The applicability of sustainable debt instruments varies with respect to financing NOC methane abatement.

Instrument	Potentially suitable characteristics	Likely challenges
Use-of-Proceeds (GSSB+)	• Limits finance to eligible activities only • Transparent disclosure and verification • Well-developed, already commercial structure	• Institutional exclusions against lending to fossil fuels • Difficulties with defining and ringfencing eligible activities for methane abatement • Traditional UoPs do not typically require organization-wide transformation strategy • Harder to deploy for initiatives with less visible, smaller project pipelines
Sustainability-Linked Bonds	• Provides flexibility for approaches to methane abatement • O&G companies have already issued SLBs • Multiple, clear KPIs can highlight progress	• Less visibility and transparency of funds' deployment for methane abatement • Requires more ambition and meaningful penalties than most SLBs so far • Lack of methane-focused KPIs to-date
Sustainability-Linked Loans	• O&G companies have already issued SLLs, including NOCs • Flexibility in loan size, structure, and disclosure • Closer collaboration/relationship between NOC and lender(s)	• Significant lack of transparency across all deal aspects • Unlikely for private lenders to require methane MRV • Does not typically require organizational commitments/transformation
Transition Debt	• Enables lending to O&G, including NOCs • Typically requires Paris-aligned transition plans and investments • Ability to blend UoP/SLB elements: restrictions on eligible activities (could require methane MRV), multiple KPIs, etc.	• NOCs typically lack Paris-aligned transition plans, targets, and investments • Transition finance frameworks still a work in progress • Similar pitfalls of UoP/SLB elements: lack of ambition, defining eligible methane abatement activities, limited external stakeholder support, limited transparency, etc.
Blended Finance	• Specifically aimed at development of emerging markets • Range of tools and creative structures with existing track record • Strong stakeholder buy-in fosters transparent reporting (and often, achievement) of impacts and financed activities	• Complex to structure, resulting in longer development time and higher costs • Requires buy-in of multiple, credible, and (preferably) impact-oriented stakeholders • Low quantum of capital dedicated to scaling blended finance tools • Typically needs DFIs and donors to originate, lead, and anchor transactions
Alternative and Unlabeled Debt	• Tailoring financial tool to the nuances of the challenge • More attractive to NOCs with limited exposure to public markets • Faster and more flexible to structure	• Flexibility allows for low-integrity approaches • Too rare to illustrate best practice

DESIGNING HIGH-INTEGRITY NOC METHANE INSTRUMENTS

Designing a sustainable debt instrument to finance methane abatement at resource-constrained NOCs will require further innovation that incorporates the key elements for a feasible and high-integrity issuance.

→ No instrument in its current form comprehensively addresses the nuances of the challenge, requiring stakeholders to design and implement transactions that enable real-world outcomes.

Key Design Element	Approach
Near-zero methane emissions ambition	Design sustainability provisions to drive real-world emission reductions aligned with the Paris Agreement (near-zero methane and flaring targets).
De-risking investments in emerging market NOCs	Enable access to finance for NOCs in emerging markets that often face elevated credit, currency, political, and regulatory risks.
Methane measurement, management, and transparency	Define terms of finance around implementation of best-in-class, transparent disclosure of methane measurement, reporting, and verification (MRV), such as through OGMP 2.0.
Eligible uses of financing	Use appropriate labels, improved company and deal disclosures, investor due diligence, and market oversight to ensure NOCs use funds for achieving stated and eligible methane emissions reduction goals.
Size and structure of issuance	Structure financial instruments to support methane abatement activities with a range of capital volumes and ROIs.
Credible stakeholder engagement	Engage financial, government, industry, and 2nd and 3rd party stakeholders as appropriate to ensure credibility of NOC methane abatement efforts.

Thank you!

Accompanying Report:

- Financing Methane Abatement: Report on Sustainable Finance Instruments

Additional Resources:

- EDF Climate Insights Hub
- EDF Activating National Oil Companies for Climate Progress
- Plugging the Leaks: An Investor Guide to Oil and Gas Methane Risk

Contact:

- Andrew Howell, ahowell@edf.org

SOURCES

Slide	Issuer/Instrument	Resource
14	EIB	EIB CAB/SAB Newsletter | Year-end 2022 CAB project allocations 2022 H1 (unaudited) Evaluation of the EIB's Climate Awareness Bonds EIB CAB/SAB Newsletter | Year-end 2022 EIB CAB/SAB Newsletter | Year-end 2022
15	Bank of China	Pre-issuance green bond framework, internal and exteral reviews Pre-issuance green covered bond framework, internal and external reviews Pre-issuance green bond framework, internal and external review statements Post-issuance annual reporting and assurance Pre-issuance green bond framework, internal and exteral reviews Pre-issuance blue bond framework, internal and exteral reviews Pre-issuance transition bond framework, internal and exteral reviews Assurance report for sustainable debt issues as of Dec 31, 2022
17	Eni	May 2021 Sustainability-Linked Finance Framework May 2022 Sustainability-Linked Finance Framework April 2023 Sustainability-Linked Finance Framework Eni Press Release on Sustainability-Linked Credit Line Eni Press Release on Sustainability-Linked Convertible Bond Eni Press Release on Reopened SLB (Jan 2023) Moody's SPO on May 2022 SLFF
18	Enel	Revised Sustainability Linked Financing Framework Second party opinion on Enel' Sustainability-Linked Financing Framework Enel Press Release on Jan 2024 SLB Issuance Enel Press Release on Feb 2023 SLB Issuance Enel Statement on Environmentally Sustainable Economic Activities Financial Times on Enel Cuts to Renewable Investments Anthropocene FII: Enel SLBs update on 2023 observation date Natixis: Market Insights on Enel's 2023 SLB Framework
19	Enbridge	Enbridge Sustainability-Linked Bond Framework ISS Second Party Opinion: Sustainability Quality of the Issuer and Sustainability-Linked Bonds
21	Shell	Shell Press Release on revolving credit facility Shell Our Climate Target webpage The Telegraph Barclays Loan to Shell Article Loan Connector: Shell seals $10bn SLL
22	Petrobras	Petrobras Sustainability Report 2022
23	Diversified	Diversified Press Release on SLL Diversified SLL Amendment Fitch Press Release on Diversified SLL SPO Diversified 2021 Sustainability Report
25	EBRD	Sustainable debt frameworks and explainers Framework for Green Transition Bonds Info Sheet
26	Snam	Snam sustainable debt frameworks, reports, 2nd party opinion ISS Second Party Opinion on Sustainable Finance Framework Climate Action and Transition Bonds Report 2022 Snam Nov 2023 Press Release on 2nd EU-Aligned Transition Bond IEEFA When Net-Zero Means Not-Zero Report
27	Repsol	Green Bond Framework (original) Second Party Opinion On The Sustainability Of Repsol's Green Bond Natixis Note: Repsol successfully issued its inaugural sustainability-linked bond ISS Second Party Opinion: Sustainability Quality of the Issuer Transition Financing Framework Carbon Intensity Indicator

SOURCES

Slide	Issuer/Instrument	Resource
28	BapCo	BapCo Transition Finance Framework BapCo Transition Finance Framework SPO BapCo SLFF Press Release BapCo Sustainable Credit Facility Press Release BapCo SLFF
30	Belize	Case Study: Belize Blue Bonds for Ocean Conservation WTW-designed parametric solution protects Belize's blue bond debt servicing from climate disasters Belize Blue Bonds 2023 Impact Report IMF Debt for Climate Swaps Report
31	Rhino	Wildlife Conservation Bond Press Release GEF Wildlife Conservation Bond Presentation Dec 2023 Rhino Bond Implementation Status and Results Report
32	FRB	Blue Forest Conservation website: Forest Resilience Bond Blue Forest Forest Resilience Bond video 2022 FRB Impact Report EPA FRB Structural Design Report
34	Nordea	SLL Funding Framework Sustainable Funding Report 2022 Investor presentation: Sustainability linked loan funding framework ISS External Review: Sustainability Quality of the Issuer and Nordea SLL Funding Framework
35	Enel	Enel's General Purpose SDG Linked Bond - Context and Principles