

OPERATIONS EVALUATION

Evaluation of the EIB's Climate Awareness Bonds

April 2021



European
Investment
Bank

The EU bank 

Operations Evaluation

Evaluation of the EIB's Climate Awareness Bonds

April 2021

Evaluation of the EIB's Climate Awareness Bonds

© European Investment Bank, 2021

The main findings of this report have been translated into French and German. They can be consulted at: <https://www.eib.org/publications/evaluation-of-the-eibs-climate-awareness-bonds>

Authors

This evaluation was carried out by the Operations Evaluation division of the European Investment Bank (EIB), under the supervision of Sabine Bernabè, head of evaluation. The team, led by Charu Wilkinson (ICF subcontractor), included Ombeline De Bock (evaluator), Marco Mota (evaluator) and René Perez (senior evaluator). Eleftheria Zarkadoula (senior assistant) also provided valuable support. The team was assisted by consultants from ICF Consulting Services Ltd.

Disclaimer

The views and assessments contained in this report reflect the views of the Evaluation Services and do not necessarily represent the views of the EIB management or of its Board of Directors.

The EIB has an obligation of confidentiality to the owners and operators of the projects referred to in this report. Neither the EIB nor the consultants employed on these studies will disclose to a third party any information that might result in a breach of that obligation, and the EIB and the consultants will neither assume any obligation to disclose any further information nor seek consent from relevant sources.

All rights reserved.

All questions on rights and licensing should be addressed to publications@eib.org.

For further information on the EIB's activities, please consult our website, www.eib.org. You can also contact our InfoDesk, info@eib.org.

Published by the European Investment Bank.

Printed on FSC® paper

TABLE OF CONTENTS

Executive summary	1
Management Response	11
1. Introduction	21
2. Evaluation Objectives, Scope and Methodology	23
2.1 Evaluation serves primarily a learning purpose	23
2.2 The evaluation was designed to respond to the information needs of its primary intended users.....	23
2.3 Multiple methods and data sources were used to build the evidence base for the evaluation.....	25
2.4 There are some caveats, limitations and methodological lessons.....	27
3. Market and Policy Context	31
3.1 Green bond market: a fast-growing, dynamic market	31
3.2 Policy context: Sustainable finance is high on the EU policy agenda.....	40
4. The EIB’s Contribution to the Development of the Green Bond Market	47
4.1 A foundational role in establishing green bonds as a “legitimate” asset class ...	47
4.2 The EIB’s contribution to the development of market governance and standards is widely acknowledged and appreciated	52
5. The Climate Awareness Bonds Activity and Framework in a Comparative Perspective	59
5.1 Motivations for issuing green bonds and scale of issuance vary across issuers	59
5.2 Renewable energy and energy efficiency are the most common eligible sectors for the use of green bonds proceeds, but within those sectors the eligible project categories vary across issuers	62
5.3 Project evaluation and selection is often done by cross-functional teams or committees.....	65
5.4 Issuers have various systems in place for management of proceeds and to ensure traceability	66
5.5 Use-of-proceeds reporting is provided either at portfolio level or project level ..	67
5.6 There is considerable diversity in approaches to impact reporting	67
5.7 The Bank’s approach to external review and verification diverges from other issuers	74
6. The Costs and Benefits of CABs	77
6.1 Additional annual costs of Climate Awareness Bonds activity are relatively small.....	77
6.2 Benefits are significant and wide-ranging	80
7. Coherence between Climate Awareness Bonds and Sustainability Awareness Bonds	89

7.1	At the market level, there is growing appetite for different types of labels	89
7.2	A complementary offering to the market	94
8.	Role of Climate Awareness Bonds in stimulating Green Investments	99
8.1	Greenium on Climate Awareness Bonds is not yet systematic and sizeable enough to act as a mechanism for incentivising green investments.....	100
8.2	Developments related to the EU Taxonomy offer the potential to develop a virtuous link between the funding and lending side of the Bank	106
8.3	Climate Awareness Bonds are restructuring the way the EIB is deploying capital	107
8.4	More widely, Climate Awareness Bonds have triggered systemic change.....	107
9.	Conclusions and Recommendations	111
9.1	Evaluation conclusions	113
9.2	Evaluation recommendations	115
Annex 1 – Theory of change for Climate Awareness Bonds		119
Annex 2 – List of references		125
Annex 3 – A review of the strengths and weaknesses of green bond databases		129
Annex 4 – Greenium literature review		131

LIST OF BOXES

Box 1	Evaluation approach and scope	2
Box 2	Methods and data sources	2
Box 3	Sampling in qualitative research.....	27
Box 4	Summary of methodologies from other investor surveys	28
Box 5	The EU Taxonomy and Technical Expert Group on sustainable finance process	44
Box 6	Stakeholder perspectives on the EU Taxonomy	45
Box 7	International efforts on taxonomies and standardisation.....	46
Box 8	The Bank’s motivations for appointing an external auditor as external reviewer instead of a second party opinion.....	56
Box 9	Key messages of the Bank’s contribution to the development of the green bond market.....	58
Box 10	Good practice – Green bond issuance	61
Box 11	Good practice – project evaluation and selection.....	65
Box 12	Best practice among selected group – management of proceeds	66
Box 13	Best practice among selected group – Use-of-proceeds reporting	67
Box 14	Best practice among selected group – impact reporting	73
Box 15	Key messages of the comparative analysis	74
Box 16	Approach to estimate the additional running costs of the EIB’s green bond activity.....	77
Box 17	The benefits of the Climate Awareness Bonds for the Bank’s wider capital markets activities	81
Box 18	The concept of greenium	86

Box 19	Key messages of costs and benefits of Climate Awareness Bonds	87
Box 20	Use-of-proceeds bonds and KPI-linked bonds	92
Box 21	Recap of key messages on coherence between Climate Awareness Bonds and Sustainability Awareness Bonds	97
Box 22	Is lower cost of capital necessary to incentivise and stimulate green investments?....	100
Box 23	Would it be feasible for the European Investment Bank to differentiate the pricing of its green loans?	104
Box 24	Recap of key messages on the role of Climate Awareness Bonds in stimulating green investments	109

LIST OF FIGURES

Figure 1	Methods used for the evaluation	25
Figure 2	Profile of the interviewees	26
Figure 3	Annual global green bond issuance volumes, \$ billion	31
Figure 4	Number of green bond issuers	32
Figure 5	Evolution of issuer type, 2007-2020 (Oct), share of annual issuance by type of issuer	33
Figure 6	Diversification of use of proceeds	33
Figure 7	Share of annual green bond issuance by currency	34
Figure 8	Share of annual green bond issuance by geography	34
Figure 9	Cumulative issuance volumes by tenor	35
Figure 10	Assets under management – green bond funds versus all bond funds, € billion.....	36
Figure 11	Annual flows to climate-aware funds, € billion	36
Figure 12	A growing number of investors are incorporating environmental, social and corporate governance considerations in their investment.....	38
Figure 13	EU policy content for sustainable finance	43
Figure 14	Yearly Climate Awareness Bonds issuance (€ billion)	48
Figure 15	Climate Awareness Bonds currencies – first year of issuance	48
Figure 16	Green bond first-time issuance, by currency and issuer	49
Figure 17	Timeline of key developments and green bond issuance over time	54
Figure 18	A group of six best-in-class issuers was selected for the comparative analysis.....	59
Figure 19	Annual issuance volumes, \$ million	60
Figure 20	Green bonds versus overall bond issuance	61
Figure 21	Eligibility criteria of the EIB and issuers selected for comparative analysis.....	64
Figure 22	Impact reporting by sector	68
Figure 23	KfW's impact reporting	69
Figure 24	IFC impact reporting	69
Figure 25	Iberdrola impact reporting	70
Figure 26	Snapshot of EIB impact reporting summary.....	70
Figure 27	Sustainable Development Goals reporting by IFC	72
Figure 28	Climate Awareness Bonds framework	79
Figure 29	EIB's strategic positioning in the field of sustainable finance.....	82
Figure 30	Profile of subsequent bond purchase of initial Climate Awareness Bonds and conventional bond investors.....	83
Figure 31	Oversubscription multiple	84
Figure 32	Investor diversification	85
Figure 33	Evolution of greenium on Climate Awareness Bonds	86

Figure 34	Secondary market performance Climate Awareness Bonds vs EIB conventional bonds in ECoop format.....	87
Figure 35	Issuance of sustainable debt products, \$ million.....	89
Figure 36	Sustainable debt types	91
Figure 37	Growth in issuance of Green Social and Sustainability bonds 2020 H1 versus 2019 H1, \$ million.....	92
Figure 38	Cumulative issuance of Green Social and Sustainability bonds since inception to September 2020	93
Figure 39	Annual Climate Awareness Bonds and Sustainability Awareness Bonds issuance volume, € billion.....	94
Figure 40	Eligibility criteria for Climate Awareness Bonds and Sustainability Awareness Bonds	96
Figure 41	There are potentially four channels through which CABs could redirect capital to green investments	99
Figure 42	Green bonds can potentially stimulate green investments by lowering the cost of capital	100
Figure 43	Literature provides mixed evidence on the existence and scale of greenium	101
Figure 44	New issue premia for non-financial European EUR bonds issued in September 2020	103
Figure 45	Green investment chain	106
Figure 46	Creating a positive feedback loop between the lending and borrowing activities of the Bank	107
Figure 47	Changing policy, market and institutional context.....	112
Figure 48	Costs and benefits of the EIB's Climate Awareness Bonds activity.....	114
Figure 49	Theory of Change for the EIB's Climate Awareness Bonds activity	120
Figure 50	Potential outcomes of greenium analysis.....	134
Figure 51	Results of the greenium analysis performed by Climate Bonds Initiative for Climate Awareness Bonds	135
Figure 52	Results of the greenium analysis for Climate Awareness Bonds.....	137
Figure 53	Evolution of greenium on Climate Bonds Initiative for Climate Awareness Bonds .	138

LIST OF TABLES

Table 1	Recommendations and management response.....	13
Table 2	Evaluation questions.....	24
Table 3	Evidence of greenium from recent primary market issuances.....	102
Table 4	A review of the strengths and weaknesses of green bond databases	129
Table 5	Summary of literature on greenium	131

ABBREVIATIONS AND ACRONYMS

AuM	Assets under management
CAB	Climate Awareness Bond
CBI	Climate Bonds Initiative
GBP	Green Bond Principles
EIB	European Investment Bank
EPOS	European Public Offering of Securities
ESG	Environmental, social and corporate governance
EUST	EU Sustainability Taxonomy
EU GBS	EU Green Bond Standard
EV	Evaluation division
FTE	Full-time equivalent
GHG	Greenhouse gas emissions
GPIF	Government Pension Investment Fund of Japan
HLEG	High-Level Expert Group on sustainable finance
IBRD	International Bank for Reconstruction and Development
ICMA	International Capital Market Association
IFC	International Finance Corporation
IFI	International Financial Institution
ISO	International Organisation for Standardisation
KPI	Key Performance Indicator
LGX	Luxembourg Green Exchange
MDB	Multilateral development bank
MFI	Monetary Financial Institution
NFRD	Non-financial reporting directive
NGEU	Next Generation EU
NPB	National Promotional Bank
PRI	Principles for Responsible Investment
SAB	Sustainability Awareness Bond
SBG	Sustainability Bond Guidelines
SDGs	Sustainable Development Goals
SEB	Skandinaviska Enskilda Bank
SLBP	Sustainability-Linked Bond Principles
SLLP	Sustainability-Linked Loan Principles
SPT	Sustainability Performance Targets
TEG	Technical Expert Group on sustainable finance
ToC	Theory of change
UFE	Utilisation-focused evaluation
UNEP FI	United Nations Environment Programme Finance Initiative

KEY TERMS

Asset management	Management of client investments by a financial services company.
Reference transaction size	Market participants widely consider €500 million to be the minimum offering size for a bond to achieve wide distribution, acceptable liquidity and reference status for pricing. See for example here .
Reference bonds	Reference bonds are characterised by reference transaction size, benchmark maturities, and regularity of distribution along the curve.
Blue Curve	<p>The Blue Curve reflects the EIB's overall funding cost in the capital markets across all currencies. The Blue Curve is a spread curve in EUR for bullet disbursements, i.e. the rate is expressed as a spread against 3M Euribor for the different maturities. The pricing of other currencies generally available (GBP, USD, JPY, CHF, DKK, SEK) as well as those available only for operations in the countries of origin (CZK, PLN, HUF) are based on derived spread curves, which reflect the Blue Curve conditions and the cross currency swap from EUR into the relevant currency.</p> <p>The Blue Curve is normally updated each month and approved by the Management Committee and the Board of Directors, unless specific market or internal operational needs require a more frequent revision.</p> <p>According to the EIB's loan pricing, the Blue Curve sets the base rate for the EIB's lending products pricing. Other elements (e.g. mark-up, risk pricing) are then added to come up to the final pricing.</p>
Bond issue	A sale of bonds to investors.
Broker-dealer	A firm that buys and sells securities both for clients and its own account.
Credit quality	The likelihood that the principal of a loan or debt security will be repaid.
Duration	The period expressed in years to recover the cost of a bond based on interest payments and return of principal.
ESG investing	Short for Environmental, Social and Governance, three factors that influence the sustainability and ethical effects of an investment.
External review/third-party review	Examination of the environmental claims of a green bond by an outside party, such as a consulting firm, ratings agency, accounting firm, or environmental group.
Green Curve	By analogy to the EIB's existing Blue Curve, which sets the base lending rates for the EIB's loans, the EIB could theoretically develop over time a Green Curve to set the base lending rates for the EIB's green lending activities eligible for CAB allocation.
Greenium	Greenium or green bond premium is defined here as the difference in yield between a green bond and an equivalent non-green bond. If this difference is negative, it implies that an investor is paying a premium (or higher price) to buy a green bond as compared to a non-green bond of the same issuer (which results in lower yield for the investor). This de facto means a lower cost of borrowing for the issuer.
Greenwashing	Labelling bonds that lack genuine environmental benefits as green or exaggerating a bond's green credentials.
Halo effect	Halo effect refers to the indirect value created by green bonds, for instance in the form of lower long-term financing costs, positive impacts on share

	prices, positive impact on the project's credit rating, attracting other investors, etc.
Index	An imaginary bond portfolio whose performance is tracked to serve as a benchmark for measuring the performance of similar bonds and bond funds.
Index eligibility	Bonds that meet the criteria for inclusion in an index based on such factors as issue size, credit quality, and maturity.
Institutional investor	An investment organisation, such as a pension fund or insurance company that trades securities in large quantities.
Issue size	The total value of a bond issue.
Issuer pay vs investor pay	Whether the green bond issuer or investors pay external review costs.
Liquidity	The ease with which an asset, or security, can be converted into ready cash without affecting its market price.
Maturity	The period of time until a bond's principal is repaid.
Premium	A green bond price higher than those of comparable non-green bonds.
Rating agency	Companies, such as Standard & Poor's, Moody's, and Fitch that evaluate bond credit quality.
Reporting	An issuer's release of periodic statements providing information on use of green bond proceeds.
Secondary market	Bond buying and selling among investors rather than purchases of bonds directly from issuers.
Second party opinion	An assessment of an issuer's green bond framework by an external reviewer.
Socially responsible investing	An investing strategy that considers social effects as well as financial performance.
Bid-offer Spread	The difference between the price of buying and selling a bond in the secondary market.
Taxonomy Regulation	Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment.
Thinly traded	A bond that trades infrequently on the secondary market.
Underwriter	A firm that manages a bond issue by buying bonds from an issuer and selling them to investors.
Yield	The income generated by a bond expressed as an annual percentage of the purchase price.

ACKNOWLEDGEMENTS

This evaluation was prepared by a team led by Charu Wilkinson (ICF subcontractor). The EIB's Operations Evaluation team was supported by external experts from ICF Consulting Services Ltd: Jerome Kisielewicz, Juliette Mathis, Julia Menge, Ralitsa Donkova and ICF subcontractor Gregor Paterson-Jones, an international capital market expert consultant. The team is also grateful to Boris Benko, senior evaluator, who provided occasional support on interview work.

The evaluation team is grateful to Andreas Hoepner (Full professor of Operational Risk, Banking & Finance) from University College Dublin and Quinn School of Business for peer reviewing the draft report and sharing valuable comments and insights.

The team would like to thank the management and staff of the European Investment Bank for their insights and information, and also for providing extensive interactions and feedback.

The team is also grateful to green bond market participants (issuers, investors, dealers, policymakers and standard setters and other stakeholders) for making themselves available for interviews.

The EIB's Operations Evaluation remains fully responsible for the contents of this evaluation report.

EXECUTIVE SUMMARY

In 2007, the European Investment Bank (EIB) kicked off the green bond market with the issuance of the world's first "use-of-proceeds" green bond, branded as a Climate Awareness Bond (CAB). While, originally developed to deliver on a capital market objective¹, the EIB's CAB activity has considerably expanded in both scale and ambition over time. The share of CABs in the Bank's total bond issuance has grown from 1% in 2007 to 10% in 2020; and it is expected to grow even further in the context of the EIB's Climate Bank Roadmap². Moreover, from 2015 onwards, it has become a strategic objective of the Bank to contribute to the growth of the green bond market by supplying liquid, benchmark-size transactions and developing market governance and standards³.

Since the EIB's inaugural CAB issuance, the green bond market has grown substantially in size and sophistication. Cumulative issuance of green bonds crossed the critical milestone of \$1 trillion in October 2020, marking a new era in capital markets. In recent years, dedicated market infrastructure has emerged for green bonds alongside an increasingly harmonised, well-defined and market-based set of guidelines and principles. The green bond market has expanded across geographies, currencies, sectors

and projects, and it continues to deepen – with repeat issuers, larger tranches and a growing base of institutional investors. As the market matures, it is growing offshoots. Recent years have seen the emergence of new types of use-of-proceeds bonds, such as social and sustainability bonds, which saw a major COVID-19-driven boost in volume this year, and new types of structured products, such as sustainability-linked or KPI-linked bonds⁴.

Notwithstanding these remarkable developments, the green bond market remains limited in size. Green bonds represented only 3.7% of total global bond issuance in 2019, making it difficult for central banks or regulators to ask market participants to build green portfolios. This remains one of the main hurdles to steering capital towards more sustainable investments.

There are indications that the situation may change in the future. The European Commission has announced that 30% of the Next Generation EU instrument will be raised via green bonds. Sovereign issuance is growing strongly, with Germany and the United Kingdom announcing their intention to develop a green benchmark curve over time. However, the greenness of sovereign bonds and the potential Commission bonds is a subject of debate^{5, 6}.

Nevertheless, there are several factors constraining the further

¹ To test the passporting mechanism of the EU Prospectus Directive for EU-wide retail distribution.

² EIB Group Climate Bank Roadmap 2021-2025 dated 11 November 2020. Available [here](#).

³ First introduced in the EIB Group Operational Plan 2015-2017 (page 15), and since then in subsequent operational plans. The objective to support the growth of the green bond market was also a key part of the September 2015 Board-approved EIB C-climate strategy.

⁴ These are bonds whereby the proceeds from the issuance are not ring-fenced to green or sustainable purposes (unlike "use-of-proceeds" green bonds or sustainable bonds) and may be used for

general or other purposes. Instead, the sustainability-linked bonds are linked to the performance of certain key performance indicators (KPIs) in achieving predefined sustainability performance targets. If the issuer fails to achieve the KPIs within the specified timeline, the penalty is a coupon step-up on the bond.

⁵ CEPS (2020), "Germany's inaugural green bond... not so green after all", 4 September 2020. Available [here](#).

⁶ Financial Times (2020), "Is Brussels green bond washing?", 19 October 2020. Available [here](#). See also Hertie School Jacques Delors Centre (2020), "Building EU green bonds that deserve their name", 19 October 2020. Available [here](#).

development of the green bond market. The most important ones are: (i) a lack of common language and standardisation, particularly in the field of impact reporting; (ii) a lack of suitable green projects and assets (constraining green bond issuance); (iii) a lack of liquidity; and (iv) the insufficient development of green securitisation in Europe.

Box 1 Evaluation approach and scope

This evaluation addresses a highly focused list of questions, reflecting the information needs of its primary intended users, i.e. notably the EIB Board, the EIB Management Committee and the Bank's operational services. These are as follows:

- (i) To what extent did the EIB contribute to fostering the development of the green bond market between 2007 and 2020?
- (ii) How do the EIB's green bond framework and activities compare with those of its peers?
- (iii) To what extent are the inputs proportionate to the benefits of the EIB's CAB activity?
- (iv) To what extent are the CAB and Sustainability Awareness Bond (SAB) programmes coherent with each other?
- (v) How can CABs be used to stimulate green investments?

Although the evaluation has been designed to meet the needs of the primary intended users, it is also relevant for external stakeholders, such as green bond investors, underwriters and book runners, other green bond issuers, green project promoters, regulators, etc.

Scope: while this evaluation primarily focuses on CABs, it also touches upon SABs. Specifically, the evaluation examines the extent to which these instruments are complementary, and whether there is any risk of market confusion or cannibalisation. Moreover, when assessing the cost of CAB activities, there was a slight overlap between CABs and SABs.

Against the above background, this evaluation examines the EIB's role in the green bond market between 2007 and 2020. Specifically, the evaluation provides an independent assessment of the EIB's activity in the market as an issuer as well as its role in developing market governance, standards and practices.

More importantly, the evaluation reflects upon the implications of the changing policy and market context

for the EIB's CAB activity going forward. This evaluation comes at a critical juncture of key institutional, policy and market developments. On the one hand, given the EIB's transition to become the EU climate bank, the EIB has set itself ambitious new targets for climate action and environmental sustainability lending (thus providing additional fuel for higher volumes of green bond issuance). Moreover, the EIB is expected to play a key role as a provider of green finance in the context of the European Green Deal. On the other hand, policy (such as the EU taxonomy) and market developments (such as the wider greening of financial markets) are changing the landscape of the EIB's funding and lending activities. In this context, this evaluation aims to provide evidence, insights and learning to guide the EIB's future CAB strategy and activity.

Box 2 Methods and data sources

This report is based on:

- In-depth review of relevant EIB documentation, e.g. CAB frameworks; newsletters; services, management and board documents.
- Literature review and research on the development of sustainable finance markets and specific topics, such as green bonds, greenium.
- Interviews with relevant EIB services.
- Interviews with the entire spectrum of market participants: underwriters/ book runners, issuers, investors, etc.
- Analysis of quantitative data including market data, CAB data.
- Quantitative analysis of greenium.
- In-depth comparative analysis with six peers.
- Data interpretation workshop with EIB staff to present, discuss and interpret the data collected, thus ensuring that findings are based on contextual understanding.

Major findings and conclusions

Role of the EIB in the development of the green bond market

The scale, regularity and diversity (multiple currencies and tenors) of the EIB's CAB issuance have contributed to market growth and depth. Over the 2007-2020 period, EIB CABs have raised the equivalent of €33.7 billion in 17 currencies. This has not only brought volume and currency diversity to the

market, but also played a role in attracting mainstream investors to the market. The EIB's CAB activity has had a demonstration effect by providing "proof of concept" as well as a growing volume of examples and references for new issuers. The EIB's approach to CABs has played an important role in educating potential issuers and investors, and in setting best practices.

Although the EIB's CABs cover a wide maturity spectrum (two to 30 years), market participants expressed mixed views on the Bank's contribution to creating a reference yield curve in currencies other than EUR and USD. And although the EIB is a major supplier of bonds in multiple currencies, tenors and coupons, supranational green bonds continue to be less liquid than sovereign bonds. This is, however, a general limitation that the EIB cannot address on a standalone basis.

The EIB has played a foundational and pioneering role in developing market governance and standards, advocating the establishment of a single EU Taxonomy for sustainable activities as a priority. The Bank was at the forefront of the development of the Green Bond Principles (GBPs) and has been a key contributor to the EU Green Bond Standard (EU GBS). The Bank is also actively involved in global efforts aimed at developing a common language in sustainable finance.

Market participants widely acknowledge and appreciate the EIB's technical knowledge and capital markets expertise. According to them, the EIB brought considerable technical knowledge and capital markets expertise to the discussions on market guidelines and standards (GBPs, EU taxonomy and EU GBS). Specifically, the Bank's inputs ensured that the design of the EU taxonomy and EU GBS had capital markets legitimacy.

The EIB has set the bar high for green bond transparency and disclosure standards. Dealers, investors and peer issuers recognise the EIB's CAB reporting practice as outstanding and best in class in terms of quality, level of detail and consistency. The EIB provides

use-of-proceeds and impact reporting on a project-by-project as well as a bond-by-bond basis, thus providing full transparency to investors and setting a benchmark for other issuers.

Due to its technical expertise and role in developing market guidelines and best practices, the EIB is also providing advisory services to other institutions (e.g. banks, cities) to support the implementation of market standards and procedures.

[The EIB's CAB activity in a comparative perspective](#)

The evaluation mapped and compared the EIB's green bond framework and activities with those of six other issuers. The aim of the exercise was to highlight good practice and identify areas for improvement for the EIB. The issuers chosen for the comparative analysis were not scientifically selected. The selection of peers was done in consultation with services. Given the objective of the exercise, the evaluation selected a mix of issuers that have received recognition and awards for their green bond activities: International Finance Corporation (IFC), ING, KfW, Iberdrola, SNCF Réseau and Region Île-de-France.

From the comparison, it emerges that the EIB's CAB activity and framework are among the best in class, with the EIB exemplifying best practice in its approach to management of proceeds, project selection, transparency, depth of reporting and external review, which correspond essentially to the core components of the GBPs.

However, there are some areas where the EIB's "peers" differ from the Bank, notably:

- Greater ambition in the use of green bonds as a source of financing (as measured by the share of green bond issuance in the issuer's overall funding profile). The scope of the assets or projects eligible for allocation of green bond proceeds varies across issuers in terms of sectors/activity (e.g. renewable energy, energy efficiency, biodiversity, etc.), type of expenditure (financing versus

refinancing) and asset type (direct lending versus intermediated lending). So far, in the absence of an unequivocal reference framework, it is difficult to directly compare eligibility criteria and green bond issuance volumes across issuers. The EU taxonomy regulation offers both the opportunity of an extension of eligibilities at the EIB and a more objective platform for their comparison with peers.

- Incorporation of environmental, social and corporate governance (ESG) criteria in the underwriter selection process alongside other criteria, such as arbitrage funding provided, quality of coverage, investor relations efforts, etc.
- Presentational aspects of impact reporting, such as data visualisation, showing the links with Sustainable Development Goals (SDGs), comparison between expected and actual impacts, and presenting aggregated data at sectoral level.

Coherence between CABs and SABs

In recent years, there has been considerable diversification and innovation in the sustainable debt market, as investors look for alternative ways to contribute to sustainability objectives. As previously mentioned, new types of bonds based on the use-of-proceeds model have emerged (social and sustainability bonds). There has also been innovation in financial structures with the introduction of sustainability or KPI-linked bonds and loans.

The proliferation of labels has led to concerns about market confusion and fragmentation, a view concurred with by most underwriters and book runners interviewed for this evaluation. In response, a number of new guidelines and principles have been developed by

the International Capital Markets Association (ICMA) to provide clarity.

Although COVID-19 has fuelled demand for social and sustainability bonds, this has not been at the expense of green bonds. Far from turning investors away from ESG investing, the COVID-19 pandemic seems to have heightened interest in green and sustainable portfolios, as is evident from issuance volumes and over-subscription levels of Green Social and Sustainability (GSS) bonds in 2020. Green bonds are, however, expected to continue to dominate the sustainable finance market due to strong investor interest in climate change issues.

The evaluation concludes that EIB CABs and SABs are complementary rather than competitive products. There is market appetite for both products, as evident from interviews with market participants, as well as data on CAB and SAB issuance and take-up. However, interviews also indicate that the distinction between the two products is not clear to all market participants, suggesting that there might be scope for improving communication on this issue. The new CAB⁷ and SAB frameworks⁸ explain the dividing lines between the two instruments more clearly, which should help address concerns regarding lack of clarity. Work is also underway to align CABs and SABs with the EU taxonomy for sustainable activities, which should provide further clarity to the market on the specific environmental and social issues addressed by the two products.

The costs and benefits of the EIB's CAB activity

Issuing green bonds involves additional costs to the EIB as compared to conventional bonds. These costs stem from the application of the four components of the GBPs⁹ that

⁷ EIB CAB framework for the year ended December 2019, document dated 31 July 2019. Available [here](#).

⁸ EIB SAB Framework 2018-2019, document dated 12 October 2020. Available [here](#).

⁹ The GBPs have four core components: 1. Use of Proceeds; 2. Process for Project Evaluation and Selection; 3. Management of Proceeds; and 4. Reporting.

have been designed to prevent “greenwashing”.

The additional running costs of issuing CABs are, however, estimated to be quite small. The annual additional running cost of CAB activity is estimated to be less than €1 million. On a relative basis, this represents roughly 2 bps of the EIB’s annual CAB issuance in 2019.

Moreover, such additional costs need to be placed within the perspective of the additional and wide-ranging benefits:

- CABs have enabled the Bank to tap into a wider pool of investors. CABs have attracted money from new long-term sustainable investors.
- Moreover, CABs have had a “halo effect” on the EIB’s conventional bond order book. CABs have attracted green investors to the EIB’s conventional bonds and contributed to diversifying and improving funding conditions across the whole debt portfolio of the Bank.
- The reputational benefits of issuing green bonds are so widely recognised that they are no longer considered additional benefits, but are rather one of the key rationales for an organisation’s decision to issue green bonds (e.g. improvement of issuers’ ESG rating).
- The level of over-subscription for CABs is often higher than for conventional bonds. This has economic benefits, such as spread compression and upsizing of transactions in response to strong demand. It also raises an interesting question as to whether green

investors should receive preferential treatment in a heavily over-subscribed order book. This issue is, however, beyond the scope of the present evaluation.

- There is some evidence of “greenium” on CABs in the primary market, but it is not systematic and conclusive. Primary market pricing of the latest EUR and USD CAB issuances evidences some prevalence of greenium (ranging from 5 to 10 bps)¹⁰. However, due to methodological constraints, the evaluation cannot establish the existence and scale of greenium with certainty.
- Better secondary market performance of green over conventional bonds (as measured in terms of financial performance or lower volatility) could, however, justify the acceptance by investors of a lower return on the primary markets.
- CABs also have an important strategic value for the Bank. The EIB’s capitals market expertise and its approach to CABs have enabled the Bank to strategically position itself at the forefront of key developments in the field of sustainable finance, thus providing it with a competitive edge vis-à-vis other market players.
- CABs (and SABs) have resulted in the overall improvement of the EIB’s business practices in three areas: (i) procedures for monitoring and reporting of (CAB and SAB) eligible loans; (ii) early implementation of the EU taxonomy for loan classification; and (iii) innovation in the EIB’s approach to capital markets¹¹.

¹⁰ “Greenium” or green bond premium is defined here as the difference in yield between a green bond and an equivalent non-green bond. If this difference is negative, it implies that an investor is paying a premium (or higher price) to buy a green bond as compared to a non-green bond of the same issuer (which results in

a lower yield for the investor). This de facto means a lower cost of borrowing for the issuer.

¹¹ Examples include: the first cross-border retail transaction distributed in all EU-27

- Finally, there is a clear public good dimension of the EIB's CAB activity, as green bonds are increasingly being recognised as an important tool for directing capital flows to green investments.

Overall, the evaluation concludes that the benefits of CABs far outweigh the additional costs, notably taking into consideration that some of the benefits have an important public good dimension and given the strategic value of CABs to the EIB.

Role of CABs in stimulating climate action and sustainable financing

CABs can play an important role in enabling the EIB to stimulate green/sustainable investments. While a greenium on CABs is not yet systematic and sizeable enough to act as a mechanism for incentivising green investments, there are signs that this may change in the future. Investors' changing perceptions of fiduciary duties, the higher transparency associated with green bonds and potential financial incentives at a policy level for sustainable finance instruments might in future translate into a consistent greenium for certain issuers. These developments need to be monitored.

Meanwhile, CABs can potentially be used as a mechanism for providing non-financial incentives to project promoters. By permitting the unequivocal identification of green projects (aligned with the EU taxonomy), CABs have value for borrowers (whose projects are only partly funded with CAB proceeds) in the form of an EIB "green stamp" and associated reputational benefits and halo effects, such as lower long-term financing costs, positive impacts on share prices, positive impact on the project's credit rating, attracting other investors, etc. As such, this EIB "green stamp" could be a distinctive

feature that acts as a catalyst for raising the "green ambitions" of projects and helping to increase the pipeline of green projects.

More widely, the EIB, via its role in the green bond market, is already enabling a shift of capital flows to sustainable activities at a systemic level. Green bonds have supported growth in other green finance tools and products by demonstrating mainstream investor demand for green (thus creating an incentive for the development of other sustainable instruments and asset classes) and developing tools and frameworks that can also be directly applied to other fixed income instruments and asset classes. Green bonds have also been catalysts for wider changes, such as engagement with policymakers, regulators and investors on sustainability issues. Specifically, the EIB's thought leadership, advocacy and activities have created broader support for green and sustainable finance.

Recommendations

As the financial sector pivots towards an increased focus on climate action, the Bank needs to be at the forefront. This has become even more pressing given the EIB's transformation into the EU's climate bank. To further cement the EIB's position as a leader in the green bond market and to help unlock the full potential of the green bond market, the evaluation makes the following recommendations:

Recommendation 1:

The EIB should continue to play a key role in further shaping the green bond market and fostering its development. The EIB's ambition to become the EU climate bank further reinforces the strategic value of CABs and the moral imperative for the EIB to continue playing a key role in the green bond market. The evaluation has identified three specific focus areas going forward:

countries with the EIB's inaugural CAB in 2007 (EPOS II); the development of the ECoop distribution format; and the

issuance of dematerialised bonds through TARGET2-Securities with payment in central bank money.

- i. The EIB should contribute to further **enhancing market liquidity** through regular reference-sized issuances. Furthermore, market participants expect the EIB to increase the overall volume of CAB and SAB issuance (both in absolute and relative terms) to provide continued visibility to the market and to meet the growing appetite for such bonds. As there is a continuous search for reference yield curves by investors globally, market participants expect the EIB to maintain a full reference curve in core currencies and issue in a range of currencies, including emerging market currencies.
- ii. The EIB should continue to **support standardisation initiatives**, particularly in the field of impact reporting. As the green bond market continues to grow and the landscape of issuers diversifies (beyond supranationals), market participants see a need for more consistency in the timing, format, metrics, methodologies and benchmarks used for impact reporting across issuers. Greater standardisation would (a) improve comparability between different green bonds, which is seen as even more important given the expansion of green bonds to new sectors and the emergence of new types of thematic bonds and (b) facilitate aggregation of impact at a fund level. While the EU GBS and the recently published ICMA Harmonised Framework for Impact Reporting¹² address some of these issues, market participants flagged a need for further effort in this direction (especially the need for harmonisation of GHG accounting methodologies and aggregation of data). Further actions in this area could, for example, include development of data science and fintech applications (e.g. blockchain) in green bond impact reporting. As the EIB is recognised and respected for its high standards in the field of impact reporting, it could play a role in pushing for more harmonisation in this field.
- iii. The EIB should continue to play a **strong educational role in the market**. Given the EIB's historical role in the green bond market, as well as its credibility and reputation, market participants are looking to the EIB to provide clarity on certain issues, such as the concept of transition in the context of the EU taxonomy regulation. Similarly, as part of its educational role, the EIB could contribute more actively to the development of an optimal third-party validation process (pre- and post-issuance) for different types of green bond issuers. The EIB could also clarify the complementarity of a use-of-proceeds bond and a KPI-linked bond. In an environment where new issuers and investors are considering entering the market, clarity on these issues would be beneficial for all market participants.

Recommendation 2:

The EIB should continue to lead the way in demonstrating the application of the EU GBS and the EU taxonomy and championing EU standards globally. There is an expectation amongst market players that the EIB will demonstrate the feasibility of fulfilling the requirements of the EU taxonomy and

12

<https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Handbook-Harmonized-Framework-for-Impact-Reporting-December-2020-151220.pdf>

the EU GBS. The Bank has already embarked on this path. For example, the 2019 CAB framework and the 2018-2019 SAB framework clarify the EIB's course of action regarding the EU taxonomy. Both documents set out the EIB's plan to "gradually align the CAB [and SAB] Internal Criteria with the EU Green Bond Standard." Through its role in the recently established Platform on Sustainable Finance, the EIB will continue to play a leading role in the further development of the EU taxonomy and its implementation. The EIB will be promoting the use of the EU GBS and the EU taxonomy by requiring that the green bonds it subscribes to (on the asset side) are aligned with the EU GBS¹³.

Recommendation 3:

The EIB should continue to invest in new product development and expand its catalogue of green products on both the assets and liabilities side of its balance sheet. As part of the Climate Bank Roadmap, the EIB has announced that its green debt offer, which is currently limited to the green energy loan product, would be further developed with: (i) a green loan product (which would have wider eligibility than its predecessor); (ii) a green bond product (including green hybrid bonds) as a loan substitute; and (iii) a technical assistance/advisory proposition enabling the EIB Group to support capacity building among potential first-time green debt issuers. This offer could be further enhanced with new green products, such as credit enhancement schemes and green securitisation products, which represent areas where there is a gap in the market and potential to have a major impact. For instance, the European Commission is considering different forms of incentives to support the issuance of green bonds meeting the requirements of the EU GBS, including the provision of co-financing or credit enhancement either at EU level or

at Member State level¹⁴. Through the InvestEU Fund and/or other EU financial instruments, the EIB could play a role in providing credit enhancement to issuers of EU GBS-compliant green bonds.

Recommendation 4:

The EIB should consider adapting some of its practices:

- Improving impact reporting for the adequate provision of information to investors in line with the logic of the EU Taxonomy Regulation, EU GBS, and applicable harmonised frameworks for impact reporting (GBPs), notably in the fields of project attribution to the EU's environmental objectives – "substantial contribution", "do no significant harm" and "minimum safeguards" – and in the form of summaries of allocation and impact data, and possibly, descriptions of additional secondary links with SDGs.
- Engaging with underwriters on ESG issues to protect the Bank's reputation, while promoting best practices in managing ESG risks. In light of this recommendation, it would be logical for the Bank to also consider engaging with banks on the assets side of its balance sheet in order to ensure consistency of practice.

Recommendation 5:

The EIB should monitor and measure the yield differential between CABs and its conventional bonds on a systematic basis. Improved pricing conditions can lead to increased demand for green loans, and therefore, more possibility for new CAB issuance.

¹³ The EIB is developing a green bond product (including green hybrid bonds) as a loan substitute. This will enable the EIB to participate in the green bond market not only as an issuer but also as a buyer.

¹⁴ 39% of respondents to the consultation stated that public guarantee schemes provided at an EU level and other incentives or alternative incentives for issuers will have a rather high or very high impact on the uptake of EU green bonds.

One way to incentivise green investments would be to transfer any CAB pricing advantage over conventional bonds (greenium) to green projects in the form of a lower cost of borrowing. This is not currently possible as (i) the EIB's present administrative setup (Blue Curve) excludes back-to-back financing; and (ii) the greenium on CABs is not consistent. However, as discussed above, this may change in the future. The EIB should therefore systematically monitor and measure any pricing advantage on CABs with the aim of transferring this on the lending side, should market and commercial considerations allow this in the future.

Meanwhile, the evaluation notes that there are alternative mechanisms through which green, i.e. taxonomy-aligned, investments could be financially incentivised (which could be applied in isolation or in combination). For example, the EIB could embed environmental and climate considerations into pricing. This would in principle favour more intensive capital allocation towards green projects, accelerating the EIB's transition to become the EU climate bank. This is, for example, in line with the findings of the Network for Greening the Financial System (of which the EIB is an observer), warning that a *"lack of recognition and pricing of environmental risks could lead to significant financial losses for corporates and FIs that provide financing to those exposed to such risks"*¹⁵. Where justified, the EIB's management could also consider further incentives to the pricing of loans in favour of green investments.

¹⁵ Network for Greening the Financial System (September 2020), "Overview of Environmental Risk Analysis by Financial

Institutions". Available [here](#).

MANAGEMENT RESPONSE

Overall management response to the Operations Evaluation report

EIB's Management Committee welcomes the comprehensive evaluation of the Operations Evaluation division (IG/EV), which is considered to be highly pertinent in the context of the EIB's role as the EU Climate Bank within the framework established by the [EU Action Plan on Financing Sustainable Growth](#) and developed in the EIB Climate Bank Roadmap 2021-2025. This EU Action Plan aims to scale up sustainable finance in order to reorient capital flows towards a more sustainable economy. Its first priority is the establishment of a shared classification of sustainable economic activities ("EU Sustainability Taxonomy" or "EUST") to facilitate sustainable investment. With this objective:

- The [EU Taxonomy Regulation](#) (EUTR), which entered into force in July 2020, sets the stage for the adoption of the EUST through delegated acts by the European Commission (EC) within the context of the Capital Markets Union.
- The [EUST](#) will provide a basis for the classification of any financial product used to finance sustainable economic activities (e.g. "green" loans or "green" bonds), establishing a single framework for the lending and funding activities of the EIB in this field.
- The [EU Green Bond Standard](#) (EU GBS) proposed by the European Commission's Technical Expert Group on Sustainable Finance requires allocation of EU Green Bonds to economic activities aligned with the EUST requirements.

Within this regulatory framework, EIB's Management Committee and Board of Directors have approved the following policy documents in November 2020:

1. [Climate Bank Roadmap 2021-2025](#), which states that EIB will:
 - align its tracking methodology for green finance with the EU Taxonomy Regulation (item 5.3);
 - reflect such alignment via extension of the eligibilities of EIB's green and sustainable bonds (item 2.49), i.e. CABs SABs;
 - gradually align CABs/SABs with the proposed EU Green Bond Standard (item 2.49)
2. [Climate strategy](#), which states that the EIB will:
 - continue to extend the scope of its CABs and SABs to cover additional activities, in line with the proposal for an EU Green Bond Standard;
 - support the green bond market in quantity and quality.

In anticipation of these developments, the EIB Finance directorate has created a "Sustainability Funding" team in its Capital Markets Department entirely dedicated to the development and issuance of CABs and SABs (09/2018). The team has:

- adopted new CAB/SAB documentation that foresees allocation of proceeds to EIB's lending activities aligned with the EU Taxonomy Regulation (04/2019);
- developed jointly with the EIB Projects directorate Initial Plans for CAB/SAB Product Development (30/04/2020);
- highlighted in the 2019 CAB/SAB Frameworks (07-10/2020) EIB's plan to gradually align the CAB Internal Criteria with the EU Green Bond Standard as retained and over time amended by the European Commission;
- illustrated to investors EIB's direction and progress on this path via timely issuance of CABs and SABs as well as communication thereon within the framework provided by the EUTR.

The Bank's projects directorate collaborates closely with the Finance directorate on CAB/SAB since inception. In March 2020, the Projects directorate established CAB and SAB coordination groups, which support the Projects directorate's dedicated dialogue with Finance directorate

further. Both coordination groups were closely involved in the development of initial plans for CAB/SAB product development and prepared extensions of CAB and SAB eligibility during 2020 in-line with these plans. Looking forward the two coordination groups will contribute to implementing the initial plans for CAB/SAB product development, in close collaboration with the Finance directorate.

As a consequence of a first extension of such eligibilities by Projects directorate, CAB/SAB issuance has more than doubled in 2020 vs. 2019 (to EUR 10.5bn from EUR 4.1bn), providing 15% of EIB’s funding program (from 7% in 2019). This has taken place at a turning point in the capital markets, in a period where the growing importance of sustainable investment is increasing the demand for these products.

The diagram below describes the *status quo* regarding CAB/SAB eligibilities. The Projects directorate has developed an EU Taxonomy Alignment Transition Plan described in chapter 5 of the Climate Bank Roadmap. This will enable the identification of EUTR-aligned green loans and other lending products– at a moment when the demand for these products is growing – and thereby also facilitate extension of CAB/SAB eligibilities. In 12/2020, the Finance Directorate adopted a formal Policy on CABs, addressing the recommendations of the Operations Evaluation in the context of the EUTR and the Climate Bank Roadmap and illustrating the progress made within the framework of the Initial Plan for CAB Product Development jointly developed by the Finance and the Projects directorates.

The synergy of these two blueprints is bound to create the conditions for further gradual increases of CAB/SAB issuance in line with the recommendations of the Operations Evaluation and growing investor demand. This in turn will consolidate EIB’s leadership in green bond space as well as its role as the EU Climate Bank.

CAB and SAB sustainability objectives – progressively aligning with the EU Taxonomy Regulation

Climate Awareness Bonds	Sustainability Awareness Bonds	
Environmental	Environmental (other than climate change mitigation)	Social
<ul style="list-style-type: none"> Climate Change Mitigation 	<p>So far:</p> <ul style="list-style-type: none"> Sustainable Use and Protection of Water and Marine Resources Pollution Prevention and Control <p>Addition on 11/01/2021 (One Planet Summit)</p> <ul style="list-style-type: none"> Protection and Restoration of Biodiversity and Ecosystems 	<p>So far:</p> <ul style="list-style-type: none"> Access to Water and Sanitation Natural Disaster Risk Management Access to Equitable and Inclusive Education Universal Access to Affordable Health Services Health Emergencies Response & Preparedness Capacity
<p><u>Eligible activities, so far:</u></p> <ul style="list-style-type: none"> Renewable Energy Energy Efficiency Research, development and deployment of innovative low-carbon technologies Electric rail infrastructure and rolling stock, and electric buses 	<p><u>Eligible activities, so far:</u></p> <ul style="list-style-type: none"> Water Supply and Management Wastewater Collection and Treatment Sustainable Forest Management 	<p><u>Eligible activities, so far:</u></p> <ul style="list-style-type: none"> Water Supply and Management Wastewater Collection and Treatment Flood Protection Education Health

Table 1 Recommendations and management response

R1 Recommendation 1

The EIB should continue to play a key role in further shaping the green bond market and fostering its development. The EIB's ambition to become the EU climate bank further reinforces the strategic value of CABs and the moral imperative for the EIB to continue playing a key role in the green bond market. The evaluation has identified three specific focus areas going forward:

- i. The EIB should contribute to further **enhancing market liquidity** through regular reference sized issuances. Furthermore, market participants expect the EIB to increase the overall volume of CAB and SAB issuance (both in absolute and relative terms) to provide continued visibility to the market and to meet the growing appetite for such bonds. As there is a continuous search for reference yield curves by investors globally, market participants expect the EIB to maintain a full reference curve in core currencies and issue in a range of currencies, including emerging market currencies.
- ii. The EIB should continue to **support standardisation initiatives**, particularly in the field of impact reporting. As the green bond market continues to grow and the landscape of issuers diversifies (beyond supnationals), market participants see a need for more consistency in the timing, format, metrics, methodologies, and benchmarks used for impact reporting across issuers. Greater standardization would (a) improve comparability between different green bonds, which is seen as even more important given the expansion of green bonds to new sectors and the emergence of new types of thematic bonds and (b) facilitate aggregation of impact at a fund level. While the EU GBS and the recently published ICMA Harmonised Framework for Impact Reporting address some of these issues, market participants flagged a need for further effort in this direction (especially the need for harmonisation of GHG accounting methodologies and aggregation of data). Further actions in this area could, for example, include development of data science and fintech applications (e.g. blockchain) in green bond impact reporting. As the EIB is recognised and respected for its high standards in the field of impact reporting, it could play a role in pushing for more harmonisation in this field.
- iii. The EIB should continue to play a **strong educational role in the market**. Given the EIB's historical role in the green bond market, as well as its credibility and reputation, market participants are looking to the EIB to provide clarity on certain issues, such as the concept of transition in the context of the EU Taxonomy Regulation. Similarly, as part of its educational role, the EIB could contribute more actively to the development of an optimal third-party validation process (pre- and post-issuance) for different types of green bond issuers. The EIB could also clarify the complementarity of a use-of-proceeds bond and a KPI-linked bond. In an environment where new issuers and investors are considering entering the market, clarity on these issues would be beneficial for all market participants.

Management response **Agreed**

EIB's Climate Strategy, approved by the Board of Directors in November 2020, states that the EIB remains committed to maintaining its developmental role, and will support the Green Bond market in quantity and quality to further spur its sustainable growth. A dedicated Sustainability Funding team has been created to issue EIB's green bonds and structure/coordinate their development with the input of all relevant services. The Projects directorate collaborates with external stakeholders on harmonised principles as far as technical aspects are concerned. Management draws attention to the following observations:

- **Enhancing market liquidity.** The current outlook for the demand of green and sustainable debt products is showing strong appetite from the investor community. The EIB Group operational plan 2021 highlights that, as the pace of disbursements to CAB and SAB eligible

projects is likely to increase in the coming years, in line with the EIB Climate Bank Roadmap, and helped by the enlargement of sector eligibility, the issuance of CABs and SABs can also be expected to increase.

“Accountability in the future disbursements” has been the key objective of CABs and SABs since EIB’s inauguration of the green bond market in 2007. For this purpose, allocations are only to new disbursements that take place after issue date. The actual flow of eligible disbursements, whose size and sequence are not known *ex ante*, determines the volume of CAB/SAB issuance in a given year.

First eligibility extensions by the Projects directorate in 2020 have permitted the Sustainability Funding team to double CAB/SAB issuance vis-à-vis 2019 – to EUR 10.5bn, or 15% of the total funding volume from 7% the year before. Further issuance growth will materialize at a pace determined by the extension of eligible lending activities, progress of the EUST-implementation within the EIB in the context of the Climate Bank Roadmap, and the actual flow of eligible disbursements.

- **Supporting standardization initiatives.** EIB’s Climate Strategy of November 2020 states that the EIB will continue engaging with capital market participants in the establishment of best market practices for the Green Bond segment, e.g. through the Green Bond Principles. In addition, the EIB will continue its work on the jointly developed (together with several other MDBs) format for Green Bond Impact Reporting, and pursue the harmonisation of impact reporting standards in the MDB/MFI/IFI community to promote the transparency and accountability of climate finance.

These efforts will reflect the experience gained by the EIB, whose action is aligned with the objectives of the EU, in the context of its implementation of the EU Taxonomy Regulation, as advised in recommendation 2 below.

- **Playing a strong educational role in the market.** The roadmap approved by the Board of Directors in November 2020 states that the EIB will also actively seek to transfer its knowledge to other potential green issuers, to help them develop and market products that meet the EU Taxonomy and so contribute to broadening and deepening the market for green finance (item 2.50).

Recommendation 2 addresses the EIB’s educational role within the context of the EU GBS. Inter alia, the European Commission will address the optimal third-party validation process based on its conclusions on the extensive feedback provided by market stakeholders on the EU GBS proposal during a consultation conducted in 2020. This will provide framework and guidance to EIB’s initiatives in this field.

The roadmap clarifies (item 2.50) that work is ongoing under EIB’s European Investment Advisory Hub within the Operations directorate to scope the needs and delivery options for a European green debt advisory platform. This is a comprehensive advisory programme to raise awareness, build capacity, and provide support to improve the quantity and quality of the issuance of green debt (bonds and loans) to finance climate action and environmental sustainability investments.

R2 Recommendation 2

The EIB should continue to lead the way in demonstrating the application of EU GBS and the EU Taxonomy and championing EU standards globally. There is an expectation amongst market players that the EIB will demonstrate the feasibility of fulfilling the requirements of the EU Taxonomy and the EU GBS. The Bank has already embarked on this path. For example, the 2019 CAB framework and the 2018-2019 SAB framework clarify the EIB’s course of action regarding the EU Taxonomy. Both documents set out the EIB’s plan to “gradually align the CAB [and SAB] Internal Criteria with the EU GBS”. Through its role in the recently established Platform on Sustainable Finance, the EIB will continue to play a leading role in the further development of the EU Taxonomy and its implementation. The EIB will be promoting the use of the EU GBS and the

EU Taxonomy by requiring that the green bonds it subscribes to (on the asset side) are aligned with EU GBS¹⁶.

Management response Agreed

The Finance and Projects directorates have jointly developed “Initial Plans for CAB/SAB product development and alignment with EU Green Bond Standard in the context of the Climate Bank Roadmap”. These plans detail the intended course of action 2021-2025 in three fields:

- alignment with the EU Sustainability Taxonomy;
- upgrade of CAB/SAB administration; and
- alignment of CAB/SAB frameworks with EU Green Bond Standard.

EIB is discussing with the external auditor of the CAB/SAB frameworks how to best structure these documents in order to describe the present state of EIB’s alignment with the EU Taxonomy Regulation and the EU GBS, to clarify what the EIB plans are to achieve and to enhance predictability and accountability of implementation.

In sustainability areas that are not yet covered by the EUST, EIB uses its own definitions within the spirit and logic of the taxonomy, and in line with the joint MDB harmonised climate finance tracking approach.

In this way, EIB has been able to facilitate COVID-related and other allocations by establishing technical screening criteria *ad interim*, a possibility admitted by the EU framework. This course of action sends a strong policy signal, since the EUST is scheduled for gradual development and will enter into force only over time. EIB is thus already establishing a reference market practice for both lending and funding, notably promoting EUTR-aligned disbursements via its Operations directorate (see management response to recommendation 3 below).

First steps of this process will be reflected in the 2020 CAB and SAB frameworks. These documents will be published in 2021 and audited by an independent supervised auditor with reasonable assurance (ISAE 3000). This provides solid market-rooted background for EIB’s contributions on taxonomy and green bond standard within the framework of the EU platform on sustainable finance and its international hub, the International Platform on Sustainable Finance (IPSF).

R3 Recommendation 3

The EIB should continue to invest in new product development and expand its catalogue of green products on both the assets and liabilities side of its balance sheet. As part of the Climate Bank Roadmap, the EIB has announced that its green debt offer, which is currently limited to the green energy loan product, would be further developed with: (i) a green loan product (which would have wider eligibility than its predecessor); (ii) a green bond product (including green hybrid bonds) as a loan substitute; and (iii) a technical assistance/advisory proposition allowing the EIB Group to support capacity building among potential first-time green debt issuers. This offer could be further enhanced with new green products, such as credit enhancement schemes and green securitisation products, which represent areas where there is a gap in the market and potential to have a major impact. For instance, the European Commission is considering different forms of incentives to support the issuance of green bonds meeting the requirements of the EU GBS, including the provision of cofinancing or credit enhancement either at EU level or at Member State level¹⁷. Through the InvestEU Fund and/or other EU financial instruments, the EIB could play a role in providing credit enhancement to issuers of EU GBS-compliant green bonds.

¹⁶ The EIB is developing a green bond product (including green hybrid bonds) as a loan substitute. This will allow the EIB to participate in the green bond market not only as an issuer but also as a buyer.

¹⁷ 39% of the respondent to the consultation stated that public guarantee schemes provided at the EU level and other incentives for issuers will have a rather high or very high impact on the uptake of EU green bonds.

Management response Agreed

The Climate Bank Roadmap states that current activity includes the development of green bond and green loan products. To respond to market demand for standardised and transparent green debt instruments (which will address the problem of “greenwashing”) and to increasing financing needs to fund green investment, the EIB green debt offer (which is currently limited to a green energy loan product) is being further developed to include a green loan product. This product allows for a wider eligibility in line with the new climate action and environmental sustainability criteria and will thus allow the EIB to issue green debt to support a significantly broader range of sectors and projects (not only those in the energy sector). The EIB is also developing a green bond product (including green hybrid bonds) as a financing instrument (i.e. as a loan substitute). This will allow the EIB to participate in the green bond market not only as an issuer but also as a buyer, which is a natural evolution after the EIB Group successfully pioneered a green bond instrument in the capital markets since 2007. It extends upon the EIB Group’s existing bond purchase initiatives, but now within the context of a green bond framework. For example, the new green debt products will promote the use of the EU Green Bond Principles and the Green Loan Principles and will also support the broader adaptation of EU taxonomy in the market as a framework to track and trace green investment. The products will target a wide range of potential issuers in terms of size and capacity undertaking eligible green investments including those linked to decarbonisation and green RDI. This will be complemented by a Technical Assistance/Advisory proposition allowing the EIB Group to further contribute to sustainable finance market development and capacity building among potential first-time green debt issuers. Furthermore, EIB will consider how the potential credit enhancement of Green Bonds currently being considered by the European Commission or by Member States might incentivise the issuance of Green Bonds when these concepts further materialise, whether through the InvestEU Fund or other EU financial instruments. Last but not least, green securitisation has indeed a potential role to play in unlocking finance for smaller Climate Action & Environmental Sustainability investments. One particular area where green securitisation might be useful is Energy Efficiency investment, the market for which is fragmented (e.g. achievement of residential energy efficiency targets will require large volumes of small-scale investment by property owners). As the execution of such structures is highly-complex and resource-consuming, the challenge for EIB is to generate scalable and replicable structures that deliver sufficient volume impact.

R4 Recommendation 4

The EIB should consider adapting some of its practices:

- Improving impact reporting for the adequate provision of information to investors in line with the logic of the EU Taxonomy Regulation, EUGBS, and applicable Harmonised Frameworks for Impact Reporting (GBP). Notably in the fields of project attribution to EU’s environmental objectives, “substantial contribution”, “do-no-significant-harm” and “minimum safeguards”, also in the form of summaries of allocation and impact data, and possibly, description of additional secondary links with SDGs.
- Engaging with underwriters on ESG issues to protect the Bank’s reputation, while promoting best practices in managing ESG risks. In light of this recommendation, it would be logical for the Bank to also consider engaging with banks on the assets side of its balance sheet in order to ensure consistency of practice.

Management response Agreed

Management draws attention to the following observations:

Improving impact reporting in line with the logic of the EU Taxonomy Regulation and the EU Green Bond Standard (EUGBS)

EIB’s *Climate Bank Roadmap 2021-2025* states that EIB will:

- align its tracking methodology for green finance with the EU Taxonomy Regulation (item 5.3);

- reflect such alignment via extension of CAB/SAB-eligibilities (item 2.49)
- gradually align CAB/SAB with the proposed EU Green Bond Standard (item 2.49)

The EU Green Bond Standard requires alignment of the use of proceeds with the EU Taxonomy Regulation. EIB has been the first issuer to amend CAB/SAB documentation accordingly.

The diagram below entails a comparison of the features of EIB’s CAB/SAB practice with the core requirements of the EUGBS as well as, for completeness’ sake, those of the Green Bond Principles governed by the International Capital Markets Association.

Regular allocation and impact reports as well as external verification of at least allocation reports are essential requirements of the proposed EUGBS. EIB’s reporting practice lives up to these requirements, as both allocation and impact reports are published in the yearly CAB/SAB Frameworks audited by a supervised independent external auditor - with Reasonable Assurance as per the International Standard on Assurance Engagements (ISAE) 3000.

The recommended improvements of impact reports for the adequate provision of information in line with the EU Taxonomy Regulation and the EUGBS are therefore being addressed in the context of the auditor’s assurance exercise and a related readiness assessment. First results will be made available in the 2020 CAB/SAB Frameworks that will be published in 2021.

	Green/Social Bond Principles	EU Green Bond Standard (EUGBS)	EIB CAB/SAB
Green projects	<ul style="list-style-type: none"> • Alignment with the GBP/SBP objectives/project categories 	<ul style="list-style-type: none"> • Alignment with the EU Sustainability Taxonomy (EUST) 	<ul style="list-style-type: none"> • EUST Transition Plan • CAB/SAB documentation already aligned • Gradual extension of CAB/SAB eligibilities
Green bond framework	<ul style="list-style-type: none"> • Description of issuer’s approach regarding process for project evaluation and selection and management of proceeds 	<ul style="list-style-type: none"> • Disclosure of issuer’s alignment with: the EU taxonomy; overall green bond strategy; project selection; methodologies and processes for allocation and impact reporting 	<ul style="list-style-type: none"> • CAB Framework since 2016 • SAB Framework since 2020 <p>(including both allocation and impact reports)</p>
Reporting	<ul style="list-style-type: none"> • Allocation and Impact reporting recommended 	<ul style="list-style-type: none"> • Allocation and Impact reporting mandatory 	
Verification	<ul style="list-style-type: none"> • Appointment of an external reviewer recommended 	<ul style="list-style-type: none"> • Issuers shall appoint an accredited external verifier • Verification applies: (i) to the Green Bond Framework and at least (ii) to the Allocation Reporting 	<ul style="list-style-type: none"> • KPMG’s Reasonable Assurance on CAB/SAB Framework covering framework, allocation and impact reports

Engaging with bank counterparts on ESG issues to protect the Bank’s reputation

The EIB Group Operational Plan 2021 states that the EIB maintains first-in-class ESG ratings from key international ESG rating agencies and strives to preserve this high level of recognition both through engagement with the agencies and its positive developments in areas with environmental and social impacts, both in its operations and internally. This approach naturally includes the dialogue with the intermediaries of our operations, be it on the assets or liabilities side.

The increasing policy- and market-relevance of ESG-aspects and –disclosures has enhanced EIB’s attention to the ESG-ratings of its bank counterparties. In the absence of comprehensive and commonly-accepted standards for ESG-ratings, however, different methodologies and practices prevail, limiting their comparability and conclusive use by EIB.

It makes therefore sense to develop EIB’s attention to ESG issues that catch spotlight in the market and to specifically address them in the dialogue with its bank counterparts on either the assets or liabilities side. Management will consider the possibility of uniform guidelines to secure coherent practice throughout the Bank, potentially building on PJ’s ongoing work on the development of ESG risk scores at counterparty level in the context of the Climate Bank Roadmap (item 5.31).

R5 Recommendation 5

The EIB should monitor and measure the yield differential between CABs and its conventional bonds on a systematic basis. Improved pricing conditions can lead to increased demand for green loans, and therefore, more possibility for new CAB issuance.

One way to incentivise green investments would be to transfer any CAB pricing advantage over conventional bonds (greenium) to green projects in the form of a lower cost of borrowing. This is not currently possible as (i) the EIB's present administrative setup (Blue Curve) excludes back-to-back financing; and (ii) the greenium on CABs is not consistent. However, as discussed above, this may change in future. The EIB should therefore, systematically monitor and measure any pricing advantage on CABs with the aim of transferring this on the lending side, should market and commercial considerations allow this in future.

Meanwhile, the evaluation notes that there are alternative mechanisms through which green, i.e. Taxonomy-aligned, investments could be financially incentivised (which could be applied in isolation or in combination). For example, the EIB could embed environmental and climate considerations into pricing. This would in principle favour more intensive capital allocation towards green projects, accelerating the EIB's transition to become the EU climate bank. This is, for example, in line with the findings of the Network for Greening the Financial System (of which the EIB is an observer) warning that a *"lack of recognition and pricing of environmental risks could lead to significant financial losses for corporates and FIs that provide financing to those exposed to such risks"*¹⁸. Where justified, the EIB's management could also consider further incentives to the pricing of loans in favour of green investments.

Management response Agreed

Management draws attention to the following observations:

Monitoring and measurement of the yield differential between CABs and EIB's conventional bonds on a systematic basis.

The Finance Directorate will define a methodology for the systematic monitoring of the yield differential between interpolated CAB- and conventional reference curves of the EIB in the secondary market - where such curves are available (presently, only in EUR). It will use public data sources and a verifiable fitting method for this purpose.

To be noted is that:

- CABs are "standard green use of proceeds bonds" (GBP-ICMA definition) for which the investors' risk exposure is to the Bank as a whole and not to the allocated projects; in a credit risk perspective, therefore, they are comparable with conventional bonds. This is likely to keep any potential greenium within boundaries;
- EIB makes use of currency transformation and maturity mix to lower its average cost of funds, which may eventually be lower than the cost of individual CABs however attractive they may be in terms of alternative cost in the currency and maturity of their issuance.

Embedding climate and environmental ("green") considerations into pricing

In addition to the potential greenium component of the funding cost, two potential components addressed by the EV-recommendation could be further considered for the determination of the

¹⁸ Overview of Environmental Risk Analysis by Financial Institutions, Network for Greening the Financial System (September 2020), available [here](#).

lending rate: (i) potential green transition component of risk pricing and (ii) any potential green strategic pricing incentives, subject to commercial and market considerations.

Potential green transition risk¹⁹ component of EIB's lending rate

As the EU climate bank, the EIB Group has been at the forefront of assessing and managing climate change and environmental risks. The Climate Bank Roadmap states that (Annex 3), in the course of its implementation, the existing methodologies for climate and environmental risk assessment will be further enhanced: the EIB will approach climate change and environmental risks at project, counterpart and portfolio levels. This may be reflected in the related risk-pricing components of the EIB's lending rate.

To be noted in this regard is that:

- Climate change and environmental risks include both physical risks and transition risks.
Physical risks originate from the physical impacts of climate change and are shared by both green and non-green projects.
- Transition risks are changes (e.g. changes in asset value or production costs) that stem from the rapid global shift of the economy and society to a resilient and low-carbon scenario, or from efforts to address environmental changes leading to policy changes, reputational impacts, and shifts in market preferences, norms and technology.

By definition, green transition risks affect non-green projects more than green projects and their consideration may improve the relative lending rate to green projects, all conditions equal. Such risks are currently captured through a number of separate processes, of which the core is the EIB's economic appraisal of a project. The Sustainability Proofing requirements under definition at European Commission level that accompany the InvestEU mandate are likely to require extension of the environment externalities presently considered in EIB's economic appraisal.

Potential green strategic pricing incentives component of EIB's lending rate

By following the non-profit-maximising principle, EIB already transfers a tangible FVA to its borrowers. Going forward, in line with market and commercial considerations, pricing related measures, as well as other financial incentives as described in Recommendation 3 above, may be considered to encourage selected green investment. It is recalled, that the pricing framework of the Bank is set by the Board and any changes to that framework would require a Board level decision.

¹⁹ It should be noted that Risk Management has developed screening tools scoring the exposure of counterparties to transition risk and physical risk. Currently, they result in standalone scores, but in the medium term these scores may be integrated in the credit rating, which would mechanically impact pricing. This would result in counterparties having a low/high transition risk (and/or physical risk) having a lower/higher risk pricing, respectively. Other penalising/incentivising measures related to the project itself could be taken on other bases

1. INTRODUCTION

1. **This evaluation reflects upon the EIB's activity in the green bond market as an issuer and its role in developing market governance, standards and practices between 2007 and 2020²⁰.** The evaluation comes at a rather opportune time for the Bank for reasons discussed below.
2. **One of the strategic objectives of the EIB is to support the development of the green bonds market²¹.** In 2007, the EIB kicked off the green market with the issuance of the world's first "standard green use-of-proceeds" bond, branded as a Climate Awareness Bond (CAB). Since then, the Bank has supplied the market with €33.7 billion of CABs in 17 currencies and across a range of maturities. Moreover, the Bank has played a key role in the market, not just in terms of issuance volumes, but also in developing market governance, standards and practices. This evaluation provides a comprehensive assessment of the EIB's contribution to the development of the green bond market between 2007 and 2020.
3. **While the green bond market has experienced significant growth and transformation, it is not yet mainstream.** Over the last decade, the green bond market has grown in both size and sophistication, backed up by an increasingly harmonised, well-defined and market-based set of guidelines and principles. The market has, however, not yet reached critical mass and it remains small relative to the conventional bond market. The EU Taxonomy, the EU Green Bond Standard (GBS) and various disclosure requirements are expected to remove some of the barriers to market growth, but in the process create new rules and requirements that the market players are still trying to fully understand. The wider greening of the financial system (discussed below) will also have far-reaching implications for the green bond market. This evaluation takes stock of these changes and examines what role the EIB could play in supporting the development of the green bond market going forward.
4. The evaluation comes at a critical juncture of the EIB's transition into the EU climate bank and fundamental shifts in the wider policy and market context. The EIB has set itself ambitious targets for climate action and environmental sustainability lending as part of its metamorphosis into the EU's climate bank. In parallel, the EIB is expected to play a critical role as a provider of green finance in the context of the European Green Deal. In addition, the EU Taxonomy (which defines which activities are sustainable), is changing the landscape of the EIB's lending and funding activities. More widely, financial markets are undergoing a fundamental transformation: market mindset and perspective is shifting on everything from risk assessment to capital allocation. There is a growing policy and societal push for integrating climate change considerations into the financial system. In the context of these developments, the evaluation reflects upon key strategic issues for the Bank, such as the potential contribution of CABs in supporting the implementation of the EU Taxonomy and in stimulating green investments.
5. **CABs constitute an important and growing area of the EIB's funding activity.** While CABs represented a relatively small share of the EIB's total bond issuance (<1%) until 2013, a turning point came in 2014 when the green bond market really took off. From 2014 to 2019, the EIB's annual CAB issuance ranged between €3.4 billion and €4.3 billion in volume, representing 6% to 7% of its total bond issuance. In 2020, CAB issuance more than doubled to €6.8 billion or 10% of the EIB's total bond issuance. CAB issuance is expected to grow further in scale and prominence

²⁰ The data used for H1 2020 is unaudited data.

²¹ First introduced in the EIB Group Operational Plan 2015-2017 (page 15) and, since then, in subsequent Operational Plans.

in the future, in the context of the EIB's Climate Bank Roadmap²² and the European Green Deal. The evaluation findings can be used to inform and guide the future scaling-up of CAB issuance.

6. The remainder of the document is structured as follows:

- Section 2 sets out the objectives and scope of the evaluation. It also provides an overview of the methodologies used to build a rich and robust evidence base for the evaluation.
- Section 3 discusses how the green bond market has evolved over time and provides an overview of relevant policy developments, by way of background and context for the evaluation.
- Section 4 assesses the role and contribution of the EIB in supporting the development of the green bond market.
- Section 5 examines the EIB's CAB framework and activity in a comparative perspective, with the objective of identifying and learning from good practices and innovations of other issuers.
- Section 6 looks at the costs and benefits of the EIB's CAB activity.
- Section 7 examines the coherence between CABs and SABs.
- Section 8 reflects upon the role of CABs in stimulating green investments.
- Section 9 presents the conclusions and recommendations of the evaluation.

7. The main Report is supported by a number of Annexes as follows:

- Annex 1 sets out the theory of change for the EIB's CAB activity.
- Annex 2 provides a list of references used for the evaluation.
- Annex 3 provides a comparative overview of the advantages and disadvantages of the different sources of green bonds data (Bloomberg, Climate Bonds Initiative and Environmental Finance).
- Annex 4 presents a detailed analysis of greenium undertaken within the framework of this evaluation.

²² Building on previous stakeholder engagement processes, the EIB launched a consultation process dedicated to the Climate Bank Roadmap on 6 March 2020. A series of webinars were organised to launch this consultative process, during which different stakeholders called on the EIB to build on its experience with CABs to launch an (even more) ambitious green bonds issuance programme to help finance, scale up and accelerate the transition to a low-carbon and climate-resilient economy. See the summary of discussions available [here](#).

2. EVALUATION OBJECTIVES, SCOPE AND METHODOLOGY

2.1 Evaluation serves primarily a learning purpose

8. **This evaluation is reflective in nature.** On the one hand, it provides a systematic, holistic and objective assessment of the EIB's CAB activities²³ between 2007 and 2020. On the other hand, it provides evidence, insights and learning to guide the future direction of the EIB's CAB activities, especially in the context of the EU Taxonomy and the EIB's metamorphosis into the EU climate bank.
9. **The evaluation serves primarily a learning purpose.** The main purpose of this evaluation is to support organisational learning by:
 - Clarifying the interconnections between the EIB's CAB activity (on the funding side) and the Bank's other functions, such as project evaluation and selection, and lending.
 - Unpacking the costs and benefits of CAB activity.
 - Building knowledge and evidence on the deeper strategic value of CABs that goes beyond the typical benefits normally associated with green bonds.
 - Developing a deeper understanding of how the wider policy and market developments (EU Taxonomy, greening of the financial system) are changing the landscape of the EIB's lending and funding activities.
 - Reflecting on the role that CABs could play in the EIB's transformation into the EU's climate bank and adaptation to the changes in market and policy context.
10. **Although the evaluation focuses on CABs, it also touches upon specific aspects of Sustainability Awareness Bonds (SABs), without evaluating SABs themselves.** Building upon the success of CABs, the EIB issued its first SAB in 2018 to extend the same approach from climate to further areas of environmental and social sustainability²⁴. By 2020, the EIB had issued SABs amounting to €4.9 billion or 5% of the EIB's total bond issuance. The evaluation examines the extent to which the two instruments are complementary to each other and whether there is any risk of cannibalisation or market confusion. Moreover, when costing CAB activities, there was a slight overlap between SABs and CABs.

2.2 The evaluation was designed to respond to the information needs of its primary intended users

11. **This evaluation followed a utilisation-focused approach²⁵.** Certain elements of the evaluation might be of interest to a broad range of stakeholders, such as green bond investors, dealers, green project promoters, regulators, etc. Moreover, the evaluation team engaged on an ongoing

²³ The evaluation only covers the EIB and does not include EIF activities given that the EIF does not borrow funds (including climate awareness bonds). It also does not cover the extension of CAB eligibility criteria.

²⁴ Investments financed by the EIB that substantially contribute to environmental and/or social objectives other than climate change mitigation are eligible for SAB allocations.

²⁵ Utilisation-Focused Evaluation (UFE), developed by Michael Quinn Patton, is an approach based on the basic premise that "evaluations should be judged by their utility and actual use". As such, evaluations should be planned and conducted in ways that enhance the likely utilisation of both the findings and of the process itself to inform decisions and improve performance. This requires an evaluator to identify stakeholders who have the most direct, identifiable stake in the evaluation and its results, and involve them at every stage of the evaluation process. Michael Quinn Patton, *Utilization-focused evaluation, 4th edition*. (Thousand Oaks, CA: Sage, 2008).

basis with the primary intended users of the evaluation at both operational²⁶ and strategic²⁷ levels throughout all stages of the evaluation process:

- Evaluation design: a series of dialogues were organised with relevant EIB Management Committee members and services to determine the focus, scope and timing of the evaluation. A key output of these dialogues was a highly focused list of questions to be addressed by this evaluation (Table 2).
- Data collection: relevant EIB services were kept informed throughout the data collection process.
- Data analysis and interpretation: a data interpretation workshop was organised with the primary intended users to present, discuss and interpret the data collected. This workshop was followed by a series of one-to-one-meetings to clarify outstanding issues and to fill the remaining gaps in analysis. An Emerging Findings workshop was also organised to discuss the preliminary results of the evaluation.

Table 2 Evaluation questions	
Evaluation Question	Section of the Report
EQ1: To what extent did the EIB contribute to fostering the development of the green bonds market between 2007 and 2020?	Section 4
EQ2: How do the EIB's green bonds framework and activities compare with those of its peers?	Section 5
EQ3: To what extent are the inputs proportionate to the benefits of the EIB's CAB activity?	Section 6
EQ4: To what extent are the CAB and SAB programmes coherent with each other?	Section 7
EQ5: How can CABs be used to reorient capital flows to more sustainable activities going forward?	Section 8

Source: IG/EV

12. **The choice of specific research methods was based on the evidence needed to respond to the key evaluation questions.** An evaluation matrix was developed during the scoping stage of the evaluation. It set out the evidence required to address each evaluation question, the data sources and methods to be used for compiling the required evidence and the judgement criteria on which the evaluative conclusions would be based²⁸.
13. **Finally, a theory of change (ToC) was developed to provide a conceptual framework for EQs 1, 4 and 5.** The ToC describes and illustrates the “causal pathways” through which the EIB's CAB activities could contribute to the development of the green bond market, generate benefits for the Bank and channel capital towards more sustainable activities in the future. It is presented in Annex 1.

²⁶ Relevant services at the EIB: Finance Directorate, Operations Directorate and Projects Directorate.

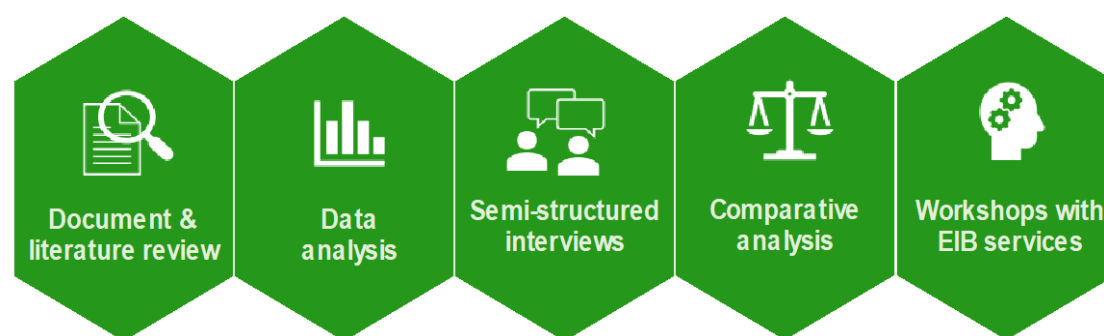
²⁷ Consultation involved relevant EIB Heads of Department and Directorate, the Management Committee and the Board of Directors.

²⁸ The evaluation matrix was presented in the Approach paper to the Evaluation.

2.3 Multiple methods and data sources were used to build the evidence base for the evaluation

14. **A combination of quantitative and qualitative methods and data sources were used to build a rich and robust evidence base for the evaluation and to provide the basis for triangulation.** Such an approach serves several purposes:
- Complementarity – elaborating or clarifying the results from one method with the findings from another method.
 - Development – using the results from one method to help develop the use of another method.
 - Expansion – extending the depth and breadth of inquiry by using different methods for different inquiry components.
15. Figure 1 provides an overview of the methods used in the framework of this evaluation. It is followed by a brief description of each.

Figure 1 Methods used for the evaluation



Source: IG/EV

16. *Document and literature review.* The document and literature review covered six main types of documentation:
- Official EIB documentation relating to CAB and SAB activities, such as relevant Management Committee notes, CAB/SAB frameworks, CAB/SAB newsletters, information on the operations supported with proceeds from CABs and SABs, CAB impact reports, external review reports, internal procedures, investor presentations, outputs of the EIB's collaborative efforts on developing a common language, articles written by EIB staff on green bonds and related topics, etc.
 - EIB documentation related to wider sustainable finance developments, e.g. information on the EIB's broader climate finance activities and technical assistance programmes, the Climate Bank Roadmap, information on ongoing developments, e.g. green debt concept paper, etc.
 - Relevant policies and standards, such as the latest EU climate change targets, European Green Deal, the EU Taxonomy, the EU GBS and other relevant market guidelines and standards (e.g. ICMA's Green Bond Principles, Climate Bonds Initiative standards, etc.).
 - Market research covering academic and grey material on green bonds and sustainable finance more broadly. Key sources of information were: Environmental Finance; GlobalCapital; Climate Bonds Initiative (CBI) surveys and reports; opinions, surveys and reports published by banks, rating agencies and asset managers.

- Documentation relating to the green bond activities of a select “peer group” of issuers for the purpose of the comparative analysis.
- Literature review on the topic of greenium.

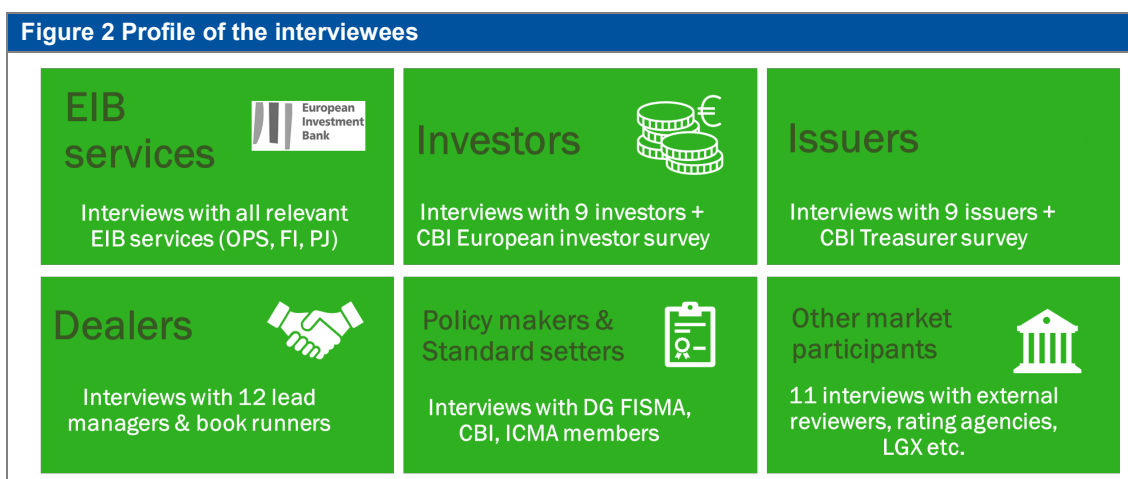
Annex 2 provides a full list of documents and literature reviewed.

17. *Data analysis.* The evaluation team used the Environmental Finance Database as a primary source in conjunction with a Bloomberg terminal (in a complementary manner) to extract historic data on bond issuance. This data was used to draw insights on market trends and issuance volumes, bonds’ characteristics (e.g. tenor, yield), number and types of issuers, number and types of investors, etc. The choice of data sources was informed by various factors, such as approach to identification of green bonds, coverage, depth of data available, costs and ease of use, etc. Annex 3 provides an assessment of the strengths and limitations of the different databases.

Most figures in section 3 are reported in USD, as the environmental finance data on which the analysis and figures are based is provided in the local currency and USD. The currency of comparison environmental finance provides is USD, and converting the value of all bonds into EUR would require the compilation of historical exchange rate data for more than 7 200 green, social and sustainability bonds issued since 2007. Such conversion is prone to errors and inconsistencies, and is best avoided if the database already contains a consistent currency of comparison. Moreover, most other providers of green bond data and analysis (e.g. Climate Bonds Initiative) and major financial news outlets (e.g. Financial Times) report their findings in USD. Conducting the CAB analysis in USD has ensured that it is comparable with other analyses of the green bond market.

The evaluation team also carried out a quantitative analysis of the costs and benefits of issuing CABs. This notably comprises a basic quantitative analysis of greenium, i.e. an analysis of whether there is evidence of a pricing advantage for the EIB when it issues CABs rather than similar conventional bonds. This analysis is presented in Annex 4.

18. *Semi-structured interviews.* In-depth interviews were conducted with EIB staff and over 40 market participants including investors (in CABs as well as other green bonds), green bond issuers, underwriters (lead managers and book runners), policymakers, standard setting bodies and other market participants. Interviews were conducted to a point of saturation, i.e. where additional interviews do not lead to the identification of new themes or concepts (see Box 3).



Source: IG/EV

Box 3 Sampling in qualitative research

Qualitative research sampling differs fundamentally from that of quantitative research sampling insofar as they pursue different objectives: qualitative methods are intended to achieve depth of understanding while quantitative methods are intended to achieve breadth of understanding. As such, the latter often seeks a representation of a large population and wants to know how often something occurs within the population, whereas the former is more interested in understanding why or how something occurs, which does not require the same quantifiable representation of the population being studied. Qualitative methods place primary emphasis on saturation (i.e. obtaining a comprehensive understanding by continuing to sample until no new substantive information is acquired).

Hagaman and Wutich (2016) provide some guidance on how many interviews are enough to identify new themes and saturate categories. A rule of thumb is that most themes are identified with 10 in-depth qualitative interviews; and no new themes are identified after about 20. Depending on how one defines it, the saturation of categories usually takes place within 15-20 interviews, and at most 40 interviews.

19. *Comparative analysis.* The CAB framework and activities of the EIB were compared with those of **six other green bond issuers**. The aim of the exercise was to compare and contrast the EIB's approach and activity vis-a-vis its "peers", with a view to highlighting good practice and identifying areas for improvement for the EIB. The issuers chosen for the comparative analysis were not scientifically selected. The selection of peers was done in consultation with EIB services. Given the objective of the exercise, the evaluation team selected issuers who have received recognition and awards for their green bond activities. Peers included in the comparative analysis included traditional and well-established issuers (other MDBs/NPBs, such as IFC and KfW) and other issuers with stronger differences compared to the EIB including ING (large bank), Iberdrola (corporate issuer), SNCF Réseau (government-related entity) and Region IdF (sub-sovereign issuer). The points of comparison included both quantitative indicators (data on issuance activity sourced from the Environmental Finance Database) as well as qualitative information extracted from documentation and interviews (e.g. information on use-of-proceeds and reporting practices). The information collected was put in perspective using some basic background information to identify when differences in practices could be attributed to differences in profiles. Information was collected on each issuer separately in a harmonised template before being compared and analysed.
20. *Workshops.* Four workshops were organised with EIB services: (i) *a theory of change workshop* to present the draft table of contents developed by the evaluation team (based on desk research and scoping interviews) to the EIB services for feedback and validation; (ii) *an approach workshop* to present the scope of the evaluation and design of the evaluation; (iii) *a data interpretation workshop* to collectively interpret the evidence collected from various sources, to identify any gaps and weaknesses in the analysis and add additional layers of insight to the analysis; and (iv) *an emerging findings workshop* to test and validate the preliminary results of the evaluation. This report reflects the discussions that took place at these workshops.

2.4 There are some caveats, limitations and methodological lessons

21. As with any study, this evaluation has some limitations and offers some methodological lessons. These are discussed below:
22. **Although an online survey targeting CAB investors was implemented, the number of responses received was too low for it to be useful.** The evaluation team launched an online survey targeting the EIB's CAB investor base to collect data on investors' preferences, views on factors constraining the growth of the green bond market, and the role that the EIB could play in supporting further development of the market. The survey was disseminated via the EIB's Investor Relations team to a sample of roughly 300 individuals from over 130 investor entities (representing about 75% of CAB primary market allocations over the period 2017-Q1 2020). It was open for a period of seven weeks (from 29 June to 15 August). Despite several reminders and attempts to promote the survey via LinkedIn, only 10 responses were received. Given the low number of responses, survey data was used as qualitative evidence, but cannot be deemed to

be representative of CAB investor views. The evaluation team also tried to set up telephone interviews with investors in an attempt to complement the online survey. However, only a limited number of investors agreed to participate in the interviews.

23. The evaluation would certainly have benefited from a broader range of investor perspectives. An analysis of methodologies deployed in other investor surveys seems to confirm that reaching investors for research purposes is a resource-intensive exercise. Offering a long window of time to answer the survey (three to four months), the option to fill in the survey also via phone and recruiting a network of relevant survey sponsors (e.g. associations of investors, stock exchanges) to promote the survey are practices which all seem to increase participation. Other factors that might contribute to an improved response rate to similar surveys in the future are: design of mobile surveys which can be completed on a smartphone and use of survey tools with a target audience builder, such as Survey Monkey Audience and Pollfish.

Box 4 Summary of methodologies from other investor surveys

CBI Green Bond European Investor Survey

Number of respondents: 44

Response rate: 45%

Window of time: five months (pilots during December 2018, survey administration between January and April 2019)

Mode: answers filled in during a telephone discussion (questionnaire sent in advance)

Survey implementation: CBI

Sponsors: Luxembourg Stock Exchange, Credit Suisse, Lyxor Asset Management and Danske Bank.

List of respondents available in an annex: yes

Link: [here](#)

BNP Paribas ESG Global Survey, 2019

Number of respondents: 347

Response rate: not available

Window of time: two months (between October and November 2018)

Mode: a combination of telephone interviews and online

Survey implementation: Longitude Research

Sponsors: none but Longitude Research is part of the Financial Times Group

List of respondents available in an annex: no

Link: [here](#)

The Global Impact Investing Network (GIIN)'s Annual Impact Investor Survey

Number of respondents: 294

Response rate: 19%

Window of time: three months (between February and April 2020)

Mode: fully online

Survey implementation: Longitude Research, part of the Financial Times Group

Sponsors: 20 sponsors [AVPN; The Bertha Centre for Social Innovation and Entrepreneurship;

The Catholic Impact Investing Collaborative; China Social Enterprise and Impact Investment Forum

(CSEIF); The Church Investors Group; The European Microfinance Platform; The Global Steering Group;

ImpactAlpha; The Impact Investors Foundation (IIF); Intellect; The Intentional Endowments Network

(IEN); Mission Investors Exchange; New Ventures (NV); Pensions for Purpose; Phenix Capital; The

Responsible Investment Association (RIA); The Responsible Investment Association Australasia (RIAA);

SIIF; Transform Finance]

List of respondents available in an annex: yes

Link: [here](#)

24. **Difficulties in quantifying the costs and benefits of the EIB's CAB activities.** The following limitations were found on the cost side:

- The EIB's cost accounting system is activity-based. It allocates overhead and indirect costs to certain activities as long as they relate to financing operations – asset side – but does not allow this to be done for funding activities – liabilities side. The alternative approach followed consisted of (1) identification of divisions involved in CAB activity; (2) identification of staff involved in CAB activity; (3) estimation of full-time equivalent (FTE) dedicated to CAB (staff involved in CAB times share of time devoted to CAB activity); (4)

estimation of staff costs linked to CAB; (5) addition of other relevant costs linked to CAB activity.

- Steps (2) and (3) proved quite difficult and are based on estimates derived from discussions with relevant services, in the absence of dedicated and uniformly filled-in timesheets. Such difficulties arose from the need to disentangle staff time costs from CAB and SAB as well as other activities.
- It was also not possible to put the EIB CAB costs in perspective with those of peers active in green bond issuance, since they are not reported to the public at large.

25. The following limitations were found on the benefits side:

- *Quantitative analysis of greenium.* To estimate greenium, the EIB's CABs should ideally have been matched with the EIB's conventional bonds with identical characteristics (i.e. issue date, maturity, size, yield, etc.). In practice, CABs often had no peers to be matched with (e.g. no comparable conventional bond issued around the same date as CAB). In that context, this evaluation used the results for the EIB's CABs included in the Green Bond Pricing in the primary market reports (covering six EUR and USD CABs issued during 2017-2019) of the Climate Bonds Initiative. The GB methodology for greenium analysis was applied by the evaluation team to extend the analysis to an additional four EUR CABs issued during 2013-2016 and one EUR CAB issued in 2020. The analysis indicated that greenium was not always present on the EIB CAB issuances so there was no attempt to extrapolate a lower cost of funding for the EIB's green bond issuance.
- *Certain other benefits were not quantified due to lack of time and resources.* While the evaluation attempted to quantify certain other benefits such as investor diversification and 'halo' effect, i.e. how many investors who have initially invested in the EIB's CABs have then invested in the EIB's other bonds (conventional or SABs), other wider reputational benefits such as press coverage, brand value, leadership role, employee and customer satisfaction were only assessed qualitatively, mainly through desk research and interviews. While in theory some of these benefits are quantifiable²⁹, the evaluation adopted a qualitative approach due to lack of time, resources and the COVID-19 context³⁰.

Finally, it is worth highlighting that the evaluation took place in a very fluid context both in terms of a rapidly evolving external environment (adoption of the EU Taxonomy and EU GBS, development of new sustainable finance products, etc.) and internal developments within the Bank (alignment to the GBS, broadening of the eligibility criteria). The evaluation team has taken this into account to the extent possible to avoid the findings quickly ceasing to be representative of the EIB's CAB activity. The findings of this evaluation will, however, need to be read in conjunction with any new developments that take place in the months following the publication of this report to have a full and accurate snapshot of the situation.

26. **Notwithstanding the above limitations, the evaluation provides a solid basis for supporting organisational learning and decision-making.** This is because:

- The interviews undertaken with market players were rich and insightful and were carried out to the point of saturation.
- The validity and reliability of the findings was enhanced through triangulation. Multiple lines of inquiry and evidence were used for answering each evaluation question (see section 2.3). This provided the basis for cross-checking the information collected from different sources, thus reducing bias. The process of triangulation also helped generate

²⁹ Tools such as GDELT can be used to assess the tone of press coverage of EIB CABs versus EIB conventional bonds or compared to the green bonds of other issuers. The role of CABs in enhancing employee satisfaction can be assessed via employee surveys while the role of CABs in enhancing brand value can be assessed via Yougov polls, for example.

³⁰ An employee survey would have placed extra burden on staff in a context where they were adapting to remote working and juggling work and childcare responsibilities.

richer, more nuanced findings by combining multiple perspectives and deepening understanding of an issue.

- Intended users were engaged throughout the evaluation process for feedback and validation.

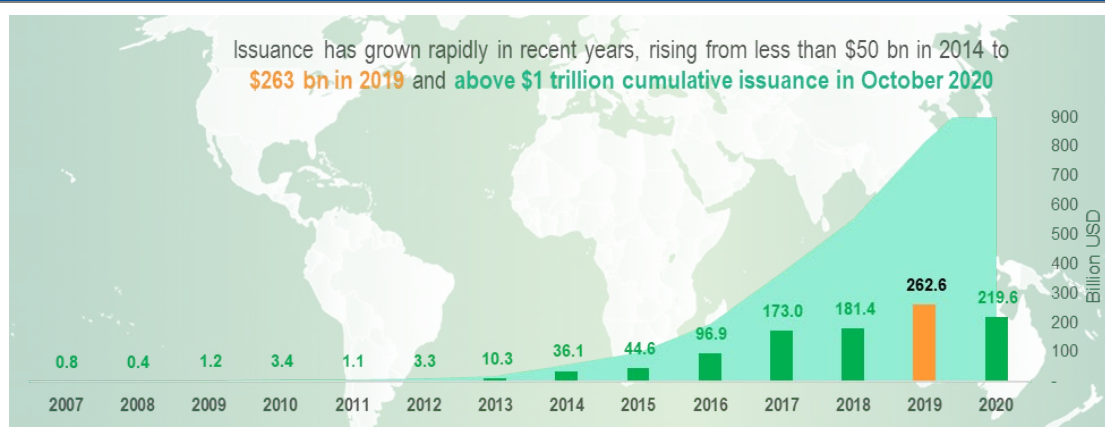
3. MARKET AND POLICY CONTEXT

27. This section describes the evolution of the green bond market as well as the latest policy developments to provide the context for the EIB's CAB activity and the analysis presented in subsequent sections.

3.1 Green bond market: a fast-growing, dynamic market

28. **The size of the green bond market has increased significantly in recent years.** Following the inaugural CAB issuance in 2007, global green bond annual issuance volumes remained small and insignificant for several years. A turning point for the market came with the sale of a \$1 billion green bond by the IFC in March 2013, closely followed by the first corporate issuance of green bonds. But the market really took off in 2014, following the launch of the Green Bond Principles (GBPs) by ICMA. The establishment of these principles helped create more transparency for investors and clarified requirements for issuers. This gave a strong impulse to both the volume and diversity of issuers (see below). Since then, the market has grown at an impressive rate. Global annual issuance increased from less than \$50 billion in 2014 to \$263 billion in 2019, while cumulative issuance crossed the critical milestone of \$1 trillion in October 2020.
29. **Despite the remarkable growth, green bonds are still a niche asset class.** In 2019, global green bonds represented just under 4% of total bond issuance. Outstanding green bond volumes (\$710 billion as of September 2020) continue to be small relative to conventional bonds (almost \$120 trillion). Moreover, in recent years, climate leaders have advocated that global green bond issuance needs to reach at least \$1 trillion per year (compared to \$263 billion in 2019) to achieve a substantial impact on climate change^{31, 32}.

Figure 3 Annual global green bond issuance volumes, \$ billion



Source: Environmental Finance Database extracted on 23/10/2020

³¹ Christiana Figueres, Hans Joachim Schellnhuber, Gail Whiteman, Johan Rockström, Anthony Hobley and Stefan Rahmstorf, "Three years to safeguard our climate", *Nature* 546, no. 7660 (2017), available [here](#).

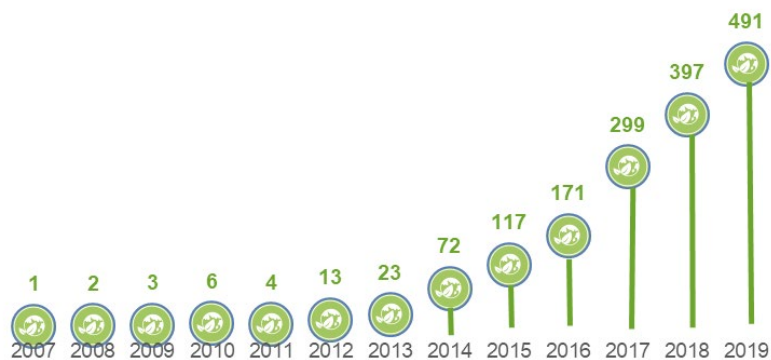
³² To enable the transition to a low-carbon economy, under a 1.5°C scenario, large-scale green investments are needed: estimates range from \$1.6 trillion to \$3.8 trillion (annually) between 2016 and 2050, for investment in supply-side energy systems alone. On top of this, the Global Commission on Adaptation (GCA 2019) estimates adaptation costs of \$180 billion annually from 2020 to 2030. Source: Climate Policy Initiative.

3.1.1 The green bond market continues to deepen, diversify and expand

30. **Alongside the significant increase in issuance volumes, the issuer universe has considerably broadened.** From 2007 to 2012, the supply side of the green bond market was dominated by small transactions issued mainly by supranational issuers and driven by reverse enquiries (see Figure 5). Municipalities and local governments joined the market with the first-time issuance by Île-de-France (the Paris region, France) in 2012 followed by Gothenburg (Sweden), Massachusetts (USA), State of California (USA), Province of Ontario (Canada). In 2013, the first corporate issuers (such as EDF) entered the market. In parallel, agency issuers (e.g. Fannie Mae, NRW Bank) and financial institutions (e.g. Crédit Agricole, Bank of America) started to become more active in the green bonds market. Sovereign green bond issuance started in December 2016 (with Poland issuing the first ever sovereign green bond). France followed in early 2017 with its €14.8 billion issuance and immediately became the largest green bond issuer that year³³. Sovereign issuances received a boost in 2020 with Germany's debut issuance of €6.5 billion. Corporates and financial institutions have, however, dominated the market in recent years (see Figure 5). These two groups have accounted for almost 60% of global annual green bond issuance since 2017. On the corporate side, recent years have seen the entry of utilities and transport companies in the market as well as first issuances from the telecom sector, healthcare companies, pharmaceutical and chemical companies. There is a huge appetite among investors for corporate issuance. In CBI's 2019 Green Bond European Investor Survey, 93% of respondents expressed a preference for corporate issuance (particularly industrials, energy and utilities, consumer discretionary, and materials³⁴) followed by development banks (76%) and sovereigns (57%).

Figure 4 Number of green bond issuers

There has been a considerable increase in the number of issuers participating in the market



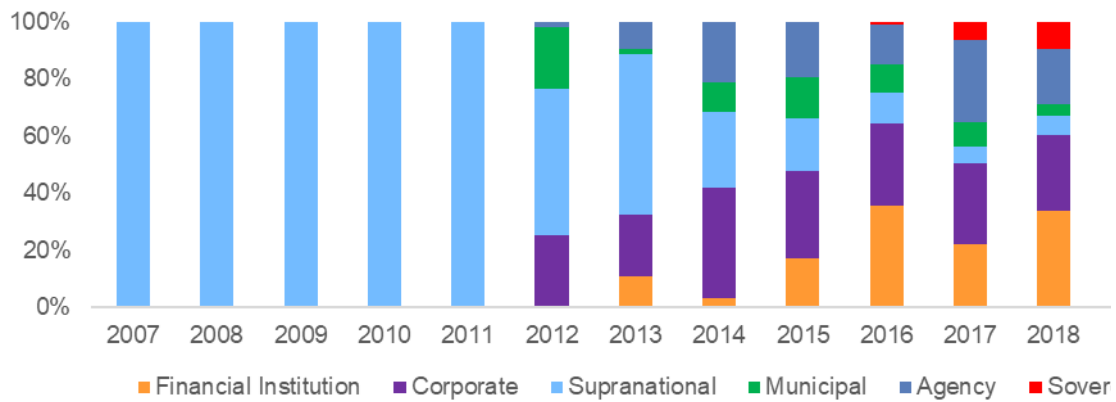
Source: IG/EV own computation based on Environmental Finance Database extracted on 23/10/2020

³³ Agence France Trésor, "Green OAT", accessed 1 October 2020 available [here](#)

³⁴ Industrials (e.g. transportation, machinery, services); Utilities (e.g. electricity, gas, water); Consumer Discretionary (e.g. automotive, retail, electronics); Energy (e.g. oil and gas, but for renewable energy projects); Materials (e.g. metals and mining, chemicals, forestry products, construction materials).

Figure 5 Evolution of issuer type, 2007-2020 (Oct), share of annual issuance by type of issuer

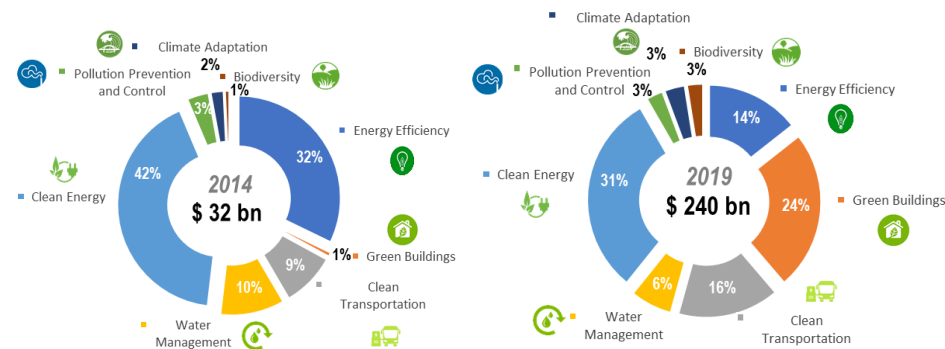
Suprationals have historically dominated the GB space, but **banks** and **corporates** have become significantly more active in recent years



Source: IG/EV own computation based on Environmental Finance Database extracted on 23/10/2020

31. **The diversification in green bond issuers is mirrored by a similar trend in the use of proceeds for green bonds.** The variety of purposes funded by green bonds has expanded beyond clean energy (renewables) and energy efficiency to green buildings and clean transportation projects. Green buildings have seen the biggest growth in relative terms in recent years (see Figure 6). As per CBI’s 2019 European Investor Survey, there is currently more demand for bonds financing mitigation over adaptation sectors, although overall there is strong interest in all use-of-proceeds categories. Within mitigation, energy is most popular (96%), followed by transport (87%) and buildings (85%). Within adaptation, water (77%) and wastewater management (68%) were cited most often. However, only 38% of respondents are investing or intend to invest in adaptation and resilience measures, mainly due to lack of opportunities and/or lack of clear metrics.

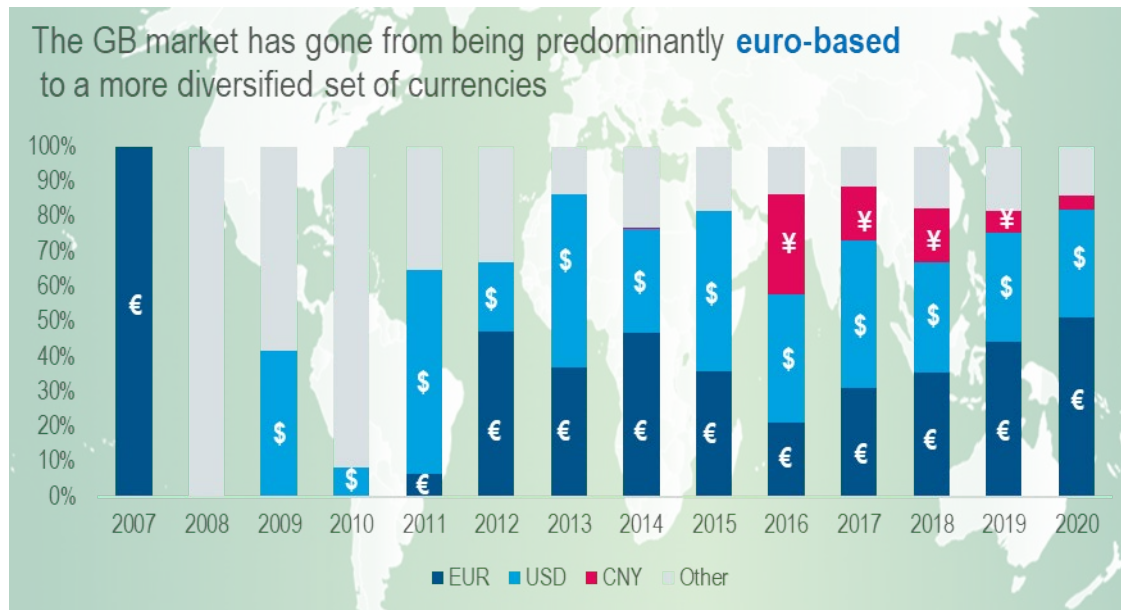
Figure 6 Diversification of use of proceeds



Source: IG/EV own computation based on Environmental Finance Database extracted on 23/10/2020

32. **The green bond market has gone from being predominantly euro-based to a more diversified set of currencies.** Between 2011 and 2015, green bonds were mostly issued in hard currency (EUR and USD) in order to attract established investors. Since 2016, issuances in CNY have also become a significant share of the total amount of green bonds issued globally each year. And in a sign of increasing market maturity, deals in emerging market currencies are starting to take off (e.g. MYR, MXN, ZAR, HUF, BRL, RUB). So far, green bonds have been issued in 38 different currencies around the world.

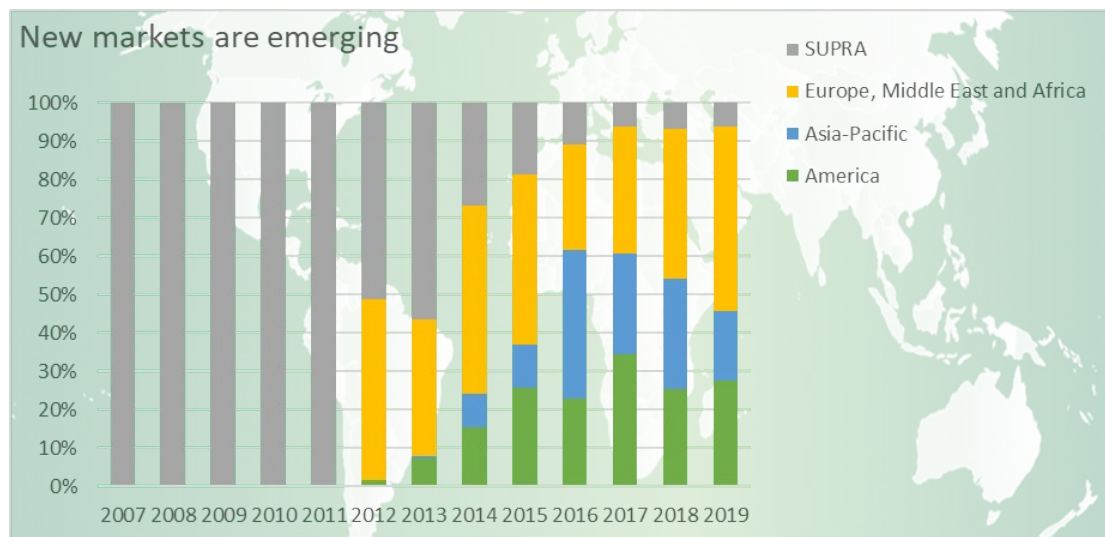
Figure 7 Share of annual green bond issuance by currency



Source: IG/EV own computation based on Environmental Finance Database extracted on 23/10/2020

33. **Europe continues to lead, but new markets are emerging.** Geographically, Europe remains the largest market for green bond supply; however, between 2016 and 2019, issuers from the United States and China collectively accounted for a third to half of global green bond issuance (see Figure 8). In CBI’s 2019 European Investor Survey, most investors said that they would like to increase their holdings in emerging market sovereigns, but at the same time 65% of respondents highlighted currency as a restriction with many of them being limited to USD and EUR, G7, or G10.

Figure 8 Share of annual green bond issuance by geography

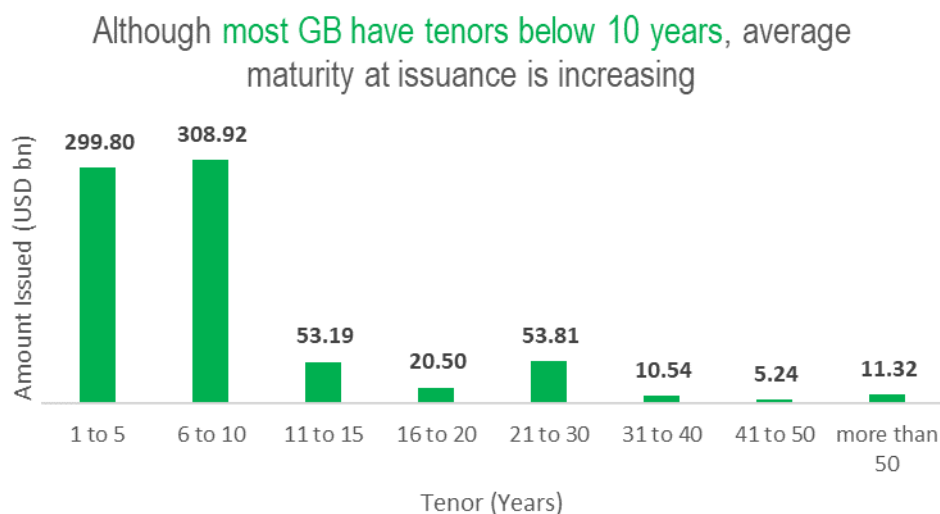


Source: IG/EV own computation based on Environmental Finance Database extracted on 23/10/2020

34. **Around one-fifth of total green bond issuance is long-term (10 years or longer).** Based on cumulative issuance volumes until 2019, the most common tenor is one to ten years. However, the use of longer tenors has been increasing in recent years. In 2019, there was a significant

change in the distribution of bond tenors, essentially away from shorter terms towards longer ones³⁵. In interviews, some investors expressed a preference for very short tenors, given the current low/negative interest rate environment.

Figure 9 Cumulative issuance volumes by tenor

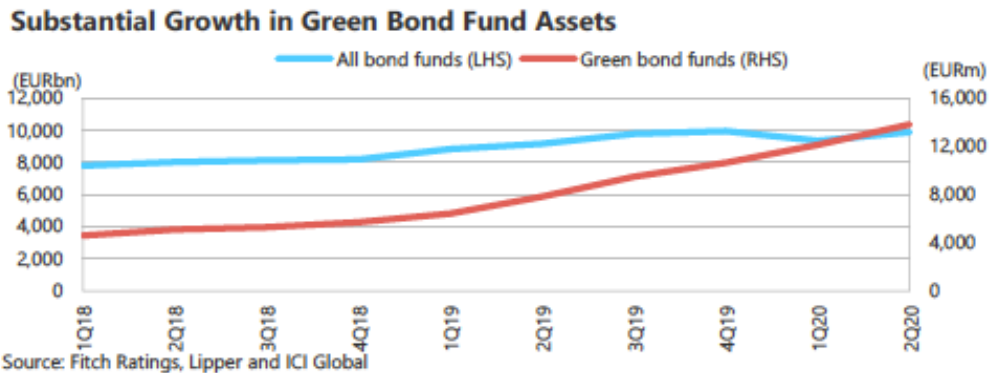


Source: IG/EV own computation based on Environmental Finance Database extracted on 23/10/2020

35. **The rapid growth in this market is being driven by a growing pool of investors.** There is growing demand for green bonds from asset owners, such as pension funds, sovereign wealth funds and corporate treasuries. A wider range of investors including smaller investors and major fixed income houses, such as BlackRock and Pimco are entering the market. Many investors buy green bonds as part of their general asset allocation. However, demand is particularly strong from investors focused on sustainable and responsible investing (SRI) and those who incorporate environmental, social and governance criteria as part of their investment analysis.
36. **The number of active green bond funds is increasing rapidly.** Many asset managers around the world have established dedicated green bond funds, e.g. Amundi, Allianz, AXA, BlackRock, Calvert, Mirova (Natixis), Nikko, SEB and State Street. Fitch counted 63 green bond funds worldwide with €13.8 billion in assets under management (AuM) at the end of 1H20. As per data compiled by Fitch, 38 funds were launched during 2016-19. Fitch estimates that green bond funds hold only around 2% of total green bonds outstanding and green bond fund AuM accounts for just 0.14% of total bond fund AuM.

³⁵ CBI State of the Market Report, 2019

Figure 10 Assets under management – green bond funds versus all bond funds, € billion

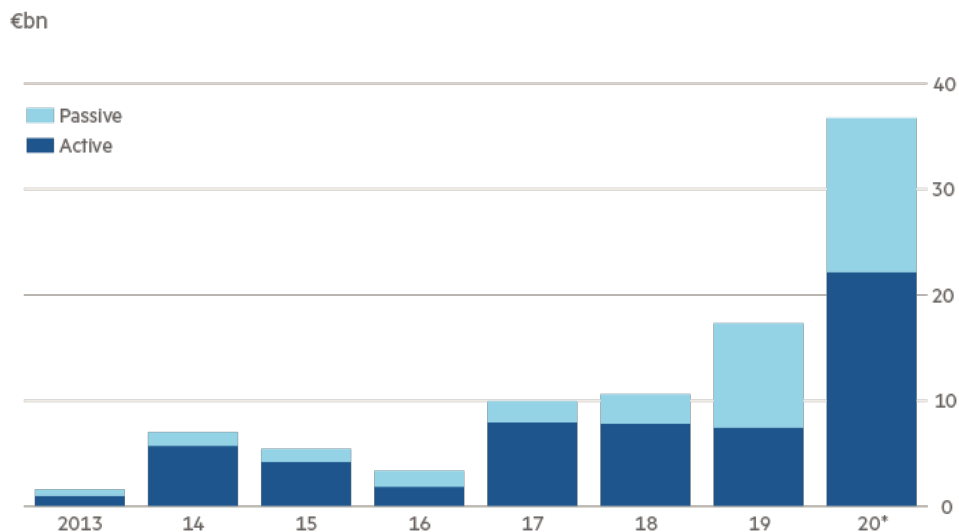


Source: Fitch Ratings Global Green Bond Fund Dashboard: 1H20, 24 September 2020

37. **Record money has flowed into climate-aware funds this year.** New money going into climate-aware funds totalled nearly €37 billion out of total sustainable fund inflows of €134 billion between January and September 2020. The previous year, this proportion was just 15 per cent, with flows significantly lower at €12 billion.

Figure 11 Annual flows to climate-aware funds, € billion

Climate change funds: annual flows



* Figure covers flows to Sep 30

Source: Morningstar

© FT

Source: Financial Times

38. **As a further sign of market maturity, dedicated green bond market infrastructure has emerged in recent years.** Since 2015, stock exchanges across the globe began having a dedicated section for green and/or sustainable assets. The Oslo, Stockholm and London stock exchanges were pioneers and most of the exchanges with this dedicated section are still based in Europe. Luxembourg is home to the first green exchange. Mexico, Japan and South Africa are examples of non-European countries where there is a dedicated green section in the stock exchange. At present, 17 stock exchanges around the world have, or plan to introduce, green

bond platforms³⁶. Bank of America Merrill Lynch, Barclays/MSCI, Standard & Poor's, Solactive and ChinaBond have developed green bond indexes³⁷, providing investors with a means to benchmark their performance. On 30 November 2020 the Luxembourg Stock Exchange (LuxSE) and Solactive announced the launch of the Solactive LGX Green Bond Impact Index, composed of a selection of green bonds listed on LuxSE. Analytic support from Bloomberg, Environmental Finance, CBI and other data providers is also becoming more sophisticated.

39. **There is also an evolving ecosystem of verifiers and assurance providers who examine process and environmental integrity.** Green bond issues often come to market supported by an external review from specialist assessors, providing independent environmental due diligence for the benefit of investors. External reviews and opinions are also important for both index providers and securities exchanges as they help determine the eligibility of bonds for green indices and listings. This external review can take several forms: (i) third party assurance: verification or certification that green bond issuance is aligned with market standards (such as the Climate Bond Standards or GBPs); (ii) green bond ratings – several agencies including Moody's and S&P have developed green methodologies to assess bonds on their greenness; and (iii) a second party opinion on the issuer's green bond framework, analysing the "greenness" of eligible projects/assets (providers include ISS-Oekom, Sustainalytics, CICERO, etc.). Overall the external review landscape is fragmented, with a variety of approaches and methods, and issues with quality control and potential conflicts of interest³⁸. Currently, the lack of accreditation of external verifiers is a major issue. The EU Technical Expert Group on Sustainable Finance has recommended moving from the current market-based regime to a centralised accreditation regime overseen by the European Securities and Markets Authority. Such a centralised regime would establish a unified approach and be in line with the authority's comparable role in relation to credit rating agencies.

3.1.2 The green bond market is expected to continue its strong growth in the future

40. **On the demand side, ESG is becoming a central pillar of investors' approaches to financing.** In Europe alone, PwC expects ESG mutual fund assets to reach between €5.5 trillion and €7.6 trillion by 2025. This would represent between 41% and 57% of the forecast €13.4 trillion European mutual fund assets by 2025. In 2019, PwC said ESG assets accounted for around €1.66 trillion (\$1.9 trillion) – or 15% – of the total €11 trillion in European fund assets. According to the PwC Report, ESG represents the "largest fundamental change" in the investment landscape since the introduction of exchange-traded funds (ETFs), and will constitute the "fastest growing area within the industry this decade"³⁹.
41. Apart from the forecast growth in ESG mutual fund assets, the value of global assets already applying ESG data to drive investment decisions is estimated to have grown to \$40.5 trillion in 2020 (source: PI online). The value of assets under management following global sustainable investment approaches (including ESG principles) is expected to reach \$45 trillion by the end of 2020 according to JP Morgan⁴⁰.

³⁶ M. Almeida, M. Filkova, C. Harrison, and P. Settle, "Green Bond European Investor Survey", Climate Bonds Initiative, November 2019, available [here](#).

³⁷ GBP Databases and Indices Working Group, "Summary of Green Fixed Income Indices Providers", ICMA Group, accessed [here](#).

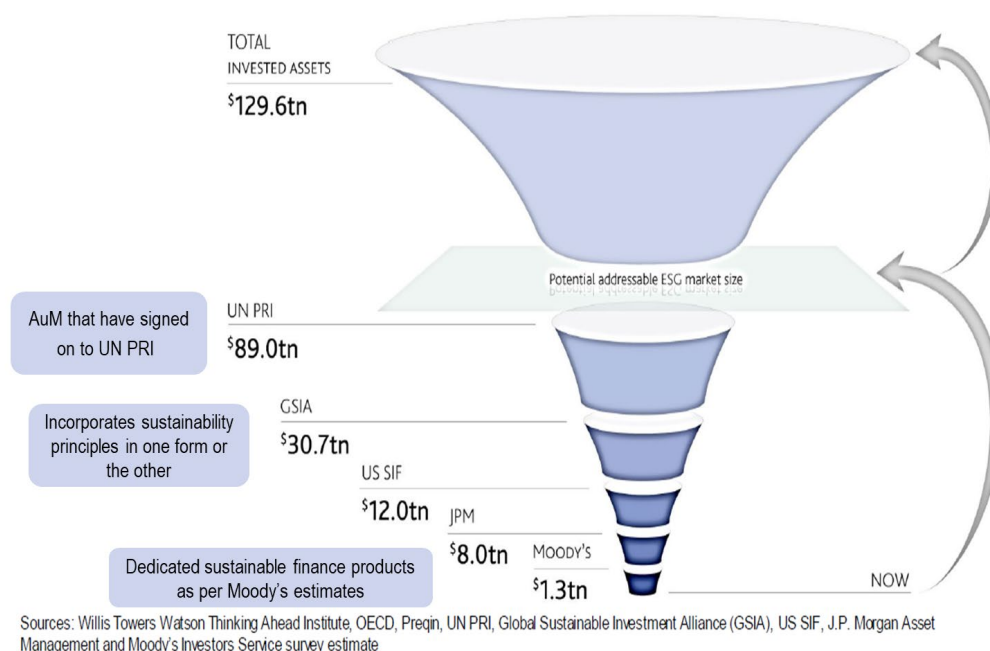
³⁸ EU Technical Expert Group on Sustainable Finance, "TEG Report: Proposal for an EU Green Bond Standard", European Commission, June 2010, available [here](#).

³⁹ PwC (2020), "2022 – The growth opportunity of the century", accessed 31 October: [here](#).

⁴⁰ Neufeld, Dorothy, "New Waves: The ESG Megatrend Meets Green Bonds", Visual Capitalist, 11 August 2020, available [here](#).

42. **Investor interest in responsible investing continues to grow steadily.** According to PRI, nearly 2 500 signatories and almost \$90 trillion of assets under management have signed up to the PRI principles of investing. Many fund managers have begun to see ESG considerations as part of their investment obligations in line with fiduciary duty. In the 2020 Responsible Investing Survey by RBC⁴¹, 60% of the investors stated that they incorporate ESG factors into their fixed income portfolios. The main reasons cited by respondents for doing so were: fiduciary responsibility (58%) and to lower risk, increase return (56%). 40% of the respondents believe that there is insufficient fixed income product offerings that incorporate ESG factors, highlighting the gap between demand and supply decisions.

Figure 12 A growing number of investors are incorporating environmental, social and corporate governance considerations in their investment



Source: Adapted from Moody's sustainable finance report dated 16 November 2020

43. **Growing concern over climate change has resulted in rising interest in green finance, including from retail investors.** Millennial investors are becoming an increasingly important demographic, and are much more likely to consider ESG factors when making investment decisions. There is also demand from high net worth individuals seeking to merge their philanthropic and investment interests.
44. **Potential greening of monetary policy.** Central banks around the world are examining the different ways in which they could use monetary policy to tackle climate change. One way they could do this is by orientating their asset purchase programmes towards green bonds, sustainability bonds, or assets that meet minimum ESG standards. If central banks decide to go down this route, it will significantly boost demand for green bonds (but in tight supply conditions

⁴¹ RBC Global Asset Management (RBC GAM), "Responsible Investing Survey: Executive Summary", RBC GAM, 2020, accessed 1 October 2020 [here](#). The survey was distributed to P&I Research Advisory Panel members, members of the Pensions & Investments database as well as a sample provided by RBC. Geographical coverage: Canada, Europe, Asia and the United States. By the closing date of the survey, 809 returns had been received.

could lead to crowding out of other investors) and encourage issuance as it would improve access to debt capital markets and liquidity. The European Central Bank's President Ms Christine Lagarde recently indicated that the Bank will consider abandoning the market neutrality principle underpinning its corporate bond purchases to offset the under-pricing of climate risk in financial markets. The European Central Bank owned more than €236 billion of corporate bonds at the end of September 2020 as part of its €3.4 trillion asset purchase programme⁴².

45. **On the supply side, first-time issuers are starting to enter the market, e.g. Germany, other sovereigns and large corporates (e.g. Alphabet).** Sovereign green bonds are expected to play a key role as an increasing number of governments assess green bond issuance as a valuable tool to display moral leadership on climate change and sustainability, and to fund commitments under the Paris Agreement. Germany made its market debut on 3 September with an issuance of €6.5 billion; another issue took place in November, bringing the total for 2020 up to €11.5 billion. Sweden entered the market on 1 September with a SEK 20 billion (approx. €1.9 billion) issue. Inaugural sovereign issuances are expected from the United Kingdom, Italy, Portugal and Spain. The European Union has also announced its plans to issue €225 billion worth of green bonds between 2021-26 as part of the €750 billion Next Generation EU recovery fund (see next section).
46. **Policy drivers include EU Green Deal, GBS and the EU Taxonomy which will clarify what is “green”.** These are discussed in detail in the next section.

3.1.3 In order to take the green bond market to the next level, some weaknesses and barriers need to be addressed

47. **Survey and interview evidence highlighted several factors as hindering the further development of the green bond market.** These are as follows:
 - **Lack of common language and standardisation and therefore lack of clarity.** Several respondents highlighted the challenges (for issuers) of providing green bond disclosure in a standardised way and (for investors) of locating and comparing pre- and post-issuance green bond reports. In a recent survey conducted by Environmental Finance, investors have called for more consistency in the timing, format, metrics, methodologies, and benchmarks used for impact reporting across issuers⁴³. The recently published ICMA Harmonised Framework for Impact Reporting is a significant step towards simplifying and standardising impact reporting and provides practical templates and instructions for issuers to help them produce comparable reports. However, there remain some challenges:
 - There are a number of different methodologies for estimating and reporting GHG emissions. The differences mainly relate to the assumptions used for estimating the future output, the emission conversion factors, the definitions for the boundaries of a specific project, the scope of the GHG emission reductions attributable to the project, and the baseline alternative used for comparison with the project. Efforts are underway to harmonise GHG accounting methodologies for particular industry sectors.
 - Moreover, there is very little guidance for fund-level reporting or resources to help the aggregation process.

⁴² Martin Arnold, “ECB to consider using climate risk to steer bond purchases, says Lagarde”, *Financial Times*, 14 October 2020, available [here](#).

⁴³ Environmental Finance (2020), “Green Bond Funds – Impact Reporting Practices 2020.” Available [here](#).

- **Lack of suitable green assets** as a factor constraining green bond issuance and eventually leading to a mismatch between demand for and supply of green bonds. A point also made by 49% of the respondents to the EU GBS consultation which ended in October 2020⁴⁴.
- **Lack of structured, centralised and verified impact data.** Moreover, differences in metrics, methodologies and reporting formats are viewed as a constraint by investors. As one of the interviewees explained: *“As more investors come to the green bond market with less knowledge, they will need more data and more reassurance about the quality of these data. It can be very difficult to collect data from various issuers and these data vary considerably from one issuer to the other.”*
- **Thin trading.** Several interviewees suggested that frequent trading remains a challenge in the market due to market size being a constraint and the prevalence of buy-and-hold investors.
- **Market efforts to promote green securitisation are lagging behind those in other market segments, such as covered bonds.** An interviewee explained that green securitisation could unlock additional funding for sustainable projects and activities. First, by allowing banks to transfer risks off their balance sheets, green securitisation would enable the financial sector to lend more to green projects and activities, as risks are better shared across a wider range of investors. Second, a deep, liquid market for green securitisation could contribute to the revitalisation of securitisation in the euro area in line with the Capital Markets Union, the EU Securitisation Regulation and its framework for simple, transparent and standardised securitisations. Third, green securitisation would also benefit from greater harmonisation with respect to climate change-related disclosure and the development of reliable and comparable data and indicators, in line with that promoted for all green issuances under the EU taxonomy.

3.2 Policy context: Sustainable finance is high on the EU policy agenda

3.2.1 Sustainable finance is critical to achieving the EU’s ambitious climate targets

48. **The EU has announced ambitious new climate targets.** In her first State of the Union speech (16 September 2020), European Commission President Ursula von der Leyen announced the ambition to cut the EU’s greenhouse gas emissions by at least 55% by 2030 (compared to 1990 levels), up from its previous target of 40%⁴⁵.
49. **The new target is part of the broader *European Green Deal*, a set of policy initiatives designed to make Europe the first climate-neutral continent by 2050 (a goal that will eventually be enshrined in climate law).** The European Green Deal⁴⁶ has a broad scope: it includes a combination of funding measures, regulatory reform and policy proposals covering several sectors including energy, transportation, agriculture, construction and finance. Among other things, it announces the Commission’s plans to present a renewed sustainable finance strategy in 2020 and stresses the key role to be played by the EIB in mobilising private and public finance to support its objectives (see more details on these developments below).

⁴⁴ EU GBS consultation, available [here](#).

⁴⁵ This target was subsequently approved by the European Council on 11 December 2020.

⁴⁶ European Commission, “Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions of 11 December 2019, ‘The European Green Deal’ COM(2019) 640” available [here](#).

50. **A vast amount of investment is needed to secure the EU's transition to a climate-neutral economy.** Reaching the 55% target will require additional investments of €350 billion per year by 2030 (compared to €260 billion per year required to meet the 40% target) in the fields of energy and climate⁴⁷, most notably:

- renovation of the building stock and access to affordable housing;
- decarbonisation of industry and renewable energy;
- sustainable mobility;
- energy system integration including infrastructure, batteries and renewable hydrogen.

These figures are a conservative estimate of the level of investments needed to deliver Europe's green transition. The above estimates do not include investment needs in agriculture or climate adaptation or the preservation and restoration of ecosystems and biodiversity due to a current lack of data.

51. **While the public sector has a vital role to play, the private sector will have to provide the bulk of the financing needed for the transition.** The *Sustainable Europe Investment Plan*⁴⁸, also known as the *European Green Deal Investment Plan* lays out the Commission's proposals on how it intends to fund the Green Deal by mobilising public and private resources. It comprises three core elements: (1) Financing: mobilising at least €1 trillion of sustainable investments over the next decade to support the EU's green transition. Funding will come from the EU budget and other public and private sources; (2) Enabling: creating an enabling framework to unlock and redirect public and private investment to sustainable projects; and (3) Supporting: providing support to public administrations and project promoters to identify, structure and implement sustainable projects.

52. **The above scale of investment can be achieved only through a fundamental shift in the way the financial system mobilises and allocates capital.** The European Union is also currently working on a *Renewed Sustainable Finance Strategy* with the aim of putting in place guidance, tools and regulation to align the financial sector with its climate goals and to reorient capital towards sustainable investments. This new strategy expected at the end of 2020 will build on the *2018 Action Plan on Financing Sustainable Growth* and the reports of the Technical Expert Group on Sustainable Finance⁴⁹. It will focus on three key areas (i) creating an enabling framework for sustainable finance (via adoption of the EU Taxonomy, for example); (ii) encouraging integration of climate and environmental risks within financial institutions and the financial system and; (iii) increasing opportunities for investors and companies by making it easier

⁴⁷ European Commission, "Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions of 17 September 2020, 'An EU-wide assessment of National Energy and Climate Plans: Driving forward the green transition and promoting economic recovery through integrated energy and climate planning' COM(2020) 564 final" available [here](#).

⁴⁸ European Commission, "Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions of 14 January 2020, 'Sustainable Europe Investment Plan, European Green Deal Investment Plan' COM(2020) 21" available [here](#).

⁴⁹ The Technical Expert Group on sustainable finance is made up of 35 members from civil society, academia, business and the finance sector, the European Union and other international public bodies, and has been working on the EU Taxonomy for climate change mitigation and adaptation since July 2018. The EIB is represented in the Technical Expert Group on sustainable finance as directly invited members, and EIB staff were members of the EU Taxonomy Working Group. The report is based on feedback from numerous expert workshops and the feedback of more than 260 stakeholders through two open consultations and 200 experts.

for them to identify sustainable investments and ensuring that they are credible (via the adoption of EU GBS, for example).

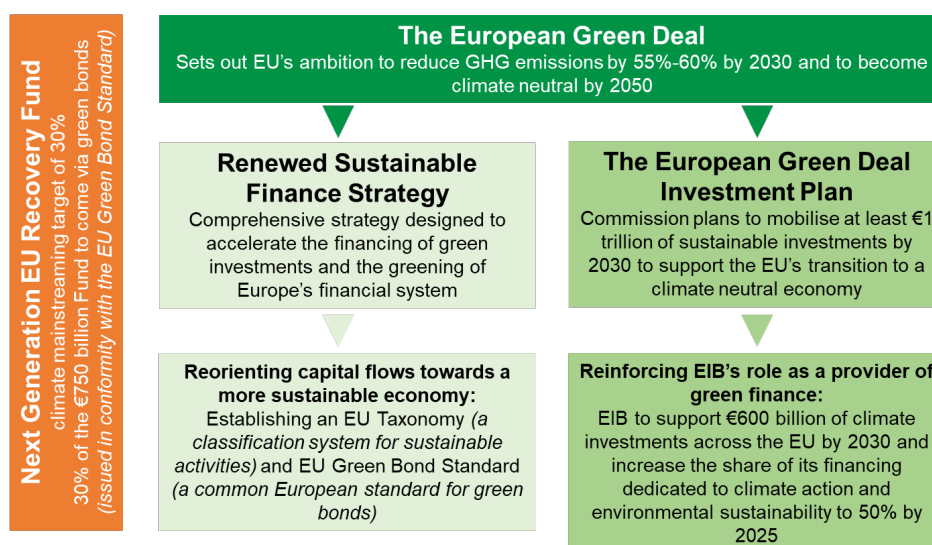
53. **The EIB is expected to play a critical role as a provider of sustainable finance.** It is envisaged that the EIB will support around €600 billion of climate investments (outside of EU mandates) across all Member States by 2030. It also recognises the role of the EIB under the InvestEU Programme. The EU's Renewed Sustainable Finance Strategy will also have implications for the EIB's role as a provider of green finance. While the Commission has not yet issued an official analysis of the public consultation on the strategy, an informal analysis of the published contributions⁵⁰ shows that respondents envisage a key role for the EIB in the financing of start-up, local and citizen-led climate action projects. Stakeholders also expect the EIB to continue to use risk-sharing schemes and/or blended finance instruments to finance sustainability-linked projects currently considered as being too risky by commercial banks. The EIB is also expected to play a leading role in climate lending globally by providing financing for climate action projects to developing countries and by working with key international bodies, such as the Green Climate Fund. Finally, the Recovery Plan for Europe launched by the Commission in May 2020 reaffirms the above and further specifies the role to be played by the EIB in the deployment of the Just Transition Mechanism.^{51, 52}
54. **Finally, the EU has made it a priority, post-pandemic, to build back through a "green recovery."** The European Council has committed to achieve a climate mainstreaming target of 30% for both the multiannual financial framework and the €750 billion Next Generation EU recovery fund. To meet this commitment, each national recovery and resilience plan will have to include a minimum of 37% of expenditure related to climate.

⁵⁰ European Commission, "Consultation on the renewed sustainable finance strategy" available [here](#).

⁵¹ European Commission, "Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions of 27 May 2020, 'The EU budget powering the recovery plan for Europe' COM(2020) 442 final" available [here](#).

⁵² A €40 billion fund which will be used to alleviate the socio-economic impacts of the transition towards climate neutrality in the regions most affected, by for example supporting the re-skilling of workers, helping SMEs to create new economic opportunities, and investing in the clean energy transition and in the circular economy.

Figure 13 EU policy content for sustainable finance



Source: IG/EV

3.2.2 The EU wants to establish itself as a leader in sustainable finance

55. **A large-scale issuance by the EU could contribute to building a global green bond market based on European standards.** In her first State of the Union speech (16 September), European Commission President Ursula von der Leyen also announced the ambition to “take green financing to the next level” by raising 30% of its €750 billion Next Generation EU recovery fund – around €225 billion – through the issuance of green bonds.⁵³ According to S&P, green bond issuances of €225 billion by the EU would significantly boost the size of the global green bond market and provide the European Central Bank, as well as other central banks holding large foreign exchange reserves in euro, with investment-grade green assets⁵⁴.
56. **The European Union is taking the lead in defining the rules for sustainable finance.** Responding to the need for standardisation of definitions and processes, the EU is developing a taxonomy of green economic activities and the GBS.
57. **The EU Taxonomy Regulation sets the stage for an EU-wide classification system** that will provide investors, companies and financial institutions with a common language and uniform criteria to identify the extent to which economic activities may be considered environmentally sustainable. To be included in the proposed EU taxonomy, an economic activity must contribute substantially to at least one environmental objective, do “no significant harm” to the other five environmental objectives set out in the legislative proposal, and respect the minimum safeguards. The classification works through technical screening criteria, methodology and guidance described in the EU report on taxonomy.

⁵³ Ursula von der Leyen, “State of the Union Address 2020”, 16 September 2020, European Parliament, Brussels, Belgium, available [here](#).

⁵⁴ Marion Amiot, Anna Liubachyna, Michael Wilkins, and Sylvain Broyer, “The EU Recovery Plan Could Create Its Own Green Safe Asset Comment”, S&P Global Ratings, 15 July 2020, available [here](#).

Box 5 The EU Taxonomy and Technical Expert Group on sustainable finance process

The TEG report – which at this stage focused on climate-related sustainability objectives – has provided recommendations on the design of an EU “green list” that creates a common understanding of what “green” means. The process to establish the Taxonomy Regulation was launched in 2018 and resulted in the entry into force of the Regulation on 12 July 2020. The Taxonomy Regulation tasks the Commission with establishing the actual list of environmentally sustainable activities by defining technical screening criteria for each environmental objective through delegated acts and building on the TEG’s recommendations. To assist it in its work on the screening criteria and related policy developments the Commission established a Platform on Sustainable Finance in June 2020. On 1 October 2020, the 50 members and 10 special observers of the Platform – selected through a call for applications – were announced. The EIB is one of the additional seven public bodies appointed directly by the Commission.¹

The TEG recommendations identify three screening criteria for economic activities to be considered “green”. Any “green” activity must (1) substantially contribute to at least one environmental objective; (2) do no significant harm to any of the other environmental objectives; and (3) apply minimum safeguards. The Regulation sets out six environmental objectives to which these criteria are applied: (1) climate change mitigation, (2) climate change adaptation, (3) sustainable use and protection of water and marine resources, (4) transition to a circular economy, (5) pollution prevention and control, and (6) protection and restoration of biodiversity and ecosystems.

On 20 November 2020, the European Commission launched a public consultation on the EU Taxonomy criteria for the two sustainability objectives: climate change mitigation and climate change adaptation. The Taxonomy Regulation requires the European Commission to adopt delegated acts for climate change mitigation and climate change adaptation by 31 December 2020, in order to ensure its full application as of January 2022. The draft delegated acts proposed by the Commission are for a four-week consultation period, still subject to change before final adoption by year-end.

For the other four environmental objectives, the EU Taxonomy should be established by the end of 2021 for application as of January 2023.

It is expected that financial market participants will be required to complete their first set of disclosures against the EU Taxonomy by 31 December 2021. Companies that are required to provide a non-financial statement under the Non-Financial Reporting Directive (NFRD) will be required to start disclosing against the EU Taxonomy in the course of 2022.

In summary, NFRD requires large EU “public interest” corporates (including many financial services firms) to publish data on the impact their activities have on ESG factors. The Sustainable Finance Disclosure Regulation – as supplemented by the Taxonomy – requires investment firms to disclose:

- The environmental sustainability of an investment and the provenance of any ESG claims made.
- The risks investments present to ESG factors.
- The risks ESG factors present to investments.
- Disclosure-related requirements for financial market participants and financial advisors at entity, service and product level. It aims to provide more transparency on sustainability within the financial markets in a standardised way, thus preventing greenwashing and ensuring comparability. The majority of the new disclosure obligations will be applicable as of 10 March 2021.

58. **The EU Taxonomy is expected to be a game changer for the sustainable finance market.**

The EU Taxonomy is expected to have wide ranging implications for investors and issuers in the European Union and beyond (see Box 6). It will for example serve as a framework for the information to be reported by companies subject to the Non-Financial Reporting Directive (NFRD) and the Sustainable Finance Disclosure Regulation. The work on the EU taxonomy is only beginning and more developments are expected in the coming years. Since it will have the force of law and since no other legal frameworks are being developed to compete with it, the EU framework could become the default global ESG (gold) standard. Moreover, its formal legitimacy, compared with the voluntary nature of other regimes, is likely to draw “appetite” from investors outside the European Union who are seeking reassurance (including from their clients) that their investments are genuinely sustainable rather than greenwashed. Nevertheless, international efforts at standardisation (if they succeed) could provide direct competition to the EU taxonomy as the de facto global ESG regulatory framework (see Box 7).

Box 6 Stakeholder perspectives on the EU Taxonomy

All the consulted market players agree on one point: the EU Taxonomy will be a game changer for the green bond market and the financial markets in general. Views vary, however, on the nature of this impact. The majority of the consulted market players, including issuers, dealers, investors and other stakeholders, anticipate that the EU Taxonomy will serve as a catalyst for the growth of the green bond market (both in terms of volumes and number of issuances). It will also support the development of other green financial products, such as green loans, by facilitating the identification of such assets. It will also encourage the incorporation of sustainability concerns by corporations and investees into their strategy, providing a sound anchor to diversify their investor base and more certainty on the transition path. For these stakeholders, by providing a clear regulatory framework for the identification of sustainable assets the EU Taxonomy will increase the confidence of investors in green financial products and provide a robust and comparable basis for their investment decisions. It will also be a key tool to fight against greenwashing in the financial market. A smaller group of market players, including a few dealers, second-party opinion providers and one issuer, feared that by setting very high standards and requirements, the Taxonomy might bifurcate the market by creating a gold standard for dark green investors and issuers. Another market segment would then be created for assets supporting the low-carbon transition but not meeting the Taxonomy requirements. Issuers with Taxonomy-compliant assets but without the capacity to report on the Taxonomy requirements due to a lack of data or budget, for example, might also end up in this market segment. Finally, some stakeholders flagged that the impact of the EU Taxonomy will largely depend on the ability to find common ground internationally across capital markets; if that can be done based on the EU approach, it will have a very big impact. The work of the International Platform on Sustainable Finance and its working group on taxonomies⁵⁵, co-chaired by China and the European Union, will be key to that prospect. Recognising that the EU Taxonomy is still in development, all market players agreed that important challenges still need to be addressed, including:

- The further development of the EU Taxonomy to complete the remaining sectoral gaps.
- The operationalisation of the technical screening criteria, some being ill-adapted to certain sectoral activities (e.g. criteria linked to GHG emission per passenger-kilometre are not considered by some as appropriate for transport infrastructure projects) or requiring granular data to be reported on.
- The alignment of the EU Taxonomy with existing standards and certification (e.g. in the real estate sector how the technical screening criteria relate to existing standards, such as BREEAM⁵⁶ or LEED⁵⁷).
- The further development of the Do No Significant Harm principles and the provision of guidance on their operationalisation.
- The implication of the periodic review of the technical screening criteria for assets initially assessed as green but failing to meet stricter criteria later on⁵⁸.

There is also a fear among some market players that the EU Taxonomy might over-regulate and become too prescriptive which might negatively impact the market over time.

“By going too far and being overly complicated, the EU taxonomy regulation could constrain the market”

“The EU taxonomy is speeding up investment and interest in green bonds. Having an overarching framework acts as a push and a pull.... However, there is a concern that it benefits yesterday’s solutions rather than tomorrow’s solutions. It should aim to facilitate quick access to green capital for innovators. There are many solutions that the EU taxonomy does not cover and therefore it could act as a brake on more innovative solutions, for example usage of battery technology in charging networks, etc.”

⁵⁵ International Platform on Sustainable Finance, annual report 2020, available [here](#).

⁵⁶ BREEAM is one of the world’s leading sustainability assessment methods for master-planning projects, infrastructure and buildings. It recognises and reflects the value in higher-performing assets across the built environment lifecycle, from new construction to in-use and refurbishment.

⁵⁷ The LEED Rating Systems make up a voluntary programme meant to objectively measure how sustainable a building is in several key areas: impact on site and location; water efficiency; energy efficiency; material selection; and indoor environmental quality.

⁵⁸ This is a question addressed by the targeted consultation on the establishment of an EU Green Bond Standard, which presents three options to address this challenge: (i) full grandfathering, where the bond is allowed to remain EU GBS-compliant throughout its term, (ii) immediate non-compliance of the bond once revised criteria come into force, and (iii) a set period of time after the criteria change when the bond can be deemed compliant.

Box 7 International efforts on taxonomies and standardisation

Aside from the European Union, several countries around the world have developed or are planning to develop taxonomies of sustainable activities⁵⁹. The European Union and China have the most advanced taxonomies. In 2015, China became the first country to develop a taxonomy in the form of a Green Bond Endorsed Projects Catalogue. It was updated and released for consultation in 2020. The updated 2020 PBoC Catalogue excludes coal, but there is no mention of production or utilisation of natural gas either. It also adds hydrogen, sustainable agriculture, green consumer finance, and other useful sectors like green services and manufacturing.

In parallel to the EU efforts to steer the financial markets into a sustainable direction, the International Organisation for Standardisation (ISO) has also been working on standardisation in the field of sustainable finance. The ISO Technical Committee 322 on sustainable finance (ISO/TC 322) is tasked with developing a framework that would help develop “*globally recognized common terminologies, principles and standards for sustainable finance*” and standardised metrics to improve transparency in the sustainable finance sector.⁶⁰ The ISO/DIS 14097⁶¹ international standard on climate finance is one of the international standards on climate action ISO is developing; the other key ones are ISO 14090 on a framework for climate change adaptation, ISO 14080 on a framework for climate action, and ISO 14030 on green bonds. The EIB does not participate in this initiative.

On 10 June 2020, the Institute of International Finance proposed that the main voluntary reporting frameworks should be consolidated into a single global framework.

59. In June 2019, the Technical Expert Group on sustainable finance published the Proposal for an EU Green Bond Standard (EU GBS), setting stricter requirements than the Green Bond Principles. The report is based on feedback from more than 100 organisations and reflects the overall support in the finance community for the creation of an EU GBS. The TEG has issued 10 recommendations – three on the establishment of EU GBS and seven on the ways Member State governments, EU institutions and capital market participants can support the implementation of the standard. The TEG recommends a *voluntary* EU GBS which comprises four core components: (1) alignment of green projects with the EU taxonomy; (2) green bond framework; (3) reporting; and (4) verification by accredited external verifiers. Additionally, it recommends the setting-up of a voluntary interim registration process for verifiers of the EU GBS for three years until a permanent accreditation system led by the European Securities and Market Authority is established. In June 2020, the Commission issued an inception impact assessment and organised a public consultation to collect views and inform the establishment of an EU GBS. The consultation closed on 2 October 2020, and further policy developments are expected in the first quarter of 2021.

⁵⁹ Canada, Chile, China, Colombia, Kazakhstan, India, Russia, South Africa and Malaysia. Source: CBI Sustainable Debt Global State Of The Market H1 2020.

⁶⁰ “Building a framework for a sustainable future”, *ISOfocus*, 9 January 2020, available [here](#).

⁶¹ ISO, “ISO/DIS 14097 Framework including principles and requirements for assessing and reporting investments and financing activities related to climate change”, accessed 1 October 2020, available [here](#).

4. THE EIB'S CONTRIBUTION TO THE DEVELOPMENT OF THE GREEN BOND MARKET

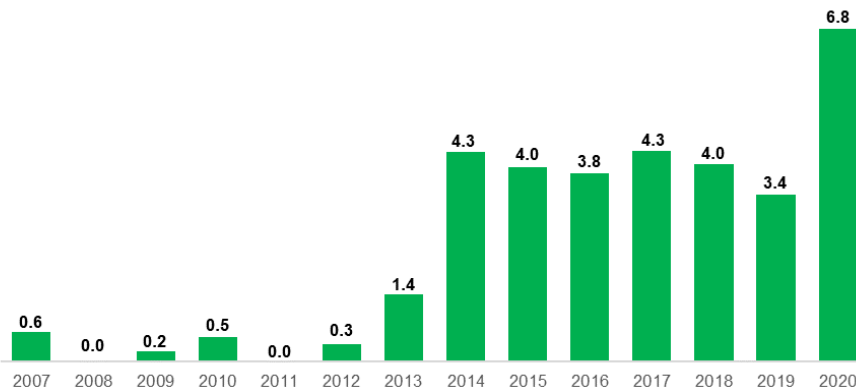
60. This section assesses the role that the EIB has played in the creation and subsequent development of the green bond market.

4.1 A foundational role in establishing green bonds as a “legitimate” asset class

61. **The EIB CAB programme kicked off in 2007 at the critical juncture of two key developments – the entry into force of the EU Prospectus Directive (2005) and the growing focus among policymakers and investors on climate change (2006).** The Prospectus Directive allowed a securities transaction to be launched and distributed in multiple EU domestic markets after authorisation by one single national supervisory authority, which would then secure the passporting of the authorised prospectus in the other target domestic markets of the European Union. In 2006, the EIB launched its first European Public Offering of Securities (“EPOS I”) – passported under the Prospectus Directive – within the eurozone. The yield of this first EPOS was linked to European inflation. Following the success of this transaction, in 2007 the EIB extended its second European Public Offering of Securities (“EPOS II”) to the whole European Union. EPOS II took the form of the first Climate Awareness Bond. The first CAB thus became the first bond ever to be sold via public offering simultaneously in all 27 EU Member States. It was also the world’s first bond focusing on climate protection with a core new feature: with this inaugural CAB, the EIB pioneered the ring-fencing of proceeds for allocation to future EIB lending projects within the fields of renewable energy and energy efficiency. In addition, the bond offered a return in the form of a single payment at maturity linked to a newly-created equity index, the FTSE4Good Environmental Leaders Europe 40 Index; and investors were offered the option to use a part of their return to buy and cancel CO₂ EU allowances within the scope of the EU Emission Trading System.
62. **The inaugural CAB bond issuance was executed in response to policy developments and niche demand from investors concerned about climate change.** At the time, climate change was high on the EU policy agenda as demonstrated by the Declaration of Berlin that confirmed the EU’s intention to lead the way in energy policy and climate protection, and the European Council adoption of a comprehensive Energy Action Plan for 2007-2009. Concurrently, there was growing interest among retail and ethical investors for opportunities to participate in climate action projects, but without the risk exposure of stock or project investments. The EIB’s inaugural CAB issue tapped into this market opportunity, while highlighting the EIB’s commitment to EU policy objectives in the field of climate action.
63. **The EIB’s CAB issuance programme has brought volume to the market.** Since the inaugural issuance in 2007, the EIB has supplied over €33.7 billion of green bonds with maturities ranging from two to 30 years. In 2007, CAB issuances represented 75% of the global green bond market. However, with the growing size and diversity of the green bond market over time, the relative share of CABs has declined significantly. In 2019, CABs accounted for less than 2% of global green bond issuance. Nonetheless, the EIB remains the largest supranational issuer of green bonds to date. Aside from the EIB, other issuers have also contributed to expanding the scale of the market. For instance, IFC’s landmark \$1 billion green bond issuance in 2013 is widely cited to have brought scale to the market and generated significant investor interest in the asset class.

Figure 14 Yearly Climate Awareness Bonds issuance (€ billion)

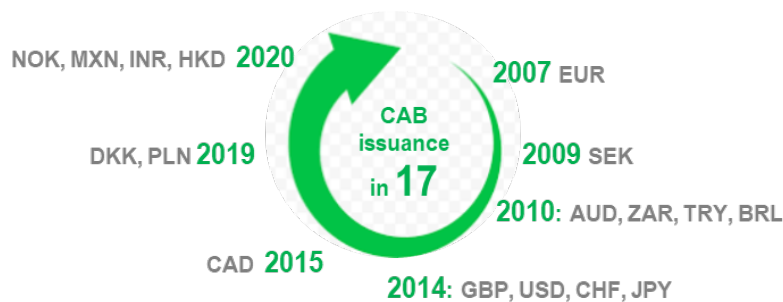
EIB **yearly CAB Issuance** (€ billion) has grown rapidly since 2014



Source: IG/EV own computation

64. **CABs have opened new markets and new currencies** The inaugural CAB issuance in 2007 launched the green bond market in euros; in 2010, the EIB issued the first green bond to be denominated in BRL; followed in 2014 by the first green bond denominated in CHF; and the first ever JPY green bond from a non-Japanese issuer⁶². It was also the first such bond in samurai format (which allows non-Japanese companies to launch bonds in Japan under Japanese regulations). More recently in 2019, the EIB issued the first green bond denominated in DKK. Similarly, the EIB issued the first SSA Green Bond in GBP in 2014⁶³ and was the first international SSA issuer to offer a green bond in CAD in 2015. CABs currently cover 17 currencies (see Figure 15 and Figure 16). Alongside the EIB, the International Bank for Reconstruction and Development (IBRD) has also played an important role in expanding the range of currencies in which green bonds are issued. Given its mandate, the IBRD has focused particularly on emerging markets.

Figure 15 Climate Awareness Bonds currencies – first year of issuance



Source: IG/EV own computation

⁶² EIB, “EIB leads and diversifies currencies with new Climate Awareness Bonds”, Press release, 28 March 2014, available [here](#).

⁶³ EIB, “EIB launches its first GBP Climate Awareness Bond”, Press release, 27 March 2014, available [here](#).

Figure 16 Green bond first-time issuance, by currency and issuer

Currency	First Date	Issuer
EUR	02/07/2007	European Investment Bank
SEK	12/11/2008	International Bank for Reconstruction and Development
USD	24/04/2009	International Bank for Reconstruction and Development
BRL	28/01/2010	European Investment Bank
ZAR	02/02/2010	Nordic Investment Bank
NZD	02/02/2010	IBRD and Nordic Investment Bank
NOK	02/03/2010	International Bank for Reconstruction and Development
RUB	02/03/2010	International Bank for Reconstruction and Development
COP	02/03/2010	International Bank for Reconstruction and Development
TRY	02/03/2010	International Bank for Reconstruction and Development
AUD	05/03/2010	International Bank for Reconstruction and Development
MXN	05/03/2010	International Bank for Reconstruction and Development
JPY	09/03/2010	International Bank for Reconstruction and Development
HUF	19/05/2010	International Bank for Reconstruction and Development
MYR	09/11/2010	International Bank for Reconstruction and Development
CAD	08/08/2011	International Bank for Reconstruction and Development
PLN	31/01/2012	International Bank for Reconstruction and Development
IDR	09/11/2012	European Bank for Reconstruction and Development
CHF	04/02/2014	European Investment Bank
GBP	26/03/2014	Unilever
CNY	26/06/2014	International Finance Corporation
PEN	19/08/2014	International Finance Corporation
INR	28/10/2014	Crédit Agricole CIB
ALL	27/11/2015	International Bank for Reconstruction and Development
PHP	29/02/2016	AP Renewables
MAD	04/11/2016	Moroccan Agency of Sustainable Energy S.A.
SGD	06/04/2017	City Developments Limited
TWD	19/05/2017	CTBC Bank, KGI Bank and Bank Sinopac
HKD	18/07/2017	MTR Corporation Limited
NGN	22/12/2017	Federal Government of Nigeria
FJD	28/12/2017	Government of Fiji
UF	18/04/2018	Aguas Andinas
KRW	30/08/2018	Shinhan Bank
SOS	23/10/2018	Protisa Peru
NAD	06/12/2018	Bank of Windhoek
THB	12/12/2018	B. Grimm Power Public Company Ltd
ISK	21/12/2018	City of Reykjavik
DKK	05/07/2019	European Investment Bank
KES	03/10/2019	Acorn Project Limited
LKR	16/06/2020	Micro, Small & Medium Enterprises Bonds

Source:IG/EV own computation based on environmental finance database

65. **CAB issuances have contributed to a demonstration effect, i.e. attracted new issuers to the green bond market.** Market participants stressed that the EIB not only engages with investors to sell their CABs, but also actively engages with other issuers or potential issuers. This is done through its active presence and engagement in the market – participating in relevant discussion forums and conferences and engaging in continuous dialogue with the market. Through its CAB framework and issuance activity, the EIB has provided a growing body of precedents and examples to other issuers, giving them the comfort and confidence to execute their own green bond frameworks. This was confirmed by the interviewed issuers who recognised the leading role of the EIB in the green bond market (alongside issuers such as the World Bank, IFC or KfW, for example). Specific members of the EIB team were referenced many times by interviewees as having deep technical knowledge and expertise and having provided thought leadership in the market.

“This market would not exist in its current form without the EIB. The EIB reporting standards, CAB outstanding in various currencies – it all helps promote the market.”

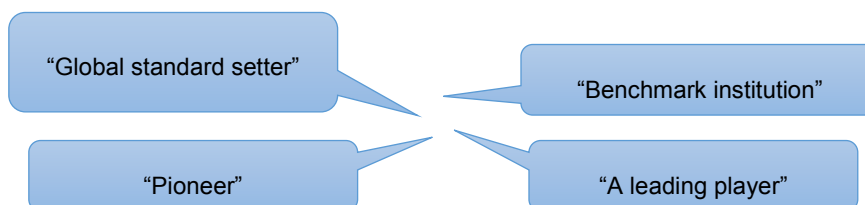
“The EIB brings volume on the market, it helps structure it. It is in line with its objective to be the climate bank.”

66. **The EIB has also contributed to product innovation.** In 2015, the EIB issued an equity index-linked Green Bond, the so-called “Tera Neva”⁶⁴, which raised €500 million for sustainable projects from institutional investors ahead of the 2015 UN Climate Change Conference. The payoff on Tera Neva is linked to the performance of the “Ethical Europe Climate Care Index” over the life of the bond, floored at zero and paid at maturity. This index consists of 30 European equities (reviewed quarterly) selected on financial and sustainability criteria based on Vigeo and Solactive filters.
67. **The EIB’s traditional ability to tap bonds at tight levels based on reverse enquiries is viewed both as a strength and a constraint.** Stakeholders not only mentioned the scale and regularity of CAB issuance as an important factor in structuring the green bond market, they also pointed to some specificities. For example, the EIB, unlike other issuers, also operates by tapping outstanding issues. The majority of past CABs have been issued with a minimum new issuance size of €500 million. These initial lines are often “tapped” later on, the transactions are upsized. CAB issuances in EUR were tapped on average three times, with a maximum number of eight taps per issuance, leading to a total outstanding amount of over €1 billion for 13 CABs. While some market participants perceive it as a very effective strategy, others expressed a different view. A bottom-up issuance approach was seen as restrictive by some interviewees: according to them, reference issuances of larger initial size would be desirable if creating liquidity is an objective. One interviewee explained that in a bottom-up approach *“where deals need to be tapped several times before reaching a benchmark size, CABs are sometimes seen as less liquid than some peers’ green bonds like KfW’s. The market dynamics would now even be ready for reference CABs of an initial size comparable with EARNs.”*

⁶⁴ More information on Tera Neva available [here](#)

“EIB’s strategy [repeated taps] is maybe cheaper, it allows the EIB to issue at a tighter spread and safer because of the smaller size of new lines and taps. The downside is that it may limit the performance of bonds in the secondary market as the bonds tend to be increased whenever there is an arbitrary advantage versus the EIB secondary curve.”

68. **Although the EIB is a major supplier of bonds in multiple currencies, tenors and coupons, liquidity of supranational bonds is comparably less than major sovereign bonds⁶⁵.** Investors recognise that the EIB’s role in developing and promoting the visibility of the asset class is contributing to increasing secondary market liquidity. Nevertheless, investors still perceive liquidity as challenging. According to a 2019 study of the Bank of International Settlements, two elements can explain the lack of liquidity on the green bond market. The first concerns the stock of instruments available for investment. The amount of green bonds in the market is residual as compared to total debt securities, limiting the availability of these bonds for investments. According to this study, at 2019 levels, the US dollar and euro segments each represent only about 6.5% of global FX reserves⁶⁶. In the future, a sample of market participants interviewed for this evaluation expect the EIB to contribute to enhancing market liquidity through larger reference issuances. The second consideration concerns the cost of trading. The bid-ask term structures suggest that green bonds tend to be more costly to buy and sell, trading with wider spreads than their conventional counterparts. This point could be partially explained by a finding from a recent CBI survey⁶⁷, namely that medium-sized and small green bond asset managers are more likely to be buy-and-hold investors with specific green mandates.
69. **The EIB’s CABs cover a wide maturity spectrum (from two to 30 years), however, market participants expressed mixed views on the Bank’s contribution to developing a full reference yield curve.** Some underwriters indicated that the EIB’s yield curve is used as a reference by the market, but others believed that this was not the case.
70. **The EIB’s contribution to establishing green bonds as a “legitimate” asset class has been universally acknowledged and appreciated by a range of market players.** Market players recognise the EIB as one of the first actors on the green bond market, and perceive it as a very visible, reputable issuer that demonstrates best practices and dedicates resources to develop the market.



71. **Finally, market participants are receptive to the strong signals sent by the EIB to the market since the inauguration of the CABs.** CAB issuances signal the EIB’s commitment to climate change mitigation, which helps crowd in investors looking to invest in green instruments. Market participants also highlighted the coherence between the EIB CAB issuances and the EIB’s

⁶⁵ Normally one would expect to see less liquidity in green bonds for the simple reason that they do not represent a large portion of a fixed income portfolio and would be the last ones to be sold if these bonds help an investor maintain their allocation to “green” in terms of an institutional investment strategy. As such, lower liquidity might be a result of a hold-to-maturity policy and not necessarily reflect lack of buyer interest.

⁶⁶ Igor Fender, Mike McMorro, Vahe Sahakyan and Omar Zulaica, “Green bonds: the reserve management perspective.” *BIS Quarterly Review*, September 2019, available [here](#).

⁶⁷ M. Almeida, M. Filkova, C. Harrison, and P. Settle, November 2019.

overall strategy and sustainability goals. This was further reinforced by the adoption of the EU climate bank goals in December 2019, which again sent a very strong signal to the market.

4.2 The EIB's contribution to the development of market governance and standards is widely acknowledged and appreciated

4.2.1 Forefront of thought leadership and standard setting – role in formulation of the GBPs and the EU GBS and decisive role in the EU taxonomy

72. The EIB has had deep and active involvement in the development of the green bond market from its very inception, and this has allowed it to play a key role in the development of a common language, standards, and best practices globally and in the European Union.
73. **The EIB was at the forefront of the first standardisation initiative in the green bond market – the GBPs.** Launched by leading intermediaries with the EIB's support in January 2014, the GBPs were recognised as a core initiative for the development of the market by ICMA, which became the GBP's secretariat in April 2014. The first edition was published in March 2015. The GBPs set out voluntary guidelines and recommendations to improve transparency and disclosure and promote integrity in the green bond market⁶⁸. In recognition of its pioneer contributions, the EIB was elected to chair the steering committee of the GBPs between 2015 and 2018 and contributed to multiple Green Bond Principles working groups. These established market consensus on the essential features of this product. The Bank coordinated, for example, the working groups on impact reporting and external reviews in 2016 as well as the working group on green projects Eligibility from end-2017 to mid-2019, establishing a direct link between technical specialists, market practitioners, policymakers and civil society representatives.
74. **The EIB has played a key role in promoting accountability and comparability in green finance.** The EIB has worked with other multilateral development banks to drive global market harmonisation. In September 2014, during the UN Summit on Climate Change, the EIB – jointly with African Development Bank, Asian Development Bank, European Bank for Reconstruction and Development, International Bank for Reconstruction and Development and IDB – published a statement to reinforce climate finance. Among other things, this statement recognised the role of MDBs in catalysing the green bonds market. It also stressed that *“going forward, [the MDBs] aim to maintain [their] developmental role, in order to spur further sustainable growth of the green bond market”*⁶⁹. The following year, the EIB worked with African Development Bank, International Bank for Reconstruction and Development and IFC on a first proposal for a framework for green bond impact reporting harmonisation (“IFI Harmonisation Framework”, March 2015) and then extended this initiative to seven other IFIs, coordinating their work and drafting the final version of the framework⁷⁰. It was finally launched during The United Nations Climate Change Conference COP 21 in December 2015. The EIB continued to promote harmonisation as chair of the Green Bonds Principles working group on impact reporting in the first half of 2016. This led to making the IFI Harmonisation Framework the general reference for the green bond market in the June 2016 edition of the GBPs, which have been retained as best banking practices by the EIB's Finance directorate. In parallel, the EIB's project experts worked together with their peers in other

⁶⁸ ICMA, “Green Bond Principles: Voluntary Process Guidelines for Issuing Green Bonds”, June 2018, available [here](#).

⁶⁹ EIB, “Joint statement by Multilateral Development Banks (MDB) on climate finance”, 11 September 2014, available [here](#).

⁷⁰ EIB, “Green Bonds – Working Towards a Harmonized Framework for Impact Reporting”, December 2015, available [here](#).

IFIs to publish “*Common Principles for Climate Mitigation Finance Tracking*”⁷¹ in June 2015 as well as a “*Framework for a Harmonised Approach to GHG accounting*”⁷² in November 2015. These frameworks provided guidance to foster coherent project classification and a uniform approach to GHG emission accounting – which improved transparency and comparability in these fields.

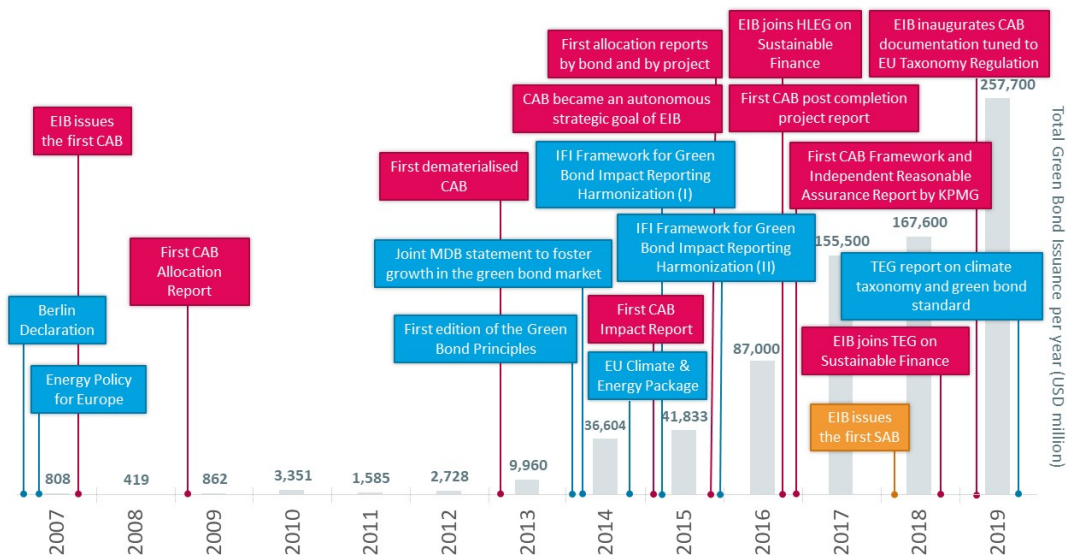
75. **The EIB has led global efforts in developing a common language in green finance.** In December 2016, the EIB mapped the China Catalogue, using the Multilateral development banks/International Development Finance Club Common Principles as reference. It then proposed and agreed with the People’s Bank of China and the China Green Finance Committee to use this mapping as a shared platform for the accountable comparison of classification practices across external reviewers and the IFIs. This was then achieved in close cooperation with WWF, which joined forces with the EIB in the arrangement of extensive consultations with the relevant constituencies in the course of 2017. The EIB condensed the results of the EIB’s mapping of the China Catalogue and the subsequent consultations with external reviewers and IFIs in a first *White Paper on the Need for a Common Language in Green Finance* that was jointly published by the EIB and the China Green Finance Committee at the United Nations Climate Change Conference COP 23 in November 2017. This white paper provided a framework to compare the China Green Bond Endorsed Project Catalogue with classifications used by the European Investment Bank and other multilateral development banks as well as external reviewers. This is important since China, the European Union and multilateral development banks have the largest share of the green bond markets. The findings of the paper, together with a concrete classification proposal for climate change mitigating activities, fed into the work of the European Commission’s Expert Groups on Sustainable Finance (see below) and provide a reference for further work on a shared approach in the context of the International Platform on Sustainable Finance (IPSF). The European Union and China co-chair the working group on taxonomy in this platform.
76. The reputation that the EIB established through its CAB Framework and activities and its work on harmonisation with other IFIs positioned it strategically to join the High-Level Expert Group on sustainable finance (HLEG), Technical Expert Group on sustainable finance and the sustainable finance platform. In October 2016, the European Commission decided to establish a HLEG to develop a European strategy for the integration of effective provisions in the EU financial policy framework in the context of the EU capital markets union. The EIB was invited to assist the HLEG as an observer and technical adviser. Cognisant of the EIB’s work on the development of a common language in green finance, the HLEG’s interim report of July 2017 recognised as the first priority the establishment of a single EU taxonomy of sustainable activities. The key role of the EIB in this context is recognised by the HLEG’s first recommendation to the European Commission on this subject: “*First, invites the European Investment Bank to coordinate the development of an EU classification for climate change finance, conducted in consultation with relevant constituencies (technical specialists, market practitioners, policymakers and civil society representatives) and taking account of work already accomplished or in progress in this area.*”⁷³ The technical knowledge and capital markets expertise that the EIB brought to the work of the HLEG was recognised by all the market players consulted during this evaluation.

⁷¹ EIB, “Common principles for climate mitigation finance tracking”, 15 June 2015, available [here](#).

⁷² World Bank, “International Financial Institution Framework for a Harmonised Approach to Greenhouse Gas Accounting”, November 2015, available [here](#).

⁷³ High-Level Expert Group on Sustainable Finance, “Interim report”, European Commission, July 2017, available [here](#).

Figure 17 Timeline of key developments and green bond issuance over time



Source: CAB evaluation team, based on discussions with the EIB and supporting materials provided by the EIB

77. **The EIB’s contribution to the EU taxonomy was decisive.** The classification proposal that the EIB submitted to the HLEG together with its 2017 White Paper served as the basis for the discussions on the proposed EU taxonomy alongside other classifications (these include classifications submitted by the Nordic Investment Bank, CBI, APG, and FTSE Russell). After discussions with other HLEG members, notably the Climate Bond Initiative, the EIB’s proposal was agreed by the HLEG and annexed to HLEG’s final report of January 2018. The proposal entailed three core features: the clear separation of policy objectives and economic activities, the idea that measurement of the contribution of economic activities to policy objectives is the condition for effective allocation of capital, and the recognition that a single EU taxonomy is required to secure fair competition in the market. The HLEG’s work on the EU taxonomy was continued by the TEG until July 2020 when the taxonomy regulation was adopted by the European Parliament. The work on the EU taxonomy is far from over and the Commission will continue to work on this in the years to come with the support of the recently established platform on sustainable finance. The EIB is part of this new platform. (See Box 5 in section 3.2 for more details).

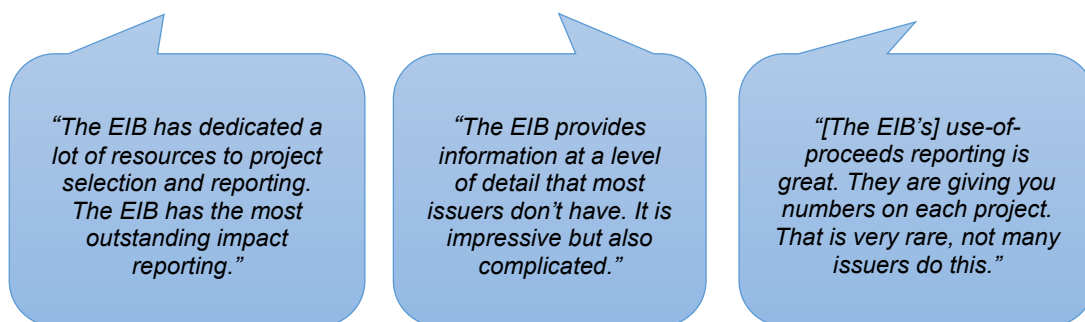
“Most financiers in the Technical Expert Group on sustainable finance did not have the expertise required to align the technical questions linked to the taxonomy with policy objectives. The EIB played a key role in this context. They provided a clear understanding of what the EU climate goals actually mean for investors and the financial market in general. They provided a ‘reality check’ for the other members of the Technical Expert Group on sustainable finance and ensured a sufficient level of ambition.”

78. **The EIB is contributing to its future development via the EU platform on sustainable finance.** The EIB Group is a permanent member of the EU sustainable finance platform, which has taken over the work of the Technical Expert Group on sustainable finance to continue work on the climate-specific criteria of the EU taxonomy and to develop criteria for the remaining four environmental objectives, and later for social objectives.

79. **The EIB is also actively involved as an observer in the International Platform on Sustainable Finance (IPSF).** The European Union launched the IPSF in 2019 to coordinate market developments globally and provide a multilateral forum for facilitating exchange. It will enable a comparison and coordination of efforts on initiatives and approaches to environmentally sustainable finance (such as green taxonomies, disclosures, standards and labels) while respecting national and regional contexts. The platform is an advisory body composed of experts from the private and public sectors. In addition, the IPSF will serve to monitor and report on capital flows towards sustainable investments. IPSF Members: Argentina, Canada, Chile, China, European Union, India, Indonesia, Japan, Kenya, Morocco, New Zealand, Norway, Singapore, Switzerland and Senegal.

4.2.2 Spearheading best practices in reporting and external review

80. **The EIB has set the standard on reporting.** Through its CAB allocation reports (from 2007 onwards) and CAB impact reports (from 2015 onwards), the EIB introduced the idea of a verifiable, documented link between the funding raised through this new type of bond and the allocation of proceeds to eligible projects. Use of proceeds is reported on a project-by-project and bond-by-bond basis. With regard to measurement and reporting on impact, the EIB provides data at a project level, using sector-specific key performance indicators (including absolute and relative carbon emissions). This helps to improve investor confidence, but also enhance public accountability for the Bank’s actions in climate mitigation. The EIB’s approach to reporting has strongly influenced the reporting requirements set out in EU GBS. However, some interviewed market participants also note that the green bond market has evolved tremendously in the past few years, and new methods of reporting are becoming more common. For example, a portfolio approach for impact reporting is seen by some as more in demand by investors than project-by-project reporting. Yet, according to CBI, the most important aspect of high-quality green bond reporting is granularity and in this respect, project level reporting is considered better than portfolio reporting. In a similar vein, bond level reporting is considered more granular than programme level reporting. Another emerging good practice and investor preference on reporting is third-party verification of impact data.



81. **Finally, the EIB’s efforts to seek independent verification of its CAB activity is another important step in promoting transparency and accountability.** A binding condition for overall external reliability is a third-party validation of an issuer’s green bond framework and reporting. The World Bank, by having its green bond framework reviewed by a scientific committee, created the concept of second party opinion. This has been a key development supporting the establishment of green bonds as an asset class. In fact, it has become the de facto market standard for external review. In the CBI’s 2020 Treasurer Survey, over four-fifths (85%) of respondents reported having commissioned a second party opinion for their first green bond. However, unlike other issuers in the market, the EIB has decided to follow a different approach. It has appointed an external auditor validating with “reasonable assurance” instead of obtaining an second party opinion. The rationale behind this decision is explained in the box below.

Box 8 The Bank's motivations for appointing an external auditor as external reviewer instead of a second party opinion

The EIB's decision to appoint an external auditor is motivated by the following factors⁷⁴:

- *Specificity of the EIB's institutional setup as the bank of the European Union, whose policies and practices are aligned with the EU's objectives and legislation.* Their implementation is directly supervised by its Board of Governors, its Board of Directors and its Management Committee, which represent directly the European Commission and the Member States. A bespoke approach that takes into account these specificities is therefore preferable instead of off-the-shelf solutions provided by external reviewers.
- *CAB-relevant technical expertise is available in-house in the EIB's Projects directorate, notably with regard to the nature and characteristics of the underlying assets.* Other issuers not disposing of such expertise in-house need to have recourse to the services offered by second party opinion providers.
- *Commitment to ensuring comparability of EIB's green bond practice via transparency, accountability and reliability.* For this purpose, a clear and objective reference framework is required to avoid market confusion. In the absence of comprehensive and commonly-accepted standards for second party opinions, different methodologies and practices prevail, limiting their comparability. The EIB's external audit with "reasonable assurance" makes explicit the EIB criteria, which already reflect international harmonisation efforts. Detailed and reliable information is in this way objectively provided to market participants, who can thus assess the compatibility of such criteria with their own. This description of EIB criteria has been performed to date within the framework set by the GBPs; the EU Taxonomy Regulation now establishes a clearer and more objective reference framework that will shape the description and assurance of the EIB's practice.
- *Avoid duplication.* Both the GBPs and the EU GBS recognise the external audit and independent reasonable assurance by KPMG as a valid external review. Any additional external review or second party opinion would be redundant.
- *Maintain neutrality versus multiple ESG label and second party opinion providers.* External reviews serve different client needs and client-driven approaches to external reviews may prevail. Distinguishing the value propositions, methods and approaches and respective scope of services of different ESG assessments is not straightforward. In order to maintain neutrality, the EIB does not apply for any ESG label. That being said, the EIB welcomes any additional analysis that supports the build-up of a network of comparable and complementary external reviews serving the needs of multiple stakeholders, since this is bound to extend the credibility and therefore to spur the sustainable growth of the Green Bond market. This was the case, for example, of Oekom's sustainable bond rating in 2015.

82. Although the rationale behind the EIB's decision to appoint an external auditor is well understood by market players with a detailed understanding of the green bond market, it is still considered as a peculiarity of the CAB framework which several market participants have difficulties in understanding. The second party opinion has developed into a standard feature for issuers in the euro green bond market, and non-specialist investors have come to expect and rely on it. Sometimes dealers have to explain to investors the difference between an second party opinion and the reasonable assurance audit KPMG provides and why it is an attractive feature of the EIB's approach. Large investors and "dark green" investors conduct in-house reviews and monitoring on top of the second party opinions (as some second party opinion methodologies are high-level and check only against the four pillars of the GBPs), and for them the second party opinion carries only rudimentary value. The EIB's audit with reasonable assurance is accepted by these investors.

⁷⁴ For more information on the distinguished features of an external audit relative to external reviews including second party opinion, see annex IV of EIB and Green Finance Committee of China Society for Finance and Banking, "The need for a common language in green finance – Towards a standard-neutral taxonomy for the environmental use of proceeds." 11 November 2017, available [here](#).

83. **Going forward, the EIB could play an important role in developing a non-financially conflicted solution to external reviews.** Second party opinions, ratings and audits suffer from a major drawback: the existence of financial conflict of interest. The 2009 financial crisis and several accounting scandals (e.g. Enron, Wirecard) have exposed the weakness of this model. In order to foster good practice in the market, the EIB could help develop a third-party validation process limiting potential financial conflicts of interest. For instance, the EIB could advocate for a central body to undertake second party opinions which are not financially conflicted. Alternatively, it could envisage a system of second party opinion soliciting multiple judgments and picking the median one. This would create reputational incentives for the second party opinion assessors to not inflate judgements vis-à-vis peers. The EIB could also envisage combining an external audit with active monitoring of index inclusion. In this way, a pre-issuance validation would be provided by the external audit, while inclusion of CABs in green bond indices would provide post-issuance validation.

4.2.3 Advisory services

84. Thanks to its technical expertise and role in developing best practices and helping establish market guidelines, the EIB also provides advisory services to other institutions (e.g. banks, cities) to support the implementation of the standards and procedures. Within the EIB, the Environment, Climate and Social Office, led by the Bank's head of Environment, Climate and Social Policy, is the division providing expert advice and support on environmental, climate and social matters. It is responsible for refining the EIB's internal strategies and practices and works closely with the Capital Markets department, notably the Sustainability Funding team, in external discussions regarding capital market standards and best practices (e.g. GBPs, sustainable finance HLEG, EU taxonomy).
85. **Since 2018, the EIB and IFC have been collaborating with other organisations as part of the Global Green Bond Partnership** with the aim of supporting green bond issuance by sub-national entities, private companies, and financial institutions in both developed and emerging markets worldwide. Workstreams include increasing awareness of the green bonds market, standardising qualifications for a green bond, and providing technical assistance and capacity building. In parallel, IFC also works in partnership with banking regulators through the Sustainable Banking Network to foster green bond market development in emerging markets, more specifically. The EIB is currently undertaking scoping work and assessing market needs in the context of the preparation of a green debt advisory platform, which depending on the results of the preparatory work could be set up to support non-experienced issuers from the real sector.







Box 9 Key messages of the Bank's contribution to the development of the green bond market

- The EIB's contribution to establishing green bonds as a "legitimate" asset class is widely acknowledged and highly appreciated.
- The EIB has brought volume and diversity to the market:
 - (i) Scale and regularity of issuance: between 2007 and 2020, the EIB CABs have raised the equivalent of €33.7 billion.
 - (ii) Diversity of currencies: with issuance spanning 17 currencies, the EIB has opened new geographic markets and made the asset class more attractive to investors.
- Market participants also acknowledge that CAB issuances have contributed to innovation and had a demonstration effect, i.e. attracted new issuers to the green bond market.
- Although the EIB's CABs cover a wide maturity spectrum, market participants expressed mixed views on the Bank's contribution to creating a reference yield curve other than in EUR and USD. Notably, although the EIB is a major supplier of bonds in multiple currencies, tenors and coupons, the lower liquidity of supranational versus sovereign green bonds is a structural challenge that cannot be addressed by any single market participant.
- A bottom-up issuance approach can be cost-effective but is seen as restrictive if liquidity is an objective; a larger size of initial tranches would be desirable – if sufficient volumes of EU taxonomy-aligned disbursements become available.
- The EIB has also played a pioneering role in developing market governance and standards, advocating for the establishment of a single EU taxonomy as a priority.
- Interviewees also acknowledged the EIB's market knowledge and its understanding of the investor perspective, which have enabled the Bank to be at the forefront of formulating the GBPs and to be a key contributor to the formulation of the EU GBS, bringing considerable technical knowledge to the discussions.
- The EIB's contribution to the EU taxonomy was decisive.
- Dealers, investors, and peer issuers recognise the EIB's CAB reporting practice as outstanding and best in class in terms of quality, level of detail and consistency.
- The EIB's approach to external review (audit instead of a second party opinion) is regarded as a peculiarity by some non-specialist market participants, reflecting the need for communication on this topic from the Bank. Moreover, the EIB could potentially lead the way in developing a non-financially conflicted solution to external reviews.
- Thanks to its technical expertise and role in developing best practices and helping establish market guidelines, the EIB also provides advisory services to other institutions (e.g. banks, cities) to support the implementation of the standards and procedures.

5. THE CLIMATE AWARENESS BONDS ACTIVITY AND FRAMEWORK IN A COMPARATIVE PERSPECTIVE

86. The evaluation mapped and compared the green bond framework and activities of the EIB with those of six other issuers (Figure 18). The purpose of the analysis was to draw out the similarities and differences between the frameworks and activities of selected issuers vis-à-vis the EIB, with a view to identifying good practices and areas where the EIB could learn from its “peers”.

Figure 18 A group of six best-in-class issuers was selected for the comparative analysis

					
<p>One of the earliest and most well-established MDB issuers</p> <p><u>Awards</u> Initiative of the year: IFC's Social Impact Note Program, 2020 (EF)</p> <p>Best green bond development bank, 2019 (CBI)</p> <p>Best impact report: 2018 Social bond impact report, 2019 (EF)</p> <p>Best impact reporting, 2017 (EF)</p>	<p>One of the most active issuers on the market</p> <p><u>Awards</u> Most impressive government or government agency green/SRI bond issuer, 2019 (GlobalCapital SRI awards)</p> <p>The largest development bank green bond deal, 2019 (CBI)</p> <p>Best impact reporting, 2017 (EF)</p>	<p>A leading issuer of green bonds on the funding side and provider of sustainability-linked and green loans on the lending side</p> <p><u>Awards</u> SRI bond of the year, 2018 (IFR awards)</p> <p>Largest certified climate bond, 2018 (CBI)</p> <p>Green bond of the year, Bank, 2018 (EF)</p>	<p>One of the most well-established and recognised local authority issuers</p> <p><u>Awards</u> Sustainability bond of the year for local authorities, 2019 (EF)</p> <p>Most impressive local government green/SRI bond issuer, 2018 (Sustainable and responsible capital markets forum)</p>	<p>One of the largest corporate issuers in the energy sector and first Spanish company to issue a green bond</p> <p><u>Awards</u> Best green energy impact bond, Europe, 2019 (CFI)</p> <p>Received awards from GlobalCapital magazine in 2016, 2017 and 2018 for being the foremost corporate issuer of green bonds</p>	<p>First issuer of green bonds in the transport sector</p> <p><u>Awards</u> Green bond pioneer award, 2019 (CBI)</p> <p>Green bond awards, 2018 (CBI)</p>

Source: IG/EV

5.1 Motivations for issuing green bonds and scale of issuance vary across issuers

87. **Issuers have a range of motivations for issuing green bonds.** These include:

- To enhance their sustainability profile among stakeholders (KfW).
- To increase investment in environmental/green assets (KfW, ING).
- To raise financing for sustainable investments (SNCF, Iberdrola).
- To attract new investors and diversify their investor base (IFC, KfW).
- To contribute to the development of the green bond market (IFC, KfW, ING).

88. **Green bonds are part of issuers' broader sustainability/climate strategies.** For the banks, the stated climate objectives are formulated as follows:

- IFC has the objective to increase its climate financing to around 35% of its own account commitments.
- KfW has issued sustainability guidelines in 2009 and envisages supporting the energy turnaround over the next five years with more than €100 billion.
- ING analyses its loan book in terms of “financed technology”, to see whether it's aligned with the shift to a low-carbon society (Terra approach) and has the objective to double its climate finance portfolio within five years (by 2022).

89. **The EIB is, by far, the largest issuer of green bonds among the selected group.** Since its inaugural issue in 2007, the EIB has issued CABs amounting to a total volume of €33.7 billion (as of 2020). Although KfW entered the market rather late (2014), it has rapidly scaled up its issuances to a total volume of \$26 billion (as of 2019).

Figure 19 Annual issuance volumes, \$ million



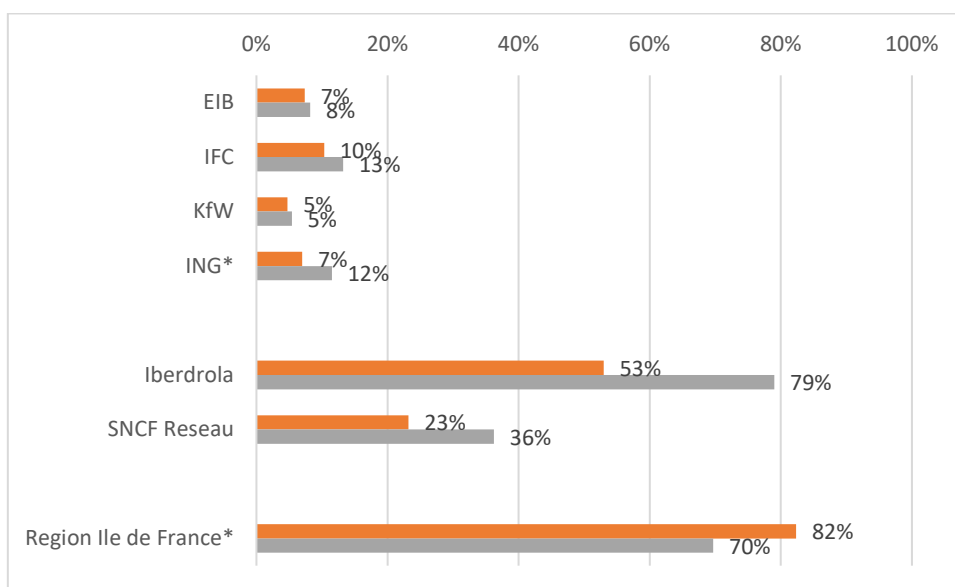
Source: IG/EV own computation based on Environmental Finance Database

90. **Until 2019, less than one in ten euros of the EIB's funding came from CABs while four in five euros of Iberdrola's funding was green.** Apart from KfW, all other issuers had a larger share of green bonds in their overall bond issuance programme as compared to the EIB until 2019. Even a peer such as IFC had higher shares than the EIB (13% vs 8%). This can partly be explained by IFC's wider list of eligible sectors (including sectors which in the case of the EIB are covered under SABs). Making the comparison combining CABs and SABs for the EIB and green and social bonds for IFC does not change the overall picture (15% vs 8.5%). Region IDF has almost exclusively issued green and sustainable bonds since 2016. The share of green bonds in the overall funding programme of corporates is growing fast. As “specialist” corporates whose activities are largely/exclusively in sectors eligible for green bond proceeds, the share of green bonds as part of their overall bond issuance is larger than the shares observed for banks. The share of green bonds in banks' funding profile is nonetheless growing, albeit more slowly than for corporates.

91. **The different scope of green bond eligibilities as well as the different eligibility criteria applied by various issuers means that direct comparisons cannot be easily drawn between the different issuers.** In the absence of an unequivocal reference framework, it is difficult to compare these factors. The EU Taxonomy Regulation offers the opportunity for both an extension of eligibilities at the EIB and a more objective platform for their comparison with peers. In 2020,

for example, the first extension of CAB eligibilities⁷⁵ in the context of the Taxonomy Regulation increased the weight of CAB issuance to 10% of total funding.

Figure 20 Green bonds versus overall bond issuance



Source: Bloomberg

* For ING and Region Île-de-France, despite potential issues with discrepancies across databases, data on green bond issuance has been sourced from the environmental finance database instead, as Bloomberg Terminal (BT) figures on green bond issuance were much lower than environmental finance figures used elsewhere in the report. For other issuers, using one database or another gives the same order of magnitude.

Data should nevertheless be interpreted with caution. Contrary to what is shown here, Region Île-de-France has almost exclusively issued green and sustainable bonds since 2016 (between 94% and 100% depending on the year, according to the latest investor presentation⁷⁶).

92. **IFC and the EIB offer the widest maturity spectrum and range of currencies.** The tenor of IFC's green bond issuances ranges from one to 30 years and it has made issuances in 20 currencies. CABs have so far been issued in 17 currencies and the tenor ranges from two to 30 years.

Box 10 Good practice – Green bond issuance

In 2020, IFC introduced Environmental, Social, Governance (ESG) considerations into its underwriter selection process. On an annual basis, IFC ranks its bond underwriters on coverage provided in the year for its funding programme in an underwriter scorecard. This includes an assessment of arbitrage funding provided, quality of coverage, investor relations efforts, ESG standing, and ancillary services. The scorecard has been enhanced by the launch of IFC's ESG Dealer Survey in June 2020 to assess banks on ESG matters. The survey was created as an enhanced and standardised annual ESG evaluation to feed into the annual scorecard ranking and was sent to over 60 underwriters. IFC formulated a list of questions to elicit information on internal practices as well as the level of significance ESG holds in the banks' corporate strategy. The 21 questions cover topics such as the institution's exposure to certain

⁷⁵ CAB eligibilities were extended from renewable energy and energy efficiency projects to "Research, development and deployment of innovative low-carbon technologies" and "Electric rail infrastructure and rolling stock, and electric buses". SAB eligibilities were extended from water projects to education and health, including emergency-related financings in the context of the COVID-19 pandemic.

⁷⁶ Region Île-de-France, "Investor Presentation", 17 December 2019, available [here](#).

sectors, whether they have internal policies related to well-being, safety, and diversity of staff, and what type of sustainability products they offer.

5.2 Renewable energy and energy efficiency are the most common eligible sectors for the use of green bonds proceeds, but within those sectors the eligible project categories vary across issuers

93. **IFC has the broadest eligibility criteria for use of proceeds among selected peers.** Projects are selected from its loan portfolio of climate-related activities meaning that projects must either: (a) reduce emissions of greenhouse gases; (b) remove greenhouse gases from the atmosphere; or (c) improve resilience against climate change risks⁷⁷. It is the only issuer to allow allocation of proceeds to climate change adaptation projects. Until now, however, only two adaptation projects have been selected for allocation of proceeds (in 2018): (i) a project financing climate adaptation solutions, such as drainage and flood management, in connection with the construction of road transport infrastructure in Cordoba; and (ii) indirect lending to climate mitigation and adaptation projects in Turkey (covering aspects such as energy efficiency, resource efficiency, renewable energy, green buildings, occupational health and safety, and R&D investments). IFC does not report impact for those projects (as its four core impact indicators are not applicable to these projects). IFC also includes some “special climate projects”⁷⁸ in its portfolio of projects to which proceeds are allocated. These are projects that contribute to mitigation, but for which GHG reduction calculations are not available due to methodological limitations (e.g. data constraints, absence of approved method for new project types, privacy issues, climate smart agriculture projects that still support climate mitigation or adaptation but for which no measurement takes place)⁷⁹. These projects represented between 5 and 15% of the commitments over 2014-2017⁸⁰.
94. **Region Île-de-France takes the approach of issuing “green and sustainability bonds”, which combine both environmental and social activities.** The framework used by Region Île-de-France for its green and sustainable bonds includes seven eligible categories: (i) buildings and equipment for education and leisure; (ii) public transportation and sustainable mobility; (iii) renewable energy and energy efficiency; (iv) biodiversity; (v) social initiatives aimed at helping vulnerable population groups; (vi) social housing; (vii) economic and socially inclusive development. The framework was slightly modified this year in response to COVID-19 to include a new sub-category of projects contributing to the improvement of health infrastructure, to the purchase of health equipment, to research and development, and to the establishment of any emergency infrastructure necessary in the context of an exceptional crisis (such as a health crisis, natural disaster, etc.).

⁷⁷ IFC, “Definitions and Metrics for Climate-Related Activities, version 3.1”, updated in April 2017, available [here](#).

⁷⁸ See IFC, page 15 for full definition.

⁷⁹ Examples of such projects (FY17) include: Integration of low-emission public transportation infrastructure (bike lanes, bus rapid transport, metro lines, improved connectivity and pavements) in the city of Buenos Aires; Investment in the first green bond issuance in Colombia by Bancolombia S.A. to fund renewable energy projects and green buildings; Acquisition and modernisation of scrap recycling plant; Expansion of one of the largest Ukrainian grain and oilseed companies that helps to link farmers with end markets by giving farmers the access to modern storage infrastructure and using low-emission transportation.

⁸⁰ From 2014 to 2017, IFC categorised projects as renewable energy, energy efficiency or special climate activities. It now uses a different classification: renewable energy, energy efficiency, climate mitigation projects that do not fall under renewable energy or energy efficiency (other mitigation), and adaptation. Despite the change in labels, IFC continues to finance projects for which no expected climate results are available.

95. **ING also has a broader sectoral eligibility than the EIB, but proceeds are de facto allocated to a limited set of activities.** As per ING's green bond framework, proceeds can be allocated to an eligible green loan portfolio of new and existing loans⁸¹ in the following categories: (i) renewable energy; (ii) green buildings; (iii) clean transportation; (iv) pollution prevention and control; and (v) sustainable water management. Until now, green bonds proceeds have, however, only been allocated to renewable energy projects – wind and solar (global) and green buildings⁸² (the Netherlands). This is due to the absence of approved methodologies to report impacts on other categories.
96. **KfW has linked its green bonds to existing loan programmes in the fields of renewable energy and energy efficiency.** According to KfW's green bond framework, proceeds can be allocated to:
- Projects financed or co-financed under the KfW loan programme “Renewable Energies – Standard” (programme no. 270) which provides financing for the construction, expansion and acquisition of plants generating power or heat from renewable energy sources that comply with the requirements defined by the German Renewable Energy Sources Act;
 - Projects financed or co-financed under the KfW loan programme “Energy-efficient construction” (programme no. 153) which provides financing for the construction of new energy-efficient residential buildings in Germany.
97. **Corporate issuers have a narrower set of eligible categories as compared to the EIB. The eligible categories for their green bonds mirror their respective lines of business.** The eligibility criteria for green bonds issued by Iberdrola – a power utility based in Spain – is restricted to renewable energy (smart grids, renewable energy production) and energy efficiency (e.g. energy efficiency of buildings, electric mobility projects – charging stations and associated infrastructure, etc.). SNCF Réseau green bonds are designed to fund infrastructure renewal and modernisation projects to enable the company to meet its target of reducing energy consumption by 20% and CO₂ emissions by 25% by 2025. Eligible use of proceeds under SNCF Réseau's green bond framework thus includes:
- Investments related to maintenance, upgrades and energy efficiency of the rail system.
 - Investments related to new rail lines and rail line extensions which ensure access to the network and the efficient movement of people and freight.
 - Other investments linked to the protection of biodiversity and natural resources.

⁸¹ Eligible green loans can be funded in whole or in part by an allocation of the bond proceeds.

⁸² New or existing commercial buildings with an Energy Performance Certificate label “A”.

Figure 21 Eligibility criteria of the EIB and issuers selected for comparative analysis

Broad objectives	EU Taxonomy environmental objectives	GBP-eligible project categories	EIB	IFC	KfW	ING	IBERDROLA	SNCF Réseau	Région Île-de-France
Climate	Climate change mitigation	• renewable energy							
		• energy efficiency							
		• green buildings							
		• clean transportation	New!						
Climate change adaptation	Climate change adaptation	• climate change adaptation							
		• low carbon technologies*	New!						
Other environmental objectives	Protection and restoration of biodiversity and ecosystems	• environmentally sustainable management of living natural resources and land use							
		• terrestrial and aquatic biodiversity conservation							
	Sustainable and protection of water and marine resources	• sustainable water and wastewater management	Through SABs						
	Pollution prevention and control	• pollution prevention and control	Through SABs						
Social objectives	Transition to a circular economy	• eco-efficient and/or circular economy adapted products, production technologies and processes							
			Through SABs	Through social bonds					
Note: In the framework, but no proceeds allocated to									

Source: IG/EV own computation

* Low-carbon technologies are not explicitly listed in the non-exhaustive list of green bond principle-eligible categories

98. **Although renewable energy and energy efficiency are the most common eligible sectors, there are differences in the approaches taken by individual issuers.** In the case of renewable energy, both electricity and heat generation seem to be typically included, as well as grid-related projects. But the list of eligible energy sources is more or less restrictive, for instance:

- Iberdrola limits itself to wind and solar, ING to wind, solar and hydro.
- KfW and ING both focus on small hydro (both excluding plants with installed power > 20MW).
- The EIB and IFC currently allow investments in biomass, geothermal, tidal and other renewables.

99. **Under energy efficiency, green buildings are typically included but differences are marked concerning both the types of eligible green buildings and other eligible categories, where applicable:**

- ING and KfW limit themselves to green buildings (KfW – new residential buildings in Germany; ING – new or existing commercial or residential buildings in the Netherlands).
- Both ING and KfW have spelled out very detailed technical criteria governing the eligibility of green buildings. Criteria are not defined at this level of granularity in the case of the EIB or IFC.
- The EIB and IFC have a longer list of eligible energy efficiency projects covering e.g. energy efficiency in industry. IFC also includes vehicle energy efficiency fleet retrofit. In the second party opinion in CICERO, the IFC category relating to “thermal power plant retrofit to enable switch from more GHG-intensive fuel to different, less GHG-intensive fuel type” was associated with a risk of extending the lifetime of existing thermal plants.

5.3 Project evaluation and selection is often done by cross-functional teams or committees

100. **ING, KfW and SNCF Réseau apply a portfolio approach to allocation of proceeds.** Proceeds are not allocated to individual projects or loans but to a so-called Eligible Green Loan Portfolio (ING and KfW) or Register (including the full list of eligible projects in the case of SNCF Réseau). This approach reportedly gives greater flexibility in terms of planning future issuances (as eligible green assets exceed the outstanding portfolio of green bonds).
101. **Other issuers use a project-by-project approach.** An additional step is introduced in project cycle management to systematically screen at an early stage each new project, in order to identify projects that would meet the green bond eligibility criteria. Proceeds are only allocated to individual projects or loans. The EIB and IFC allow allocation of proceeds to projects with partial eligibility.
102. **Issuers typically undertake the project selection process internally, involving several directorates/departments of the organisation.** For instance, at SNCF Réseau, the Treasury and Funding department, the Accounting and Management Control department and the Sustainable Development department are involved in the selection process. At IFC, the categorisation as climate-related activity⁸³ is decided primarily by the Climate Policy team of the Climate Business department, in collaboration with regional and global climate change teams. The Climate Metrics Steering Committee is responsible for any changes to the definition of climate-related activities or discussions on the climate metrics. It is responsible for the consistent and appropriate reporting of IFC climate business and is composed of six members drawn from the Climate Policy unit; manufacturing, agribusiness and services; infrastructure and natural resources; financial institutions group; Environmental and Social unit of the Transactional Risk Solutions department; crosscutting advisory services. ING has set up a Green Bond Committee which is responsible for the implementation of its Green Bond framework and actual project evaluation and selection. It also manages any updates to its Green Bond framework, including expansions to the list of eligible categories, as required. The Green Bond Committee is composed of representatives from group treasury, group sustainability, sustainable finance, sustainable markets, and subject matter experts from the various sectors of allocated assets. It meets at least annually.
103. **On top of applying green bond eligibility criteria, issuers typically also have processes in place to manage environmental and social risks.** Banks observe their standard due diligence processes and safeguard policies for environmental and social issues, as for any other projects. Iberdrola and Region Île-de-France also mention the application at the project level of specific ESG criteria.

Box 11 Good practice – project evaluation and selection

The involvement of cross-departmental teams in project selection/committees for project selection and management of updates to the Green Bond framework, including any changes to eligibility criteria (SNCF, IFC, ING). At the EIB, the Projects directorate is responsible for defining loan eligibilities and CAB eligibility criteria following the principle of segregation of responsibilities, a best practice recommended by the external auditor.

⁸³ Green bond eligible projects are then selected from the pool of climate-related activities, provided that they consist of direct and indirect lending.

5.4 Issuers have various systems in place for management of proceeds and to ensure traceability

104. **All proceeds from IFC green bonds are set aside in a designated account.** The proceeds are credited to a separate “green cash account” and disbursed to green bond-eligible projects. Disbursements are often made over a period of time, depending on a project’s amortisation schedule. As green bond proceeds are disbursed, corresponding amounts are adjusted from the green cash account accordingly on a regular basis.
105. **The EIB has created a CAB-dedicated sub-portfolio within its treasury’s liquidity portfolio for the separate booking of unallocated CAB proceeds.** A dedicated IT tool has been designed for the automated tracking of CAB data. CAB proceeds are allocated automatically by the IT tool to new disbursements that take place after issue date only (no refinancing), on a first-in-first-out basis.
106. **Other issuers rely on other formal internal processes to manage proceeds, based on the “virtual” green account/cash account approach.** Green bond proceeds are treated standardly and transferred to a general account, while in parallel green proceeds and project expenditures are tracked “virtually”, i.e., as an accounting entry initially credited with the bond amount and gradually debited as projects require funding. Region Île-de-France opted for this approach specifically because other approaches would go against the principle of universality, one of the “foundational” budgetary principles of the French State budgetary framework, which involves the mandatory use of one single account for all expenditures without any ring-fencing.

Box 12 Best practice among selected group – management of proceeds

The Green Bond Principles, with regard to management of proceeds, proposes that the proceeds of a green bond *should be credited to a sub-account, moved to a sub-portfolio or otherwise tracked by the issuer in an appropriate manner, and attested to by the issuer in a formal internal process linked to the issuer’s lending and investment operations for green projects.*

According to the World Bank⁸⁴, for the purposes of tracking net proceeds of a green bond, issuers may use one of the following approaches:

1. separate green account, or
2. sub-account, or
3. virtual green account.

The GBPs do not prescribe any of the approaches as being better over another.

However, *some investors criticize the green bond market for not implementing regulations to verify the authenticity and track the proceeds of green bonds, but the Principles are a market-driven organization, not a regulator*⁸⁵.

The World Bank acknowledges that *public entities may find it difficult to create a separate account or sub-account (options 1 and 2).*

The Technical Expert Group on Sustainable Finance acknowledged, in its interim report on the EU GBS, the *unclear expectation on the tracking of proceeds* as a barrier to the green bond market’s development. Therefore in its final report, the TEG advised that the management of proceeds aligns the EU GBS with the most recent market practice on tracking by equivalent amounts, paying particular attention to the concerns raised by sovereign issuers *about requirements for potentially complex tracking procedures that can be incompatible with the legal parameters of government finance and national budgets.*

In summary, the Technical Expert Group on Sustainable Finance proposal seems to address the concerns of the supply side (notably public sector and sovereign issuers), whilst the demand side (investors and asset managers) would be more inclined towards higher scrutiny and stricter regulations to verify the

⁸⁴ The World Bank, “Green Bonds Proceeds Management and Reporting”, 2018, available [here](#).

⁸⁵ Mirova, “Green Bond Principles Promote Best Practices in the Green Bond Market”, Natixis, 7 February 2020, available [here](#).

authenticity and tracking of the proceeds. Hence this evaluation considers that those issuers which are willing to go the extra mile, to alleviate investors' concerns related to the legitimacy of the market, through ring-fencing of green bond proceeds through a separate green account (IFC) or sub-account (EIB), are to be considered best practice.

5.5 Use-of-proceeds reporting is provided either at portfolio level or project level

107. Most peers provide only limited use-of-proceeds reporting (in the same document as the impact report), at the portfolio level (e.g. breakdown of commitments by category of investment). The EIB provides CAB allocations by project and by bond in the annual CAB Framework including description of sector and country location. Summary of allocations by sector/country are communicated only in the CAB newsletter (no such summary is provided in the annual CAB Framework).
108. Only Region Île-de-France provides project level use-of-proceeds reporting like the EIB.

Box 13 Best practice among selected group – Use-of-proceeds reporting

Detailed project level reporting on use of proceeds (EIB, Region Île-de-France)

5.6 There is considerable diversity in approaches to impact reporting

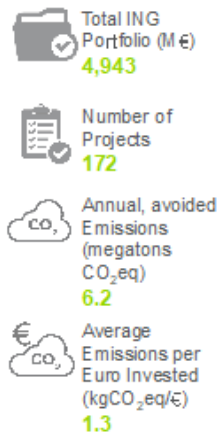
109. **Impact reporting is available at two main levels: (i) portfolio level reporting (KfW, ING, SNCF Réseau) and (ii) project level reporting (EIB, IFC, Iberdrola, Region Île-de-France).** The choice mirrors the way in which proceeds are allocated (to portfolios or to individual projects).
110. For those reporting at portfolio level, in addition to the global overview, a breakdown is often available by category of investment. For example, KfW and ING provide data separately for their renewable energy and green buildings portfolios; SNCF Réseau reports separately on investments related to new or existing lines. The key figures are accompanied by the relevant information on the methodology used (in the same document). Among those reporting at project level, Iberdrola, IFC and the EIB provide key impact metrics in an aggregate manner in a summary table.

Figure 22 Impact reporting by sector

CATEGORIES	INDICATORS	RESULTS
INVESTMENTS IN MAINTENANCE, MODERNISATION AND ENERGY EFFICIENCY PROJECTS CONCERNING THE RAIL SYSTEM	GREENHOUSE GASES (GHG) EMITTED AND AVOIDED EMISSIONS	
	– Greenhouse Gas emissions due to the renewal project	657 ktCO ₂ eq
	– Greenhouse Gas emissions avoided thanks to the renewal project	6,329 ktCO ₂ eq
	PROTECTION OF RESOURCES	
	– Share of re-used and recycled rails (tons)	100%
	– Share of re-used ballast (tons)	30 to 50%
	– Volume of wooden sleepers recycled for energy purposes	67,753 tons
INVESTMENTS RELATED TO NEW LINES AND LINE EXTENSIONS	GREENHOUSE GAS (GHG) EMISSIONS	
	– Greenhouse Gas emissions due to the project	80 ktCO ₂ eq
	– Emissions avoided	277 ktCO ₂ eq
	PROTECTION OF RESOURCES	
	– Number of hectares compensated	6,430
	– Number of wildlife crossings created	1,253
OTHER INVESTMENTS LINKED TO THE GLOBAL CLIMATE CHANGE CHALLENGES, THE PROTECTION OF BIODIVERSITY AND NATURAL RESOURCES	The category is to be expanded as it groups several projects that are less significant in terms of amounts, but important for the overall corporate strategy.	

ING RENEWABLE ENERGY PORTFOLIO CLIMATE IMPACTS – PORTFOLIO AS OF 31 DECEMBER 2019

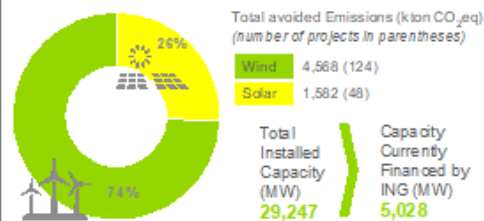
By the Numbers



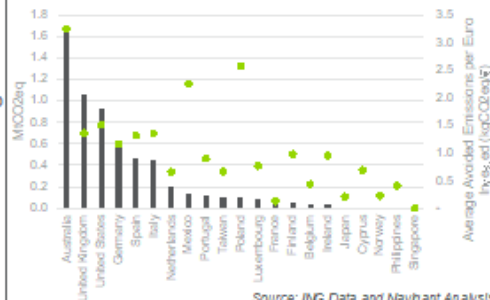
Key Findings

- The total ING Renewable Energy Portfolio was successful in creating positive climate impacts
- The annual avoided emissions for this total portfolio was **6.2** megatons CO₂eq, or an average **1.3** kgCO₂eq per euro invested

Avoided Emissions by Technology



Avoided Emissions in megatons CO₂e q (Bars) and Average Avoided Emissions per Euro Invested (Dots) by Project Country



2 / ©2020 NAVIGANT CONSULTING, INC., NKGIA GUIDEHOUSE INC. ALL RIGHTS RESERVED



Source: SNCF Réseau 2017 reporting; ING impact report 2019

Figure 23 KfW's impact reporting

Impact Data 2014-18 from KfW Loan Programmes underlying "Green Bonds - Made by KfW"
(based on ex-ante information from the loan approval process and evaluated by an independent third party)

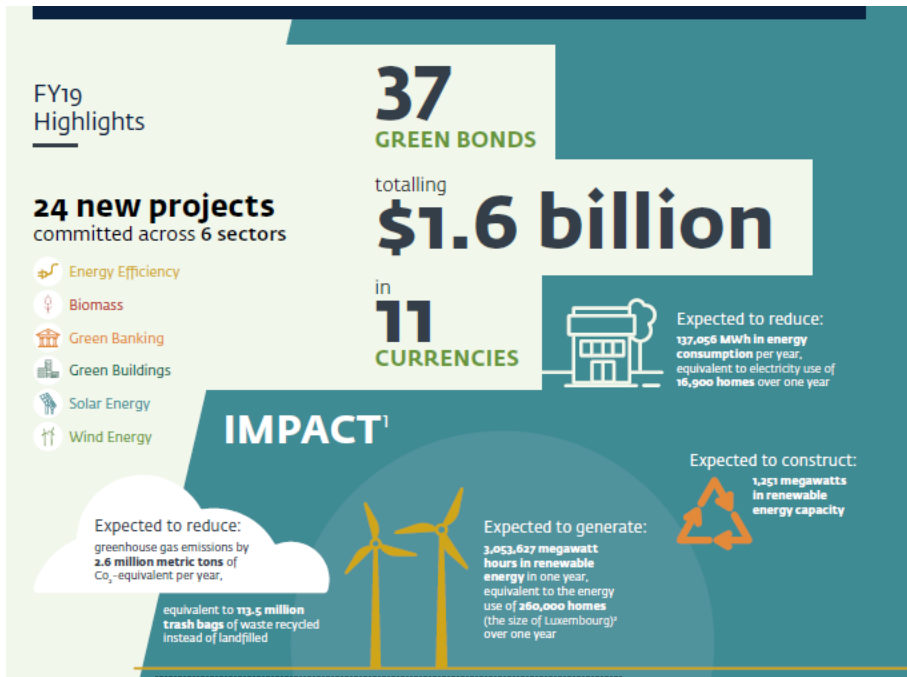
Renewable Energy: KfW loan programm "Renewable energies - standard" (No. 270)																		
Basic data						Impact data (based on total project costs in Germany)						Impact data per €1m KfW loan amount (based on KfW's share in total project costs) ¹						
Year	Total project costs (EUR in millions)	... thereof in Germany	KfW's share in total project costs	KfW's signed loan amount (EUR in millions)	Number of loans	Financial lifetime of portfolio (duration in years)	Annual GHG emissions reduced/avoided (in tons of CO ₂ e)	Annual renewable electricity generation (in MWh)	Renewable energy capacity added (in MW)	Annual savings in energy imports to Germany (EUR in millions)	Number of jobs created and/or preserved (in person years)	Annual savings in external costs (EUR in millions)	Annual GHG emissions reduced/avoided (in tons of CO ₂ e)	Annual renewable electricity generation (in MWh)	Renewable energy capacity added (in MW)	Annual savings in energy imports to project country (in EUR)	Number of jobs created and/or preserved (in person years)	Annual savings in external costs (in EUR)
2014	5,909	68%	64%	3,786	4,805	8.6	3,540,000	4,900,000	2,467	187	70,230	361	860	1,218	0.61	46,479	17	89,702
2015	5,421	78%	79%	4,286	2,887	8.6	3,510,000	5,200,000	2,603	191	67,160	353	859	1,273	0.64	46,759	16	86,418
2016	5,670	80%	80%	4,516	3,138	8.6	3,620,000	5,400,000	2,769	202	71,340	368	794	1,185	0.61	44,321	16	80,721
2017	4,988	67%	72%	3,576	2,736	8.5	not yet available	not yet available	not yet available	not yet available	not yet available	not yet available	not yet available	not yet available	not yet available	not yet available	not yet available	not yet available
2018 ²	1,812	50%	91%	1,655	1,776	8.5	not yet available	not yet available	not yet available	not yet available	not yet available	not yet available	not yet available	not yet available	not yet available	not yet available	not yet available	not yet available
Ø since 2014 ²							3,557,116	5,162,426	2,611	193	69,921	361	842	1,225	0.62	45,799	16	85,360

Energy Efficiency: KfW loan programm "Energy-efficient construction" (No. 153)																	
Basic data						Impact data (based on total project costs)						Impact data per €1m KfW loan amount (based on KfW's share in total project costs)					
Year	Total project costs (EUR in millions)	... thereof in Germany	KfW's share in total project costs	KfW's signed loan amount (EUR in millions)	Number of loans	Financial lifetime of portfolio ⁴ (duration in years)	Annual GHG emissions reduced/avoided (in tons of CO ₂ e)	Annual final energy savings (in MWh)	Number of jobs created and/or preserved (in person years)	Annual GHG emissions avoided (in tons of CO ₂ e)	Annual final energy savings (in MWh)	Number of jobs created and/or preserved (in person years)	Annual GHG emissions avoided (in tons of CO ₂ e)	Annual final energy savings (in MWh)	Number of jobs created and/or preserved (in person years)		
2014	26,400	100%	100%	5,623	65,065	[tba]	101,000	330,000	305,000	3.8	12.5	12	3.8	12.5	12		
2015	31,900	100%	22%	6,996	78,464	[tba]	139,000	380,000	355,000	4.4	11.9	12	4.4	11.9	12		
2016	39,600	100%	29%	11,287	69,424	[tba]	182,000	430,000	429,000	4.6	10.9	11	4.6	10.9	11		
2017	30,100	100%	34%	10,295	54,176	[tba]	139,000	280,000	317,000	4.6	9.6	11	4.6	9.6	11		
2018 ¹	22,924	100%	33%	7,569	34,492	[tba]	not yet available	not yet available	241,600	not yet available	not yet available	not yet available	not yet available	not yet available	not yet available		
Ø since 2014 ²							144,466	363,992	340,667	4.4	11.0	11	4.4	11.0	11		

Combined portfolio consisting of Renewable Energy & Energy Efficiency (KfW loan programmes No. 153 & 270)																		
Basic data						Impact data (based on total project costs)						Impact data per €1m KfW loan amount (based on KfW's share in total project costs) ¹						
Year	Total project costs (EUR in millions)	... thereof in Germany	KfW's share in total project costs	KfW's signed loan amount (EUR in millions)	... thereof renewable	... thereof energy efficiency	Number of loans	Financial lifetime of portfolio ⁴ (duration in years)	Annual GHG emissions reduced/avoided (in tons of CO ₂ e)	Annual final energy savings (in MWh)	Renewable energy capacity added (in MW)	Number of jobs created and/or preserved (in person years)	Annual GHG emissions avoided (in tons of CO ₂ e)	Annual final energy savings (in MWh)	Renewable energy capacity added (in MW)	Number of jobs created and/or preserved (in person years)		
2014	32,309	94%	29%	9,409	40%	60%	69,870	[tba]	3,641,000	330,000	4,900,000	2,467	375,230	356	7.5	490	0.25	14
2015	37,321	96%	30%	11,287	38%	62%	81,351	[tba]	3,649,000	380,000	5,200,000	2,603	422,160	328	7.4	482	0.24	13
2016	45,270	98%	35%	15,803	29%	71%	72,562	[tba]	3,802,000	430,000	5,400,000	2,769	500,340	230	7.8	339	0.17	12
2017	35,098	95%	40%	13,871	26%	74%	56,912	[tba]	not yet available	290,000	not yet available	not yet available	not yet available	7.2	not yet available	not yet available	not yet available	not yet available
2018	24,736	96%	38%	9,324	18%	82%	36,268	[tba]	not yet available	not yet available	not yet available	not yet available	not yet available	not yet available	not yet available	not yet available	not yet available	not yet available
Ø since 2014 ²									3,707,032	363,261	5,194,441	2,630	439,766	293	7.5	422	0.21	13

Source: KfW Impact Report

Figure 24 IFC impact reporting



Source: IFC Green bond impact report (FY2019)

Figure 25 Iberdrola impact reporting

Sustainability indicators in the area of distribution		
Name of project	Increase in capacity within the horizon of the investment plan (MW)	
Renewable generation connection in Scotland	2,167	
Strengthen international connection in Scotland	6,640	
Castile-La Mancha photovoltaic connection plan	604	

Sustainability indicators in the area of smart grids		
STAR Project	Status as of 2011 ⁰¹	Status as of 2012
Smart meters (no.)	154,428	442,441
Smart meters installed (%)	144	416
Transformer centres adapted for remote management (no.)	583	2,692
Transformer centres adapted for remote management (%)	0.88	4.01

Sustainability indicators in the area of renewable energy ⁰¹		
Installed capacity attributable to the bond (MW)	2017 output attributable to the bond (GWh)	CO ₂ avoided due to the bond (Tm) ⁰²
47%	94%	245,471

Source: Iberdrola Sustainability Report 2017

111. **The EIB presents such information in its annual CAB framework**, but only for its investment loans. There is no provisional information made available ex-ante on expected impacts for its intermediated loans (which absorbed 7% of amounts allocated in 2019); the information on impact is only presented at completion once all allocations are confirmed. Figure 26 below presents a snapshot of the EIB's impact reporting.

Figure 26 Snapshot of EIB impact reporting summary

Annual average project data per EUR 1m project cost, weighted by CAB-relevant disbursement in 2019 (investment loans only)	
Absolute GHG emissions	189 t CO ₂ equivalent
GHG emissions saved/avoided	515 t CO ₂ equivalent
Primary energy savings	0.17 GWh/y
Renewable heat capacity added	0.02 MW-th
Renewable electricity capacity added	0.38 MW-e
Renewable electricity capacity rehabilitated	0.02 MW-e
Renewable electricity produced	0.89 GWh-e
Renewable heat produced	0.11 GWh-th

Source: EIB CAB Framework 2019

112. **The EIB, IFC and Iberdrola provide highly detailed project level data.** Impact reports contain lists of eligible projects and links to websites bearing more relevant project information, such as project promoter details, project objectives and an assessment of key environmental and social risks and mitigation measures. Iberdrola provides a detailed table for each bond with all the project names, their allocation, impact and other information, such as the installed energy capacity. They provide an annex of all the details (allocated amount, projects, sub-categories for each project, environmental benefits) for each green bond.
113. **Issuers publish their reports at different times of the year, which could be problematic for investors.** IFC publishes its reporting each September, shortly after the end of its financial year (ending on 30 June). KfW, ING and Iberdrola typically publish their reports earlier than the EIB, in March or April (the EIB published its 2019 CAB Framework in August 2020). The difference in the timing of the reporting may, however, be partly explained by the differences in post-issuance

review practices. The production of a limited assurance report (for ING, Iberdrola) may be quicker than the EIB's reasonable assurance report.

114. **Issuers primarily report on expected impacts** using historical data from similar projects which are completed. KfW uses data from past evaluations, SNCF Réseau the data from the carbon audits of specific projects it commissions. As new data on actual impacts flow in, the calculation methods used to derive expected impacts need updating. SNCF Réseau, for instance, updates annually its extrapolation ratios to incorporate the new knowledge.

115. The key differences in the approaches adopted by selected issuers are as follows:

- Unlike KfW, the EIB provides no information on expected impacts for its intermediated loans. It only reports the impacts of these loans on project completion.
- Several issuers use external consultants to develop their impact methodologies and/or calculate the expected impacts (e.g. SNCF Réseau, ING). This is typically not the case for MDBs/NPBs who typically do this in-house.
- Some issuers report on the impact of their green bonds in relation to the SDGs (IFC, KfW, ING, Region IdF).
- Like the EIB, most peers give impact metrics prorated for the portion of contribution made, except IFC (at the risk of inflating its climate contributions).

116. **KfW has the most advanced approach to ex-post reporting of impacts, albeit at portfolio level.** KfW communicates actual annual impacts in an aggregate manner ex-post for its green bonds specifically, once they have been calculated externally, and compares them with expected impacts⁸⁶. Results for 2019 are expected to become available in 2022. At the EIB and IFC, relevant ex-post impact information consists of Environmental and Social Completion Sheets (in the case of the EIB) and independent evaluations, for a sample of projects (in the case of both the EIB and IFC). The ex-post information is not aggregated.

⁸⁶ See for instance pp. 15 and 16 of KfW's 2020 Green Bonds report available [here](#). For more details on the methodology, please see p. 15 of [this report](#).

Figure 27 Sustainable Development Goals reporting by IFC

Green bond climate sector	Project short name	Project ID	Country	Type	Project description	Climate loan committed	Annual energy produced	Annual energy savings	RE capacity constructed/rehabilitated	Green building impact	Other impact	Expected annual reduction in GHG emission tCO ₂ e/ year	Sustainable development goals
						USD millions	MWh	kWh	MW	M ²			
Solar	Linyang Energy	41370	China	RE	IFC's loan will finance the construction of the first grid-parity* solar projects in China which will help to reduce GHG emissions and meet increased electricity demand.	11	368,456	N/A	299	N/A	-	273,989	7, 8, 13
Biomass	Amadeus JV	42202	Brazil	RE/Other Mitigation/Adaptation	IFC's loan will finance the construction of a dissolving wood pulp mill and the installation of a cogeneration plant. This will produce feedstock for wood-based cellulose fibers and feed 40 percent of excess bioelectricity generated on site as green energy into the public grid. The project will also sustainably plant and manage about 70,000 hectares of eucalyptus plantations.	200	676,000	N/A	144	N/A	70,000 hectares of forest area under sustainable management.	653,500	7, 8, 12, 13, 15
Green buildings	WDP Romania	42730	Romania	EE/RE	IFC's loan will finance the construction of resource-efficient semi-industrial and logistics properties across Romania. The project is expected to contribute to the reduction	110	21,000	23,029,000	10	336,000	-	21,638	7, 8, 9, 13

Source: IFC green bond impact report FY20

117. **All banks (EIB, IFC, KfW, ING) refer to the harmonised framework for impact reporting in their impact reports; some additionally refer to other frameworks.** ING also refers to the Platform for Carbon Accounting Financials' (PCAF) *Paving the way towards a harmonised carbon accounting approach for the financial sector and the IFI Approach to GHG Accounting for Renewable Energy Projects*. IFC refers to its online platform *Climate Assessment for Financial Institutions* which is used internally but also reportedly by others (other multilateral development banks, international financial institutions, private institutions and fund managers) to measure the climate impacts of projects.
118. **The three most common categories of impact indicators are: GHG emissions avoided, renewable energy capacity/production, energy savings.** The EIB reports on both relative and absolute GHG emissions. This is also the case for SNCF Réseau, while other issuers present only one indicator, GHG emissions avoided. To calculate GHG emissions avoided, it is required to have a baseline/reference scenario (what would have happened without the project). Here, issuers base themselves on country emission factors for electricity generation projects or other reference data for other project types. Emission factors represent the emissions that would have been generated from more carbon-intensive sources (without the project). Emission factors are country-specific (as they depend on the energy mix of each country). In the area of green buildings, country-specific data are sought on the actual energy consumption of real estate in the country.
119. **With respect to renewable energy capacity/production, the EIB has a longer list of available indicators compared to peers.** While the EIB distinguishes between electricity and heat, other issuers typically report on energy more generally (regardless of whether they finance power or heat generating plants – both types of plants also form part of the eligible projects). The EIB also reports on renewable electricity capacity added and rehabilitated separately, while other issuers present only one indicator, “added capacity” or “constructed or rehabilitated capacity”. In addition to capacity, all issuers except ING also report on annual energy production/electricity generation, though exact labelling and units of measure may differ. Finally, with respect to energy savings, the three MDBs/NPBs refer to annual energy savings indicators. While the EIB refers to primary energy savings, KfW refers to final energy savings. IFC does not specify (at least in its impact report).

120. **Two issuers also provide estimates of the number of jobs supported through the green bond eligible projects (KfW, Region Île-de-France).** These estimates have been produced using available employment impact ratios (based on past similar projects in the case of KfW, sourced from relevant ministries or national federations in the case of Region Île-de-France). Ratios are a function of the type of projects financed. For example, Region Île-de-France uses different ratios. For transportation projects 7.1 direct FTEs per €1 million invested, for green buildings 11.6 FTEs per €1 million invested in the case of new constructions; 14.2 FTEs in the case of renovation works. KfW creates 12 jobs (person-years) per €1 million invested on average.

Box 14 Best practice among selected group – impact reporting

Region Île-de-France organises site visits to show projects' impacts and engage investors, who appreciate this approach.

Reporting good practices: visualisation of data, aggregation by sector/sub-sector, showing links to SDG goals (IFC).

Reporting on actual impacts and comparing these with expected impacts (KfW).

Providing detailed project level data on impacts (IFC, EIB, Iberdrola).

With regard to GHG emissions, reporting on additional indicators (such as annual absolute/gross GHG emissions), which go beyond the core indicator (GHG emissions reduced/avoided) prescribed by the harmonised framework for impact reporting, is seen as a good practice by this evaluation. The rationale being that the more information is disclosed the better informed investors are, hence contributing to the increase in transparency of the asset class (EIB, SNCF).

Moreover, in the context of achieving the objective of net-zero emissions by 2050, consistent with the commitments under the EU Green Deal, it is important not only that emissions are reduced but also that there are negative emissions.

Negative emissions (i.e. removal of carbon dioxide from the atmosphere) are expected to derive from technologies that do not exist today⁸⁷. The EU vision for a possible future EU economy⁸⁸ and notably its seventh and eighth pathways assesses how net-zero GHG emissions, i.e. climate neutrality, can be achieved by 2050, thereby also looking at the role of net negative emissions to achieve zero greenhouse gas emissions by 2050:

- *The seventh pathway pushes zero-carbon energy carriers and relies on CO₂ removal technologies, namely bioenergy combined with carbon capture and storage (CCS), to balance emissions.*
- *The eighth pathway, by contrast, focuses more on the impact of a circular economy in a world in which customer choices become less carbon-intensive. It has more scope to strengthen the land use sink and needs to rely less on CO₂ removal technologies to balance out remaining emissions.*

Hence, reporting on these indicators – reduction of emissions and negative emissions – towards a common objective (net-zero emissions) should be disentangled and have at least the following indicators:

- GHG emissions reduced/avoided – being suitable for reduction of emissions, which assumes higher importance in the present stages.
- Annual absolute/gross GHG emissions – being suitable for negative emissions, when future technologies will be in place, enabling the removal of GHG from the atmosphere.

⁸⁷ Brad Smith, "Microsoft will be carbon negative by 2030", Microsoft, 16 January 2020, available [here](#) and Duncan McLaren, "Guest Post: The problem with net-zero emissions targets", *Carbon Brief*, 30 September 2019, available [here](#).

⁸⁸ European Commission, "Going Climate-Neutral by 2050: A strategic long-term vision for a prosperous, modern, competitive and climate-neutral economy", 16 July 2019, available [here](#).

5.7 The Bank's approach to external review and verification diverges from other issuers

121. **In contrast with the EIB, all peers have obtained a second party opinion prior to issuance.** Second party opinion provide an assessment of the issuer's green bond framework and analyse the "greenness" of eligible assets ex-ante. Various second party opinion providers have been selected by peers, all have different approaches but as market leaders all provide extensive second party opinions (also covering an assessment of the issuer's profile through ratings for ISS ESG and Vigeo Eiris or qualitatively for CICERO)
122. **Several issuers also obtain external post-issuance reviews to complement a second party opinion prior to issuance.** Approaches to this vary:
- Limited assurance reports from audit firms (ING, Iberdrola) or moderate assurance report (SNCF Réseau) – which notably provide assurance that the proceeds have indeed been allocated to eligible green projects.
 - Post-issuance verification from ISS ESG (SNCF Réseau) – which has the same purpose but also reviews the application of the Climate Bonds Standard.
123. **The EIB is the only issuer commissioning an annual reasonable assurance report from KPMG, covering its CAB Framework and allocation and impact reports, since 2016.** A reasonable assurance report provides the highest level of assurance⁸⁹ – in the auditors' own words, "the scope of a limited assurance engagement is substantially less extensive than the scope of a reasonable assurance engagement, and thus, less security is provided." The document also contains the External Review Form elaborated by the GBPs, an important step towards standardisation and comparability of external reviews. The previous chapter explained the EIB's rationale for choosing an audit over an SPO.

Box 15 Key messages of the comparative analysis

- The evaluation mapped and compared the green bond framework and activities of the EIB with those of six other issuers (IFC, ING, KfW, Iberdrola, SNCF Réseau, Region Île-de-France).
- The EIB is by far the largest issuer of green bonds among the selected group but until 2020 IFC's green bonds have represented a higher share of total bond issuance than the EIB's. IFC and the EIB offer the widest maturity spectrum and range of currencies.
- For all peers, issuing green bonds is part of a broader sustainability/climate strategy and their **motivations** include diversifying their investor base, increasing investments in green assets, raising financing for sustainable investments, enhancing their sustainability profile or contributing to develop the green bond market.

⁸⁹ The International Standard on Assurance Engagements (ISAE) 3000 states that "the objective of a **reasonable assurance** engagement is a reduction in assurance engagement risk to an acceptably low level in the circumstances of the engagement as the basis for a **positive form of expression of the practitioner's conclusion**. The objective of a **limited assurance engagement** is a reduction in assurance engagement risk to a level that is acceptable in the circumstances of the engagement, but where risk is greater than for a reasonable assurance engagement, as the basis for a **negative form of expression of the practitioner's conclusion**". In plain words, in the case of reasonable assurance the reviewer concludes on the basis of his analysis that the issuer actually did what he said he did; in the case of limited assurance, as the scope and detail of the work conducted by the reviewer does not allow a positive statement, a more prudent wording is recommended, e.g. "...nothing has come to our attention that prevents us from...". Moderate assurance engagement is not defined in the International Standard on Assurance Engagements (ISAE) 3000. Like for limited assurance, conclusions come in a negative form.

- In terms of **use of proceeds**, although renewable energy and energy efficiency are the most common eligible sectors and also the most frequent categories effectively used for allocation of green bond proceeds, there are differences in the approaches adopted by individual issuers.
- **Allocation of proceeds** differs across issuers. While ING, KfW and SNCF Réseau apply a portfolio approach, other issuers use a project by project approach. Both approaches are allowed under the IFI green bond impact reporting harmonisation framework; however, only the project-by-project approach serves to provide investors with detailed information on such allocations by bond.
- Issuers have various systems in place for **management of proceeds** and to ensure traceability. Ring-fencing green bond proceeds in a separate account or sub-account is considered the best practice by the GBPs.
- **Impact reporting** is available at two main levels: (i) portfolio level reporting (KfW, ING, SNCF Réseau) and (ii) project level reporting (EIB, IFC, Iberdrola, Region Île-de-France). In contrast, most peers provide only limited **use-of-proceeds reporting** at the portfolio level. The EIB and Region Île-de-France are the only issuers to provide Use-of-proceeds reporting at project level.
- Issuers primarily report on expected impacts using historical data from similar projects which are completed. The EIB presents expected impacts only for its investment loans and such information is not available at appraisal for its intermediated loans, unlike KfW.
- KfW is the only issuer to communicate actual annual impacts in an aggregate manner ex-post for its green bonds specifically, once they have been calculated externally, and to compare them with expected impacts.
- The EIB is the only issuer to publish absolute GHG emissions for each project.
- In light of net-zero commitments, the EIB and SNCF's approach to reporting on additional indicators (such as annual absolute/gross GHG emissions), which go beyond the core indicator (GHG emissions reduced/avoided), represent good practice.

6. THE COSTS AND BENEFITS OF CABs

124. This section provides an analysis of the costs and benefits of CABs for the EIB. Issuing green bonds involves additional costs compared to conventional bonds deriving from applying a green bond framework which sets out an issuer’s approach to (i) use of proceeds, (ii) process for project evaluation and selection, (iii) management of proceeds, (iv) reporting and (v) external review. On the benefits side, green bonds appear to have the potential to offer several positive aspects, such as wide reputational benefits, higher investor demand, investor diversification and in some cases, lower cost of funding (greenium). However, the prevalence and magnitude of those benefits may not be assured for all green bond issuers and over time. The evaluation sought to examine the EIB’s specific case and how it has been able to reap such benefits over the evaluation period. Certain benefits are difficult to quantify and a more descriptive or alternative approach was applied.

6.1 Additional annual costs of Climate Awareness Bonds activity are relatively small

125. **Incremental running costs of CABs are estimated to be relatively small.** An assessment carried out by the evaluation team (Box 16) estimated incremental running costs related to green bond activity to be roughly 0.02% of the EIB’s 2019 annual CAB issuance, or €764 000. It comprises both the external audit review and direct costs (salaries, social charges and other direct costs) of 2.8 FTEs evenly shared amongst the Finance and Projects directorates for their time spent on tasks which are additional due to the fact the bonds are green and not conventional bonds.

126. **The above chimes with the information collected from other issuers and the 2020 CBI Treasurer Survey.** While the interviewees could not provide a precise amount for the additional costs, a few say that they are relatively small compared to the overall benefits. Of the 86 treasurers who responded to the CBI survey, 38% find the costs of a second party opinion, extra legal costs and reporting “negligible.”⁹⁰ A majority of survey respondents (90%) say that the cost of borrowing is very similar or lower than the cost of conventional bonds.

Box 16 Approach to estimate the additional running costs of the EIB’s green bond activity



Step 1- Identification of divisions involved in CAB activity



Step 2- Identification of staff involved in CAB activity in each division



Step 3- FTE estimation (staff involved X share of time devoted to CAB activity)



Step 4- Estimation of staff costs (No. of FTEs X Average direct costs per FTE)



Step 5- Adding other relevant costs (external review audit)

First and foremost, the word “incremental” is of paramount importance in the type of assessment undertaken, given that only costs pertaining to the “greenness” of the activity are taken into consideration. That is to say, if those bonds were not issued under a green format, they would have been issued under a conventional format.

Second, the evaluation has focused on analysing and estimating the additional running costs of the EIB’s green bond activity when at cruise speed and hence deliberately ignoring peaks of activity or other one-off costs, whose benefits are expected to last for the whole lifetime of the green bond activity and for which the evaluation did not dispose of data, such as:

- *Additional work carried out during the back-office due diligence (2012-14) and introduction of CAB and SAB Frameworks in 2016 and 2020 respectively.*

⁹⁰ C. Harrison, L. Muething and K. Tukiainen, “Green Bond Treasurer Survey”, Climate Bonds Initiative, April 2020, available [here](#).

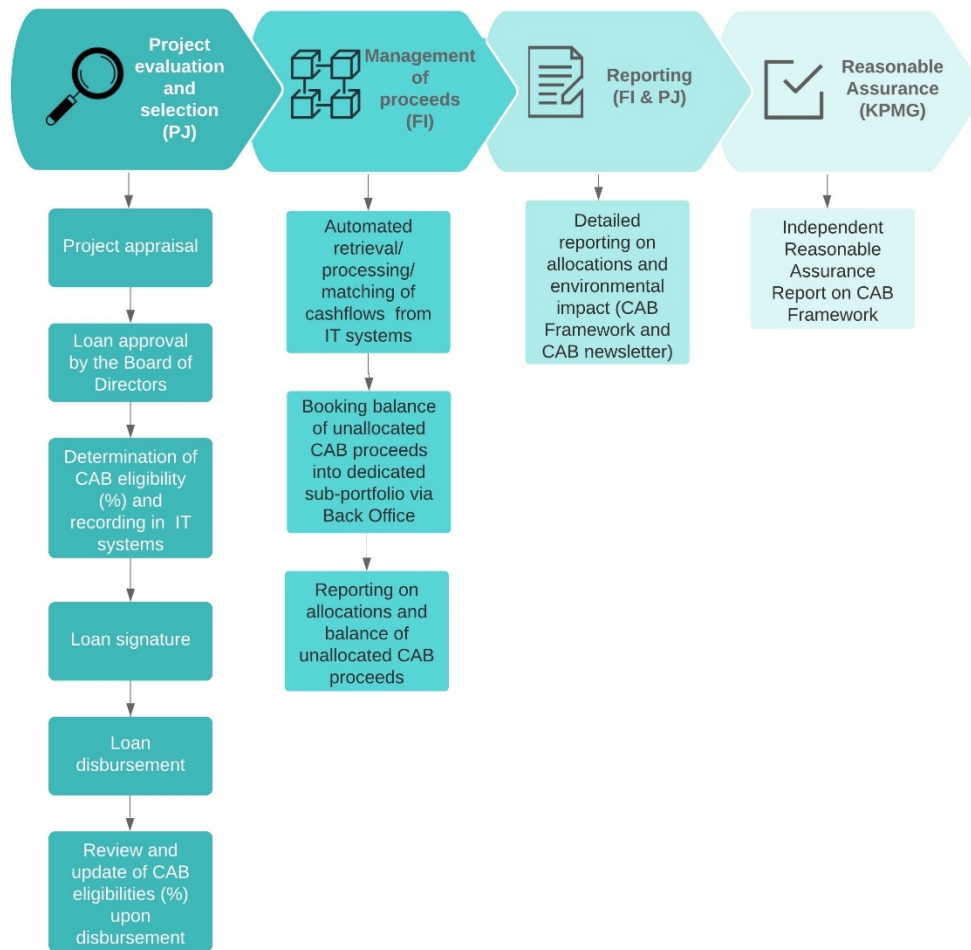
- *Enhancements introduced on the EIB's information systems (front and back office) to deal with specificities of CAB eligibilities and allocation of proceeds. Finally yet importantly, certain costs are deliberately excluded, such as bond sustainability ratings and green labels as these are paid by third parties or were not provided at the request of the EIB. The costs of the annual external assurance engagement are included. Underwriting fees are deemed similar for CABs and conventional bonds, thanks to the ECoop format, hence not additional.*

127. **The main cost element is direct costs.** The responsibilities for CAB issuance, allocation of proceeds and reporting is split between the Projects directorate and the Finance directorate according to their respective fields of competence⁹¹. Figure 28 provides a summary of the activities carried out under each stage of the CAB framework.

- **Project evaluation and selection:** Projects directorate defines the CAB loan eligibilities and eligibility criteria based on a subset of the Climate Action – Mitigation investments, and appraises potential projects. The Projects directorate CAB experts then review the loans approved by the Board of Directors and assign CAB-eligibility percentages to each project in the IT systems, building on the Climate Action Indicator system. The Projects directorate also checks the availability of CAB impact indicators and makes sure the Projects directorate contact person adds them in case they are missing. Upon CAB-eligible disbursements, the Projects directorate performs a revision post-disbursement and prior to a FI data freeze and updates CAB-eligibility percentages in the IT systems based on any new information that may have become available (i.e. information updated in the CAB Framework).
- **Management of proceeds:** FI is responsible for the allocation of proceeds based on the inputs of eligibilities by the Projects directorate. Allocations are automated and performed by a dedicated IT tool which retrieves all CAB-relevant cash flows, matches them on a first-in-first-out basis and calculates the balance of unallocated CAB proceeds. On a regular basis, FI reconciles any discrepancies between disbursement data produced by the Projects directorate and data produced by the FI IT tool. The reconciled allocations are then booked in a dedicated Treasury sub-portfolio invested in money market instruments pending allocation to eligible disbursements. This permits audit and reasonable assurance of the allocation reports.
- **Reporting:** Each year, FI produces an annual report on allocations by individual bonds and by individual projects and the Projects directorate produces an annual report on the expected impact of allocated projects, which are included in a “CAB Framework” audited and assured by KPMG.
- **Assurance:** The annual CAB Framework is subject to an audit by KPMG Luxembourg, which assures both the allocation and impact reports included therein with *reasonable assurance*.

⁹¹ Segregation of duties was urged and welcomed by external auditors, who have certified the EIB's CAB practice since 2016 – with reasonable assurance.

Figure 28 Climate Awareness Bonds framework



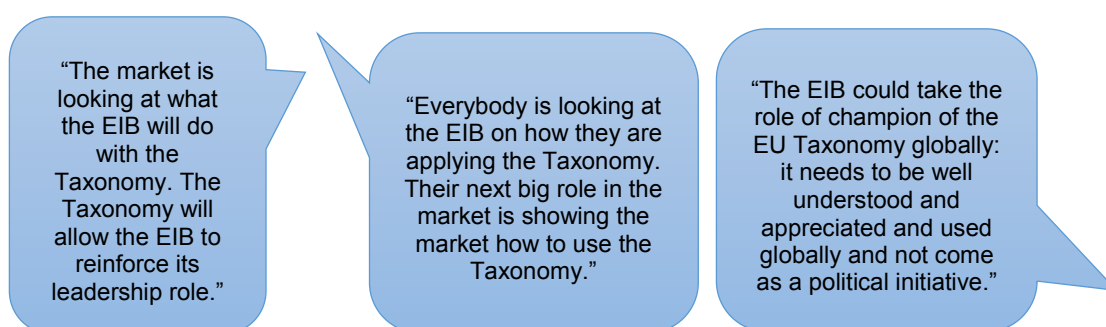
Source: IG/EV

128. **On the Finance directorate side, the Sustainability Funding team is mainly composed of funding officers which were within other funding teams prior to the creation of the dedicated unit.** Therefore, they mainly consisted of staff converted into a specialised function and hence no major incremental cost for the structure. The Sustainability Funding team does not rely on other funding team support for work in relation to CAB issuance, e.g. discussion with banks, negotiation and execution of price, documentation and publicity – directly executing themselves all of the work which would have to be undertaken regardless of the “colour” of the bonds. Marginal costs are therefore essentially limited to the resources spent in the Sustainability Funding team in connection with CAB/SAB-specific tasks that add to the team’s ordinary funding activities (core aspects are described in section 6.2 below). On the Investors Relations team, the incremental work pertains mainly to dedicated green bond communication (newsletters) and presentational aspects of allocation reporting, whilst back-office teams deal notably with the allocation of CAB proceeds. Overall, the Finance directorate does not expect its staff involvement to increase significantly with the widening of CAB eligibilities.
129. On the Projects directorate side, several teams are involved in activities ranging from strategic to operational (eligibilities, procedures, audit, reporting, etc.). A CAB coordination group representing all the Projects directorate’s departments was established in 2020 to support the further development of CABs. The Projects Directorate expects its staff involvement to increase significantly, as eligibilities are extended to sectors other than renewable energy and energy efficiency, in order to verify CAB eligibility percentages and CAB impact indicators for additional CAB volumes, and to put in place supporting procedures and systems. This shall, however, be

partly mitigated by constantly improving efficiency of processes and automation. A specific time recording has been put in place.

6.2 Benefits are significant and wide-ranging

130. **The EIB's capital markets expertise and its approach to CABs have allowed the Bank to strategically position itself at the forefront of key developments in the field of sustainable finance, providing it with a competitive edge vis-à-vis other players.** As illustrated in the quotes below, the key elements of the EIB's capital markets expertise and approach to CABs are as follows:
131. *Early development of processes and tools for promoting accountability, transparency and reliability.* The EIB was at the forefront of efforts aimed at promoting accountability, transparency and reliability of CABs as well as green bonds more generally. These efforts include the due diligence and administration upgrade of the CAB framework⁹² in 2014-15; the EIB's proposal for green bond impact reporting harmonisation (2015); the EIB's first CAB impact report using the harmonised format (2015); coordinating the development of the IFI framework on green bond impact reporting harmonisation (2015); coordinating Green Bond Principles working groups on impact reporting and external reviews (2016); and the publication of the first CAB external audit with reasonable assurance (2016). These efforts supported international and EU work on green and sustainable finance. In further recognition of the EIB's efforts and expertise, the Commission invited the Bank to join the HLEG on sustainable finance, where it has played an influential role in informing the European Union's approach to sustainable finance.
132. *Early development of international comparability in green finance.* The EIB's efforts directed at developing a common language in green finance (such as Mapping of the China Green Bond Endorsed Project Catalogue, preparation of the first White Paper on the need for a common language in green finance, etc.) provided the basis for the EIB's technical contributions to the HLEG and Technical Expert Group on sustainable finance⁹³. These contributions ensured that the work of these groups could take market-related aspects into consideration and therefore enhance its legitimacy in capital markets.
133. *Early development of consistency between CABs/SABs and the EU Taxonomy Regulation.* The EIB was the first issuer to align its CAB- and SAB documentation with the EU Taxonomy Regulation. This has placed the Bank in a leading position with respect to the implementation of the Taxonomy. Given the EIB's unique institutional position, expertise and high standards, the market is now expecting the EIB to lead the way in the implementation of the EU Taxonomy.



134. *Early development of consistency between the EIB's lending and funding activities in the field of sustainable finance.* Structural changes like the EU Sustainability Taxonomy (EUST) and the

⁹² Which led to the development of reliable IT infrastructure within the EIB for identification of eligible projects and automation of allocations.

⁹³ See Recommendation 1 in High-Level Expert Group, 55-56.

wider greening of the financial system, which are changing the landscape of the EIB's lending and funding activities:

- On the lending side: the EIB's activities are being reassessed and relabelled, in the context of the EU climate bank, and in light of the EUST. These developments on the lending side (together with climate bank targets) will permit larger volume of CAB/SAB issuances.
- On the funding side: the EIB was the first issuer linking its CABs' documentation to the upcoming EU Taxonomy in order to enable a gradual extension of CAB eligibilities to activities (other than the initial RE&EE) contributing substantially to climate change mitigation in line with the EUST. The EIB will progressively allow SABs' proceeds for allocation to a wider range of activities (initially only water, later extended to health and education in 2019) in line with EUST, EU GBS, GBPs, the Social Bond Principles and the Sustainability Bond Guidelines.

The EIB's EU taxonomy transition plan will enable the Bank to extend CAB/SAB eligibilities and to increase CAB/SAB issuance to meet growing demand from sustainable investors. Moreover, systematic EUST implementation on the lending side can be turned into a competitive edge on the funding side (this topic is discussed in chapter 8).

135. **CABs and SABs have also contributed to overall improvement of the EIB's business practice.** There are three key areas of improvement attributable to the EIB's work on CABs and SABs:

New procedures for monitoring and reporting of eligible loans

- Systematic monitoring and reporting on new disbursements of eligible loans.
- Systematic reporting on new disbursements of eligible loans by policy objective.
- Systematic monitoring and reporting of eligible projects' impact after approval of eligible loans.

Early implementation of the EU Taxonomy Regulation to loan classification

Ongoing reflection on how EUST logic can be applied to lending areas not yet covered by EUST builds credibility in the EU Platform on sustainable finance and enhances the value of the EIB's advisory services to its clients.

Innovation in funding-related activities

CABs have had a wide-ranging impact on the way the EIB approaches capital markets (Box 17). CABs have provided the basis for capital market integration, cross-border retail distribution, testing of back-office infrastructure in the context of ECB's clearing and settlement initiatives, development of new issuance strategies (ECoops), improvement of internal workflows and procedures in the Projects and Finance directorates as well as a dialogue with civil society.

Box 17 The benefits of the Climate Awareness Bonds for the Bank's wider capital markets activities

Capital market integration for cross-border retail distribution. The inaugural CAB issued in 2007 was passported and distributed via European Public Offering of Securities for the first time simultaneously in all 27 countries of the European Union (EPOS II).

Extension of distribution channels. In 2008, the EIB developed the ECoop format, taking stock of the acknowledgements on pan-European retail distribution gained with the first CAB. This served to extend distribution with cooperative and savings banks, helping the EIB adapt to the financial crisis.

Dematerialised securities and payments in central bank money. In 2013, an EIB CAB was the first EIB bond to be issued in dematerialised form through Lux CSD (Luxembourg law of April 6 2013 on dematerialised securities) and to be paid in central bank money (ECB T2S).

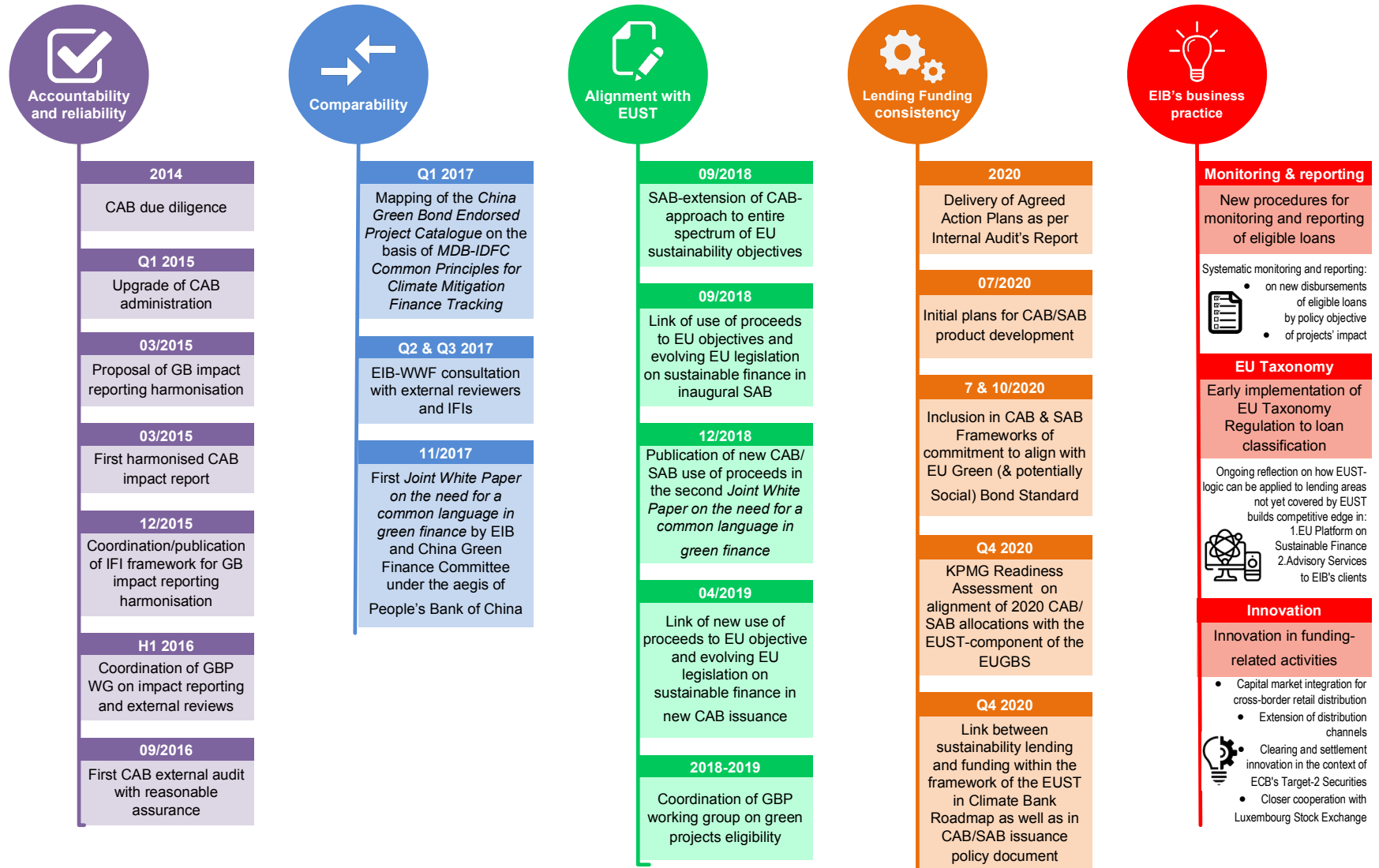
Closer cooperation with the Luxembourg Stock Exchange. In 2015, the EIB drew the attention of LuxSE to the potential of the green bond market, starting a series of joint initiatives for the parallel promotion of CAB/SAB and the new Green Exchange strategy of LuxSE.

Source:IG/EV

Figure 29 EIB's strategic positioning in the field of sustainable finance

Early developments in the field of sustainable finance

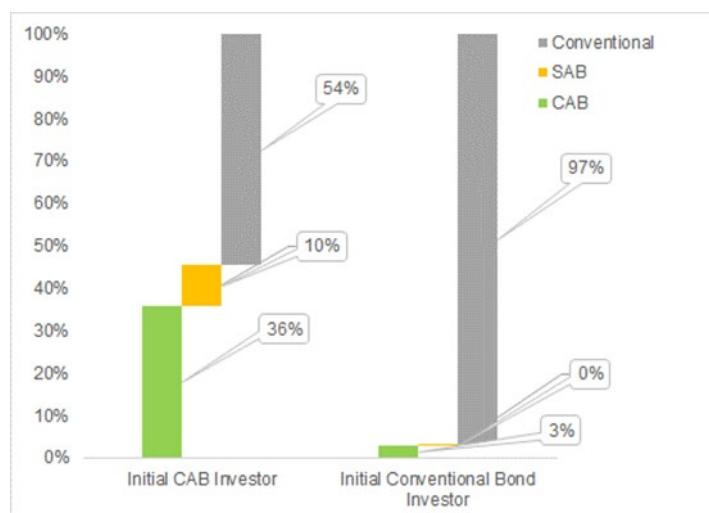
EIB's Capital markets expertise and its approach to CABs has allowed the Bank to strategically position itself at the forefront of key developments in the field of sustainable finance



Source: IG/EV

136. **The improved relationship between different services of issuers (i.e. funding, investor relations, lending) emerges as one of the key benefits of issuing green bonds in the interviews.** Issuing a green bond requires more and better communication and cooperation between different services than the issuance of conventional bonds. Working closely together on creating a green bond framework, for example, leads to better understanding of the work of other units of the issuers. This positive effect on internal relationships is also a key finding in the CBI Treasurer Survey.
137. **CABs have attracted green investors to conventional bonds and helped diversify and improve funding conditions across the whole debt portfolio of the Bank.** Investors who first bought EIB bonds under the CAB format and subsequently bought bonds did it so, not exclusively in green or sustainable format. Figure 30 shows that initial CAB investors have dedicated slightly more than half (54%) of their subsequent investments in EIB bonds under a conventional format and only 46% under a thematic format (CAB or SAB). At the same time, investors having first purchased the EIB conventional bonds dedicated the vast majority (97%) of their subsequent investments to the same type of bonds and only a residual amount (3%) to CABs.

Figure 30 Profile of subsequent bond purchase of initial Climate Awareness Bonds and conventional bond investors



Source: IG/EV own computation

138. **The literature review and interviews suggest the existence of benefits for issuers of green bonds, such as wider reputational benefits, investor diversification, and employee and customer satisfaction.** Reputational benefits of issuing green bonds are so widely recognised that they are no longer considered additional benefits, but are rather one of the key rationales for deciding to issue green bonds.⁹⁴ One of the interviewed issuers stated that issuing green bonds is now almost a requirement for reputable issuers. Issuing green bonds also sends a strong market signal that the organisation is “open for green business.”
139. **Diversification of investors and better engagement with investors** are key findings echoed in interviews and the CBI Treasurer Survey. Almost all (98%) treasurers responding to the CBI

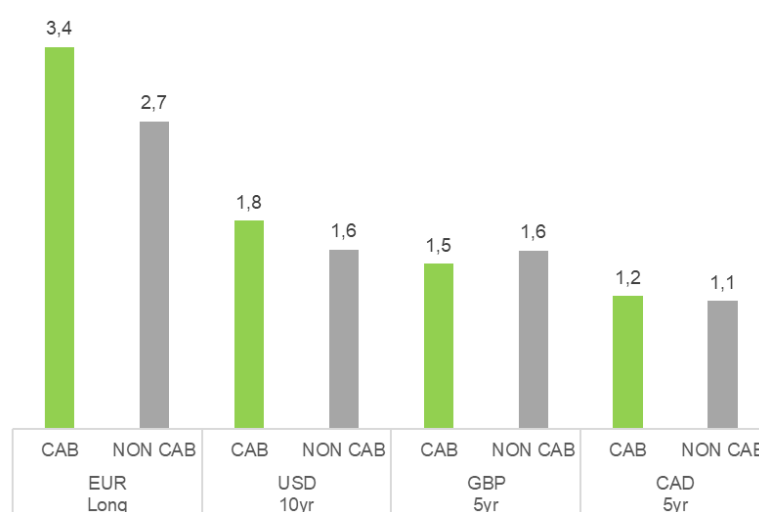
⁹⁴ C. Harrison, L. Muething and K. Tukiainen, “Green Bond Treasurer Survey”

survey say that green bonds attract new investors. Because of the more extensive communication and explanation of what green bonds are, how they function, the reporting requirements, etc. issuers are more engaged with investors and therefore gain higher visibility for their institution.

140. Moreover, ESG rating agencies have specific questions on the green bond activity of their rated entities, suggesting that it has a positive impact on the rate attributed⁹⁵. This possibly implies that an issuer’s commitment to green bond finance can itself be an indicator of superior sustainability and/or strategic governance.
141. **The EIB CABs are often more subscribed than conventional bonds of comparable size and maturity.** The evaluation examined core (EUR, USD, GBP) and one non-core (CAD) currencies, composed of two baskets of comparable (in terms of maturity and rate) CAB and conventional bonds, totalling a sample of 66 bonds – after exclusion of reverse enquiries⁹⁶ that skewed the oversubscription multiples (especially those of conventional bonds).

Figure 31 Oversubscription multiple

142. **CAB issuance in EUR, USD and CAD are more over-subscribed than conventional bond issuance**, as depicted in Figure 31. For GBP issuance the rate of over-subscription was lower in CAB than conventional bond issuance (still, CABs were over-subscribed, but by less than conventional bonds). This can be explained by the fact that issuance in GBP is purchased predominantly by bank treasuries, which are more interested in the value of the AAA paper for capital relief purposes (compliance with Basel requirements) than the green aspect.



Source: IG/EV own computation

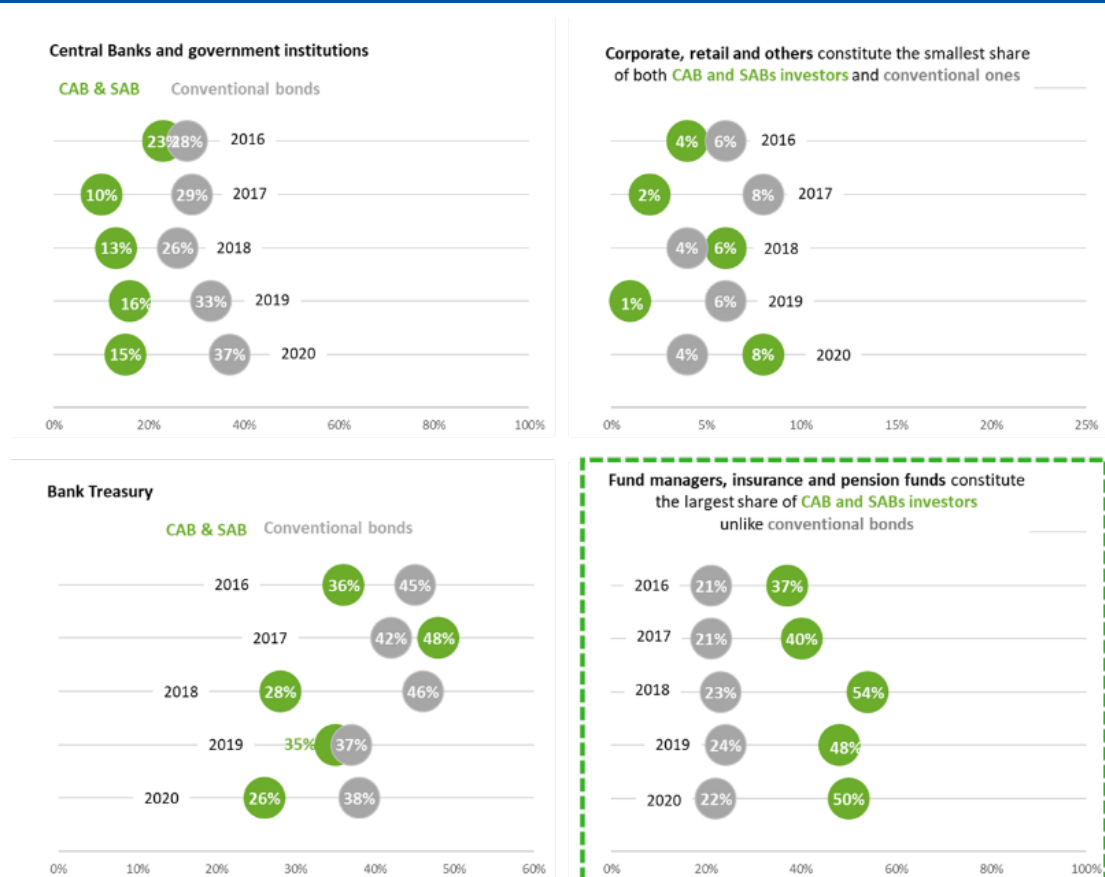
143. Moreover, according to the EIB services, **CAB issuances are often increased in size (upsized) to accommodate strong demand.** Hence, the over-subscription multiple is understated as compared to a situation where it is computed as the ratio between order book and original bond size (instead of amounts allocated). A strong over-subscription level often leads in the bond negotiation process to price tightening compared to initial guidance, therefore favouring funding cost conditions.
144. This raises an interesting question as to whether green investors should receive preferential treatment in a heavily over-subscribed order book. This issue is, however, beyond the scope of the present evaluation.
145. **CABs have enabled the Bank to tap into a wider pool of investors.** CABs have attracted money from new types of investors, notably long-term sustainable investors, and contributed to

⁹⁵ However, from the rating reports of such agencies, it is not clear the weight such considerations have on the overall rating.

⁹⁶ In a reverse inquiry, investors (or dealers) determine an amount and type of bonds they wish to buy and approach the issuer with a request to buy debt securities with particular features at a particular price.

diversifying the investor base of the EIB, thus improving access to capital markets. CABs have a wider investor pool as compared to conventional bonds. Fund managers, insurance and pension funds are the main investors in the EIB CABs, whilst conventional bonds are traditionally placed with central banks and banks' treasuries. As depicted in Figure 32 fund managers, insurance companies and pension funds subscribed around 50% of CAB and SAB issuance over the last five years. On the other hand, for conventional bonds they represented only around 20%. The lion's share of the EIB conventional bonds are placed with banks' treasuries and central governments or governmental institutions. This evidences the clear interest and/or compromise of the investment strategy of retail and institutional investors in the green economy.

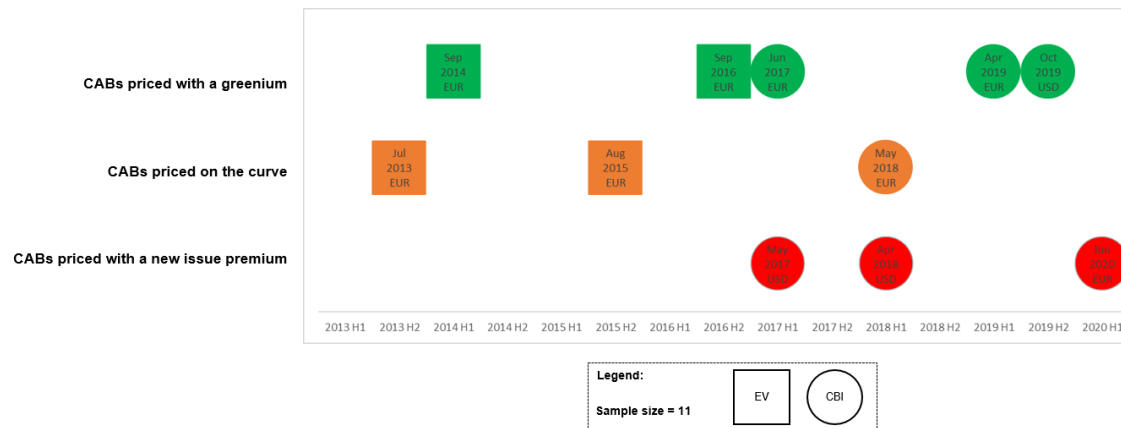
Figure 32 Investor diversification



Source: IG/EV own computation

146. **Primary market pricing of CABs evidences some prevalence of greenium but not consistently.** Less than half (45%) of CABs benefited from a greenium in their primary market placement. The evidence is based on CBI's Green Bond Primary Market Pricing Reports for the period 2017 to 2020 and a replication of the analysis for the period 2013 to 2016 based on the same methodology. This means that CABs priced below the yield curve of seasoned comparable conventional bonds, hence investors were willing to receive lower income and the EIB paid a lower cost of funding. Whilst the remaining CABs observed either a new issue premium (i.e. in line with conventional bonds which typically pay a premium too) or were priced on the yield curve, in equal proportions as depicted in Figure 33.

Figure 33 Evolution of greenium on Climate Awareness Bonds



Source: IG/EV own computation

Box 18 The concept of greenium

Green bond premium is defined as the difference in yield between a green bond and an equivalent non-green bond.

Green bond premium = Yield on a green bond – Yield on a vanilla bond

Greenium is the premium (or higher price) paid by investors to buy a green bond as compared to a conventional, non-green bond of the same issuer (which results in lower yield for the investor).

Greenium = if (Yield on a green bond – Yield on a vanilla bond) < 0

A new issue premium is a standard feature of the bond market. The new issue premium is the extra yield that a buyer receives, and a seller pays, for a new bond compared to where seasoned bonds from the same issuer are trading in the secondary market at the time of issuance.

However, in the primary market, a “greenium” (a negative green bond premium) arises when the green bond is issued at a higher price (and thus lower yield) compared to a comparable conventional bond, providing a lower cost of funding. For example, an issuer launches a new green bond and if there are more primary market bids for this bond than the book size (in simple terms, excess demand), this could lead to a greenium in pricing.

If in the secondary market there is also more demand than supply from those bondholders who are willing to sell at the vanilla bond’s current market price, the price for the green bond rises to above that of the vanilla bond until holders are willing to sell.

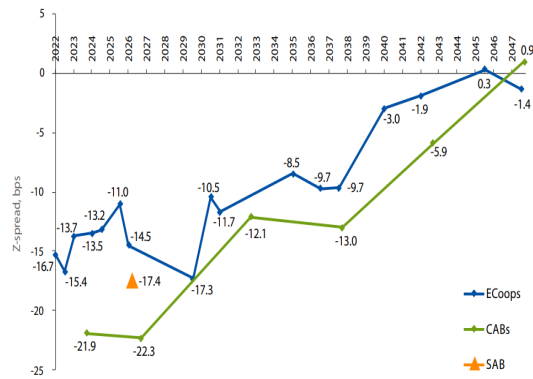
- 147. Based on the literature review and the analysis of interviews, it seems that pricing differences in the primary market between green and conventional bonds of the same issuer are linked more to starker imbalances between supply and demand dynamics in the green bond market than to credit risk considerations, as both types of bonds rank pari passu. Pricing is mostly dependent on the size of the issuance and on the reputation and credit rating of the issuer. It should be noted that a surprising finding from the CBI Treasurer Survey is that cheaper pricing of green bonds is not considered a principal benefit of issuing green bonds; the other benefits discussed above are more prominently recognised by treasurers.⁹⁷

⁹⁷ Caroline Harrison, L. Muething and K. Tukiainen, “Green Bond Treasurer Survey”

148. Better secondary market performance of green over conventional bonds could justify the acceptance by investors of a lower return in the primary markets.

A study published by CBI⁹⁸ shows that green bonds outperform conventional bonds, whether when comparing performance at index level or for matched baskets, controlling for idiosyncratic factors such as sector, currency and liquidity. The study also revealed that under stress conditions the green bonds were less volatile than conventional bonds of the same issuer. Figure 34 displays the zero volatility spread (Z-spread) for the EIB CABs, SABs and conventional bonds in ECoop format. The Z-spread is a measure of a debt security's volatility with regard to a benchmark (treasury) curve. A high Z-spread implies it is riskier and a low Z-spread implies it is less risky. The EIB EUR CABs trade with lower volatility⁹⁹ (implying less risk for investors) than conventional bonds (ECoops) in the secondary market, which can help to partially explain the investors' preference for these types of securities. If investors do value these distinguished green features – i.e. delivering superior risk-adjusted returns or exhibiting downside risk protection – then this may justify the greenium from a market pricing perspective.

Figure 34 Secondary market performance Climate Awareness Bonds vs EIB conventional bonds in ECoop format



Source: IG/EV own computation

Box 19 Key messages of costs and benefits of Climate Awareness Bonds

- Issuing green bonds involves additional costs compared to conventional bonds from applying the four components of the GBPs in an attempt to avoid greenwashing.
- However, at the EIB, the **additional running costs of issuing green bonds are estimated to be relatively small**. The same holds true for other issuers interviewed as part of the evaluation and those who took part in the 2020 CBI Treasury Survey.
- In addition, the green bond process improves the quality of monitoring and reporting on a permanent basis, increasing the information available to investors (e.g. disbursement flows, primary policy objectives, updated impact data).
- The additional costs of issuing green bonds also need to be placed within the perspective of the potential additional benefits for green bond issuers. However, the prevalence and magnitude of those benefits are not assured for all green bond issuers, nor over time.
- The EIB's capital markets expertise and its approach to CABs have enabled the Bank to **strategically position** itself at the forefront of key developments in the field of sustainable finance, providing it with a **competitive edge** vis-à-vis other players.
- CABs have had an impact on the way the EIB approaches capital markets, which on certain occasions went beyond green finance issues, such as: the first cross-border retail transaction offered simultaneously in all EU-27 countries with the EIB's inaugural CAB in 2007 (EPOS II); the

⁹⁸ Caroline Harrison and Monika Filkova, "Green Bond Pricing in the Primary Market: July-December 2018", Climate Bonds Initiative, 2019, available [here](#) (pages 18-19)

⁹⁹ However, the lower volatility may also be a consequence of the lower liquidity of these types of securities, which are predominantly purchased by investors seeking to hold them to maturity rather than for trading purposes.

development of the ECoop format; the testing of dematerialised issuance in T2S and payment in central bank money.

- **CABs attract green investors to the EIB's conventional bonds** and help to diversify and improve funding conditions across the whole debt portfolio of the Bank.
- **Reputational benefits** of issuing green bonds are so widely recognised that they are no longer considered additional benefits, but are rather one of the key rationales for deciding to issue green bonds. For instance, ESG rating agencies have specific questions on the green bond activity of their rated entities, suggesting that it has a positive impact on the rating attributed. This possibly implies that an issuer's commitment to green bond finance can itself be an indicator of superior sustainability and/or strategic governance.
- The EIB's CABs are often **more subscribed** than its conventional bonds.
- CABs have enabled the Bank to tap into a **wider pool of investors**. Fund managers, insurance and pension fund managers constitute the largest share of CAB investors.
- Primary market pricing of the latest EUR and USD CAB issuance evidences **some prevalence of greenium but not in a consistent manner**. The existence of greenium in primary market issuance seems to be explained notably by starker imbalances in supply and demand of green bonds rather than credit risk considerations.
- Moreover, **better secondary market performance** of green over conventional bonds (as measured in terms of financial performance or lower volatility) could justify the acceptance by investors of a lower return in the primary markets.
- Overall, **CABs' benefits seem to far outweigh the costs**, notably taking into consideration the fact that some of the benefits have a connotation of public good given the strategic positioning of the EIB as the EU climate bank and its leading role in the market.

7. COHERENCE BETWEEN CLIMATE AWARENESS BONDS AND SUSTAINABILITY AWARENESS BONDS

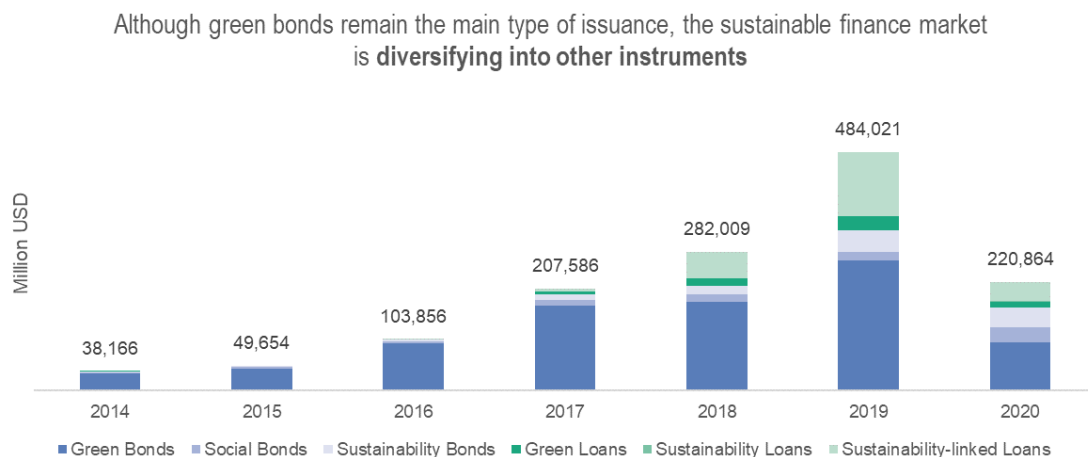
149. The recent surge in issuance of social and sustainability bonds – triggered by COVID-19 – has generated intense discussion on whether these types of bonds are cannibalising the market for green bonds and creating market confusion and fragmentation. This section firstly looks at this issue at the market level and then specifically drills down to the EIB CABs and SABs.

7.1 At the market level, there is growing appetite for different types of labels

7.1.1 Recent years have seen an emergence of a range of sustainable finance instruments

150. In recent years, there has been considerable diversification and innovation in the sustainable debt market, as investors look for alternative ways to contribute to sustainability objectives. Alongside the emergence of new labels for use-of-proceeds bonds (social bonds, sustainability bonds), there has been innovation in financial structures with the introduction of sustainability or KPI-linked bonds and loans. The latter are general corporate purpose borrowing structures where the cost of capital can fluctuate based on whether certain sustainability targets or KPIs are met or not. The market share of other sustainability-labelled debt instruments (social bonds, sustainability bonds, green loans and sustainability-linked loans) increased to about 35 percent of the total sustainable debt market in 2019.

Figure 35 Issuance of sustainable debt products, \$ million



Source: Based on environmental finance dataset

151. **The proliferation of labels has led to concerns about market confusion and fragmentation.** Most underwriters and book runners interviewed were of the view that there is confusion arising from a lack of clarity on the distinguishing features of the different labels and the overlapping nature of some bonds (green and sustainability bonds). Some even expressed concerns regarding liquidity issues in case of excessive debt fragmentation and even further multiplication of labelling. The investor community, in particular, would like more clarity on what the different labels stand for and the issuers also need to be clear about the focus of their bonds. On the flip side, some underwriters held the view that there is no market confusion, especially with the recent entry into force of the EU Taxonomy Regulation as well as the publication of ICMA guidelines (see below) in areas not yet covered by the EU Taxonomy, and if the issuers are clear and transparent about their different bond offerings.

“For social sustainability bonds, there is a lot of confusion even with Social Impact Bonds (which are not even bonds actually).”

7.1.2 New market guidelines and principles have been developed to enhance clarity

152. **Specifically for standard green use-of-proceeds bonds, the framework established by the EU Taxonomy Regulation is bound to provide more clarity in the future.** This extends also to the clarification of the concept of transition. The EU Taxonomy will define green transition activities with dynamic technical screening criteria aligned with the EU objectives including the Paris Agreement and the UN 2030 Agenda. In this way, it will provide a clear reference for standard use-of-proceeds bonds and other types of sustainable debt products in the field of transition.
153. **The European Commission is also considering the possibility of an extension of the Taxonomy approach to social sustainability objectives, which would provide clarity for social/sustainability use-of-proceeds bonds.** The EU Taxonomy Regulation specifies that, by 31 December 2021, the Commission shall publish a report on the provisions required for this extension. On 27 October 2020, a working group on social taxonomy was created within the EU platform on sustainable finance.
154. In the interim, ICMA and other market actors have developed a number of new guidelines and principles. The Social Bond Principles and Sustainability Bond Guidelines closely follow the logic of the GBPs established in 2014 by extending the use-of-proceeds eligible categories to cover projects with positive social outcomes in the case of the Social Bond Principles and by allowing the issuance of bonds that (re)finance a combination of green and social projects. The Green Loan Principles, developed by the Loan Market Association with support from ICMA, apply the use-of-proceeds principle to loans. They aim to create the same level of transparency and regular review for green loans. The Social Bond Principles and Sustainability Bond Guidelines are identical to the Green Bond Principles in terms of processes for project evaluation and selection, reporting requirements and external review. The logic behind the process of project evaluation and selection, management of proceeds, and reporting set out in the Social Bond principles, Sustainability Bond Guidelines and GLP is identical to that defined in the SBG.
155. **The Sustainability-Linked Bond Principles (SLBP) and Sustainability-Linked Loans introduce a complementary approach to sustainable debt.** They are not necessarily based on the use of proceeds; they primarily relate funding conditions to the delivery of sustainability targets for the issuer/borrower. Sustainability-linked bonds are therefore forward-looking performance-based instruments which require bond issuers to commit to future improvements in sustainability outcomes, however set and measured.¹⁰⁰ The SLBP were developed by ICMA in 2020 and are based on KPIs measured against Sustainability Performance Targets (SPTs). The Sustainability-Linked Loan Principles (SLLP), developed by the Loan Market Association with support from ICMA, apply the principle of KPIs measured against SPTs to loans.
156. On 9 December 2020, ICMA released its Climate Transition Finance Handbook¹⁰¹. The ICMA Handbook does not create any label for transition bonds. Rather, it provides guidance on the practices, actions and disclosures to be made available when raising funds in debt markets for climate transition-related purposes, with the issuance of use-of-proceeds bonds aligned with the Green and Social Bond Principles or Sustainability Bond Guidelines, or general corporate







¹⁰⁰ ICMA, “Sustainability-Linked Bond Principles: Voluntary Process Guidelines”, June 2020, available [here](#).

¹⁰¹ ICMA (2020) Climate Finance Transition Handbook for issuers, December 2020. Available [here](#).

purpose bonds issued in line with the SLB Principles. The recommendations have four key elements:

- Issuer’s climate transition strategy and governance.
- Business model environmental materiality.
- Climate transition strategy to be “science-based” including targets and pathways.
- Implementation transparency.

Figure 36 Sustainable debt types

Category	Type	Guiding principles	Date established/ last updated	Eligible use of proceeds	Commentary	Market share (issuance in 2019, Million USD) §
	Green Bond	 EU Green Bond Standard	2014/2018; NA	Eligible green projects	To align, must meet: (1) use of proceeds (2) project selection (3) management of proceeds (4) reporting criteria of respective Principles	264,840
	Green Loan		2018			28,646
Sustainable use of proceeds	Social Bond		2017/2020	Eligible social projects		16,942
	Sustainability Bond		2017/2018	Eligible green & Social projects		43,525
	Transition Bond	No commonly recognised guidelines available*	NA	NA	NA	NA
Overall sustainability strategy	Sustainability Linked Loan		2019	General corporate purpose	KPIs can be based on ESG metrics, ESG score or both	129,558
KPI-linked strategy	Sustainability Linked Bonds		2020			51,000 ¶

Source: Adapted from a presentation by ING

Notes:

* AXA IM proposed Transition Bond Guidelines in 2019; CBI in partnership with Credit Suisse proposed a Transition Label in 2020

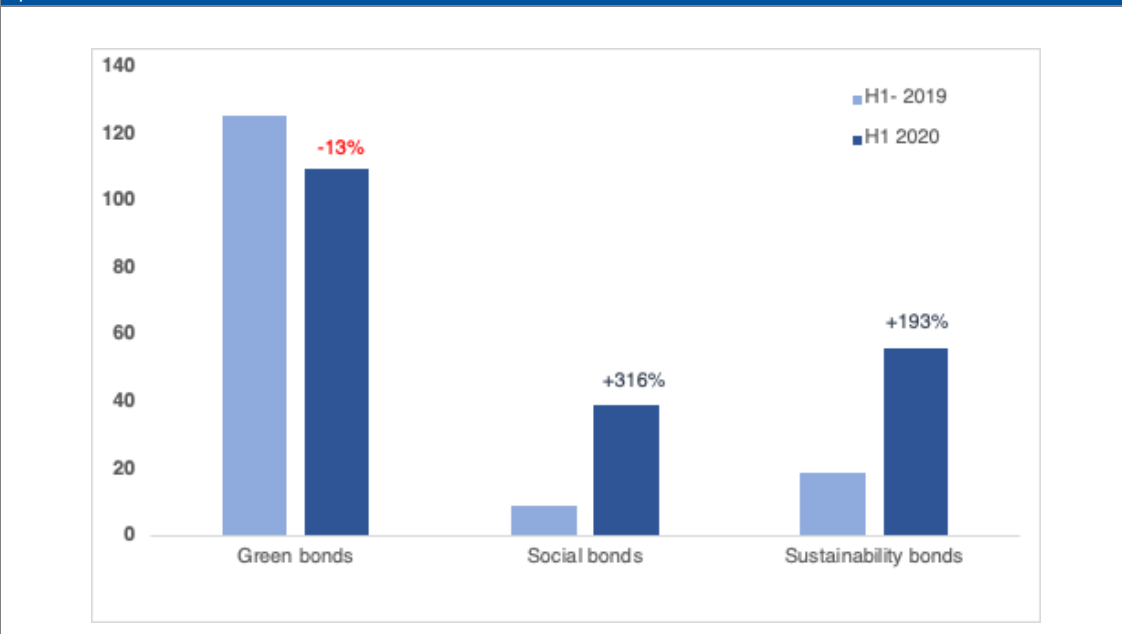
§ Source: Environmental finance database, own calculation.

¶ Source: BloombergNEF

7.1.3 COVID-19 has fuelled demand for social and sustainability bonds, but not at the expense of green bonds

157. **Amid the economic fallout caused by the ongoing COVID-19 pandemic, the growth in social and sustainability bonds has outpaced that of green bonds.** Global green bond issuance in the first half of 2020 was down 13% as compared to the same period last year. On the other hand, issuance of social and sustainability bonds – driven by the COVID-19 pandemic – hit record levels over the same period (Figure 37).

Figure 37 Growth in issuance of Green Social and Sustainability bonds 2020 H1 versus 2019 H1, \$ million



Source: Environmental finance database

158. **There appears to be a general consensus that there is market appetite for bonds addressing a range of SDG goals.** The strong growth of social and sustainability bonds has fuelled speculation that these instruments are cannibalising the market for green bonds. However, interviews and wider market research suggest that there is demand for different labels and types of instruments considering the societal challenges being faced and growing investor interest in ESG issues. The different labels and types of bonds are seen as complementary by market participants as they address a variety of SDG objectives and meet the requirements of different types of investors (some focusing on social, other focusing on green, etc.). Overall, the existence of different labels is seen to broaden the universe of issuers and investors, and contribute to increasing the scale and depth of sustainable finance markets. Overall, COVID-19 seems to have reinforced investor interest in sustainable finance.

Box 20 Use-of-proceeds bonds and KPI-linked bonds

After the emergence of sustainability/KPI-linked bonds, a dialogue has developed in the market on their complementarity with use-of-proceeds bonds.

The main features of Sustainability-Linked Bond Principles are as follows:

- (i) They provide an economic incentive for issuers to commit to KPIs defined by the issuer.
- (ii) They can provide accountability on the issuer's KPIs.
- (iii) They provide issuers with full flexibility on the use of proceeds.

However, pricing is a thorny issue for these instruments at present. Pricing in the primary market is difficult, and until the market matures the underwriter only expects to see coupon step-ups if a target is missed, because no investors will be willing to take the risk of taking a coupon step-down if a target is hit. Some also criticise a misalignment of incentives (investors benefit from the coupon step-up if the issuer fails to hit its target). Finally, it can be tricky to establish meaningful KPI targets and comparability between bonds is more difficult.

The evaluation tilts towards the view that KPI-linked bonds and use-of-proceeds bonds are complementary. Each model has its own merits, and as such the two models taken together appeal to a broader range of issuers and investors depending on their preferences. SLBs can be more suitable for hard-to-abate sectors as they embark on a green transition. SLBs are meant to complement green bonds, and should enable more issuers to access the sustainable financing market. Traditionally, issuers of green bonds have been issuers with heavy capital expenditure requirements in green areas, such as renewable

energy, utilities, green buildings and rail (such issuers must use the proceeds of green bonds exclusively for green purposes but do not need to achieve any predefined green targets). However, corporate issuers which do not have such green expenditures readily available may find it more challenging to tap the green bond market. They could, nonetheless, tap the SLB market since the use of proceeds is not restricted to green projects or uses only.

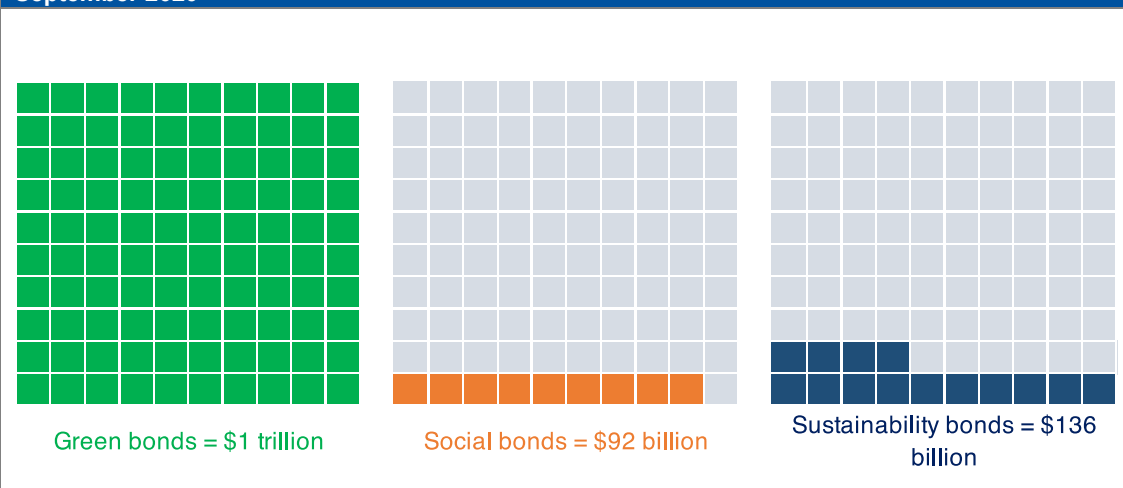
It is worth mentioning here that sustainability-linked bonds received a boost in September 2020, when the ECB announced that it would accept these bonds as collateral¹⁰² with effect from January 2021 and also start buying them under its asset purchase programmes provided they comply with programme-specific eligibility criteria.

NB: If the use of proceeds of KPI-linked bonds is not aligned with the EU Taxonomy, these bonds will not be recognised legally as a sustainable investment under the EU Taxonomy Regulation.

159. **Green bonds are expected to continue to dominate the sustainable finance market.** Green bonds constitute the largest (Figure 38) and the deepest part of the market and there are several factors that will continue to generate interest in this segment:

- The importance of climate change considerations, and the huge risks climate change represents for the investment portfolios.
- The existence of dedicated green market infrastructure (standards, indices, impact measurement tools) and funds (see section 3). On the other hand, social bond and sustainability bond development is not supported by the existence of dedicated funds or indices, making benchmarking more difficult.
- Social/sustainability bonds are more heterogeneous. They do not constitute a unique asset class and it is harder to establish a dedicated social bond fund.
- And while there is a high degree of overlap in the investor base for CABs and SABs, there are also investors that focus on one or the other. Overall, the green investor base is thought to be larger in terms of both volume and number.
- Climate change is a global issue, while social bonds tend to address more local issues.

Figure 38 Cumulative issuance of Green Social and Sustainability bonds since inception to September 2020



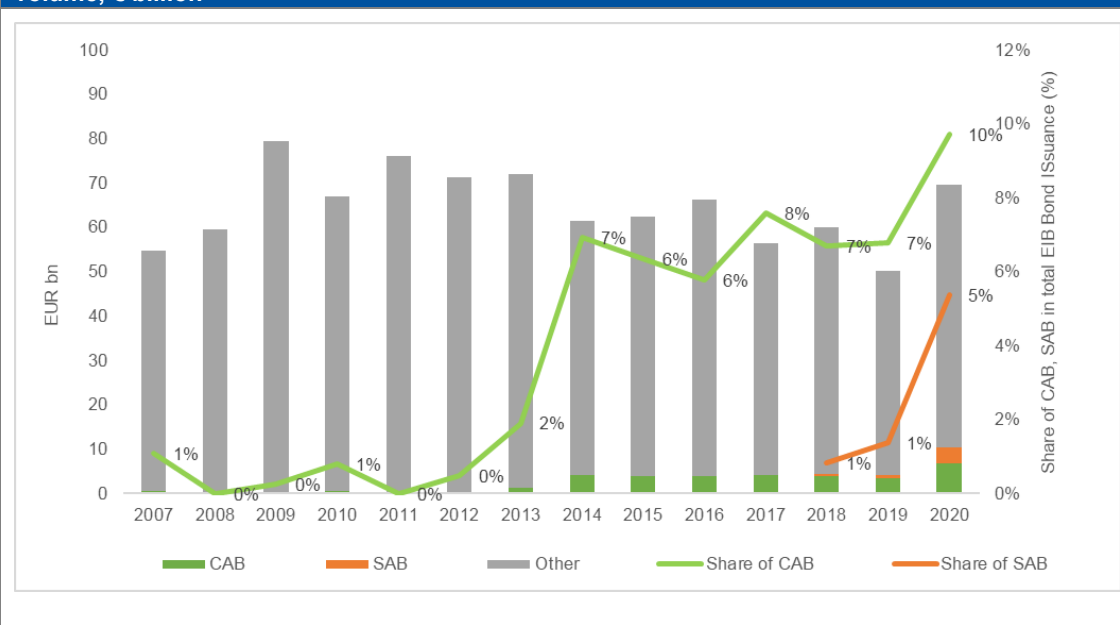
Source: Environmental finance database

¹⁰² ECB (2020), “ECB to accept sustainability-linked bonds as collateral”, Press release, 22 September 2020. Available [here](#).

7.2 A complementary offering to the market

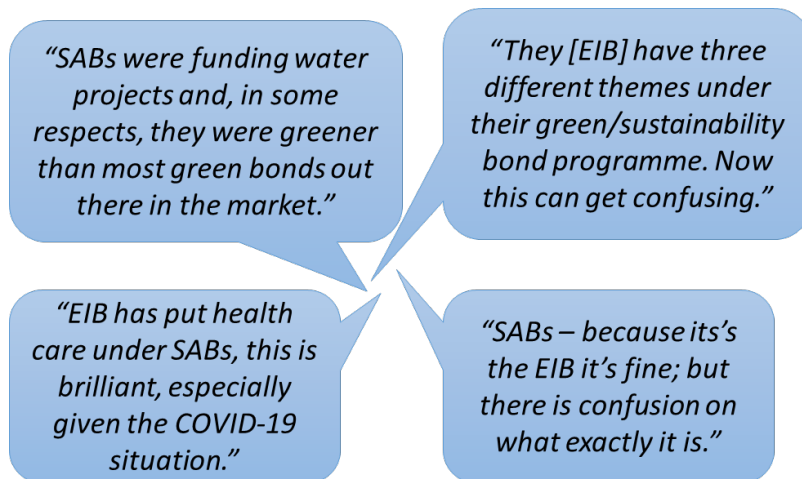
160. **By definition, CABs and SABs jointly span the whole spectrum of EU sustainability objectives.** On the one hand, CAB use-of-proceeds documentation states that “CABs include renewable energy, energy efficiency, and other economic activities contributing substantially to climate change mitigation”. On the other hand, SAB use-of-proceeds documentation states that “Sustainability Awareness Bonds complement CABs by extending the same approach from climate to further areas of environmental and social sustainability.”
161. **The market perceives CABs and SABs as complementary instruments** and some interviewees even emphasised that there is room for “parallel coexistence” of both, without any risk of cannibalisation. This is evident from the data on issuance and market take-up – Figure 39. The launch of SABs in 2018 has not affected the average issuance volumes of CABs, either in absolute or relative terms.

Figure 39 Annual Climate Awareness Bonds and Sustainability Awareness Bonds issuance volume, € billion



Source: IG/EV. The left axis shows absolute values in € billion. The right axis shows CAB/SAB issuance relative to total EIB bond issuance. The chart is based on unaudited data for 2020.

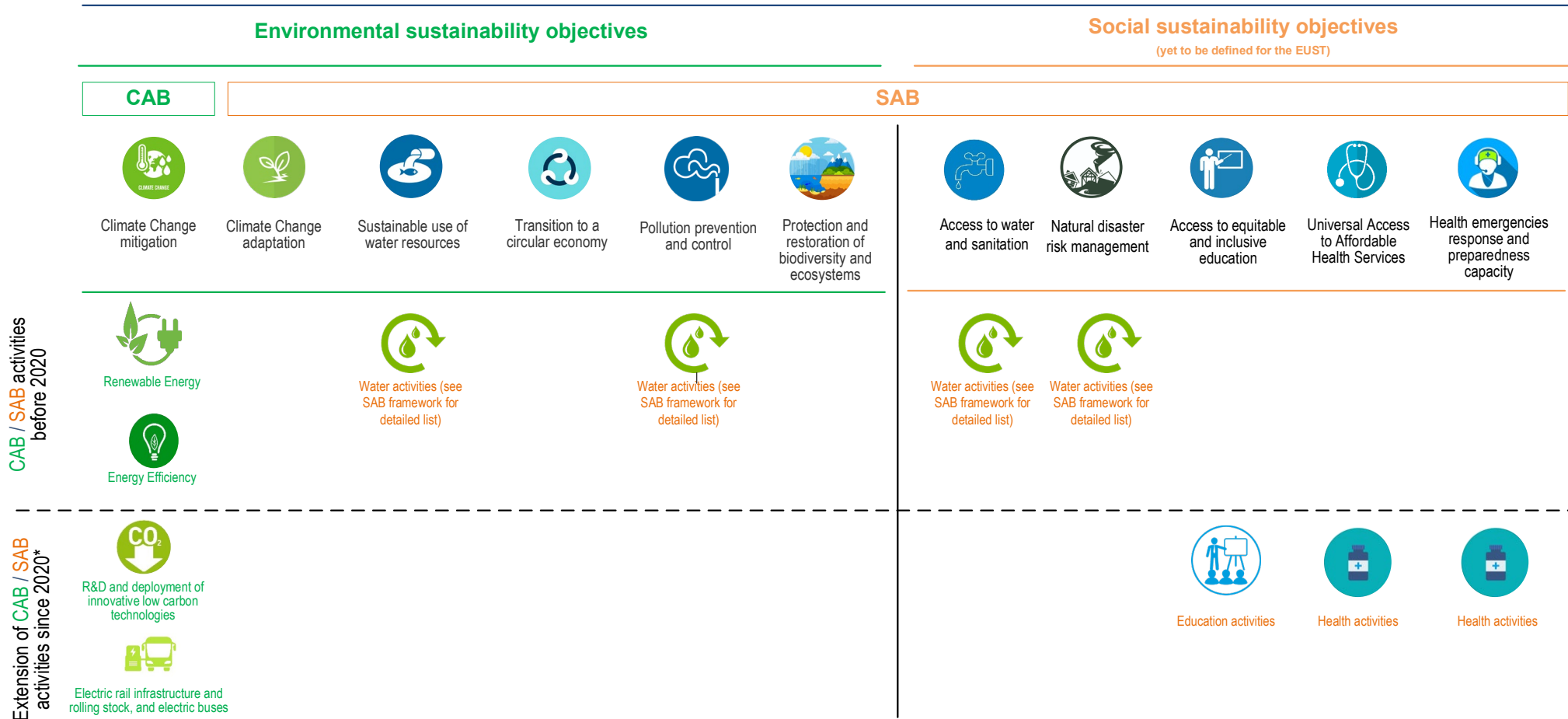
162. **The complementarity of the two instruments could be further explained to some market participants.** There was less of an agreement among market participants on whether the complementarity of CABs and SABs had been clearly communicated. According to an interviewee, for example there is lack of coherence in the EIB’s approach to CABs and SABs with a very strict definition for the use of CAB proceeds on the one hand and a relatively loose definition for the use of SAB proceeds on the other.
163. **This has not created any issue due to the EIB’s strong reputation, track record and high levels of transparency in CAB/SAB reporting.** In addition, the use-of-proceeds section of the CAB and SAB documentation states that allocations will be “in line with evolving EU sustainable finance legislation, including the EU Taxonomy Regulation”.
164. The development of the EU Taxonomy and its implementation at the EIB are therefore bound to reduce the possibility of misunderstandings going forward.



165. **As the eligibility criteria for both CABs and SABs are broadened (see Figure 40), the coherence between CAB and SAB allocations in the context of the EU Taxonomy Regulation will become more apparent to the market.** On 31 July 2020, the EIB published its 2019 CAB Framework and in October 2020 the inaugural SAB Framework. The two frameworks detail CAB and SAB eligibilities and mirror each other in clarifying the respective areas of allocation. The transparent description of SAB eligibilities and eligibility criteria in line with the logic of the EU Taxonomy will help their understanding by investors until the EU Taxonomy for environmental and social objectives beyond climate is established.

Figure 40 Eligibility criteria for Climate Awareness Bonds and Sustainability Awareness Bonds

EU Sustainability Taxonomy



Note: (i) Further extensions of SAB objectives and CAB/SAB activities are possible; (ii) Social sustainability objectives for SABs are defined by EIB until extension of EU Sustainability Taxonomy to social sustainability objectives

Source: IG/EV own computation

Box 21 Recap of key messages on coherence between Climate Awareness Bonds and Sustainability Awareness Bonds

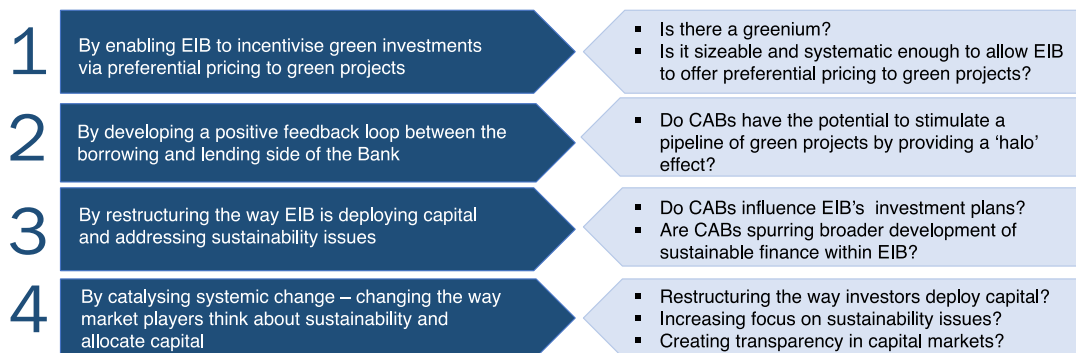
- In recent years, there has been considerable diversification and innovation in the sustainable debt market, as investors look for alternative ways to contribute to sustainability objectives (emergence of new labels such as social bonds, sustainability bonds and introduction of sustainability or KPI-linked bonds and loans).
- The proliferation of labels has led to concerns about market confusion and fragmentation. Most underwriters and book runners interviewed were of the view that there is confusion arising from lack of clarity on the distinguishing features of the different labels and overlapping nature of some bonds.
- Specifically for standard green use-of-proceeds bonds, the framework established by the EU Taxonomy Regulation is bound to provide more clarity in the future. This extends also to the clarification of the concept of transition.
- The European Commission is also considering the possibility of an extension of the taxonomy approach to social sustainability objectives, which would provide clarity for social/sustainability use-of-proceeds bonds.
- In the interim, a number of new guidelines and principles have been developed. On the one hand, the Social Bond Principles and Sustainability Bond Guidelines closely follow the logic of the Green Bond Principles.
- The Sustainability-Linked Bond Principles and the Sustainability-Linked Loans introduce a complementary approach to use-of-proceeds bonds. They are not necessarily based on the use of proceeds; they primarily relate funding conditions to the delivery of sustainability targets for the issuer/borrower.
- COVID-19 has fuelled demand for social and sustainability bonds, but not at the expense of green bonds. Green bonds are expected to continue to dominate the sustainable finance market.
- Complementarity of the two instruments can be further explained to some market participants. There was less of an agreement among market participants on whether the complementarity of CABs and SABs had been clearly communicated.
- As the eligibility criteria for both CABs and SABs are broadened, the coherence between CAB and SAB allocations in the context of the EU Taxonomy Regulation will become more apparent to the market.

8. ROLE OF CLIMATE AWARENESS BONDS IN STIMULATING GREEN INVESTMENTS

166. **The evaluation examined four channels through which CABs could shift capital towards green investments.** These are as follows:

- (i) by enabling the EIB to raise financing on advantageous terms, thus allowing the Bank to incentivise green investments by reducing the cost of capital for such projects;
- (ii) by developing a positive feedback loop between the lending and borrowing side of the Bank;
- (iii) by restructuring the way the EIB is deploying capital and addressing sustainability issues;
- (iv) by catalysing systemic change, i.e. changing the way market players think about sustainability and allocate capital.

Figure 41 There are potentially four channels through which CABs could redirect capital to green investments



Source: IG/EV

167. **The evaluation does not dwell over the role of CABs in attracting new financing beyond what would have been available to the EIB through conventional bond issuance.** This notion of “additionality” of green bond financing is rather narrow in construct and does not apply to highly-rated issuers, such as the EIB. Given the EIB’s AAA credit rating, solid reputation, strong business model, etc., the Bank would have had access to this financing in any case (via conventional bond issuance). Moreover, the volume of CAB issuance is driven by the availability of eligible green loans, rather than the other way round. For these reasons, the evaluation focuses on the channels described above and further discussed below.

8.1 Greenium on Climate Awareness Bonds is not yet systematic and sizeable enough to act as a mechanism for incentivising green investments

168. **One of the ways in which green bonds could stimulate green investments is by lowering the cost of capital for such investments**¹⁰³. The logic goes as follows: in the case of a “greenium” in the primary market, an issuer would benefit from lower cost of capital. This would then enable the issuer to offer preferential/cheaper financing to eligible projects (or other improvement of financial terms), thus incentivising green investments¹⁰⁴ (see Figure 42 below).

Figure 42 Green bonds can potentially stimulate green investments by lowering the cost of capital



Source: IG/EV

Box 22 Is lower cost of capital necessary to incentivise and stimulate green investments?

Some people question whether pricing incentives are necessary to stimulate green investments, arguing that the market is moving in the opposite direction, i.e. penalising projects that are not green. In recent years, rating agencies have routinely and explicitly started incorporating climate risks into their assessment processes. As such, companies undertaking green investments benefit from an improved credit profile (other things being equal) as these investments reduce their exposure to climate risks. However, penalising non-green is not the same as incentivising green. As green investments can be capital-intensive (particularly investments in low-carbon or climate-resilient infrastructure), the cost of capital for initial investment can be a critical factor in their development. For example, the share of cost of capital in the total cost of renewable electricity generation is estimated to be as high as 50-70%. Even small changes in the cost of capital could play a significant role in facilitating project development and increasing overall investment levels in the low-carbon transition¹⁰⁵.

“Cost of capital can account for a significant share of total project costs for infrastructure. Reducing the cost of capital for a green project relative to a non-green project could help tip the balance in favour of the green project on pure business grounds.” – Sean Kidney, CEO, Climate Bonds Initiative. Green Bond Additionality: The Big Picture

169. **Banks are starting to incentivise green investments via preferential pricing, but this is not happening systematically.** Some promotional banks, such as NRW in Germany – which are benefiting from a “greenium” at new issuance – are passing this benefit on the funding side to the bank’s lending side. The greenium is being used to drive up the volume of green investments. NRW has established an internal green refinancing curve (in addition to a conventional refinancing curve) for environment-friendly projects. To incentivise green investments, eligible projects are offered interest-rate subsidies somewhere in the single digit basis point range¹⁰⁶. Market participants interviewed in the framework of this evaluation provided examples of other commercial banks that are offering preferential pricing to green projects. Interviewees, however, explained that it is generally difficult for a commercial bank to do so because: (a) green bond

¹⁰³ Igor Shishlov, Romain Morel and Ian Cochran, “Beyond transparency: unlocking the full potential of green bonds”, I4CE, June 2016, available [here](#).

¹⁰⁴ In the case of a corporate issuer, it would reward the company with cheaper financing, thereby providing incentives for green investments.

¹⁰⁵ See footnote 81.

¹⁰⁶ Environmental Finance, “A greater role for green bonds – interview with Dr Frank Richter, Head of Investor Relations at NRW Bank”, 11 February 2020, available [here](#).

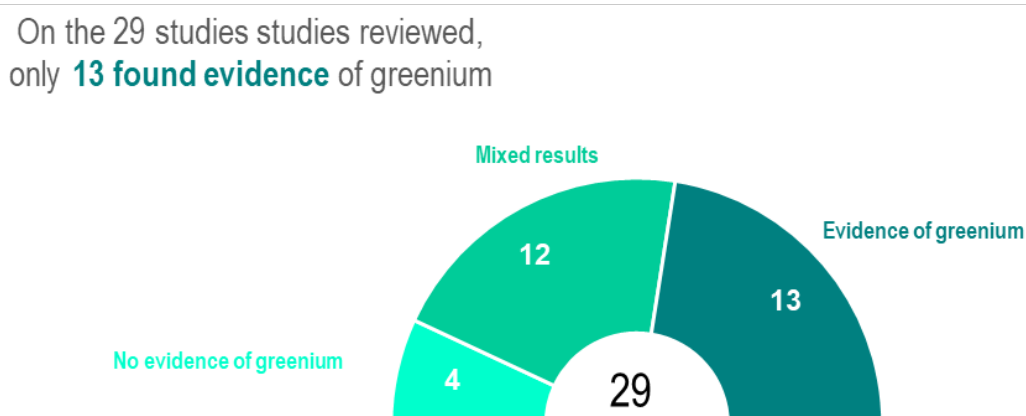
issuance costs more and these costs have to be recovered; (b) the idiosyncratic nature of greenium; and (c) there is currently no green capital relief. For green bonds to make a material impact on investments, borrowing yields would need to be consistently lower for issuers.

Q: Would you expect a banking sector issuer to pass on the benefits of the lower yield (on its green bonds) to green projects in the form of a lower interest rate?

"We are not seeing that consistently at this time. However, we are seeing banks offer sustainability-linked loans with a discount for borrowers. Many financial groups are also reviewing their lending standards across sector, with a focus on hard-to-abate sectors, as banks look to achieve net-zero by 2050. As such, this could be of benefit in the future."

170. **Overall, the evidence on the existence and scale of a “greenium” is inconsistent and inconclusive.** The evaluation team carried out an extensive review of academic and grey literature on greenium. While no consensus has emerged yet in the academic and practitioner literature on whether the greenium exists and on its scale, the review of key studies shows that main determinants of the greenium are the type of issuer, the sector, the rating of the bonds, and whether the issuer follows established standards and guidelines. The lack of consensus is driven in part because studies follow different methodologies (e.g. bond matching of green and conventional bonds, comparison of green and conventional indices, primary vs secondary market analysis), cover different time periods, different types of issuers (e.g. municipal, corporate), and different currencies. However, recent overview studies suggest that green bonds are more likely to carry a greenium if they are investment grade, issued by governments, and follow established guidelines on governance and reporting (e.g. CBI certification). Issue size, tenor and currency do not appear to have a statistically significant effect on whether bonds price with a greenium. The greenium is more pronounced on the secondary market. MacAlister et al (2020), who conducted an extensive literature review¹⁰⁷, report that 56% of studies observe a greenium on the primary market and 70% of studies find it on the secondary market. The greenium ranges from 0 to 20 basis points and clusters around 5 basis points. Figure 43 below provides a summary of the literature reviewed and Annex 4 presents a detailed Table of the literature review.

Figure 43 Literature provides mixed evidence on the existence and scale of greenium



Source: IG/EV own computation

¹⁰⁷ The authors go through a robust screening of 34 articles, and the key finding above is based on 15 articles.

171. **Some recent issuances, however, point to the possibility of a greenium in the primary market.** Strong investor demand (€33 billion in orders, for a final book size of €6.5 billion) allowed for one basis point premium for the inaugural German green bond issuance (September 2020) compared to its conventional “twin”¹⁰⁸. Similarly, it is reported that Alphabet’s \$5.75 billion sustainability bond issuance (August 2020) secured record low borrowing costs for the technology giant¹⁰⁹. In October, MuniFin reported that its €500 million green bond was six times oversubscribed with a negative new issue premium. Volkswagen AG, Daimler AG and Orange SA priced their green/sustainability bonds issued in September 2020 at a significantly cheaper cost than their existing debt (see table below). In Volkswagen’s case, the automaker will save almost €3 million every year, according to Bloomberg calculations. It raised €2 billion (\$2.4 billion) across two green tranches, paying 15.4 and 13.6 basis points below its very liquid yield curve for eight and 12-year notes, respectively. Moreover, analysis by Bank of England shows that green bonds issued by European companies in September 2020 priced on average nearly 10 basis points inside existing curves and tighter than other non-green issuance over the same time period.

Table 3 Evidence of greenium from recent primary market issuances

DATE OF ISSUE	ISSUER	TENOR	SIZE (€ MILLION)	PRICING VS EXISTING DEBT (BPS)**
Sept. 16	Volkswagen (Green)	8Y	1 250	-15.4
Sept. 16	Volkswagen (Green)	12Y	750	-13.6
Sept. 9	Orange (Sustainability)	9Y	500	-15.5
Sept. 3	Daimler (Green)	10Y	1 000	-13.7

*Euro-denominated, non-financial corporate ESG issuance, Sept. 2020

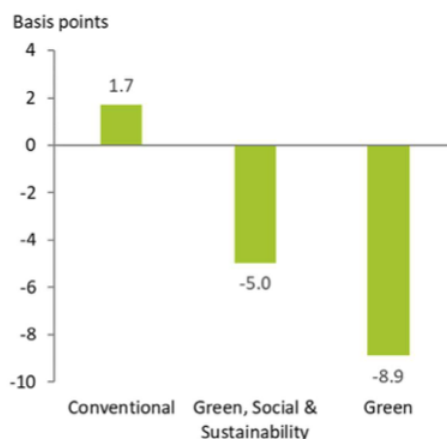
** Pricing differential between primary market green bonds placement and yield curve of existing conventional debt. If negative, there is evidence of greenium.

Source: Bloomberg Green, available [here](#)

¹⁰⁸ Euractiv, “Germany raises €6.5 billion from first-ever green bond”, 3 September 2020, available [here](#).

¹⁰⁹ Joe Robinson, Richard Waters and Eric Platt, “Alphabet locks in record-low borrowing costs in \$10 billion deal”, *Financial Times*, August 2020, available [here](#).

Chart 11: New issue premia for non-financial European € bonds (Sep 2020)



Source: Bloomberg Finance L.P., and Bank calculations, available [here](#)

172. **Interviews with market players provide a mixed picture on the topic of greenium.** Underwriters offered a range of views on whether green bonds attract a “greenium” or not. The main points emerging from these interviews are as follows:

- Some issuers might benefit from a greenium, e.g. financial institutions/corporate issuers (5-10 bps) and SSA (1-2bps), and in certain geographic or currency markets (e.g. 1-2 bps in EUR market, Sweden). But even so, the greenium is not systematic. Sometimes it is there, sometimes not.
- There was no consensus on the existence of greenium in primary markets. According to some interviewees, there was no significant evidence of green bonds being issued at a “greenium” and pricing inside their yield curve (i.e. offering a lower yield) in the primary market. According to them, many green bonds are actually priced in line with their vanilla bond yield curve as investors would generally not bid above the fair price in primary markets. However, some interviewees provided anecdotal evidence of green bonds pricing at tighter levels in primary markets.
- Several interviewees suggested that green bonds trade at tighter levels than comparable vanilla bonds in the secondary market.

173. **Investors are generally not willing to sacrifice yield for green, but there are exceptions to this rule.** Interviews with market participants suggest that any greenium that currently exists is a function of demand-supply dynamics (coupled with the dominance of buy-and-hold investors in the market)¹¹⁰ but not because investors are willing to “pay more for green”. According to some of the underwriters and book runners interviewed, investors are generally not willing to accept a lower yield for green due to their fiduciary duties: in the absence of a specific mandate to give advantage to green bonds, accepting a lower interest rate compared with traditional bonds with the same financial characteristics/credit risk is not compatible with fiduciary duty and more broadly with mainstream investors’ interest. Some interviewees, however, acknowledged that lower yields may be possible in some circumstances:

- When investors are compelled to buy green bonds to meet a mandate.

¹¹⁰ In CBI’s “Green Bond Treasurer Survey”, respondents stated that cheaper pricing when it exists is driven by supply-demand imbalances.

- When there is an incentivising factor or subsidy involved, e.g. tax incentives which allow investors to pay more for green.
- Some retail investors, such as younger investors/individual wealth management clients are willing to pay more for green. A number of asset managers are creating retail models that capitalise on green.
- Green bonds provide investors with a level of transparency (on which projects are green) and visibility (where their money is going and what impact it is having) that conventional bonds do not provide. This lowers search and transaction costs for investors that actively want or are mandated to invest in sustainable assets. As such, some investors might be willing to pay more for green bonds.

174. **There are differences in investor perspectives by geography (United States vs Europe) and by type.** For example, anecdotal evidence suggests that green bonds trade at a premium only under extraordinary circumstances in the United States and, with rare exceptions, only in the secondary market. In the US market, green bonds generally trade “on the curve,” with no pricing distinction from non-green bonds with similar characteristics. CBI analysis shows that European green bonds tend to achieve more spread tightening (as compared to plain vanilla equivalents) in primary and secondary markets compared to US dollar-denominated green bonds. In Europe, investors are more environmentally conscious and appear to be more willing to accept a marginally lower yield (“only a few basis points”) for green as compared to the US. Generally speaking, no investor actually wants to recognise that they are ready to pay more for green bonds, but some interviewees think that it would be logical to pass on the pricing benefits of green bonds to green projects to incentivise and grow the green side of their balance sheet (according to them, this would also solve the dilemma of issuers not having enough green projects for issuance). One of the investors interviewed was agnostic about it, recognising that greenium could compensate issuers for the additional cost associated with green bond issuance. Interviews also reveal that it might be more difficult for institutional investors, such as pension funds, to accept lower yields.

175. **Any greenium associated with CABs is not yet large and consistent enough to be factored into the EIB’s funding curve (Blue Curve).** As shown in section 6, less than half (45%) of the selected sample of CABs analysed have benefited from a greenium in their primary market placement. Furthermore, CBI’s analysis shows that the greenium on CAB ranges from 5 to 10 bps.

Box 23 Would it be feasible for the European Investment Bank to differentiate the pricing of its green loans?

Base rate

It could be problematic for the EIB to develop a green curve (similar to the blue curve) for the pricing of loans to which CAB proceeds are allocated, owing to:

- Operational constraints: when CAB eligibility of a project < 100% – borrowers would have to have two different loan prices. The EIB could, however, decide to apply the green curve only to green loans (where the project needs to be 100% green) and sustainability-linked loans.
- Constraints from an asset-liability management point of view: the CABs are not yet very diversified in terms of currencies, maturities, etc. allowing for a pool of funds to be used for on-lending: there would be a mismatch in term of asset-liability management. This can, however, be resolved through swaps in the management of the green curve. However, CAB and SAB issuance would need to be scaled up to 20-30% of the EIB’s funding to make this work.

Risk pricing

In the context of the climate bank, the EIB will embed climate risk (through assigned scores to a given counterpart) into a screening tool used mainly for reporting purposes. However, it is not yet envisaged to use it for adjusting the probability of default of a given counterpart – though in theory it could be used in the future for doing that and hence impacting the pricing.

Further green pricing incentives

As the EIB has set ambitious targets for climate action and environmental sustainability lending, its management could consider when justified further incentives aiming to improve the pricing conditions offered to green borrowers.

176. With both risk pricing and eventual further green pricing incentives when justified, differentiated pricing of green loans could kick-start a virtuous dynamic for green bond issuance.
177. **As regards future perspectives, a mix of views exist on the likely development in the market pricing of green bonds.** Some of the market participants interviewed were of the opinion that any greenium would eventually fade out as markets move towards demand-supply equilibrium. A contrary view is that greenium would stabilise and even improve in the future. For example, S&P expects that greenium in the US market could increase and be sustained “because investors have increasingly started screening for green bond credentials”.¹¹¹
178. **Indeed, a reinterpretation of fiduciary duty is already starting to take place.** As climate risks start to impact the wider economy, acceptance is growing that investors need to incorporate those risks within their investment processes. The Principles for Responsible Investment (PRI), the United Nations Environment Programme Finance Initiative (UNEP FI) and The Generation Foundation, have just finalised a three-year project, *Fiduciary Duty in the 21st Century*. One conclusion was that fiduciary duty includes the incorporation of ESG issues into investment analysis and decision-making processes, consistent with investment time horizons.¹¹² More concretely, nearly 2 500 investors representing over \$90 trillion of assets under management have signed on to the United Nations Principles of Responsible Investing (PRI) and therefore have committed to integrating ESG aims in their investing. The value of global assets applying ESG data to drive investment decisions is estimated to have grown to \$40.5 trillion in 2020 (source: PRI online), while the value of assets under management following global sustainable investment approaches (including ESG principles) is expected to reach \$45 trillion by the end of 2020 according to JP Morgan¹¹³.
179. **Financial incentives may also encourage issuers to go green and investors to invest more in green bonds.** The European Commission is considering a range of financial incentives to encourage take-up of EU green bonds. These include:
- Providing public guarantees or credit enhancement to make EU green bonds more attractive to investors.
 - Putting in place a scheme to subsidise – totally or partially – the additional cost associated with external verification of EU green bonds in order to equalise issuance costs with mainstream bonds.
 - Encouraging Member States to assess supporting the green bond market through tax incentives for assets located in the EU.
 - The possibility of providing preferential capital treatment to EU green bonds. For example, in the context of mobilising policy actions with regard to sustainable finance, the European Parliament and Commission are considering introducing a Green Supporting Factor (GSF) or Brown Penalty (BP) for capital reserve requirements. The introduction of a GSF or BP may support capital allocation that is consistent with EU climate and sustainability objectives.
180. The discussion on potential incentives will be further developed by the European Commission following the consultation. Some of the above incentives (tax incentives, preferential capital treatment) could encourage investors to accept lower yield on green bonds.

¹¹¹ Aneesh Prabhu, Corinne B. Bendersky and Michael Tsahalís, “Why Corporate Green Bonds Have Been Slow To Catch On In The U.S.”, *S&P Global Ratings*, 4 February 2019, available [here](#).

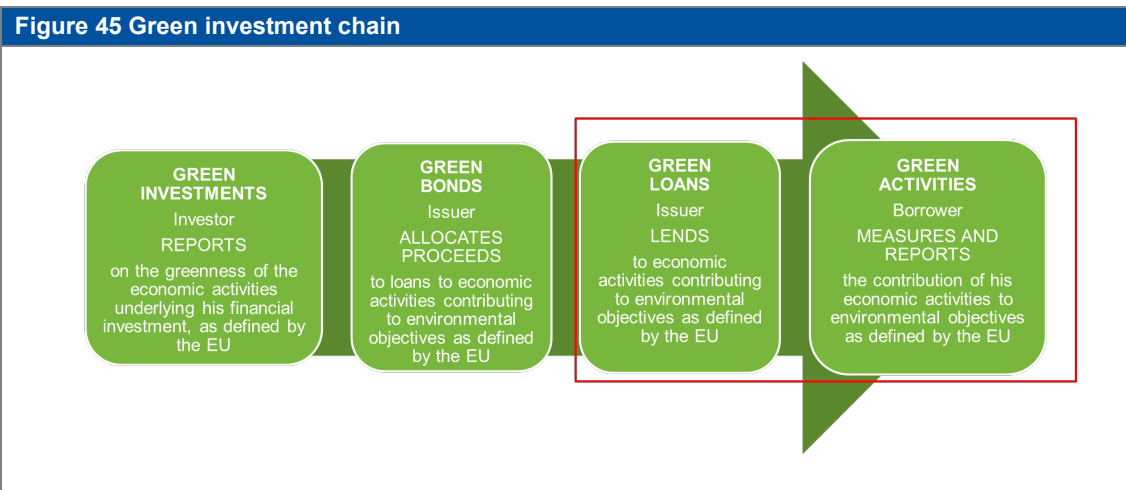
¹¹² Rory Sullivan, Will Martindale, Elodie Feller, Margarita Pirovska and Rebecca Elliott, “Fiduciary duty in the 21st century final report.”, UN PRI, 2020, available [here](#).

¹¹³ Neufeld, “New Waves: The ESG Megatrend Meets Green Bonds.”

8.2 Developments related to the EU Taxonomy offer the potential to develop a virtuous link between the funding and lending side of the Bank

181. Going forward, two developments will drive up CAB issuance volume:

The new Taxonomy-aligned definitions will permit larger volume of CAB issuances. The EUST provides a unified EU classification system for sustainable activities along the entire investment chain (see graph below). With the entry into force of this framework, the Bank expects that the market will in the future consider that the Bank's loans and its other investments are EU-sustainable only if the funds are deployed in economic activities that live up to the requirements of the EU Sustainability Taxonomy. Equally, the EU GBS proposal released on 18 June 2019 explicitly requires that EU green bonds are allocated to economic activities that are aligned with the EUST. The EIB is therefore currently aligning the eligibilities and traceability of its climate action and environmental sustainability activities with the EU Taxonomy on the lending side and in parallel working on an extension and alignment of CAB eligibilities on the borrowing side. The new definitions will be in place with effect from January 2021. A widening of the CAB eligibility criteria and alignment of climate action and environmental sustainability definitions across the Bank will contribute to enhancing the pool of eligible assets.



Source: [Technical Expert Group on Sustainable Finance Report on EU GBS](#), June 2019

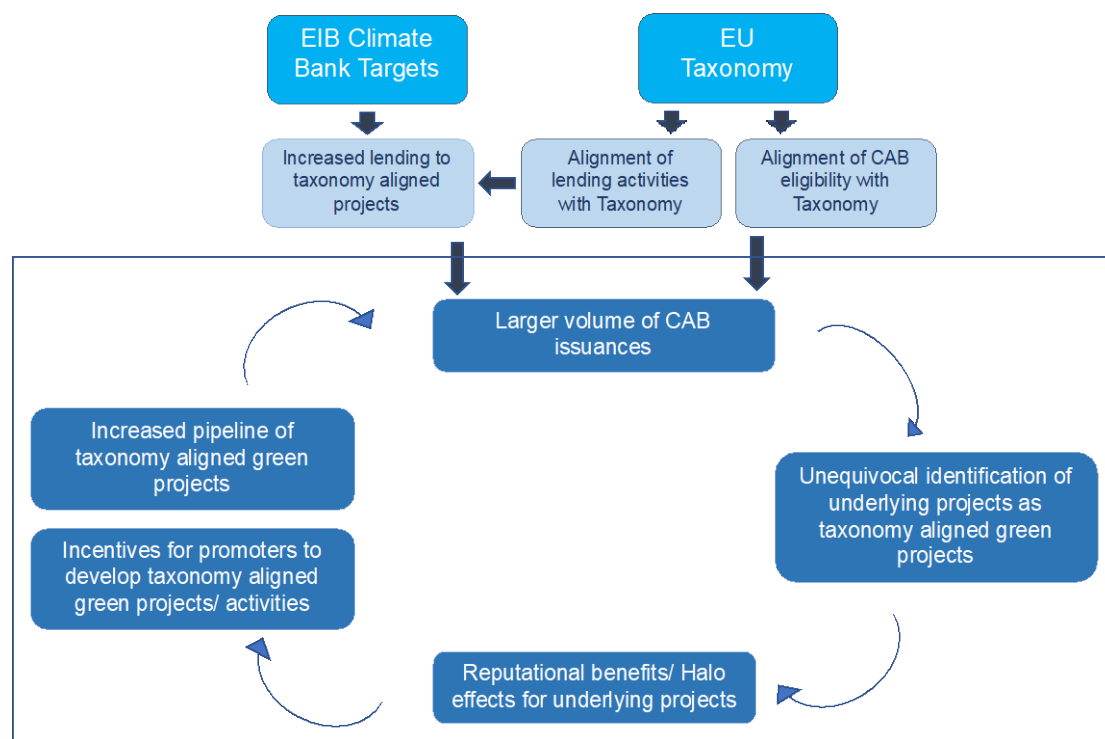
The EIB's climate action and environmental sustainability lending targets will expand the pool of assets eligible for allocation of CAB proceeds. As part of its transformation into the EU's climate bank, the EIB has set itself ambitious new targets for climate action and environmental sustainability (i) to support €1 trillion of investment in climate action and environmental sustainability between 2021 to 2030; and (ii) to increase the share of its financing dedicated to climate action and environmental sustainability to 50% by 2025 and beyond.

182. **The taxonomy-related developments provide a unique opportunity to the Bank to create linkages between its funding and lending side.** CABs have provided the Bank with a reliable and credible infrastructure for identification of eligible green projects. With the broadening of the CAB eligibility criteria, this infrastructure¹¹⁴ can be used to identify Taxonomy-aligned projects. The unequivocal identification of projects as green (subject to the scrutiny of markets and external reviewers) would have an important signalling function. It would *de facto* provide a “green stamp” and signal to the market that the project is green, thus bringing reputational benefits to projects and halo effects resulting in benefits, such as lower long-term financing costs, positive impacts on share prices, positive impact on the project's credit rating, attracting other investors, etc. The EIB “green stamp” (confirming that the CAB-eligible activity is aligned with the EU taxonomy) could be a discriminating factor that acts as a catalyst for raising the “green ambitions” of projects

¹¹⁴ CAB allocations are automated via an IT tool. Additionally, external review certifies ex-post that CAB proceeds were allocated to eligible projects.

and contribute to increasing the pipeline of green projects. Moreover, the clear identification of green projects could also provide a solid basis for any commercial policy decision to provide preferential pricing to such projects.

Figure 46 Creating a positive feedback loop between the lending and borrowing activities of the Bank



Source: IG/EV

8.3 Climate Awareness Bonds are restructuring the way the EIB is deploying capital

183. **CABs have supported an expansion of sustainable finance products within the Bank.** The experience and knowledge developed under CABs are now enabling the Bank to expand its range of sustainable finance products. On the funding side, the Bank has developed SABs, which have built upon the CAB framework, infrastructure and processes. On the lending side, the Bank is developing dedicated green debt products (green energy loans, green loans and sustainability-linked loans) in response to a growing demand from its clients for such products.
184. **Dedicated green debt products will further stimulate green investments.** The green label provided by dedicated green debt products together with the green stamp provided by CAB eligibility can generate a strong synergy of value for the Bank's clients.

8.4 More widely, Climate Awareness Bonds have triggered systemic change

185. **CABs have played a catalytic role in the green bond market.** Since the launch of the first CAB in 2007, the market has evolved into a full-fledged asset class with its own dedicated funds and specialist investors. Annual green bond issuance grew from \$3.4 billion in 2010 to \$263 billion in 2019; and in October 2020, it reached the critical milestone of cumulative \$1 trillion issuance. As demonstrated in section 4, the EIB has played a foundational role in the creation and subsequent development of the market via its CAB issuances and other efforts aimed at improving market governance and standardisation.

186. **The EIB's advocacy and thought leadership have created broader support for green and sustainable finance.** In a bond market historically insensitive to environmental issues, this has meant first and foremost raising awareness of climate issues and introducing it into the financial markets. Via its CAB activity, the EIB is expanding the conversation around important environmental issues and bringing powerful new allies to the table through the capital markets in a way that has not happened before. Thanks to the efforts of the EIB, market participants and policymakers alike recognise the value and potential of sustainable finance in supporting transition to low-carbon and climate-resilient economy.

187. **The green bond market is beginning to restructure the way that investors deploy capital.** Green bonds are having catalytic and scaling benefit for green and sustainable finance, including:

- Green bonds are being purchased by (green) investors that would otherwise not be engaged in the transaction – thereby spurring demand for a product that, over time, can start to finance new environmental benefits.
- Green bonds have catalysed the development of sustainable finance market infrastructure, e.g. green exchanges, indices, ratings and reviews (section 3).
- The popularity and robust performance of green bonds are helping to make green and sustainable finance an attractive option for mainstream investors.
- The principles, processes, and definitions that have emerged to simplify and facilitate green bond issuance are reducing information asymmetry between investors and green issuers, thus making it easier for them to transact. Green bonds have changed investor behaviour, and capital markets have evolved from a market where investors knew little about what their investments were supporting to one where purpose matters more than ever.
- By offering unprecedented levels of transparency to investors, green bonds have created demand for improved ESG disclosure by companies and financial institutions. This will have a tangible knock-on benefit in facilitating sustainable finance across a range of asset classes and financial products.
- Successful approaches in green bonds are spurring the development of other sustainable finance products – which includes social bonds, sustainability-linked loans, green loans and others.
- Shift in investor mindset – asset managers and institutional investors are increasingly integrating ESG factors into their investment mandates. Moreover, as mentioned earlier, views on fiduciary duty are changing. There is growing acceptance that investment managers need to incorporate ESG issues into investment analysis and decision-making processes beyond narrow short-run financial terms.
- Shift in mindset of central banks – Central banks around the world are examining the different ways in which they could use monetary policy to tackle climate change. One way they could do this is by orientating their asset purchase programmes towards green bonds, sustainability bonds, or assets that meet minimum ESG standards.
- Green bonds make it easier for corporates to raise capital on attractive terms – some market players consider that there has been a shift, especially from the side of corporate issuers that can now more easily raise new money for new environmental projects.
- Governments, financial centres, central banks and banking supervisors are greening the financial systems by developing green bond guidance, green taxonomies, regulation, and reporting guidelines. It helps investors to better understand the climate risk exposure in their portfolios and to move capital to more climate-resilient investments while strengthening the resilience of the financial system.

Box 24 Recap of key messages on the role of Climate Awareness Bonds in stimulating green investments

- The evaluation examined four channels through which CABs could shift capital towards green investments. These are as follows:
 - 1 *By enabling the EIB to raise financing on advantageous terms, thus allowing the Bank to incentivise green investments by reducing the cost of capital for such projects.*
 - Banks are starting to incentivise green investments via preferential pricing, but this is not happening systematically.
 - Interviews with market players provide a mixed picture on the existence and scale of “greenium”. Investors are generally not willing to sacrifice yield for green, but there are exceptions to this rule.
 - Any greenium associated with CABs is not yet large and consistent enough to be factored into the EIB’s financing curve.
 - As regards future perspectives, a mix of views exist on the likely development in the market pricing of GBs.
 - Greenium on CABs is not yet systematic and sizeable enough to act as a mechanism for incentivising green investments.
 - 2 *By developing a positive feedback loop between the lending and borrowing side of the Bank.*
 - Going forward, two developments will drive up CAB issuance volume: (i) the EIB’s climate action and environmental sustainability lending targets will expand the pool of assets eligible for allocation of CAB proceeds; and (ii) the new Taxonomy-aligned definitions will permit larger volume of CAB issuances.
 - The Taxonomy-related developments provide a unique opportunity to the Bank to create linkages between its funding and lending side. The EIB green stamp (confirming that the CAB-eligible activity is aligned with the EU Taxonomy) could be a discriminating factor that acts as a catalyst for raising the “green ambitions” of projects and contribute to increasing the pipeline of green projects.
 - Developments related to the EU Taxonomy offer the potential to develop a virtuous link between the funding and lending side of the Bank.
 - 3 *By restructuring the way the EIB is deploying capital and addressing sustainability issues.*
 - CABs have supported an expansion of sustainable finance products within the Bank with SABs on the funding side and dedicated green debt products on the lending side, which are expected to further stimulate green investments.
 - 4 *By catalysing systemic change, i.e. changing the way market players think about sustainability and allocate capital.*
 - The green bond market is beginning to restructure the way that investors deploy capital and induce a shift in mindsets. For instance, the principles, processes, and definitions that have emerged to simplify and facilitate green bond issuance is reducing information asymmetry between investors and green issuers, thus making it easier for them to transact.

9. CONCLUSIONS AND RECOMMENDATIONS

188. This section sets out the key conclusions of the evaluation and provides a series of recommendations to inform future CAB strategy and activity. These conclusions and recommendations must, however, be viewed in the wider context (see Figure 47). This is a fast moving area with new policy developments and new products being developed at a frantic pace:

- **There is a massive regulatory and political push for green and sustainable finance in Europe.** The European Commission has introduced a raft of policy measures to align EU financial markets with its climate and other environmental goals. The Taxonomy in particular will have a far-reaching impact on financial markets, including the green bond market. Recent policy statements from the ECB and the European Commission are also expected to provide a significant boost to the market.
- **There is growing political, market and societal momentum that is driving the wider greening of the financial system.** For example, market perspective is shifting on everything from risk assessment to the notion of fiduciary duty and capital allocation.
- **Beyond the green bond market, the issuance of broader sustainability-themed bonds aimed at addressing social and governance issues is picking up pace.** Other sustainability-labelled debt instruments have emerged, including social bonds, sustainability bonds, green loans and sustainability-linked loans. The COVID-19 pandemic has reinforced investor interest in sustainable finance and this is changing the shape of the market.
- **The EIB itself is undergoing a transformation** to respond to these new developments (particularly the EU Taxonomy) and to deliver on its promise as the EU's climate bank as well as its commitments under the European Green Deal.

Figure 47 Changing policy, market and institutional context



Source: IG/EV

9.1 Evaluation conclusions

189. **The EIB has played a foundational role in the development of the green bond market in several ways:** its issuance programme has brought volume and currency diversity to the market and has had a demonstration effect for other issuers by providing a growing body of precedents and examples. The EIB was also at the forefront of thought leadership and standard setting. The EIB has made a significant contribution to building the credibility of the asset class by promoting transparency and good practices.

190. **The EIB's CAB activity and framework are among the best-in-class.** Compared to other market leaders, the EIB stacks up well in terms of its approach to management of proceeds; project selection; transparency and depth of reporting; and external review. There are some areas where the EIB's "peers" are perceived to be better than the Bank in the view of some market participants, notably:

- Some issuers, such as IFC, Region Île-de-France and ING have shown greater ambition in the use of green bonds in their respective funding profiles in the past few years. These issuers have scaled up their green bond activity (as a share of total bond issuance) much faster than the EIB, even though they entered the market later. The scale of green bond issuance depends on an issuer's eligibility criteria for green bonds and the size of balance sheet. A narrow eligibility criterion inevitably restricts the pool of green assets eligible for green bonds, relative to an issuer's balance sheet.

So far, in the absence of an unequivocal reference framework, it is difficult to directly compare green bond eligibility criteria across issuers. As noted earlier, although renewable energy and energy efficiency are the most common eligible sectors, there are substantial differences across issuers as regards the precise activities considered to be eligible within these broad sectors. The EU Taxonomy Regulation offers both the opportunity of an extension of eligibilities at the EIB and a more objective platform for their comparison with peers.

- Incorporation of ESG criteria in the underwriter selection process alongside other criteria, such as arbitrage funding provided, quality of coverage, investor relations efforts, etc. (IFC)¹¹⁵.
- Presentational aspects of impact reporting including data visualisation, aggregation by sector/sub-sector, showing links with SDG goals (IFC). KfW reports on the actual impacts of its intermediated loans. Region Île-de-France organises site visits to underlying projects to engage investors and demonstrate impact. The EIB has organised one such event for a CAB-eligible project.

Going forward, the EIB will have to consider the requirements of the EU Taxonomy Regulation, in terms of impact reporting, notably in the fields of project attribution to the EU's environmental objectives, record of "substantial contribution", "do no significant harm" and "minimum safeguards".

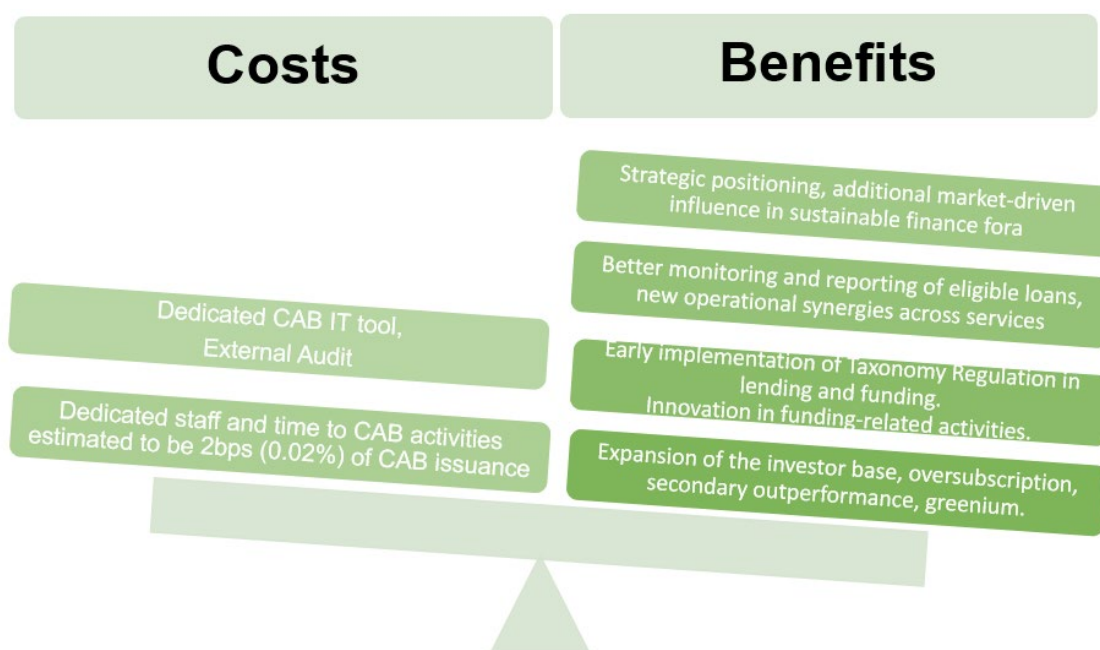
191. **CAB activity has brought important strategic added value to the Bank.** Not only has it materially transformed the way the EIB approaches sustainable investors, it has also enabled the EIB to strategically position itself ahead of structural changes in the market (such as the EU Taxonomy and the wider greening of the financial system). This has meant that the EIB has been able to effectively capitalise on these developments to further cement its position as a market leader. For example, the EIB was the first issuer to align its CAB documentation with the EU Taxonomy Regulation, and the market is now looking to the EIB to lead the way in the practical

¹¹⁵ GlobalCapital (2020), "IFC shifts ESG focus onto banks with new dealer scorecards", 11 June 2020. Available [here](#). See also: GlobalCapital (2020), "Banks must be held to high standards in public", 11 June 2020. Available [here](#)

implementation of the Taxonomy and EU GBS. Moreover, the EIB's unique positioning has turned into a competitive edge in the form of growing demand for CABs, a diverse and "sticky" investor base and the development of new products, such as SABs, which meet investors' growing appetite for such products while serving the EU's policy objectives and therefore the Bank's. The reputational benefit associated with Taxonomy alignment, sealed by CAB eligibility, is increasing. This is generating stronger demand for Taxonomy-aligned green loan and green loan substitute products, prompting the EIB to extend their offering. And while the considerable and growing demand for CABs has not yet translated into a systematic price differential versus conventional bonds, there is some evidence of a greenium for CABs in the primary market which may further develop and benefit the Bank in the future. Beyond the Bank itself, the EIB's CAB activity can be viewed as a "public good". It has had important spillover benefits for other issuers (demonstration effect) and financial markets (the example set with CAB is being mirrored in other efforts aimed at greening the financial system).

192. **The benefits of CAB activity outweigh the costs.** While most of the above benefits are difficult to quantify, it seems clear that they are far greater in scale compared to the running costs of the activity (< €1 million per annum). The existence of greenium on certain issuances might be seen as an extra incentive for issuers, but should not be taken for granted. Investors' generalised interest in green bonds is showing issuers: (i) that the transition to a green economy has the backing of the investor community, and (ii) that issuers have a key role as intermediaries in the finance supply chain to promote such transition by setting ambitious plans for green lending. Green investment needs can thus be met through a more transparent and accountable process of intermediation that directly involves financial markets through reliable reporting.

Figure 48 Costs and benefits of the EIB's Climate Awareness Bonds activity



Source: IG/ EV

193. **CABs and SABs complement each other, spanning the whole spectrum of EU sustainability objectives.** Whether looking at CABs or SABs specifically or GSS bonds more generally, the conclusion that emerges from this evaluation is that these instruments are not in competition with one another, but rather complementary. A range of tools and instruments are needed to meet the climate change and societal challenges (especially funding the post-COVID recovery). Collectively these instruments address a wider range of SDGs and, as such, they diversify the products available to both issuers and investors. This helps bring in more issuers to the market and at the same time creates an asset base for a wider range of investors.

194. **While the complementarity of CABs and SABs can be further explained, this is not deterring investors from buying these products.** CAB/SAB documentation links eligibilities with the EU Taxonomy Regulation. As the eligibility criteria for both CABs and SABs are broadened within this context, CAB-SAB complementarity will become more apparent to the market.
195. **CABs can play an important role in enabling the EIB to stimulate green/sustainable investments.** While a greenium on CABs is not yet systematic and sizeable enough to act as a mechanism for incentivising green investments, there are signs that this may change in the future. Specifically, investors' changing perceptions of fiduciary duties (and the growing move to integrate ESG considerations into investment decisions), the higher transparency associated with green bonds and potential financial incentives at a policy level for sustainable finance instruments might translate into a consistent greenium for issuers like the EIB. These developments need to be monitored. More concretely, the EIB could use the "green stamp" (confirming that CAB-eligible activity is aligned with the EU Taxonomy) as a discriminating factor that acts as a catalyst for raising the "green ambitions" of projects and increasing the pipeline of green projects.
196. **The EIB, via its role in the green bond market, is already spearheading a shift of capital flows to sustainable activities at a systemic level.** Green bonds have supported growth in other green finance tools and products by demonstrating mainstream investor demand for green (thus creating an incentive for the development of other sustainable instruments and asset classes) and developing tools and frameworks that can also be directly applied to other fixed income instruments and asset classes. Green bonds have also been catalysts for wider changes, such as engagement with policymakers, regulators and investors on sustainability issues. Specifically, the EIB's thought leadership, advocacy and activities have created broader support for green and sustainable finance.

9.2 Evaluation recommendations

Recommendation 1:

197. **The EIB should continue to play a key role in further shaping the green bond market and fostering its development.** The EIB's ambition to become the EU climate bank further reinforces the strategic value of CABs and the moral imperative for the EIB to continue playing a key role in the green bond market. The evaluation has identified three specific focus areas going forward:
- i. The EIB should contribute to further **enhancing market liquidity** through regular reference-sized issuances. Furthermore, market participants expect the EIB to increase the overall volume of CAB and SAB issuance (both in absolute and relative terms) to provide continued visibility to the market and to meet the growing appetite for such bonds. As there is a continuous search for reference yield curves by investors globally, market participants expect the EIB to maintain a full reference curve in core currencies and issue in a range of currencies, including emerging market currencies.
 - ii. The EIB should continue to **support standardisation initiatives**, particularly in the field of impact reporting. As the green bond market continues to grow and the landscape of issuers diversifies (beyond supranationals), market participants see a need for more consistency in the timing, format, metrics, methodologies, and benchmarks used for impact reporting across issuers. Greater standardisation would (a) improve comparability between different green bonds, which is seen as even more important given the expansion of green bonds to new sectors and the emergence of new types of thematic bonds and (b) facilitate aggregation of impact at a fund level. While the EU GBS and the recently published ICMA Harmonised Framework for Impact Reporting address some of these issues, market participants flagged the need for further efforts in this direction (especially the need for harmonisation of GHG accounting methodologies and aggregation of data). Further actions in this area could, for example, include development of data science and fintech applications (e.g. blockchain) in green bond impact reporting. As the EIB is recognised and respected for its high standards in the field of impact reporting, it could play a role in pushing for more harmonisation in this field.

- iii. The EIB should continue to play a **strong educational role in the market**. Given the EIB's historical role in the green bond market, as well as its credibility and reputation, market participants are looking to the EIB to provide clarity on certain issues, such as the concept of transition in the context of the EU Taxonomy Regulation. Similarly, as part of its educational role, the EIB could contribute more actively to the development of an optimal third-party validation process (pre- and post-issuance) for different types of green bond issuers. The EIB could also clarify the complementarity of a use-of-proceeds bond and a KPI-linked bond. In an environment where new issuers and investors are considering entering the market, clarity on these issues would be beneficial for all market participants.

Recommendation 2:

198. **The EIB should continue to lead the way in demonstrating the application of EU GBS and the EU Taxonomy and championing EU standards globally.** There is an expectation amongst market players that the EIB will demonstrate the feasibility of fulfilling the requirements of the EU Taxonomy and the EU GBS. The Bank has already embarked on this path. For example, the 2019 CAB framework and the 2018-2019 SAB framework clarify the EIB's course of action regarding the EU Taxonomy. Both documents set out the EIB's plan to "gradually align the CAB [and SAB] Internal Criteria with the EU GBS". Through its role in the recently established platform on sustainable finance, the EIB will continue to play a leading role in the further development of the EU taxonomy and its implementation. The EIB will be promoting the use of the EU GBS and the EU taxonomy by requiring that the green bonds it subscribes to (on the asset side) are aligned with the EU GBS¹¹⁶.

Recommendation 3:

199. The EIB should continue to invest in new product development and expand its catalogue of green products on both the assets and liabilities side of its balance sheet. As part of the Climate Bank Roadmap, the EIB has announced that its green debt offer, which is currently limited to the green energy loan product, would be further developed with: (i) a green loan product (which would have wider eligibility than its predecessor); (ii) a green bond product (including green hybrid bonds) as a loan substitute; and (iii) a Technical Assistance/Advisory proposition enabling the EIB Group to support capacity building among potential first-time green debt issuers. This offer could be further enhanced with new green products, such as credit enhancement schemes and green securitisation products, which represent areas where there is a gap in the market and potential to have a major impact. For instance, the European Commission is considering different forms of incentives to support the issuance of green bonds meeting the requirements of the EU GBS, including the provision of co-financing or credit enhancement either at EU level or at Member State level¹¹⁷. Through the InvestEU Fund and/or other EU financial instruments, the EIB could play a role in providing credit enhancement to issuers of EU GBS-compliant green bonds.

Recommendation 4:

200. **The EIB should consider adapting some of its practices:**
 - Improving impact reporting for the adequate provision of information to investors in line with the logic of the EU Taxonomy Regulation, EU GBS, and applicable Harmonised Frameworks for Impact Reporting (GBP). Notably in the fields of project attribution to the

¹¹⁶ The EIB is developing a green bond product (including green hybrid bonds) as a loan substitute. This will enable the EIB to participate in the green bond market not only as an issuer but also as a buyer.

¹¹⁷ 39% of respondents to the consultation stated that public guarantee schemes provided at the EU level and other incentives or alternative incentives for issuers will have a rather high or very high impact on the uptake of EU green bonds.

EU's environmental objectives, "substantial contribution", "do no significant harm" and "minimum safeguards", also in the form of summaries of allocation and impact data, and possibly, description of additional secondary links with SDGs.

- Engaging with underwriters on ESG issues to protect the Bank's reputation, while promoting best practices in managing ESG risks. In light of this recommendation, it would be logical for the Bank to also consider engaging with banks on the assets side of its balance sheet in order to ensure consistency of practice.

Recommendation 5:

201. **The EIB should monitor and measure the yield differential between CABs and its conventional bonds on a systematic basis.** Improved pricing conditions can lead to increased demand for green loans, and therefore, more possibility for new CAB issuance.
202. One way to incentivise green investments would be to transfer any CAB pricing advantage over conventional bonds (greenium) to green projects in the form of a lower cost of borrowing. This is not currently possible as (i) the EIB's present administrative setup (Blue Curve) excludes back-to-back financing; and (ii) the greenium on CABs is not consistent. However, as discussed above, this may change in the future. The EIB should therefore, systematically monitor and measure any pricing advantage on CABs with the aim of transferring this on the lending side, should market and commercial considerations allow this in the future.
203. Meanwhile, the evaluation notes that there are alternative mechanisms through which green, i.e. Taxonomy-aligned, investments could be financially incentivised (which could be applied in isolation or in combination). For example, the EIB could embed environmental and climate considerations into pricing. This would in principle favour more intensive capital allocation towards green projects, accelerating the EIB's transition to become the EU climate bank. This is, for example, in line with the findings of the Network for Greening the Financial System (of which the EIB is an observer) warning that a "*lack of recognition and pricing of environmental risks could lead to significant financial losses for corporates and financial institutions that provide financing to those exposed to such risks*"¹¹⁸. Where justified, the EIB's management could also consider further incentives to the pricing of loans in favour of green investments.

¹¹⁸ Overview of Environmental Risk Analysis by Financial Institutions, Network for Greening the Financial System (September 2020), available [here](#).

Annex 1 – Theory of change for Climate Awareness Bonds

The theory of change (ToC) illustrates the causal mechanisms or pathways through which the EIB's CAB activities could contribute to the development of the green bond market, generate benefits for the Bank and channel capital towards more sustainable activities in the future.

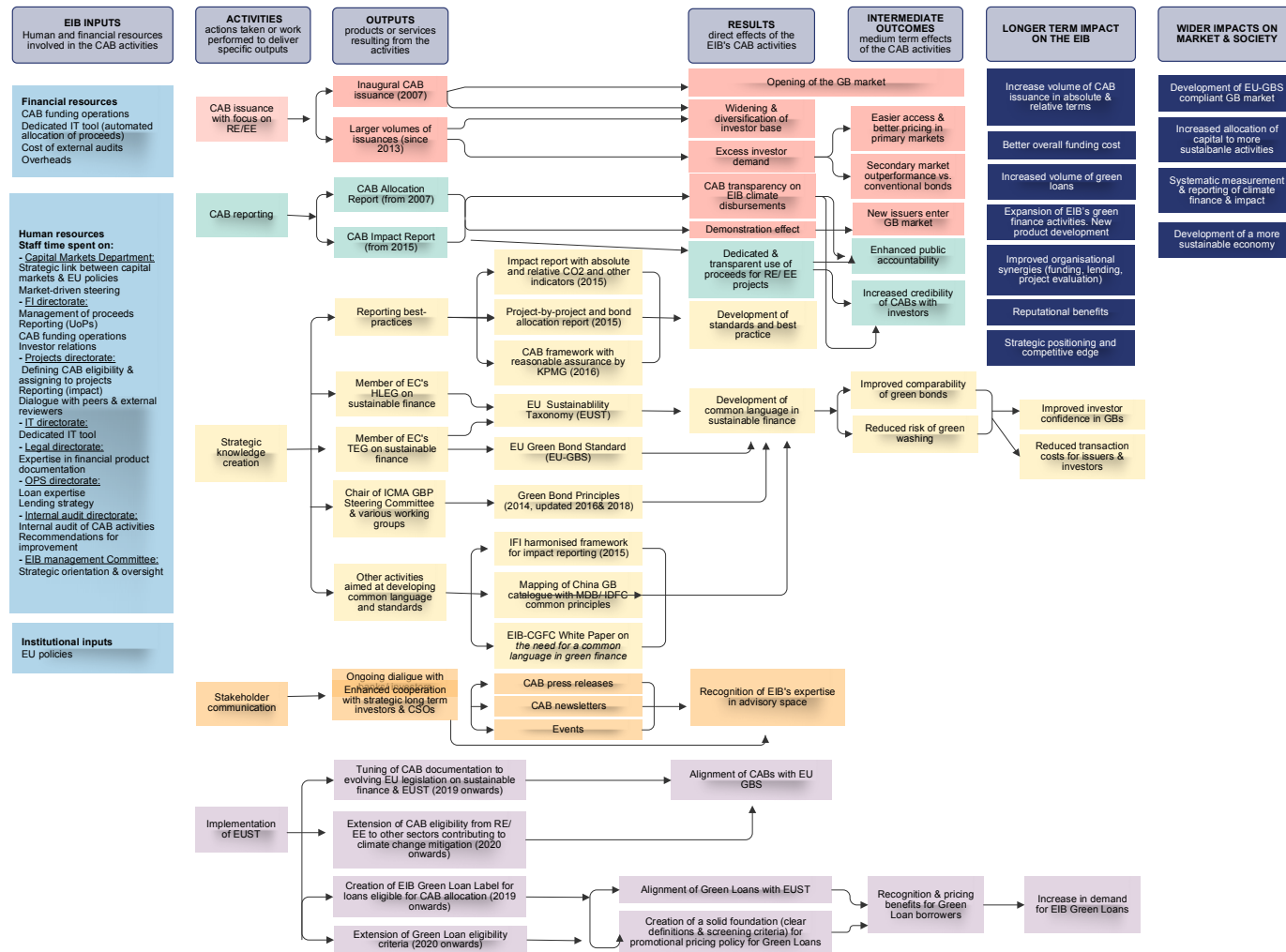
Figure 49 illustrates the ToC for the EIB's CAB activity. It has been developed on the basis of desk research, scoping interviews and a workshop with key staff involved in the delivery of the EIB's CAB activities. It reflects the broader understanding of CABs as not just a product, but also a **process** involving three core areas of the EIB's activity: project appraisal, lending and funding. The links depicted in the theory of change presented below are, however, more restricted to the topics evaluated. For instance, the ToC does not dwell upon the role of CABs in serving wider capital market objectives of the Bank (e.g. testing of passporting mechanism, dematerialised format for listing of securities and the knock-on effect of these).

As depicted in the figure below, the ToC of CAB is described through a causal chain consisting of the following building blocks (from left to right):

- Inputs – the human and financial resources that go into the intervention.
- The activities, outputs and expected effects (results, outcomes and impacts) of an intervention.
- The assumptions that explain how the activities would lead to the effects in the context of the intervention.
- The main external factors (confounding factors) that also influence the direction and scale of effects.

The ToC provided a conceptual framework for the evaluation, specifically EQs 1, 4 and 5. The evaluation tested the extent to which the causal mechanisms depicted in the ToC are evident in reality.

Figure 49 Theory of Change for the EIB's Climate Awareness Bonds activity



Source: IG/EV

The EIB has channelled three types of inputs into CAB activities:

- (i) Financial resources meant to cover CAB issuance costs and the costs of external services, such as auditing or IT tools.
- (ii) Human resources, i.e. staff time spent on CAB activities, such as issuance, reporting, due diligence, coordination of services, policy dialogue, etc.
- (iii) EU policies supporting the development of an EU framework to facilitate sustainable investment and the European Union's engagement to fight climate change, the EIB rules, policies, good practices.

These inputs are channelled through several directorates within the Bank under the coordination of the Sustainability Funding team, as illustrated in the above ToC.

The ToC also reflects the causal pathways associated with the following strands of the EIB's CAB activities:

- CAB issuance
- CAB reporting
- Strategic knowledge creation
- Stakeholder communication
- Implementation of the EU Sustainability Taxonomy (EUST)

CAB Issuance – The inaugural CAB issue marked the birth of the green bond market in 2007 and created a new class of bonds. Larger-scale issuances since 2013 have generated increased visibility and greater investor interest, thus contributing to widening and diversifying the investor base, including attracting green investors to the EIB's conventional bonds. Strong (and even excess) investor demand for CABs has enabled the EIB to access funding on beneficial terms and have easier access to capital markets at times of pressure. The growth of investor demand and larger volumes of issuance, including allocations to new eligible disbursements, have brought about greater scrutiny and transparency. This is expected to contribute to better overall funding cost. In theory, one could expect the lower funding cost to be passed on to green projects in the form of preferential pricing. This, in turn, should incentivise such projects and stimulate green investments.

Moreover, the unequivocal identification of CAB-eligible projects as "green projects" aligned with the EU Taxonomy Regulation could provide strong reputational benefits to these projects.

CAB Reporting – The EIB seeks to create transparency across its entire CAB operations, but particularly in its management of proceeds. Through its CAB allocation reports (from 2007 onwards) and CAB impact reports (from 2015 onwards), the EIB introduced the idea of a verifiable, documented link between the funding raised through this new type of bond and the allocation of proceeds to eligible projects. With regard to measurement and reporting on impact, the EIB takes the lead in reporting at project level (project-by-project and bond-by-bond allocation reports) through sector-specific key performance indicators (including absolute and relative carbon emissions), informing stakeholders of the impact generated by CAB-supported projects. This ultimately helps to improve investor confidence, but also enhance public accountability for the Bank's actions in climate change mitigation. Finally, the EIB's efforts to seek independent verification of its CAB activity are another important step in building market confidence in a new asset class, underpinning the transparency and accountability agenda. By developing state-of-the-art practice (including automation of allocation), and its establishment as practice in the green bond market, the EIB contributed to the ongoing development of comparable reporting on economic activities by policy objective rather than mere sector.

Strategic knowledge creation – The EIB's expertise in green bonds and climate change have enabled the Bank to strategically position itself at the forefront of key developments in the field of sustainable finance, providing it with a competitive edge vis-à-vis other players. For example, the due diligence and administration upgrade of the CAB Framework in 2012-2014 led to greater coordination between the finance and projects experts' teams, which provided the basis for:

- further improvements in CAB practice (audit with reasonable assurance);
- influence on Green Bond Principles working group and MDB discussions (impact reporting harmonisation);
- strategic initiatives (mapping of China Catalogue, roundtables with external reviewers);
- development of reliable infrastructure for identification of eligible projects and automation of allocations;
- consultations with IFIs, White Paper on the need for a common language in Green Finance that supported the EIB's technical contributions to the HLEG (technical proposal for an EU classification of climate change mitigating activities) with capital markets legitimacy.

The result is strategic positioning of the EIB ahead of structural changes like the EU Sustainability Taxonomy (EUST) and the wider greening of the financial system, which are changing the landscape of the EIB's lending and funding activities. This translates into a competitive edge for the Bank via:

- innovative supply of fixed income products that meet both the needs of investors and EU policy objectives;
- product design features, e.g. flexibility with SABs to respond to COVID-driven demand;
- high demand for CABs/SABs;
- optimal funding costs.

Stakeholder communication – The EIB's continuous communication with markets (via the publication of CAB press releases, newsletters, participation in key events, for example), expert constituencies and official authorities and enhanced cooperation with strategic long-term investors and civil society organisations (CSOs) contributes to improving the overall visibility of the EIB's CAB activities and greater recognition of its expertise in the advisory space.

All these CAB outputs have **reputational and demonstration effects**, helping to attract new green bond issuers to the market (e.g. other MDBs, sovereigns, municipalities, corporates). The CAB issuances also signal the EIB's commitment to climate change mitigation, which helps crowd in investors looking to invest in green instruments and enhances capital market perception of the European Union's role in sustainable finance.

Implementation of EU Sustainability Taxonomy – This refers to the ongoing activities within the Bank (described in the previous section) in aligning its funding and lending activities to evolving EU legislation on sustainable finance and the EUST (2019). A broadening of CAB financing eligibilities from renewable energy and energy efficiency to other sectors contributing to climate change mitigation and the launch of new green debt products (aligned with CAB eligibility), which benefit via CAB allocations from EUST compliance certification for climate lending, should result in strategic positioning and competitive edge on both the lending and the funding side. Over time, it is expected that (i) the new Taxonomy-aligned CAB eligibilities will permit larger volume of CAB issuances and (ii) the EIB's growing targets for Taxonomy-aligned climate action and environmental sustainability lending will expand the pool of assets eligible for allocation of CAB proceeds. The Taxonomy-related developments contributed to improve organisational synergies and to create linkages between the Bank's lending, funding and project evaluation activities.

The ToC is underpinned by a number of assumptions:

- There is a sufficient pipeline of eligible disbursements that enables the CAB issuances.
- There is demand among investors for green bonds/sustainable finance.

- On the supply side, other issuers (besides the EIB) are willing and able to issue green bonds.
- Significant investment is required to meet global/EU climate goals.
- The EIB practices and reporting are regarded as good practice by other issuers and market participants.
- There is a desire and willingness among policymakers and market participants to develop and adopt common definitions and standards.
- The EIB continues to uphold the highest green bond standards – i.e. there is no “greenwashing” by the EIB.

The main external factors are as follows:

- The growing urgency to address the existential threat posed by climate change.
- Importance attached by policymakers, market participants and the general public to climate change and environment.
- Central bank interest rates which affect yields¹¹⁹ and policy developments (e.g. plans to incorporate environmental sustainability objectives into their reserve portfolios) which may boost demand for green bonds.
- Policy framework governing green bonds, e.g. standardisation of definitions and disclosure requirements, tax incentives.
- Prevalence of greenwashing in the market (the risk of undermining the environmental integrity of green bonds and investor confidence).

¹¹⁹ The relationship between central bank interest rates and bond yield can be explained with an example. Consider the situation where a central bank slashes its base rate from 3% to 1%. If there's a bond trading on the market that's paying 4%, it will become more attractive than a new issue paying an interest rate of 1% or so. Its price will therefore go up reflecting a higher demand for it. And as its price increases, its yield becomes less. The increased demand for the bond results in rising prices, and falling yields.

Annex 2 – List of references

- Agence France Trésor (2017). “Green OAT”. Available [here](#)
- Agliardi, Elettra and Rosella Agliardi (2019). “Financing environmentally-sustainable projects with green bonds.” *Environment and Development Economics*, pp. 1-16. Available [here](#)
- Bachelet, Maria Jua, Becchetti, Leonardo and Stefano Manfredonia (2019). “The Green Bonds Premium Puzzle: The Role of Issuer Characteristics and Third-Party Verification.” *Sustainability* 2019, 11(4). Available [here](#)
- Baker, Malcolm, Bergstresser, Daniel, Serafeim, George and Wurgler, Jeffrey (2018). “Financing the Response to Climate Change: The Pricing and Ownership of U.S. Green Bonds.” Brookings. Available [here](#)
- Bloomberg Green (2020). “Green Bond Boom Sees ‘Brownium’ Penalty for Conventional Notes”, 17 September 2020. Available [here](#)
- BloombergNEF. Available [here](#)
- BNP Paribas (2019). “ESG Global Survey, 2019”. Available [here](#)
- Bour, Tom (2019). “The green bond premium and non-financial disclosure: Financing the future, or merely greenwashing?”, Master’s Thesis Maastricht University. Available [here](#)
- CBI (2017). “Green Bond Pricing in the Primary Market: January 2016 - March 2017.” Available [here](#)
- CBI (2019). “Green Bond European Investor Survey”. Available [here](#)
- CBI (2019). “Green Bond Pricing in the Primary Market: July - December 2018.” Available [here](#)
- CBI (2019). “Green Bond Pricing in the Primary Market: January - June 2019.” Available [here](#)
- CBI (2020). “Financing credible transitions: How to ensure the transition label has impact.” White Paper. Available [here](#)
- CBI (2020). “Green Bond Treasurer Survey 2020.” Available [here](#)
- CBI (2020). “Green Bond Pricing in the Primary Market: July - December 2019.” Available [here](#)
- CBI (2020). “Green Bond Pricing in the Primary Market: January - June 2020.” Available [here](#)
- Erlandsson, Ulf (2020). “Green Bond Risk Premiums: A Twin-Bond ULFP Approach.” SSRN Papers. Available [here](#)
- European Commission (2014). Non-financial reporting. Available [here](#)
- European Commission (2017). High-Level Expert Group on Sustainable Finance Interim Report, July 2017. Available [here](#)
- European Commission (2019). “TEG Report: Proposal for an EU Green Bond Standard”, June 2019. Available [here](#)
- European Commission (2019). “Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions of 11 December 2019, ‘The European Green Deal’ COM (2019) 640.” Available [here](#)
- European Commission (2020). “Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions of 14 January 2020, ‘Sustainable Europe Investment Plan, European Green Deal Investment Plan’ COM (2020) 21.” Available [here](#)

European Commission (2020). “Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions of 27 May 2020, ‘The EU budget powering the recovery plan for Europe’ COM(2020) 442 final.” Available [here](#)

European Commission (2020). “Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions of 17 September 2020, ‘An EU-wide assessment of National Energy and Climate Plans: Driving forward the green transition and promoting economic recovery through integrated energy and climate planning’ COM(2020) 564 final.” Available [here](#)

European Commission (2020). Consultation on the renewed sustainable finance strategy. Available [here](#)

European Union (2003). “Directive 2003/71/EC of the European Parliament and of the Council of 4 November 2003 on the prospectus to be published when securities are offered to the public or admitted to trading and amending Directive 2001/34/EC” (Text with EEA relevance). Available [here](#)

EIB (2014). “EIB launches its first GBP Climate Awareness Bond.” Press release: 27 March 2014. Available [here](#)

EIB (2014). “Joint statement by Multilateral Development Banks (MDB) on climate finance”, 11 September 2014. Available [here](#)

EIB (2014). “EIB leads and diversifies currencies with new Climate Awareness Bonds.” Press release: 28 March 2014. Available [here](#)

EIB (2015). “Common principles for climate mitigation finance tracking.” 15 June 2015. Available [here](#)

EIB and several other IFIs (2015). “Green Bonds – Working Towards a Harmonized Framework for Impact Reporting.” Available [here](#)

EIB and Green Finance Committee of China Society for Finance and Banking (2017). “The need for a common language in green finance – Towards a standard-neutral taxonomy for the environmental use of proceeds.” Available [here](#)

EIB (2020). CAB Framework 2019. Available [here](#)

EIB (2020). The EIB Group Climate Bank Roadmap 2021-2025, available [here](#).

Environmental Finance Bond Database. Available [here](#)

Environmental Finance (2020). “A greater role for green bonds – interview with Dr Frank Richter, Head of Investor Relations at NRW Bank”, 11 February 2020. Available [here](#)

Ehlers, Torstern and Frank Packer (2017). “Green bond finance and certification”, *BIS Quarterly Review*, September 2017. Available [here](#)

Euractiv (2020). “Germany raises €6.5 bln from first-ever green bond”, 3 September 2020. Available [here](#)

Fatica, Serena, Panzica, Roberto and Rancan, Michela (2019). “The pricing of green bonds: Are financial institutions special?” *JRC Working Papers in Economics and Finance*. Available [here](#)

Fender, I., M. McMorrow, V. Sahakyan and O. Zulaica (2019). “Green bonds: the reserve management perspective.” *BIS Quarterly Review*, September 2019. Available [here](#)

Figueres, C., Schellnhuber, H.J., Whiteman, G., Rockström, J., Hobley, A., & Rahmstorf, S. (2017). “Three Years to Safeguard our Climate.” *Nature*, 28 June. Available [here](#)

Financial Times (2020). “Alphabet locks in record-low borrowing costs in \$10 billion deal”, August 2020. Available [here](#)

- Financial Times (2020). “ECB to consider using climate risk to steer bond purchases, says Lagarde”, 14 October 2020.” Available [here](#)
- Fitch Ratings (2020). “Global Green Bond Fund Dashboard: 1H20.” Available [here](#)
- Gianfrate, Gianfranco and Peri, Mattia (2019). “The green advantage: Exploring the convenience of issuing green bonds.” *Journal of Cleaner Production* 219, 127-135. Available [here](#)
- Global Impact Investing Network (2020). “2020 Annual Impact Investor Survey.” Available [here](#)
- Hachenberg, Britta and Schiereck (2018). “Are green bonds priced differently from conventional bonds?” *Journal of Asset Management* 19, 371-383. Available [here](#)
- Hagaman, Ashley and Wutich, Amber (2016). “How many interviews are enough to identify metathemes in multisited and cross-cultural research? Another perspective on Guest, Bunce, and Johnson’s (2006) Landmark Study.” *Field Methods* 2017; 29(1): 23-41. Available [here](#)
- Hyun, Suk, Park, Donghyun and Tian, Shu (2020). “The price of going green: the role of greenness in green bond markets.” *Accounting and Finance* 60:1, 73-95. Available [here](#)
- I4CE (2016). “Beyond transparency: unlocking the full potential of green bonds.” Available [here](#)
- IAASB (2013). “International Standard on Assurance Engagements (ISAE) 3000 (Revised), Assurance Engagements other than Audits or Review of Historical Financial Information.” Available [here](#)
- Iberdrola (2017). “Sustainability Report 2017.” Available [here](#)
- ICMA (2017). “The GBP Databases and Indices Working Group. Summary of Green Fixed Income Indices Providers, June 2017.” Available [here](#)
- ICMA (2018). “Green Bond Principles: Voluntary Process Guidelines for Issuing Green Bonds, June 2018”. Available [here](#)
- ICMA (2020). “Sustainability-Linked Bond Principles: Voluntary Process Guidelines, June 2020.” Available [here](#)
- IFC (2017). “Definitions and Metrics for Climate-Related Activities, Version 3.1, April 2017.” Available [here](#)
- IFC (2019). “Green Bond Impact Report Financial Year 2019.” Available [here](#)
- IFC (2020). “Green Bond Impact Report Financial Year 2020.” Available [here](#)
- ING (2020). “Post-Issuance Green Bond Impact Report Financial Year 2019.” Available [here](#)
- ISO (2020). “Building a framework for a sustainable future.” 9 January 2020. Available [here](#)
- ISO (2020). “ISO/DIS 14097 Greenhouse gas management and related activities – Framework including principles and requirements for assessing and reporting investments and financing activities related to climate change.” Available [here](#)
- Kapraun, Julia and Scheins, Christopher (2019). “(In)-Credibly Green: Which Bonds Trade at a Green Bond Premium?” (March 5, 2019). Proceedings of Paris December 2019 Finance Meeting EUROFIDAI – ESSEC. Available [here](#)
- Karpf, Andreas and Mandel, Antoine (2017). “Does it Pay to Be Green?” SSRN Papers. Available [here](#)
- Karpf, Andreas and Mandel, Antoine (2018). “The changing value of the “green” label on the US municipal bond market.” *Nature Climate Change* 8, pp. 161-165. Available [here](#)
- KfW (2020). Green Bond Impact Report 2017-2018. Available [here](#)

Larcker, D. and Edward Watts (2020). "Where's the Greenium?" *Journal of Accounting and Economics*. Available [here](#)

Nanayakkara, Madurika and Colombage, Sisira (2019). "Do investors in Green Bond market pay a premium? Global evidence." *Applied Economics* 51:40, 4425-4437. Available [here](#)

Neufeld, Dorothy (2020). "New Waves: The ESG Megatrend Meets Green Bonds." Visual Capitalist. Available [here](#)

Partridge, Candace and Medda, Francesca Romana (2018). "Green Premium in the Primary and Secondary U.S. Municipal Bond Markets." SSRN Papers. Available [here](#)

Partridge, Candace and Medda, Francesca Romana (2019). "The evolution of pricing performance of green municipal bonds." *Journal of Sustainable Finance & Investment* 10:1, 44-64. Available [here](#)

Patton, M.Q. (2008). *Utilization-focused evaluation*, 4th edition. Thousand Oaks, CA: Sage.

Prabhu, Aneesh, Corinne B. Bendersky, and Michael Tsahalis (2019). "Why Corporate Green Bonds Have Been Slow to Catch On In The U.S.", S&P Global Ratings, 4 February 2019. Available [here](#)

Preclaw, Ryan and Bakshi, Anthony (2015). "The cost of being green." *Environmental Finance*. Available [here](#)

RBC Global Asset Management (RBC GAM) (2020). Responsible Investment Survey. Available [here](#)

Region Île-de-France. Investor presentation December 2019. Available [here](#)

S&P Global Ratings (2020). "The EU Recovery Plan Could Create Its Own Green Safe Asset." Comment, 15 July 2020. Available [here](#)

SNCF Réseau (2017). Green Bonds Report. Available [here](#)

Takatsuki, Yo and Julien Foll. "Financing brown to green: Guidelines for Transition Bonds." 10 June 2019. Available [here](#)

UN PRI (2020). "Fiduciary duty in the 21st century final report." Available [here](#)

Von der Leyen, Ursula (2020). "State of the Union Address 2020". Available [here](#)

World Bank (2015). "International Financial Institution Framework for a Harmonised Approach to Greenhouse Gas Accounting", November 2015. Available [here](#)

Zerbib, Olivier David (2019). "The effect of pro-environmental preferences on bond prices: Evidence from green bonds." *Journal of Banking and Finance* 98, 39-60. Available [here](#)

Annex 3 – A review of the strengths and weaknesses of green bond databases

The study team has aimed at using the most reliable and up-to-date sources of data to inform the analyses undertaken in this report. In most cases, data has been extracted from the Environmental Finance Database, which presents historic information about green bond deals and green loans. Moreover, whenever environmental finance data was insufficient to inform the analyses, data from the Bloomberg Terminal has been used and the study team has noted some discrepancies between the two databases.

Table 4 A review of the strengths and weaknesses of green bond databases

	Environmental Finance Database	Bloomberg Terminal	Climate Bonds Initiative
Summary	The environmental finance database tracks every self-labelled green, social and sustainability bond issued since the inception of the market in 2007. The database includes bonds where the issuer and/or lead manager explicitly states that they are green, social or sustainability-focused.	Bloomberg Terminal is a renowned source for information on financial instruments, including bonds.	The Climate Bonds Initiative has been collecting data and analysing the green bonds market. CBI is recognised as one of the leading institutions working in the field of green finance.
Strengths	<ul style="list-style-type: none"> On top of the basic financial data about the deals (e.g. maturity, tenor, size), environmental finance includes supporting documentation for the bonds, such as final terms, external reviews and impact reports. The database also presents information regarding green loans. The user interface and data extraction are simple and clear. 	<ul style="list-style-type: none"> BT presents extensive financial data for each issuance. Green bonds can be identified using the green instrument indicator. BT presents data on total bond issuances which allows for assessing the fraction of green bonds over total bonds for a given institution. BT presents data on holders of green bonds. Although this data is not extensive, it allows for identifying top green bond investors. 	<ul style="list-style-type: none"> Full labelled green bond list, updated monthly and weekly by email. Includes: <ul style="list-style-type: none"> Green bond tranches. Green repackaged notes. Green bonds still under review ("pending"). Exclusions (mostly other labelled bonds, such as sustainability bonds, and green bonds issued under Chinese standards which occasionally diverge from the CBI taxonomy and database methodology).
Limitations	<ul style="list-style-type: none"> Environmental finance is constantly reviewing its data for inaccuracies and backfilling any data that may have only become public at a later date, which means that historic figures may change over time and that data extracted on different dates might lead to different analytical results. 	<ul style="list-style-type: none"> Data extraction and processing is very complex for users not familiar with BT functions. 	<ul style="list-style-type: none"> Excel-based database shared by email rather than online portal. <ul style="list-style-type: none"> Database providing the same level of information as the environmental finance database but at a higher cost. The database does not give direct access to the supporting evidence provided by the

	<ul style="list-style-type: none"> Information on the use of proceeds, currencies and tenors is presented aggregated per deal. This compromises the analysis of deals that have more than a single use of proceeds, currency or tenor. 		environmental finance database.
Relevance for the study	Most of the graphs and figures presented have been sourced from environmental finance (e.g. market size, tenors, use of proceeds, currencies, maturities). Data related to sustainable, social and sustainability-linked bonds and loans was sourced from EF.	Quantitative information on green bond investors has been sourced from BT. Furthermore, total bond issuance for the EIB and its peers has been sourced from BT.	The greenium analysis was built upon the results of CBI's analysis of the greenium on CAB issuances.

Source: ICF

Annex 4 – Greenium literature review

New issue premium is the norm in the financial market. When new bonds are about to be issued in the primary market, their pricing depends upon the current price of similar investments (credit quality, term to maturity) currently trading in the secondary market, as the latter would be the alternative investment to the former (counterfactual). There is a long history in the literature of findings that a new issue premium is the norm in bond markets. A new issue premium is the difference between the primary issue yield on bonds and the yield on the same bonds subsequently traded in the secondary market. A new issue premium is then seen as the cost an issuer has to bear, in order to attract new investment.

However, green bonds have disrupted this norm. However, the above-mentioned trend might not always occur. The yield of a new bond might be lower than its seasoned counterfactual. If this happens we are in the presence of a new issue concession. In the context of green bonds, a new issue concession has been coined as “greenium”, by several authors including the Climate Bonds Initiative.

Greenium occurs when, at the date of issuance of a new green bond in the primary market, its yield is lower than the yield at which similar vanilla bonds are trading in the secondary market.

Greenium has been the subject of several studies which provided mixed evidence due to their different methodologies and samples. The evaluation team carried out an extensive review of academic and grey literature on greenium. Table 5 provides a summary of the literature reviewed. Overall, there is no consensus in the literature that green bonds command a greenium in the marketplace: while there are several studies which find evidence of a greenium, others point towards an increased cost of funding and some find no evidence of an underlying difference in pricing of green bonds and conventional bonds. The different conclusions derived notably from the different methodologies and sample composition included in the analysis. For instance, studies which attempt to assess the existence of greenium by composing two baskets at market level will obtain results which are highly dependent on the type of issuer and sector. It is important to further restrict the samples to perform a meaningful comparison.

Table 5 Summary of literature on greenium

Author	Year	Sample	Evidence of greenium	Conclusions
MacAskill et al.	2021	NA (literature review)	Mixed results	Marginally positive consensus is emerging on the existence of greenium.
Tang and Zhang	2020	665 corporate issuances	Mixed results	No consistently significant greenium.
Lacker and Watts	2020	640 matched pairs of green and non-green issues	Mixed results	No greenium, in 85% of matched cases. Observed greenium caused by security size or coupon rate.
Erlandsson	2020	16 data points (20 April 2020)	N/A	Explores relationship between risk premium and spread premium and concludes that when green bonds trade with lower volatility, issuers can profit from a lower cost of capital.
CBI	2020	21 bonds (H1 2020)	Mixed results	<ul style="list-style-type: none"> • Ten green bonds priced with normal new issue premia. • Six green bonds priced on the yield curve (no new issue premia). • Five green bonds priced inside their yield curve, exhibiting a greenium.
CBI	2020	19 green bonds (H2 2019)	Mixed results	<ul style="list-style-type: none"> • Three green bonds priced with normal new issue premia. • Eight green bonds priced on their yield curves. • Seven green bonds priced with a greenium.

Author	Year	Sample	Evidence of greenium	Conclusions
Partridge and Medda	2020	Comparison of a green municipal bonds index and a similar S&P index (2014-2018)	No evidence of greenium	No conclusive evidence of greenium on the primary market.
Kapraun and Scheins	2019	1 520 green bonds and 202 394 conventional bonds	Evidence of greenium	Significantly negative premium of 20-30 bps on primary market, and positive premium on secondary market. Results highly dependent on issuer, currency, listing.
Agliardi and Agliardi	2019	1 green bond; 388 conventional bonds	Evidence of greenium	Greenium with median 6.89 bps and a range between 0.43 and 17.96 bps.
Fender et al.	2019	Comparison of green and conventional indices	Mixed results	US dollar green bond index enjoys a spread of 4 bps above conventional benchmark (positive portfolio greenium). Euro green bond index has a spread of -12 bps (negative portfolio greenium).
Bachelet et al.	2019	89 green bonds	Mixed results	Green bonds from institutional issuers have negative premia. Green bonds from private issuers have positive premia, unless the issuer commits to certifying the bond green.
Gianfrate and Peri	2019	121 senior bullet EUR green bonds (2013-2017)	Evidence of greenium	Green bonds are issued with a statistically significant average greenium of about 18 bps. The greenium for corporate issuers is larger, at 21 bps.
Nanayakkara and Colombage	2019	82 green bonds	Evidence of greenium	Green bonds are traded with a tighter spread of 62.7 bps.
Hyun et al.	2019	60 green bonds	Evidence of greenium	On average, there is no significant yield premium or discount on green bonds. Green bonds certified by an external reviewer enjoy a greenium of about 6 bps. Green bonds with CBI certificate enjoy a greenium of around 15 bps.
Faticia et al.	2019	1 397 green bonds	Evidence of greenium	Greenium for green bonds issued by supranational institutions and corporates. No greenium for bonds issued by financial institutions.
Bour	2019	536 bonds	Evidence of greenium	Average yield discount of green bonds at 23.3 bps
Zerbib	2019	110 green bonds	Evidence of greenium	Greenium of 2 bps on the secondary market
CBI	2019	32 green bonds (H1 2019)	Mixed results	<ul style="list-style-type: none"> • Twelve green bonds priced with normal new issue premia. • Fifteen green bonds priced on their yield curves. • Six green bonds priced with a greenium.
CBI	2018	21 green bonds (H2 2018)	Mixed results	<ul style="list-style-type: none"> • Fourteen green bonds priced with normal new issue premia. • Five green bonds priced on their yield curves. • Two green bonds priced with a greenium.

Author	Year	Sample	Evidence of greenium	Conclusions
Partridge and Medda	2018	716 US municipal green bonds and 814 conventional bonds (June 2013-January 2018)	Evidence of greenium	Primary market exhibits a small average greenium, and secondary market exhibits a greenium of about 5 bps.
Karpf and Mandel	2018	1 880 US municipal green bonds (2010-2016)	Mixed results	Issuers of green bonds have historically faced a negative premium on the US municipal bond market. In recent years the premium has, however, turned positive.
Baker et al.	2018	2 083 US municipal green bonds (2010-2016), 19 corporate green bonds (2014-2016)	Evidence of greenium	Green bonds are issued at a premium to otherwise similar ordinary bonds (-6 basis points or more if externally verified).
Zerbib	2018	110 bonds (July 2013 – December 2017)	No evidence of greenium	Small, albeit statistically significant, negative green bond premium of -2 bps.
Hachenberg and Schiereck	2018	Daily spreads of 7 032 green bonds and 14 064 conventional bonds (1 October 2015 – 31 March 2016)	Mixed results	Green bonds on average do not trade significantly tighter than their counterparts.
Ehlers and Packer	2017	21 green bonds	Evidence of greenium	Green bond issuers on average have borrowed at lower spreads compared to conventional bonds. Mean difference in spread is around 18 bps, standard deviation of the premium is 27 bps.
Karpf and Mandel	2017	1 880 green bonds and 36 000 conventional bonds	No evidence of greenium	Green bonds are traded at lower prices/higher yield than expected for their profile.
CBI	2017	14 green bonds (January 2016 – March 2017)	Mixed results	<ul style="list-style-type: none"> • Four green bonds priced with normal new issue premia. • Four green bonds priced on their yield curves. • Six green bonds priced with a greenium.
BNEF		Limited sample	Evidence of greenium	-25 bps on average on secondary market.
HSBC	2016	Limited sample	No evidence of greenium	No green premium.
Preclaw and Bakshi	2015	42 bonds (2014-2015)	Evidence of greenium	-20 bps on average on secondary market.

Source:IG/ EV computation

CBI's methodology controls for such idiosyncratic factors. It is very unlikely¹²⁰ that there are two exact similar bonds (a green and vanilla bond) to properly compare and assess the existence of greenium. Hence the methodology prescribed by CBI consists of comparing a new green bond with a basket of vanilla seasoned bonds which share the same:

- Credit quality: only bonds of the same issuer and that have the same payment ranking.

¹²⁰ With the exception of the recent German Federal Government model for green bonds, which will always be issued alongside a twin vanilla bond, thus allowing for proper monitoring of pricing differences.

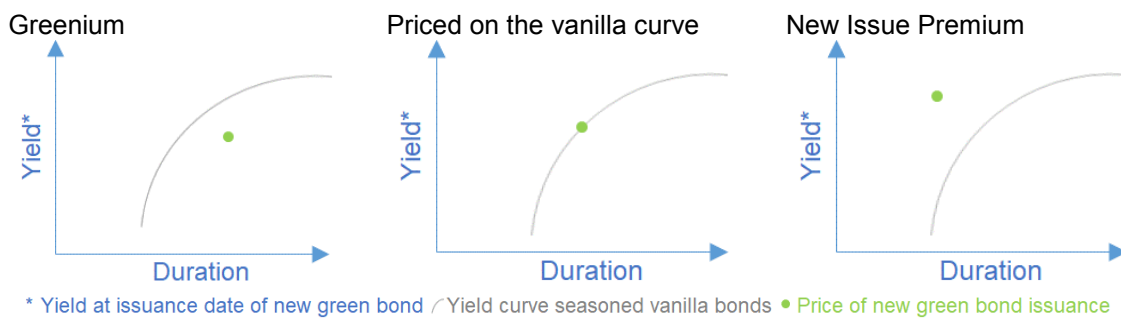
- Term to maturity: by comparing the price of the new green bond with the yield curve for seasoned vanilla bonds (as at date of issuance of the green bond).

CBI's methodology also prescribes other eligibility criteria for the composition of the vanilla bond basket aimed at capturing the liquid portion of the market, such as:

- only EUR and USD currencies;
- size EUR >€0.5 billion;
- at least 3 years to maturity at issue date;
- inclusion only of vanilla repayment structures (bullet at maturity);
- fixed-rate bonds (because of uncertainty about floating rate bonds).

Consequently there are three possibilities, as depicted in Figure 50:

Figure 50 Potential outcomes of greenium analysis



Source: IG/EV

If a green bond at issuance observes a greenium, it means that its yield is trading inside (or below) the yield curve of similar seasoned vanilla bonds, meaning that:

- Primary market subscribers of the green bond were willing to accept a lower return for the green bond compared to that of a similar conventional investment (the vanilla bond).
- The issuer of the green bond has to pay a lower yield to investors, hence benefiting from a lower cost of funding.

As noted by CBI, in its green bond primary market pricing reports, “*There is no reason why a bond being green should impact its price, since green bonds rank pari passu (on equal footing) with bonds of the same rank and issuer. There is no credit enhancement to explain pricing differences (...)*”. However, such differences are often observed as summarised below for the EIB’s CABs.

Figure 51 shows the results of CBI’s greenium analysis for all CABs issued between 2017-2020H1.

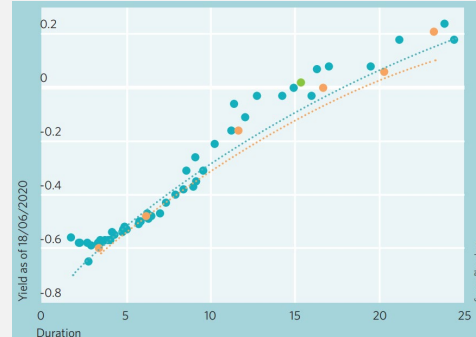
Figure 51 Results of the greenium analysis performed by Climate Bonds Initiative for Climate Awareness Bonds

Legend

- New issue green bonds
- Vanilla bonds
- Seasoned green bond

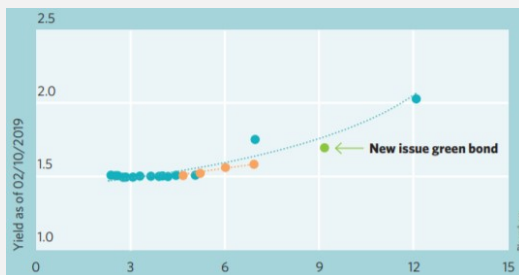
EIB 2035 EUR

Issued in June 2020
Priced with **new issue premium** compared to the vanilla curve.



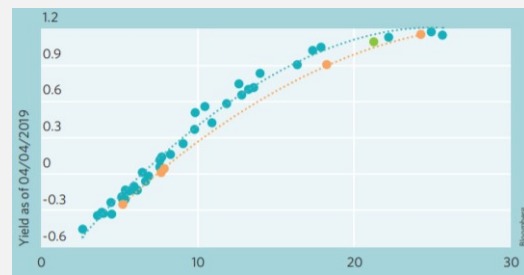
EIB 2029 USD

Issued in October 2019
Priced on the green curve, with a **greenium** to the vanilla curve.



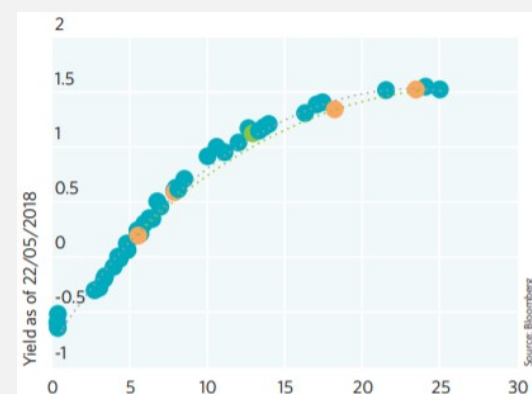
EIB 2042 EUR

Issued in April 2019
Priced on the green curve, with a **greenium** to the vanilla curve.



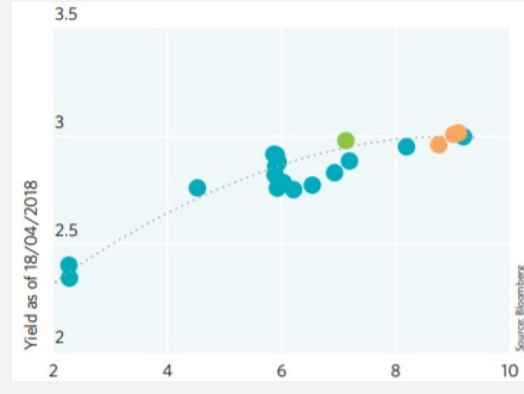
EIB 2032 EUR

Issued in May 2018
Priced on the vanilla curve, with issue premium to the green curve.



EIB 2025 USD

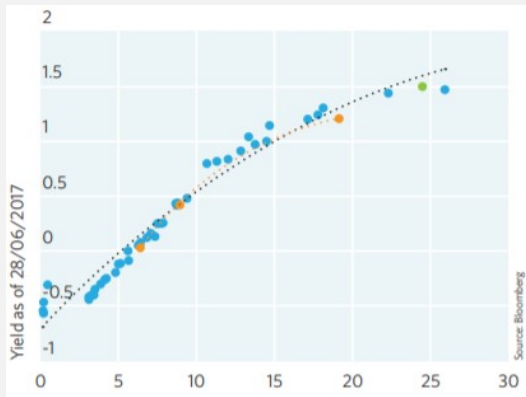
Issued in April 2018
Priced with **new issue premium** compared to the vanilla curve.



EIB 2047 EUR

Issued in June 2017

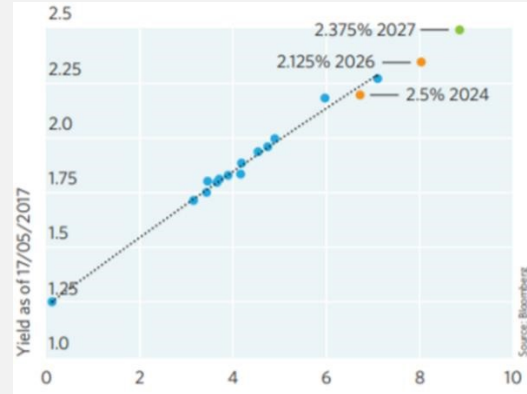
Priced with a **greenium** to the vanilla curve.



EIB 2027 USD

Issued in May 2017

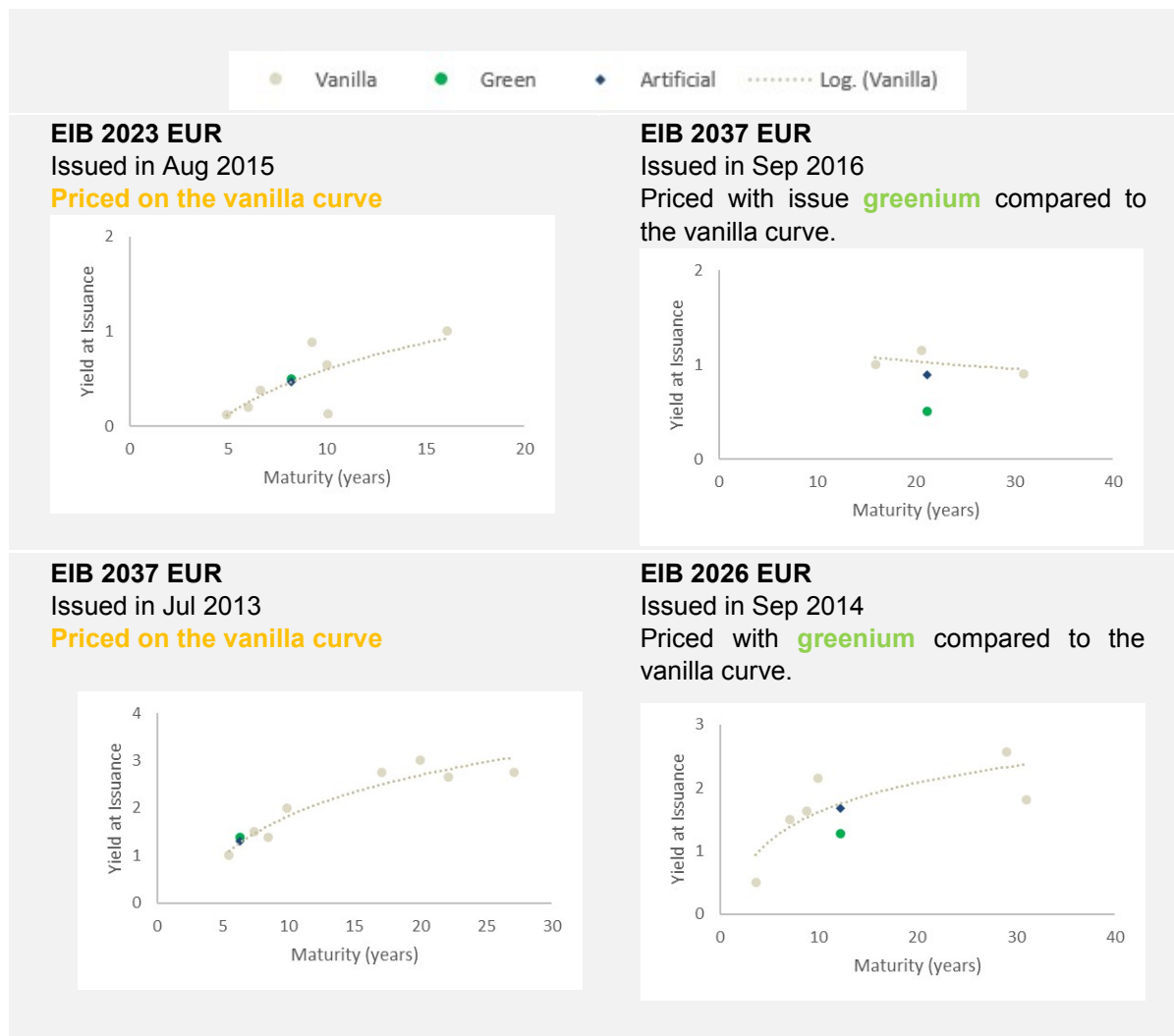
Priced with **new issue premium** compared to the vanilla curve.



Source: CBI Pricing Reports 2017-2020H1 ([here](#))

The evaluation team extended the analysis to the EIB EUR CABs issued between 2013 and 2016, using the same methodology as CBI. The results are presented in Figure 52.

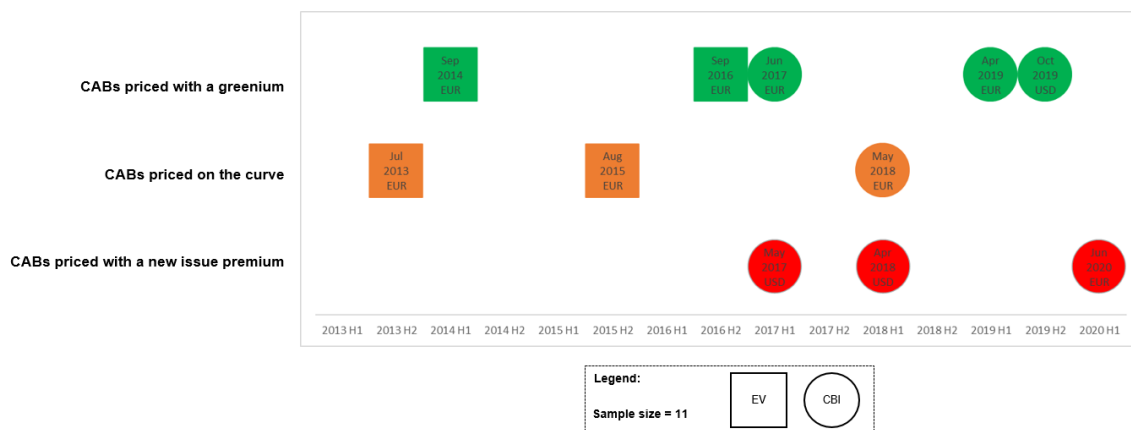
Figure 52 Results of the greenium analysis for Climate Awareness Bonds



Source: ICF, using data from Bloomberg

Primary market pricing of CABs evidences some prevalence of greenium but not consistently. According to CBI's Green Bond Primary Market Pricing Reports for the period 2017-2020H1 and extended own analysis for the period 2013-2016, under the same methodology as CBI, this evaluation has found that less than half (45%) of CABs benefited from a greenium in their primary market placement. Meaning therefore that they priced below the yield curve of seasoned comparable conventional bonds, hence investors were willing to receive lower income and the EIB paid a lower cost of funding. Whilst the remaining CABs observed either a new issue premium or were priced on the yield curve, in equal proportions as depicted in Figure 53.

Figure 53 Evolution of greenium on Climate Bonds Initiative for Climate Awareness Bonds



Source: CBI and CAB evaluation team

About Operations Evaluation division

The Operations Evaluation division conducts independent evaluations of the European Investment Bank Group's activities. It assesses the relevance and performance of these activities in relationship to their objectives and evolving operating environment. It also helps the EIB Group to draw lessons on how to continuously improve its work, thereby contributing to a culture of learning and evidence-based decision-making.

Evaluation reports are available from the EIB website:

<http://www.eib.org/infocentre/publications/all/ex-post-evaluations/index.htm>

OPERATIONS EVALUATION

Evaluation of the EIB's Climate Awareness Bonds

April 2021



**European
Investment
Bank**

The EIB bank



**OPERATIONS
EVALUATION**

European Investment Bank
98-100, boulevard Konrad Adenauer
L-2950 Luxembourg
☎ +352 4379-22000
www.eib.org – ✉ info@eib.org

Operations Evaluation
✉ Evaluation@eib.org
www.eib.org/evaluation