



Defining "green" in the context of green finance

Final report

October 2017

EUROPEAN COMMISSION

Directorate-General for ENVIRONMENT
Directorate ENV.F — Global Sustainable Development
Unit ENV.F.1— Sustainable Development Goals, Green Finance & Economic Analysis

European Commission
B-1049 Brussels

This study was a result of the contract No 070201/2017/758449/ETU/ENV.A.2 with title
"Green Finance: definitions and implications for investments"

Defining "green" in the context of green finance

Final report

Authors: Kahlenborn, Walter (adelphi), Annica Cochu (adelphi), Ivo Georgiev (COWI Denmark), Frederik Eisinger (adelphi), Dominic Hogg (Eunomia)



Getting in touch with the EU

In person

All over the European Union there are hundreds of Europe Direct Information Centres. You

can find the address of the centre nearest you at: <http://europa.eu/contact>

On the phone or by e-mail

Europe Direct is a service that answers your questions about the European Union. You can

contact this service

– by freephone: 00 800 6 7 8 9 10 11 (certain operators may charge for these calls),

– at the following standard number: +32 22999696 or

– by electronic mail via: <http://europa.eu/contact>

Finding information about the EU

Online

Information about the European Union in all the official languages of the EU is available on

the Europa website at: <http://europa>.

LEGAL NOTICE

This document has been prepared for the European Commission however, it reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

More information on the European Union is available on the Internet (<http://www.europa.eu>).

Luxembourg: Publications Office of the European Union, 2017

PDF ISBN 978-92-79-76732-6 doi:10.2779/285586 KH-07-17-106-EN-N

© European Union 2017

Reuse is authorised provided the source is acknowledged. The reuse policy of European Commission documents is regulated by Decision 2011/833/EU (OJ L 330, 14.12.2011, p. 39). For any use or reproduction of photos or other material that is not under the EU copyright, permission must be sought directly from the copyright holders.

Contents

| | |
|-----------------------------------------------------------------|-----------|
| Abstract | VII |
| Executive summary | VIII |
| Synthèse | XII |
| Abbreviations | XVII |
| List of figures | XIX |
| List of tables | XIX |
| 1 Introduction | 1 |
| Part 1 – Existing approaches for defining “green” | 2 |
| 2 Pre-considerations and scope of the study | 2 |
| 2.1 Relationship between climate, green and sustainable finance | 2 |
| 2.2 Defining “green” for targeted and untargeted financing | 3 |
| 3 Worldwide efforts on defining “green” | 5 |
| 3.1 Green bonds | 6 |
| 3.1.1 Definitions used by issuers | 6 |
| 3.1.2 Definitions used by financial service providers | 8 |
| 3.1.3 Definitions provided by policy makers | 11 |
| 3.2 Green lending | 12 |
| 3.2.1 Definitions used by banks | 13 |
| 3.2.2 Definition provided by associations and policy makers | 14 |
| 3.3 Green listed equity | 15 |
| 3.3.1 Definitions underlying green equity indexes | 17 |
| 3.3.2 Definitions underlying green themed funds | 17 |
| 3.3.3 Definitions underlying green labels and certifications | 18 |
| 3.4 Digression on environmental impact of green finance | 19 |
| 3.4.1 Measuring environmental impact of companies and projects | 19 |
| 3.4.2 Mechanisms for creating environmental impact | 21 |
| 4 Status quo of the scope and quality of green | 25 |
| 4.1 Means for defining “green” | 25 |
| 4.2 Scope of green objectives and sectors | 27 |
| 4.3 Level of detail of green definitions | 30 |
| 4.4 Degrees of greenness | 31 |
| 4.5 ESG management in green finance | 32 |
| 4.6 Summary of approaches to defining “green” | 33 |
| Part 2 – Implications for the European Union | 34 |
| 5 Need and approaches for defining green | 34 |
| 5.1 Need for a harmonised definition of green | 34 |
| 5.2 Constituent elements of a green definition | 35 |
| 5.3 Scope of green objectives and sectors | 37 |

| | | |
|-----------|-------------------------------------------------------------------------------------------------------------|-----------|
| 5.4 | Level of detail of green definitions | 37 |
| 5.5 | Degrees of greenness | 38 |
| 5.6 | ESG management in green finance | 40 |
| 6 | Suggested policy options for defining "green" for green finance in the EU | 41 |
| 6.1 | Option 1: The EC develops a conceptual definition of green finance | 42 |
| 6.2 | Option 2: The EC endorses a universal taxonomy of "green" | 43 |
| 6.3 | Option 3: The EC develops an EU-specific taxonomy | 44 |
| 6.4 | Option 4: The EC supports development of a rating methodology for measuring alignment with green objectives | 49 |
| 6.5 | Option 5: The EC develops process criteria for green financing and investment | 50 |
| 7 | Possible implications of defining "green" | 54 |
| 7.1 | Implications for the market size of green finance and investments | 54 |
| 7.2 | Implications for environmental impact | 56 |
| 7.3 | Implications for policy-making | 57 |
| 8 | Conclusions | 59 |
| 8.1 | The definition of "green" needs to go beyond taxonomies | 59 |
| 8.2 | Next steps to focus on policy objectives and impact mechanisms | 61 |
| 9 | Annexes | 63 |
| 9.1 | Annex I – Description and assessment of selected definitions | 63 |
| 9.2 | Annex II – List of Definitions | 73 |
| 9.3 | Annex III – Comparison of green sectoral taxonomies | 76 |
| 9.4 | Annex IV – Interview and survey guideline | 78 |
| 10 | Publication bibliography | 84 |

Abstract

Landmark international steps were taken with the adoption of the UN Sustainable Development Goals and the Paris Climate Agreement. These commitments, and the growing awareness of the urgency to address climate change and environmental degradation, as well as the importance of maintaining the EU's competitiveness, call for a better alignment of the financial system with EU policies supporting sustainability while reducing environmental risks.

This report presents an overview and analysis of worldwide efforts on defining "green" for green bonds, lending and listed equity. It describes the means and scope for identifying green assets and activities through conceptual definitions, taxonomies, ratings methodologies and other mechanisms. It suggests policy actions, which the European Commission could consider to support the development of "green" definitions, and discusses possible implications of such actions. Its preliminary findings are intended to feed into the work of the EU High-Level Expert Group on Sustainable Finance.

The findings of the study are based on data collected through literature review, interviews and a survey with stakeholders of the European and international financial community, including asset owners, asset managers and others. The study is complemented by a list of available "green" definitions, descriptions and assessments of selected definitions, as well as a comparison of available green sectoral taxonomies.

Executive summary

Part 1 – Existing approaches to defining "green"

Worldwide, a large number of stakeholders, including banks, investors, financial service providers, policy makers and regulators, academia and NGOs, are involved in defining what is "green" in the context of green finance. These definitions are often developed individually and vary in regard to scope, level of detail, transparency and other dimensions. While some definitions are used by multiple stakeholders (e.g. the list of eligible categories provided in the Green Bond Principles, methods underlying certain green indexes), many financial institutions or companies define "green" in their own terms.

This study analyses worldwide efforts on defining "green" in three segments:

- **Green bonds:** Most of the bonds labelled as "green" are in line with the broad and general list of eligible project categories¹ outlined in the Green Bond Principles (GBP). Often, the green character of green bonds is verified by external reviewers through second opinions. External reviewers do not usually apply own definitions of "green", but rather assess whether the bond is aligned with the GBP and whether the expected environmental impacts of green projects are realistic. Exceptions include, for example, Standard & Poor's, who has developed an assessment method for rating the "greenness" of green bonds. Labels and certification schemes to certify the greenness of bonds are also emerging, including the Climate Bonds Standard & Certification Scheme developed by the Climate Bonds Initiative (CBI). Overall, financial service providers for green bonds, for the most part, build their definitions of "green" on the guidance provided in the GBP and by the CBI.
- **Green lending:** Banks are increasingly involved in green loan origination. Eligibility for credit under specific green credit lines is usually tied to the compliance with detailed technical eligibility criteria. Such eligibility criteria can be accompanied by lists of technologies or products that can be considered as green without further assessment. Several Multilateral Development Banks together with the International Development Finance Club (IDFC) developed the MDB-IDFC Common Principles for Climate Mitigation Finance Tracking. These principles include a taxonomy of eligible sectors for climate mitigation finance. Beyond this initiative, joint action is relatively limited.
- **Green equity investment:** Investors use a range of strategies for making sustainable investments². Green equity investments are mostly made via index investing or equity funds. In recent years, many indexes have been developed to identify and track the performance of specifically green industries, firms and investments. While index providers are relatively transparent about the methodologies for identifying green companies for their indexes, the methods for delimiting "green" used by green equity funds are often complex and contested. Thus, labels and certification schemes to certify the greenness of funds have been developed. Overall, methodologies used to delimit "green" are highly heterogeneous in the green listed equity segment. Efforts to harmonise such definitions have yet to be taken.

¹ These categories cover a wide range of sectors and environmental objectives (ranging from green energy, transportation and buildings, over to environmentally sustainable management of living natural resources to and climate change adaptation), but do not entail more specific eligibility or exclusion criteria.

² A major share of investments is made using positive/negative screening, ESG integration or engagement strategies (see chapter 3.3). Sustainability- or environmental-themed investing and green impact investing, which allow investors to invest in purely sustainable or green assets, have very low market shares.

As illustrated below, the approaches to defining "green" assessed for this study (see Annex II for a list of definitions) have different characteristics and strengths, depending on the dimension under consideration. For example, detailed taxonomies help define clearly what is "green" per sector or objective. Rating systems allow for evaluating an item's degree of compliance or alignment with environmental objectives while not, *per-se*, including or excluding it from a list of eligible investments. Process criteria can steer investors towards becoming more involved with companies on environmental matters, hence raising awareness for the growing importance of environmentally friendly behaviour.

| Approaches to defining "green" | | | | | |
|--------------------------------|---------------------------------------------------------|-------------------------------------------------------------|------------------------------------------------------|-------------------------------------------------|----------------------------|
| Instruments | Objectives | Taxonomy | Exclusion criteria | Indicators and Ratings | Process criteria |
| Objectives | Broad vs. narrow | Common vs. less common objectives, sectors and technologies | | Linked / not linked to more detailed taxonomies | |
| Taxonomies | Detailed vs. general | | With/without controversial items | | |
| Exclusions | Based on sectors, technologies or compliance with norms | | Working with min. (green) or max. (brown) thresholds | | Full or partial exclusions |
| Greenness | Binary (green/non-green) vs. degrees of greenness | | | | |
| ESG | Taken or not taken into consideration for green finance | | | | |

The analysis of these approaches illustrates that green finance is typically defined by reference to what it finances (i.e. investment into green technologies, activities and companies) and not by what it achieves (financing and investment leading to a specific environmental impact). However, if one takes a view of green finance not as an objective in itself but rather as a tool to improve environmental conditions, the focus is on the potential impact of green investments. Methodological challenges for measuring impact are reinforced by a lack of understanding and research regarding the mechanisms through which green finance and investments can achieve positive environmental impact, such as information dissemination, dialogue and shareholder activism. Basing a green finance definition only on what is financed, and not on how it is financed, thus neglects other mechanisms through which investment products might exert influence on the environmental impact of the companies in which they are invested.

Part 2 – Implications for the European Union

The results of the status quo analysis were used as basis for interviews and a survey³ on the definition of "green" for the European Union. Taking all outcomes into account, this study identifies five options which the European Commission (EC) could consider:

1. The EC could develop a **conceptual definition** of green finance. The conceptual definition should specify the environmental objectives to which green finance should contribute, signalling the EU's ambitions with regard to creating (and measuring) impact.

³ Stakeholder input was gathered through eight interviews and 21 full, or partial, responses to an online survey conducted specifically for this study. The consultation covered various stakeholder groups, including asset owners or asset managers, financial service providers, NGOs, consultancies or finance-related associations, and other categories of stakeholder.

2. Aligned with the terms of the conceptual definition, the EC could, in close coordination with the EIB, endorse a **universal taxonomy**, which harmonises the classification of green assets and activities. The universal taxonomy approach would allow for individual market standards/labels to specify detailed requirements applicable to countries both within, and outside of, Europe.
3. Aligned with the terms of the conceptual definition and the proposed universal taxonomy, the EC could develop and endorse an **EU-specific taxonomy**. In order to deliver on this, the EC could adopt an opt-in approach: activities that are unanimously agreed to be green would feature directly in the taxonomy, while those that require further discussion would gradually be included as agreements are reached on the conditions for inclusion in the taxonomy. The EU-specific taxonomy could also identify elements where a case-by-case approach is needed to determine whether they are green or not. Overall, such a taxonomy could be integrated into European standards and labelling schemes for different financial instruments.
4. Aligned with the terms of the conceptual definition, the EC could support the development of a **green rating methodology** for measuring the contribution to environmental or sustainability goals made by activities or companies. A score would reflect, on a relative scale, how businesses or specific investments are contributing to environmental goals. This would allow assessing multiple dimensions, and support benchmarking of environmental performance.
5. The EC could develop **process criteria** for green financing and investment. Such criteria could be focused on fostering signalling, dialogue and shareholder activism as mechanisms for increasing the environmental impact of green finance. More details need to be developed, for example, on defining which stakeholders should be involved in the implementation of the process criteria; how to ensure data quality and independence of the environmental assessment processes; and what information should be reported on, and how.

These options are not mutually exclusive, as they constitute different instruments of an overall definition of "green". However, not all options are equally appropriate for the EU at this point, given the assessment of the implications of each option for 1) the market size of green finance and investments; 2) environmental impacts; and 3) policy-making.

A **conceptual definition** can, above all, send the signal that awareness of the need for green finance is growing in the EU. It cannot, however, provide guidance on which investments are specifically considered "green", thus allowing room for (possibly inappropriate) interpretations of green finance and failing to support investors in selecting eligible projects. A **universal taxonomy** of green sectors that does not differentiate between "dark green" and "light green" investments can increase coherence of green finance between countries and regions, but does not necessarily stimulate moving towards the darker shades of green and may have lock-in effects. An **EU-specific taxonomy**, in turn, may be perceived as too ambitious for many investors, as well as too costly to comply with. Both types of taxonomy would be relevant mostly for targeted finance and investments (representing only a small fraction of total finance and investments worldwide). This implies limited effects on the overall volume of green finance which, in turn, limits potential environmental impact. A **rating methodology** to assess alignment of investments with environmental or sustainability objectives does not seem to be a viable option for European Commission to develop at the moment, given that its contribution to increasing the volume of green finance and generating environmental benefits is unclear. Finally, **process criteria** could help to increase awareness on the need for managing environmental risks and opportunities among investors and companies at the same time.

Against this background, the European Commission could take further efforts in support of Options 1, 2 and 5 (conceptual definition, universal taxonomy, process criteria). Option 3 could be initiated following, or in parallel, to the work on Option 2.

Concrete next steps with regard to Option 1 (conceptual definition), Option 2 (universal taxonomy) and Option 3 (EU-specific taxonomy) could be:

- **Formulating EU-wide policy objectives in a way that is relevant and meaningful to investors, defining roadmaps:** The European Commission (EC) could work on aligning and clearly communicating EU-wide environmental policy objectives that serve to guide the overall understanding of the positive effects that green finance should contribute to and against which it can be measured. Such objectives could also feed into the development process of the universal taxonomy as well as the EU-specific taxonomy, which would list policy objectives and corresponding eligibility indicators/ thresholds.
- **Identifying areas of consensus:** The EC could then identify technologies or activities that are commonly agreed to be green in the EU and Member States. Each item could be mapped against the identified environmental priority objectives, clearly marking the objectives to which the item contributes and whether it could potentially lead to trade-offs with other objectives.
- **Developing a framework for assessing controversies:** In parallel, the EC could systematically determine why certain investments are controversial. The result of such an activity could consist of a framework that determines which aspects (e.g. environmental trade-offs, ease of impact measurement) providers of targeted finance need to consider, and how, when assessing potentially controversial investments.

Concerning option 5 („process criteria“) next steps could be:

- **Research on how to increase environmental impact through non-financial mechanisms:** Little research exists on the mechanisms by which green finance and investment create environmental impact (such as information dissemination, dialogue and shareholder activism) beyond through targeted financing of green projects. Further research could be conducted on these questions, in order for the EC to be able to formulate adequate process criteria.
- **Dialogue with market actors:** The EC could conduct a series of workshops to raise awareness on the environmental impact of green investment and to discuss possible measures to this extent in the management of financial products.
- **Pilot implementations:** Based on the outcome of such a dialogue series, the EC could ask market actors together with civil society to develop and test appropriate process criteria (possibly based on current systems). The application of the criteria should be accompanied by an evaluation project. The results of the pilot implementation could form the basis for the final development of such process criteria.

Synthèse

Partie 1 – Les approches existantes pour définir ce qui est « vert »

Dans le monde entier, de nombreux acteurs de l'économie, y compris les banques, les investisseurs, les prestataires de services financiers, les décideurs politiques et les régulateurs, les universitaires et les ONG, tentent de définir ce qui est « vert » dans le cadre de la finance verte. Chacun d'entre eux a élaboré sa propre définition, qui varie selon notamment la portée et le niveau de précision et de transparence. Tandis que certaines définitions sont utilisées par plusieurs parties prenantes (p. ex. la liste des catégories éligibles énoncée dans les Principes applicables aux obligations vertes, les méthodes sous-jacentes à certains indices verts), plusieurs institutions financières ou sociétés définissent les investissements « verts » avec leurs propres termes.

Cette étude analyse les efforts mondiaux entrepris afin de définir ce qui est « vert » dans les trois segments de marché suivants :

- **Obligations vertes** : La plupart des obligations considérées comme « vertes » sont conformes à la liste générale des catégories de projet éligibles⁴ énoncée dans les Principes applicables aux obligations vertes (Green Bond Principles, ci-après « GBP »). Bien souvent, le caractère écoresponsable des obligations vertes est contrôlé par des intervenants externes au moyen de deuxièmes avis. Les intervenants externes n'appliquent généralement pas leur propre définition des obligations « vertes », mais vérifient plutôt si l'instrument répond aux critères des GBP et si les potentiels impacts environnementaux des projets verts sont réalistes. Il existe néanmoins quelques exceptions, comme l'agence Standard & Poor's, qui a développé sa propre méthode d'évaluation afin d'analyser l'écoresponsabilité des obligations vertes. Des systèmes de labels et de certification qui attestent du caractère écoresponsable des obligations voient également le jour, notamment le système de certification et de standards pour les obligations climatiques développé par l'Initiative pour les obligations climatiques (Climate Bonds Initiative, ci-après « CBI »). De manière générale, la plupart des prestataires de services financiers établissent leur définition des obligations « vertes » selon les lignes directrices fournies dans les GBP et par la CBI.
- **Prêts verts** : Les banques offrent de plus en plus de prêts verts. Les investisseurs doivent généralement se conformer à des critères d'éligibilité techniques précis afin d'être éligibles à un crédit d'une ligne de crédits verts. Les critères d'éligibilité peuvent être accompagnés de listes de technologies ou de produits qui sont considérés comme verts, sans autre évaluation. De nombreuses banques multilatérales de développement (Multilateral Development Banks, ci-après « MDB »), associées au Club international du développement de la finance (International Development Finance Club, ci-après « IDFC ») ont créé les Principes communs MDB-IDFC pour le suivi du financement des mesures de lutte contre le changement climatique. Ces principes incluent une taxonomie des secteurs éligibles. Au-delà de cette initiative, les démarches conjointes sont plutôt rares.

⁴ Ces catégories regroupent un large éventail de secteurs et d'objectifs environnementaux (allant des énergies renouvelables, des transports verts et des bâtiments écologiques à la gestion écologiquement viable des ressources naturelles biologiques et aux mesures d'adaptation au changement climatique), mais n'impliquent pas de critères d'éligibilité ou d'exclusion plus spécifiques.

- Placements en actions vertes** : Les investisseurs utilisent un éventail de stratégie afin de réaliser des placements durables⁵. Les placements en actions vertes sont généralement réalisés au moyen de placements indiciaires ou de fonds d'investissement. Ces dernières années, de nombreux indices ont été créés afin d'identifier et de suivre les performances de secteurs, de sociétés et d'investissements verts. Tandis que les fournisseurs d'indices sont relativement transparents en ce qui concerne les méthodologies qu'ils utilisent afin d'identifier les sociétés vertes à intégrer à leurs indices, les méthodes pour définir ce qui est « vert » utilisées par les fonds d'investissement verts sont souvent complexes et controversées. Par conséquent, des systèmes de labels et de certifications ont été mis au point afin de certifier le caractère écoresponsable des fonds. Globalement, les méthodologies utilisées pour définir ce qui est « vert » dans le segment des actions vertes cotées en bourse sont très hétérogènes. Aucun effort d'harmonisation de ces définitions n'a encore été entrepris.

Comme indiqué ci-dessus, les approches qui définissent ce qui est « vert » évaluées dans la présente étude (voir l'annexe II pour une liste des définitions) ont différentes caractéristiques et forces, en fonction de l'aspect étudié. Par exemple, les taxonomies détaillées aident à définir clairement ce qui est « vert » selon le secteur ou l'objectif. Les systèmes de notation permettent d'évaluer le degré de conformité ou de concordance d'un investissement avec les objectifs environnementaux, mais ne l'incluent ni ne l'excluent, pour ainsi dire, d'aucune liste d'investissements éligibles. Les critères en matière de processus peuvent inciter les investisseurs à engager le dialogue avec les sociétés au sujet de questions environnementales, les sensibilisant ainsi à l'importance d'adopter des comportements respectueux de l'environnement.

| Les approches pour définir ce qui est « vert » | | | | | |
|------------------------------------------------|------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------|----------------------------------|
| Instruments | Objectifs | Taxonomie | Critères d'exclusion | Indicateurs et notations | Critères de processus |
| Objectifs | Vaste ou restreint | Objectifs, secteurs et technologies courant(e)s ou moins courant(e)s | | Liés ou non liés à des taxonomies plus détaillées | |
| Taxonomies | Détaillée ou générale | | | Avec ou sans titres controversés | |
| Exclusions | Selon les secteurs, les technologies ou la conformité aux normes | | Travaillant avec des seuils min. (vert) ou max. (marron) | | Exclusions partielles ou totales |
| Caractère vert | Binaire (vert/non-vert) ou degrés d'écoresponsabilité | | | | |
| ESG | Pris en compte ou non dans les financements verts | | | | |

L'analyse de ces approches démontre que les financements verts sont généralement définis par rapport à ce qu'ils financent (par ex. les investissements dans les technologies, les activités et les sociétés vertes) et non par rapport à leurs impacts (financement ou investissement engendrant un impact environnemental spécifique). Toutefois, si on part du principe que le financement vert n'est pas un objectif en soi, mais plutôt un outil permettant d'améliorer les conditions environnementales, alors l'accent est mis sur les po-

⁵ Une large part des investissements sont effectués en utilisant des stratégies de sélection positive et négative ou d'intégration ou d'engagement ESG (voir chapitre 3.3). Les investissements des thèmes du développement durable et de l'écologie et les investissements à impact environnemental, qui permettent aux investisseurs de placer leur capital dans des actifs intégralement durables ou verts, ont très peu de parts de marché

tentiels impacts des investissements verts. Les enjeux méthodologiques concernant la mesure de l'impact sont renforcés par le manque de compréhension et de recherche au sujet des mécanismes grâce auxquels le financement et les investissements verts peuvent avoir un impact environnemental positif, comme la diffusion d'informations, le dialogue et l'activisme actionnarial. Une définition du financement vert uniquement fondée sur ce qu'il finance, et non sur la façon dont il est financé, ignore les autres mécanismes grâce auxquels les produits d'investissement exerceront une influence sur l'impact sur l'environnement des sociétés dans lesquelles ils investissent.

Partie 2 – Enjeux pour l'Union Européenne

Les résultats de l'analyse de la situation actuelle ont été utilisés afin de mener des entretiens et une enquête sur la définition des investissements « verts » au sein de l'Union Européenne. En tenant compte de tous les résultats, la présente étude propose cinq possibilités que la Commission Européenne (CE) pourrait adopter :

1. La CE pourrait mettre au point une **définition conceptuelle** du financement vert. Cette dernière préciserait les objectifs environnementaux auxquels le financement vert devra contribuer, faisant foi des ambitions de l'UE en ce qui concerne la création (et la mesure) d'un impact.
2. Conformément à la définition conceptuelle, la CE, en collaboration étroite avec la BEI, pourrait adopter une **taxonomie universelle**, qui viendrait harmoniser la classification des actifs verts et des activités vertes. Cette taxonomie universelle permettrait à chacune des normes ou chacun des labels du marché de venir apporter des précisions quant aux exigences applicables aux pays à l'intérieur et à l'extérieur de l'Europe.
3. Conformément à la définition conceptuelle et à la taxonomie universelle proposée ci-dessus, la CE pourrait mettre au point et adopter une **taxonomie spécifique à l'UE**. Afin d'atteindre ces objectifs, la CE devrait adopter un principe de consentement préalable : des activités unanimement reconnues comme vertes pourront directement être intégrées à la taxonomie, tandis que celles qui requièrent des discussions plus poussées seraient graduellement incluses à mesure que des ententes sont conclues au sujet des conditions d'intégration à la taxonomie. La taxonomie de l'UE pourrait également identifier des éléments pour lesquels une approche au cas par cas est nécessaire afin de déterminer si ces derniers sont écoresponsables ou non. De manière générale, cette taxonomie pourrait être intégrée aux normes européennes et aux systèmes de labels pour les différents instruments financiers.
4. Conformément à la définition conceptuelle, la CE pourra soutenir le développement d'une **méthodologie de notation verte** pour mesurer la contribution aux objectifs environnementaux et de développement durable provenant des activités ou des sociétés. Cette note indiquerait, sur une échelle relative, de quelle manière certaines entreprises ou certains investissements contribuent aux objectifs de protection de l'environnement. Cette méthodologie permettrait d'évaluer plusieurs aspects, et de soutenir l'analyse de la performance environnementale.
5. La CE pourrait développer des **critères de processus** pour le financement et les investissements verts. Ces critères viseront à encourager la signalisation, le dialogue et l'activisme actionnarial comme mécanismes pour renforcer l'impact environnemental du financement vert. Plus de détails doivent encore être établis, comme définir quelles parties prenantes doivent être impliquées dans la mise en œuvre des critères de processus, comment garantir la qualité de données et l'indépendance des processus d'évaluation environnementale, et quelles informations doivent faire l'objet de rapport et de quelle manière.

Ces options ne s'excluent pas mutuellement, car elles constituent différents instruments d'une définition générale de ce qui est « vert ». Cependant, elles ne sont pas toutes pertinentes pour l'UE à ce jour, étant donné l'évaluation des enjeux de chacune des options

pour 1) la taille du marché du financement et des investissements verts, 2) les impacts environnementaux et 3) l'élaboration des politiques.

Une **définition conceptuelle** peut, avant tout, indiquer que les acteurs de l'économie européenne sont de plus en plus sensibles au besoin de financement vert. Elle ne fournit cependant pas de lignes directrices concernant quels investissements sont considérés comme « verts », laissant ainsi place à des interprétations (potentiellement erronées) du financement vert et n'aidant pas les investisseurs à sélectionner des projets éligibles. Une **taxonomie universelle** des secteurs verts qui ne fait pas la différence entre les investissements « vert foncé » et « vert clair » peut augmenter la cohérence du financement vert entre les pays et les régions du monde, mais n'incite pas nécessairement à s'orienter vers les nuances plus sombres et peut avoir des effets de verrouillage. Une **taxonomie spécifique à l'UE**, quant à elle, pourrait être perçue comme trop ambitieuse par de nombreux investisseurs, ainsi que trop coûteuse à mettre en œuvre. Les deux types de taxonomie seraient principalement pertinents pour le financement et les investissements ciblés (représentant seulement une petite fraction du total du financement et des investissements mondiaux). Ils auraient des effets limités sur le volume global du financement vert qui, à son tour, limite le potentiel impact sur l'environnement. Une **méthode de notation** pour évaluer la conformité des investissements aux objectifs environnementaux et de développement durable ne semble pas être une option envisageable pour la Commission Européenne pour le moment, étant donné que sa contribution à l'augmentation du volume de financement vert et à la génération d'effets bénéfiques sur l'environnement n'est pas claire. Enfin, les **critères de processus** pourraient aider à faire prendre conscience du besoin en matière de gestion des risques et des opportunités en matière d'environnement parmi les investisseurs et les sociétés en même temps.

Dans ce contexte, la Commission Européenne pourrait adopter les options 1, 2 et 5 (définition conceptuelle, taxonomie universelle, critères de processus). L'option 3 serait démarrée après ou en même temps que l'option 2.

Les étapes suivantes suggérées concernant l'option 1 (définition conceptuelle), l'option 2 (taxonomie universelle) et l'option 3 (taxonomie spécifique à l'UE) pourraient être :

- **Formuler des objectifs politiques applicables à toute l'UE qui soient pertinents et efficaces pour les investisseurs, définir des feuilles de route** : La Commission Européenne (CE) pourrait harmoniser et clairement communiquer les objectifs politiques de l'UE concernant l'environnement qui serviront de guide à la compréhension générale des effets positifs auquel le financement vert devrait contribuer et à l'aune desquels il sera mesuré. Ces objectifs pourraient également venir alimenter le développement du processus de la taxonomie universelle ainsi que la taxonomie spécifique à l'UE, qui fournirait une liste des objectifs politiques et les indicateurs/seuils d'éligibilité correspondants.
- **Identifier les domaines de consensus** : La CE pourrait alors identifier les technologies ou les activités qui sont généralement considérées comme vertes par l'UE et par les États membres. Chaque investissement pourrait être mis en correspondance avec les objectifs prioritaires environnementaux identifiés, indiquant clairement les objectifs auxquels l'investissement contribue et s'il peut mener à des compromis avec d'autres objectifs.
- **Développer un cadre pour évaluer les controverses** : En parallèle, la CE pourrait systématiquement déterminer pourquoi certains investissements sont controversés. Elle pourrait créer un cadre qui détermine quels aspects (par ex. les compromis environnementaux, la facilité de mesure de l'impact) les prestataires des financements ciblés devront prendre en considération, et de quelle manière, lors de l'évaluation des investissements potentiellement controversés.

En ce qui concerne l'option 5 (critères de processus) les étapes suivantes pourraient être:

- **Effectuer des recherches sur la meilleure façon de renforcer l'impact environnemental des mécanismes non financiers** : Peu d'études existent sur les mécanismes grâce auxquels le financement vert et les investissements verts créent un impact environnemental (comme la diffusion d'informations, le dialogue et l'activisme actionnarial) à l'exception de celles réalisées au moyen de financement ciblé de projets verts. Des recherches supplémentaires pourraient être conduites à ce sujet, afin de permettre à la CE de formuler des critères de processus adaptés.
- **Dialoguer avec les acteurs du marché** : La CE pourrait conduire une série d'ateliers afin de faire prendre conscience de l'impact sur l'environnement des investissements verts et de débattre des potentielles mesures à appliquer dans la gestion de produits financiers.
- **Essais pilotes** : Selon les résultats de la série de dialogue mentionnée ci-dessus, la CE pourrait demander aux acteurs du marché ainsi qu'à la société civile de développer et de tester des critères de processus adaptés (éventuellement fondé sur les systèmes actuels). L'application des critères pourrait être accompagnée d'un projet d'évaluation. Les résultats de l'essai pilote pourront former la base pour le développement des critères de processus finaux.

Abbreviations

| | |
|---------------|----------------------------------------------------------------------------------------------------|
| ADB | Asian Development Bank |
| AFD | Agence Française de Développement (French Development Agency) |
| AfDB | African Development Bank |
| BMUB | Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (Germany) |
| BMZ | Federal Ministry for Economic Co-operation and Development (Germany) |
| BREEAM | Building Research Establishment Environmental Assessment Methodology |
| CBI | Climate Bonds Initiative |
| CBRC | China Banking and Regulatory Commission |
| CGFC | China Green Finance Committee |
| CREBs | Clean Renewable Energy bonds |
| CSR | Corporate social responsibility |
| CSRC | China Securities Regulatory Commission |
| DG ENV | Directorate-General for Environment |
| DIE | Deutsches Institut für Entwicklungspolitik (German Institute for Development Policy) |
| EBRD | European Bank for Reconstruction and Development |
| EC | European Commission |
| EE | Energy efficiency |
| EIB | European Investment Bank |
| EU | European Union |
| EUR | Euro |
| ESG | Environmental, social and governance |
| FNG | Forum Nachhaltige Geldanlagen (Sustainable Investment Forum Germany) |
| FTSE | Financial Times Stock Exchange |
| GBA | Green Bonds Assessment |
| GBP | Green Bond Principles |
| GCIM | Global Climate Index Methodology (MSCI) |
| GEIM | Global Environment Indexes Methodology (MSCI) |
| GHG | Greenhouse gases |
| GIIN | Global Impact Investing Network |
| GIZ | Deutsche Gesellschaft für Internationale Zusammenarbeit (German Development Cooperation Agency) |
| I4CE | Institute for Climate Economics |
| ICMA | International Capital Market Association |
| IDB | Inter-American Development Bank |
| IDFC | International Development Finance Club |
| IEA | International Energy Agency |
| IES | Institute for Environment and Sustainability |
| IFC | International Finance Corporation |
| IRIS | Impact Reporting and Investment Standards |

| | |
|----------------|---------------------------------------------------------------------------------------------------------------------------|
| ISO | International Standards Organisation |
| JRC | Joint Research Centre |
| KfW | Kreditanstalt für Wiederaufbau (German National Development Bank) |
| KPI | Key Performance Indicators |
| LEED | Leadership in Energy and Environmental Design |
| MDB | Multilateral Development Bank |
| NAFMII | National Association of Financial Market Institutional Investors (China) |
| NCREB | New Clean Renewable Energy Bonds |
| NDC | Nationally Determined Contributions |
| NDRC | National Development and Reform Commission (China) |
| NGO | Non-governmental organisation |
| NIB | Nordic Investment Bank |
| OECD | Organisation for Economic Co-operation and Development |
| PBoC | People's Bank of China |
| QGREEN | Nasdaq Green Economy Global Benchmark Index |
| QECBs | Qualified Energy Conservation Bonds |
| RE | Renewable energy |
| S&P | Standard & Poor's |
| SBT | Science Based Targets Initiative |
| SDG | Sustainable Development Goals |
| SDSN | Sustainable Development Solutions Network |
| SRD | Shareholders Rights Directive |
| SRI | Sustainable and responsible investment |
| TEEC | Transition Energétique et Ecologique pour le Climat (Law on Energy and Ecological Transition for the Climate (France)) |
| UNEP | United Nations Environment Programme |
| USD | US Dollar |
| US SIF | Forum for Sustainable and Responsible Investment (U.S.) |
| WBA | World Benchmarking Alliance |
| WWF | World Wide Fund For Nature |
| ZWS | Center for Solar Energy and Hydrogen Research Baden Württemberg (Germany) |

List of figures

| | |
|-------------------------------------------------------------------------------|----|
| Figure 1: Linkages between climate, green and sustainable finance | 2 |
| Figure 2: Different aspects of green finance and investment | 3 |
| Figure 3: Volume of newly issued green bonds, 2012-2016 | 6 |
| Figure 4: Development of green finance commitments of IDFC members | 12 |
| Figure 5: Green finance commitments by instrument in 2014 | 12 |
| Figure 6: SRI assets by strategy and region | 16 |
| Figure 7: Growth of light and dark green funds (AuM by category in € billion) | 18 |
| Figure 8: Volumes by themes in € million | 18 |
| Figure 9: Interplay of options for defining green for green finance | 41 |

List of tables

| | |
|--------------------------------------------------------------------------------|----|
| Table 1: Overview of means for defining "green" | 25 |
| Table 2: Overview of broad and narrow objectives | 27 |
| Table 3: Overview of sectors and technologies covered by taxonomies | 28 |
| Table 4: Common environmental exclusions for sustainable mutual funds | 29 |
| Table 5: Overview of detailed vs. general taxonomies | 30 |
| Table 6: Overview of binary and incremental approaches to "greenness" | 31 |
| Table 7: Overview of ESG management in green finance | 32 |
| Table 8: Overview of the discussed approaches to defining "green" | 33 |
| Table 9: First draft of a narrower EU-specific green taxonomy | 46 |
| Table 10: Reporting fields, objectives and suggested indicators | 48 |
| Table 11: Possible implications for the volume of green finance and investment | 55 |
| Table 12: Possible implications for environmental impact per option | 56 |
| Table 13: Possible implications for policy-making per option | 58 |

1 INTRODUCTION

Large amounts of finance are needed to allow for sustainable development and to achieve climate and environmental objectives (G20 Green Finance Study Group 2016): it is estimated that total global investment needs to achieve the SDGs are in the order of USD 5 trillion to USD 7 trillion per year (UNCTAD 2014). Particularly private finance is needed, with public finance serving to leverage such private capital.

The G20 Green Finance Study Group (2016) defines "green finance" as "financing of investments that provide environmental benefits in the broader context of environmentally sustainable development. [...] Beyond the financing of green investments, green finance also involves efforts to internalize environmental externalities and adjust risk perceptions in order to boost environmentally friendly investments and reduce environmentally harmful ones [...]". Yet, this is only one of several definitions of green finance available globally and, moreover, such a definition provides little guidance on selecting investments that actually have the potential to provide such environmental benefits.

As noted by OECD (2012) as well as by the High-Level Expert Group on Sustainable Finance (2017), the lack of a common definition of green⁶ comes up regularly in institutional investor surveys when asked about the main barriers to green investing. The breadth of definitions can hamper the selection of assets for green products, reduce transparency for investors and foster greenwashing. At the same time, the question of whether a definition of what is "green" (and what is not) would help to increase the flow of green finance is, to some extent, still debated among stakeholders. This study seeks to contribute to this discussion. More specifically, the study has the following objectives:

- Identify approaches to defining "green" for green finance in the EU and beyond,
- Discuss the (dis)advantages of the most relevant approaches to defining green,
- Compare options for a definition of 'green' from an EU policy-maker perspective,
- Clarify the implications of different definitions for green finance and investments, environmental impact and policy-making in the EU.

The study is structured in two parts. Part 1 of the study presents the results of a literature review, along with relevant discussion points. Chapter 2 frames the approach to climate, green and sustainable finance and discusses the difference between targeted and untargeted green finance. Chapter 3 then illustrates worldwide efforts aimed at defining "green" in the context of green finance and introduces the concept of environmental impact. In Chapter 4, the different approaches to defining "green" are categorized and assessed from different perspectives.

Part 2 addresses the implications of Part 1 for the European Union (EU). Based on the results of expert interviews and an online survey, Chapter 5 outlines the need and options for a harmonised definition of "green" in Europe. Moreover, it discusses the constituent elements of such a definition and illustrates different perspectives on the scope and quality of "green". Then, in Chapters 6 and 7, options for defining "green" in the context of green finance in and for the European Union are drafted and assessed with regard to their implications for investments, environmental impact and policy-making. Chapter 8 presents the final conclusions.

⁶ Green finance can be termed differently, e.g. finance for green growth / economy, environmental finance, eco-friendly finance, clean tech finance, etc. (OECD 2012). These terms will be treated equally in this study.

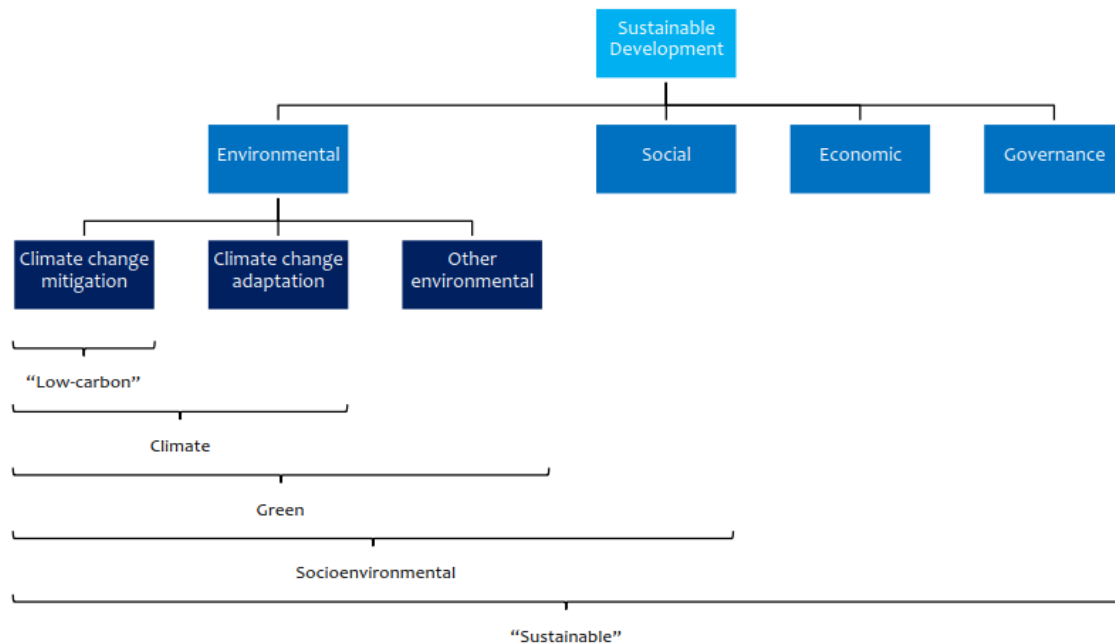
Part 1 – Existing approaches for defining “green”

2 PRE-CONSIDERATIONS AND SCOPE OF THE STUDY

2.1 Relationship between climate, green and sustainable finance

The term “green finance” is closely associated with related concepts, such as climate finance and sustainable finance. While some organisations use these terms interchangeably, this study is based on the understanding that **climate, green and sustainable finance are nested concepts** in the way illustrated in figure 1.

Figure 1: Linkages between climate, green and sustainable finance (UNEP Inquiry 2016a)



Within the green dimension, particularly climate change mitigation has received international attention. This study reviews the approaches to **defining climate (mitigation) finance** and assesses them in order to draw conclusions regarding commonalities and differences, as well as the advantages and disadvantages, of the different approaches. However, the study also has the goal to identify and evaluate **definitions of “other” green dimensions**, such as biodiversity protection, conservation of natural resources and pollution control and mitigation.

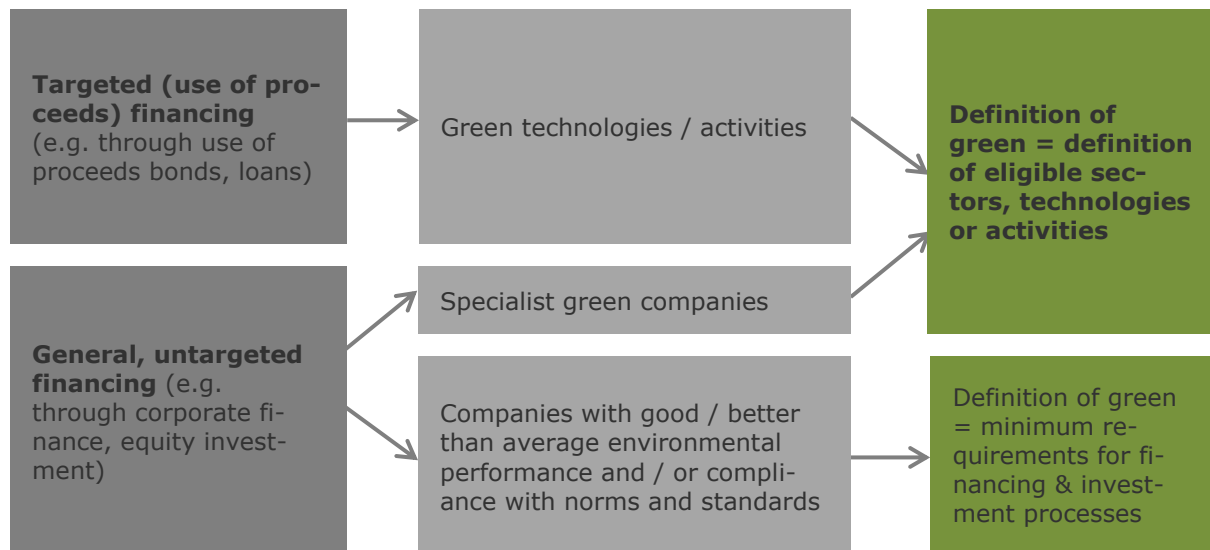
Drawing a **line between green finance and sustainable finance** is more difficult. The study focuses, first and foremost, on finance with positive environmental impacts. However, particularly in the field of “sustainable and responsible investment” (SRI), which is becoming more and more important for institutional investors, approaches to identifying appropriate investments usually take environmental, social and governance (ESG) impacts into account simultaneously. The study will, therefore, also consider, to a lesser extent, broader sustainable investment strategies. Within these strategies, specific focus will be placed on how environmental sustainability is defined.

It is the goal of the study to outline options for definitions of “green” that can, later on, become embedded in **broader sustainable finance definitions**. As expressed by one of the experts contacted for this study, “green finance should be a subset of a wider definition of sustainable finance and embedded in a broader ‘greening finance’ approach, aiming to shift financial flows from brown to green – not only grow the green niche”.

2.2 Defining "green" for targeted and untargeted financing

"Green" can be defined using different means and their relevance varies between financial segments (as will be discussed in chapters 3 and 4 in more detail), most prominently between targeted and untargeted finance. Figure 2 illustrates the difference between these two types of financing and shows related implications for the definition of "green".

Figure 2: Different aspects of green finance and investment (adelphi/COWI)



Green targeted (use of proceeds) financing: Capital is provided for the development and implementation of green technologies / activities / projects (such as the construction of photovoltaic solar electricity generation facilities) or for companies whose revenues are generated to a high extent by green technologies / activities ("specialist green companies"). Targeted green finance is most commonly provided through green use of proceeds bonds and green loans, or green project finance. By crediting the proceeds to a sub-account, or by otherwise ring-fencing or tracking them, the issuer or borrower can ensure that proceeds are used for the stated purposes. One of the objectives of targeted green finance is to provide money to green projects, thereby allowing investors or creditors to contribute to societal objectives, while simultaneously reducing the stranded asset risks arising from stricter environmental and climate policy and changing market demand. In order to define "green" in the context of targeted financing, it is important to specify which sectors, technologies, activities or projects are considered as "green". The study will look in detail at the status quo of such definitions and develop first suggestions on how "green" can be defined in the EU.

General, untargeted green financing: Capital is provided for companies that successfully manage environmental (as well as social and governance (ESG)) risks and are thus perceived as more environmentally friendly than others. This broader approach to defining green finance is common in listed and private equity investment ("sustainable and responsible investment", SRI) as well as corporate finance, where capital is usually provided for general purposes, i.e. there are no restrictions on how the capital can be used by the company. Such financing strategies can help to reduce environmental risks across investors' portfolios and, to a lesser extent, move companies towards greener development by raising awareness of the importance of ESG risk management. Yet, financing is not provided for a specific purpose and hence the correlation between the funding and its green impacts is hard to measure (2° Investing Initiative et al. 2016). In order to strengthen the green credentials of this type of finance, it is helpful to determine minimum requirements focussing on the "how" (procedural aspects, e.g. mandatory engagement of investors with companies).

This study focuses mostly on methods for identifying green sectors, technologies or activities (see upper green box, figure 2), rather than on the approaches for mainstreaming of ESG criteria across untargeted financing (lower green box). This is due to several reasons: recent discussions, especially in the green bonds sector, have shown that harmonised definitions of "green" are a priority of many stakeholders as little research has been done regarding how available approaches align, or differ⁷. In addition to allowing for directing finance to specifically green projects or pure "green" players (green specialist companies), an agreed definition of "green" can also serve to indicate the changes that are expected to be necessary, not just at the level of selected companies, but on an economy-wide level (e.g. to increasing use of renewable energies, sustainable agricultural practices, etc.). In addition, restrictions in terms of both time and resources necessitated focusing the study on selected questions.

Consequently, the results of the study are of most relevance to those engaged in targeted financing (through green use of proceeds bonds and green project loans, as well as for investments through green funds).

⁷ The European Investment Bank, together with several partners, is working on a "descriptive" or "standard-neutral" taxonomy that maps and compares existing green taxonomies (see chapter 3.1 for more detail). This is being undertaken in parallel to the writing of this study.

3 WORLDWIDE EFFORTS ON DEFINING "GREEN"

A large number of stakeholders, including banks, institutional investors, financial service providers, policy makers, academia and NGOs, are involved in defining what is "green" in the context of green finance. These definitions are often developed in isolation and vary in regard to scope, level of detail, transparency and other dimensions. While some elements of the definitions are used by multiple stakeholders at the same time (e.g. the taxonomy of eligible categories provided in the Green Bond Principles, methods underlying certain green indexes), many financial institutions or companies define "green" in their own terms. Available standards and labels often allow for this, as long as these are adequately explained, so that outsiders can decide for themselves whether the definition aligns with what they are seeking from green investments.

Many **banks**, including most multilateral development banks and several national development finance institutions (such as AfD and KfW), have developed guidance regarding which projects fall under their definition of "green", either in a general sense, or in the context of specific themes, such as clean technology, low-carbon development, climate change mitigation or energy efficiency. These definitions are used, above all, for green lending and/or issuing green bonds.

Large **institutional investors** have been actively developing an understanding of sustainable investment that is, above all, based on investment strategies to select companies with good environmental, social and governance (ESG) performance, or to avoid, or engage with, companies active in specific sectors, such as nuclear energy. Furthermore, institutional investors increasingly pursue sustainable investments aligned with the UN's Sustainable Development Goals (SDGs). While sustainable investing has advanced furthest in equities, green bonds are an area of considerable growth potential. Green factors have so far been less important in alternative asset classes (OECD 2012).

Financial service providers, including index providers, rating agencies, stock exchanges and labelling agencies, have reacted to the growing interest on the part of asset owners in sustainable and green finance by creating a range of tools and services, such as green indexes, labels and green bond ratings. Early indexes, rating systems, benchmarks and other analytical products tended to focus on the integration of sustainability criteria in the general investment approach. In more recent years, indexes and rating systems have been developed to identify and track the performance of specifically green industries, firms and investments.

Meanwhile, **policy makers** across the globe are cooperating with the financial industry to develop guidance for green finance. Efforts are usually focused on outlining product or process standards⁸ which financial players can follow to become more sustainable. Definitions of what is "green" have been developed by only a small number of policy makers.

The following chapters will outline and assess the different approaches to defining "green" in the context of green finance, as developed and applied by the stakeholders just described. While examples of individual or joint approaches are included, **the overview is by no means exhaustive, and is meant only to illustrate key points**. The assessment will focus on green bonds, green lending and green (sustainable) investment. Other areas of green finance, including environmental and climate risk insurance, green foreign direct investment, and emissions trading, are not considered here.

⁸ For a discussion of product and process standards see High-Level Expert Group on Sustainable Finance (2017)

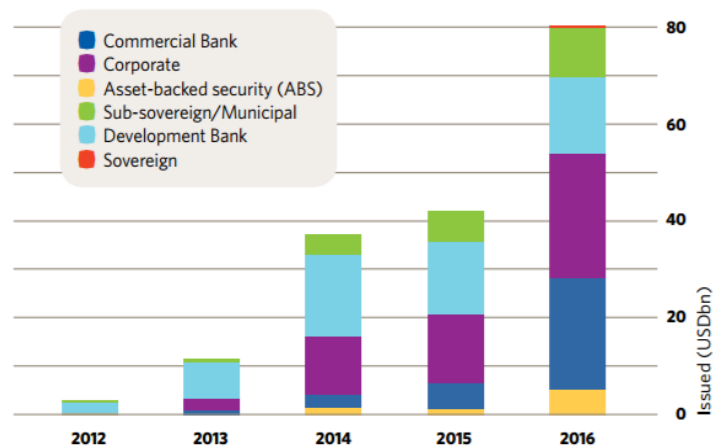
3.1 Green bonds

According to the **Green Bond Principles (GBP)**⁹, "green bonds are any type of bond instrument where the proceeds will be exclusively applied to finance or re-finance new or existing eligible green projects". In order for a bond to be labelled and accepted as "green", it is, therefore, required to specify how the proceeds of a bond will be used. Figure 3 illustrates the volume of bonds labelled as "green" since 2012 (CBI 2017).

3.1.1 Definitions used by issuers

Most of the bonds labelled as "green" by their issuers fall within the list of eligible project categories defined by the GBP. These categories cover a broad range of sectors and environmental objectives, ranging from renewable energy and energy efficiency, transportation and buildings over environmentally sustainable management of living natural resources to climate change adaptation, but do not entail more specific eligibility or exclusion criteria. Analysis by the Climate Bonds Initiative (2016a), an international, investor-focused organisation working to scale up the green bond market, shows that labelled green bonds are used to finance projects corresponding to various themes¹⁰, with energy as well as buildings and industry being the largest.

Figure 3: Volume of newly issued green bonds, 2012-2016 (CBI 2017)



In addition to specifying for each bond individually how the proceeds will be used, many green bond issuers develop **green bond frameworks** in order to illustrate their general understanding of "green". Of the ten most recent issuances in August 2017¹¹, six issuers have green bond frameworks with varying degrees of detail:

- The **Nordic Investment Bank**, in its 2014 Green Bonds Framework¹², roughly describes the sectors into which eligible categories must fall (energy efficiency, renewable energy, public transport solutions, transmission and distribution systems, waste management systems, waste water treatment, green buildings) and determines that a long-term lock-in in high carbon infrastructure should be prevented. Energy effi-

⁹ The GBP are voluntary guidelines for issuers of green bonds developed by the International Capital Markets Association (ICMA). The GBP comprise four components (use of proceeds, process for project evaluation and selection, management of proceeds, reporting) as well as list of sectors and activities for which the proceeds of the bonds might be used. ICMA (2017): The Green Bond Principles 2017, <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/GreenBondsBrochure-JUNE2017.pdf>

¹⁰ Detailed information on the use of proceeds of individual bonds can be accessed through second party opinions to assess whether the use of proceeds justifies labelling the bonds as green. According to CBI (2016a), about 60 percent of labelled green bonds have received an external review. The majority of these second opinions are available through the website of the CBI, but have not been assessed for this study.

¹¹ Nordic Investment Bank, Greensboro, ADB, Anglian Water, IFC, Bancóldex, KfW, Renovate America

¹² Nordic Investment Bank (2014): NIB Environmental Bond Framework https://www.nib.int/filebank/a/1410449130/c14f001e548bdeef346b853a6cd82c2a/3986-NEB_Framework.pdf

ciency projects are only eligible if they lead to a reduction in electric energy use of at least 30%. Efficiency projects involving fossil fuel power or heat generation are not eligible. Commercial and multi-family buildings need to be certified according to LEED Platinum or BREEAM Excellent¹³, and fulfil EU Green Building requirements.

- **Renovate America** Inc., a provider of consumer financing options for home improvements in the U.S., developed a green bond framework under which it intends to issue green bonds and other green notes through its ABS platform called Home Energy Renovation Opportunity Funding. The framework entails a detailed taxonomy of eligible projects and determines specific eligibility criteria for each product¹⁴.
- The frameworks by other issuers from the list provide only very general information on eligibility. The **Asian Development Bank** (ADB)¹⁵ defines broad categories of eligibility, divided into mitigation and adaptation. The green bond framework of the **International Finance Corporation** (IFC)¹⁶ states that projects eligible for green bond financing are selected from IFC's climate-related loan portfolio. The Colombian Bank **Bancóldex** describes five categories of eligible projects¹⁷. **KfW's** Green Bond Framework document contains a list of eligible renewable energy project categories that promote the transition to low-carbon and climate-resilient growth¹⁸. The frameworks do not specify any other criteria.

While this overview shows that the definitions of eligible projects for green bonds are highly adapted to the priorities, portfolios and needs of the issuers, the second party opinions¹⁹ confirm that all of these definitions fall within the project categories defined by the GBP. Yet, the informational value of confirming alignment between green bonds and the GBP is limited, given that the project categories specified in the GBP are rather broad. Stakeholders in the green bonds market perceive it as important to take measures to increase comparability between green bonds by different issuers and to reduce transaction costs for assessing the quality of individual bonds. Against this background, the **European Investment Bank** (EIB), together with several partners and in close coordination with financial experts, is working on a "descriptive" or "standard-neutral" taxonomy. This is a framework comparing existing standards, with the aim of capturing all acceptable definitions of "sustainable" while allowing for specific sub-sets of this overall taxonomy. So far, the following steps have been taken:

- In cooperation with the **People's Bank of China** (PBoC) and the **China Green Finance Committee** (CGFC), the EIB has attributed each category of the Chinese Green Bond Endorsed Project Catalogue ("China Catalogue") to the policy objectives mentioned in the Green Bond Principles. Moreover, it used the MDB-IDFC Common

¹³ LEED and BREEAM are rating systems to assess the greenness of buildings. See Vierra, Stephanie (2016) on Green Building Standards And Certification Systems: <https://www.wbdg.org/resources/green-building-standards-and-certification-systems>

¹⁴ Sustainalytics (2017): Renovate America Green Bond - Hero Green Bond Framework, http://www.sustainalytics.com/wp-content/uploads/2017/04/RA-Framework_Second-Opinion_HERO-Green-Bond.pdf

¹⁵ Asian Development Bank: Green Bond Framework, <https://www.adb.org/sites/default/files/adb-green-bonds-framework.pdf>

¹⁶ IFC: IFC's Green Bonds Process, http://www.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/about+ifc_new/ifc+governance/investor+relations/ifc+green+bonds+process

¹⁷ Sustainalytics (2017): Banco De Comercio Exterior De Colombia (Bancoldex) - Green Bond Framework, http://www.bancoldex.com/documentos/9984_Bancoldex_Green_Bond_Second_Opinion.pdf

¹⁸ CICERO (2015): Second Opinion on KfW's Green Bond Framework, <https://www.kfw.de/PDF/Investor-Relations/Pdf-Dokumente-Investor-Relations/Second-Opinion-04072014.pdf>

¹⁹ A second party opinion can be described as the result of an independent consultant's review of the compliance of a bond or green bond framework with an existing or individually defined standard.

Principles for Climate Mitigation Finance Tracking²⁰ to 1) clarify the eligibility criteria which make compatible the Chinese categories with the MDB-IDFC categories in the area of climate change mitigation; and 2) to attribute the Chinese categories in the area of climate change mitigation to the MDB-IDFC categories.

- In cooperation with the **WWF** and **Institute for Climate Economics** (I4CE), EIB has established a formal platform with the community of green bond external reviewers and used the work already performed on the China Catalogue to enquire which classification sets are actually used by them. As a result, it should be possible to jointly ascertain which taxonomies are effectively used in the capital markets and to work out how each of the existing taxonomies could be aligned to enhance the translation of one taxonomy into each of the others. In addition to this translation effort, EIB's work is supposed to contribute to answering the question "Can sectoral categories be re-grouped in order to reduce the level of detail?" This is important for effective decision-making in the capital markets that cannot cope with the same degree of technical precision required by specialists in their assessment of projects.

3.1.2 Definitions used by financial service providers

Often, the "green" character of green bonds is verified through **second opinions** by external reviewers. External reviewers do not usually apply their own definitions of "green", but rather, assess whether the green bond complies with the GBP, and whether the expected environmental impacts of green projects are realistic. For example, Moody's performs Green Bond Assessments (GBA), which are "forward-looking opinions of the relative effectiveness of the issuer's approach for managing, administering, allocating proceeds to and reporting on environmental projects financed by green bonds" on the basis of the GBP. The assessment does not evaluate the green nature of projects but rather their transparency and accountability. Cicero and Standard & Poor's, in turn, have developed proprietary assessment methods for rating the quality of green bonds.

- **CICERO** differentiates three "shades of green", reflecting the issuers' adherence to a long-term vision for a low carbon, "environmentally resilient" society²¹. "Light green" indicates that the project is predicted to be environmentally friendly, but does not contribute to the long-term vision; projects that represent steps to the long-term vision are "medium green"; and projects that "already apply solutions of the future" are "dark green". CICERO assesses each of the projects funded by the bond, and then derives a single shade for the bond as a whole.
- **Standard & Poor's (S&P) Green Evaluation** is an asset certification that green bond issuers may submit as a second opinion. The evaluation provides a relative green impact score that is mainly based on a mitigation score (environmental impact) or an adaptation score (resilience level). Transparency and governance are also assessed but do not enhance the final Green Evaluation - rather, its impact is neutral or negative. Another interesting feature of the evaluation is that it takes a "carbon hierarchy" approach: the "greenness" of the use of proceeds is evaluated using a hierarchy of technologies in terms of their contribution to decarbonisation²². Projects relat-

²⁰ The MDB-IDFC Common Principles for Climate Mitigation Finance Tracking were developed by several multi-lateral development banks (MDB) in cooperation with the International Development Finance Club (IDFC). See chapter 3.2 for further information.

²¹ CICERO (2016): Framework for CICERO's 'Second Opinions' on Green Bond Investments, <http://cicero.oslo.no/file/2/CICERO%20Second%20Opinion%20Framework%20280416.pdf/download>

²² S&P Global Ratings (2017): S&P Global Ratings Green Evaluation: Time to Turn Over a New Leaf?, <https://www.spratings.com/documents/20184/1481001/Green+Evaluation/bbcd37ba-7b4f-4bf9-a980-d04aceffa6b>

ed to fossil fuels, for instance, are not excluded from consideration in this evaluation – instead, they lower the overall score of the asset.

Standards, labels and certification schemes to certify the "greenness" of bonds are also emerging.

- The **Climate Bonds Initiative (CBI)** has established a certification scheme²³ for green bonds that is based on a detailed taxonomy of eligible sectors as well as exclusions (see Annex I.2). The CBI has also developed or is in the process of developing more specific eligibility criteria which bonds in certain sectors have to comply with in order to achieve certification. These criteria are determined in cooperation with experts from research and industry.

| | |
|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <p>Available eligibility criteria: Water, Solar, Wind, Geothermal, Low Carbon Buildings, Low Carbon Transport</p> | <p>Under development: Bioenergy, Land Use, Hydropower, Marine, Waste Management, Information technology and broadband</p> |
|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|

- **LuxFLAG** also provides a green bond label²⁴. One of the eligibility criteria for obtaining the label is that the applicant must utilise its proceeds for investing in one of the broad categories of potential eligible green projects specified in the GBP. Exclusions are also specified. Moreover, the applicant "must apply the Sustainable Development Goals in the use of proceeds", although it is not explained how this requirement is to be implemented.
- Several processes are currently underway, or expected to start, within the **International Standards Organisation (ISO)**. These include the recently commenced New Work Item "Green bonds - Environmental performance of nominated projects and assets" (reference: ISO/NP 14030, under ISO/TC 207/SC 4) led by the American National Standards Institute²⁵; and the (pending) New Work Item "Proposal to Green Finance: Assessment of Green Financial Projects", proposed by the Chinese Standards organisation²⁶. The British Standards Institute has also launched a process to develop a set of standards to increase clarity over the credentials of green financial products²⁷.

A recent report (Climate Bonds Initiative, Luxemburg Green Exchange 2017) on the role of **stock exchanges** in the growth of the green bond sector identifies six stock exchanges with a dedicated green bond segment, or list. These are: The Oslo Stock Exchange, London Stock Exchange, the Stockholm Stock Exchange (i.e. Nasdaq Stockholm), the Mexico Stock Exchange, the Luxembourg Stock Exchange and the Italian Stock Exchange. Examples of their approaches to defining "green" include:

- **Nasdaq Sustainable Bond List:** the dedicated green bond list within Nasdaq Stockholm (the operating name of the Stockholm Stock Exchange) dates from 2015. Only

²³ Climate Bonds Initiative: Climate Bonds Standard, Version 2.1, https://www.climatebonds.net/files/files/Climate%20Bonds%20Standard%20v2_1%20-%20January_2017.pdf

²⁴ LuxFLAG: Green Bond Label, <https://www.luxflag.org/labels/green-bond/>

²⁵ ISO: Green bonds - Environmental performance of nominated projects and assets, <https://www.iso.org/standard/43254.html>

²⁶ ISO: New Work Item Proposal: Green Finance - Assessment of Green Financial Projects, <https://share.ansi.org/Shared%20Documents/News%20and%20Publications/Links%20Within%20Stories/ISO%20NWIP%20Assessment%20of%20Green%20Financial%20Projects.pdf>

²⁷ HM Treasury, Department for Business, Energy & Industrial Strategy (2017): UK government launches plan to accelerate growth of green finance, <https://www.gov.uk/government/news/uk-government-launches-plan-to-accelerate-growth-of-green-finance>

bonds whose proceeds are used for the following purposes may be listed on this list: "activities related to climate change mitigation and adaptation, enhancing or protecting biodiversity, reducing resource use or for socially positive activities such employment, education and healthcare without negative impact on the environment"²⁸. Additionally, issuers need to submit a second opinion by an experienced third-party. Thus, bonds may be listed if they are demonstrated to be beneficial on the environmental or social dimensions – or both. Bonds whose proceeds will fund activities harmful to the environment are excluded from the list, even if they simultaneously contribute towards other social goals.

- **Luxembourg Green Exchange:** the largest platform exclusively dedicated to green, social and sustainable securities (mostly bonds), commenced in 2016²⁹. The issuer has to submit an external review that verifies that the bond is "green" (or social, or both) in terms of the use of its proceeds. Thus, the exchange is not directly involved in defining whether a bond is "green", and nor does it endorse or recommend any specific taxonomy to assess the "greenness" of the use of proceeds.
- **Borsa Italiana:** Italy's stock exchange launched, in 2017, a dedicated 'green and social bond' list. Borsa Italiana defines green bonds as bonds whose proceeds "are exclusively used to finance projects with specific environmental benefits/ impacts"³⁰. However, it does not specify what those environmental benefits, or impacts, might be. Bonds need to have a third-party certification³¹ in order to be listed in it, and issuers need to report annually on the use of the proceeds. Hence, third-party certifiers yield considerable power over the definition of what a green bond is.

The providers of green bond indexes also have to deal with defining green. The GBP Databases and Indices Working Group (2017) identifies four global **green bond indexes** (Barclays MSCI, Standard & Poor's, Bank of America Merrill Lynch, and Solactive) and two Chinese green bond indexes. Most of these have their own methodology for choosing the components of the index. The following two are examples of these methodologies:

- The **Barclays MSCI Global Green Bond Index**³² comprises bonds whose proceeds are destined for seven sectors (alternative energy, energy efficiency, sustainable water, green building, pollution prevention, adaptation, other). For each sector, more detail on eligible technologies or activities is provided. All securities are independently evaluated by MSCI ESG Research.
- In order to be eligible for **S&P's Green Project Bond Index** and for the **Solactive Green Bond Index**, in turn, bonds must be flagged as "green" by the Climate Bonds Initiative.

Dedicated **green bond funds** have grown rapidly, but because many have restrictive investment criteria (including exclusion criteria), they are not able to invest in all green

²⁸ NASDAQ (2015): NASDAQ SUSTAINABLE BOND LIST, http://business.nasdaq.com/media/sustainable-bonds_tcm5044-17903.pdf

²⁹ Luxembourg Green Exchange, <https://www.bourse.lu/lgx>

³⁰ Borsa Italiana (2017): ExtraMOT Market Rules, http://www.borsaitaliana.it/borsaitaliana/regolamenti/extramot/rules20170313.en_pdf.htm

³¹ Definition of "certification" by the GBP (2017): An issuer can have its Green Bond or associated Green Bond framework or Use of Proceeds certified against an external green assessment standard. An assessment standard defines criteria, and alignment with such criteria is tested by qualified third parties/certifiers.

³² Barclays MSCI (2014): Barclays MSCI Green Bond Indices https://www.msci.com/eqb/methodology/meth_docs/Barclays_MSCI_Green_Bond_Indices.pdf

bonds issued³³. Investments into green bonds typically have to be at least between 50 and 70 per cent of the total assets under management by the green fund.

Overall, financial service providers in the green bond markets, for the most part, rely on the broad and vague definition of eligible green projects determined by the GBP, or on the more elaborate taxonomy under development by the Climate Bonds Initiative.

3.1.3 Definitions provided by policy makers

As summarized by UNEP Inquiry (2017), many countries have issued guidance or undertaken other activities to support the growth of local green bond markets. Yet, these efforts do not usually entail individual definitions of "green". For example, the Federal Ministry for the Environment, Nature Conservation, Construction and Reactor Safety (BMUB), together with KfW, has developed the minimum requirements for KfW's investments in green bonds³⁴. These requirements largely reflect the GBP and do not make further specifications on the use of proceeds.

China is a notable difference, as Chinese public policy institutions and regulatory bodies are strongly involved in defining green projects that can be financed through green bonds.

- In December 2015, the **Green Finance Committee of China Society of Finance and Banking** published the Green Bonds Endorsed Project Catalogue, the first set of guidelines for the issuing of green bonds by Chinese institutions³⁵. It entails a taxonomy defining six categories (energy saving, pollution prevention and control, resources conservation and recycling, clean transportation, clean energy, ecological protection and climate change adaptation) with 31 sub-categories of projects that are eligible for financing via green bonds. This list is broad and comprehensive. It covers climate change mitigation and adaptation projects, and broader environmental projects, such as projects addressing air pollution.
- The **Chinese National Development and Reform Commission** (NDRC) has also developed guidelines with a list of projects eligible for green bond issuance. These are largely in line with the Catalogue of projects endorsed by PBoC. The exception is with nuclear energy, which is included by NDRC but not endorsed by PBoC.
- The National Association of Financial Market Institutional Investors (NAFMII) and China Securities Regulatory Commission (CSRC) are also developing their own green bond guidelines with a definition of "green" that could align or differ from those endorsed by the PBoC and NDRC (Climate Bonds Initiative 2016b). Yet, efforts are under way to harmonise definitions of "green" across institutions³⁶.

Another example of relevant definitions can be found in the **U.S.** The Office of Energy Efficiency & Renewable Energy of the U.S. Department of Energy has created two public financing schemes for governments seeking to raise capital to invest in energy efficiency and renewable energy projects. These are the **Qualified Energy Conservation Bonds**

³³ Financial Times (August 2017): Green bond funds struggle to put capital to work, <https://www.ft.com/content/5ffab26e-72f1-11e7-93ff-99f383b09ff9>

³⁴ KfW: KfW Green Bond Portfolio, <https://www.kfw.de/nachhaltigkeit/KfW-Konzern/Nachhaltigkeit/Nachhaltige-Unternehmensprozesse/Nachhaltiges-Investment/KfW-Green-Bond-Portfolio/>

³⁵ Green Finance Committee: China Green Bond Endorsed Project Catalogue (2015 Edition), <http://www.greenfinance.org.cn/displaynews.php?cid=79&id=468>

³⁶ Personal communication with China Green Finance Committee

(QECB) and the **New Clean Renewable Energy Bonds (NCREB)**³⁷. The proceeds from QECB must be used to finance energy-saving and related programs. Meanwhile, NCREB proceeds must be used exclusively to finance capital expenditures related to renewable and alternative energy projects. This includes geothermal, solar, wind, biomass, hydroelectric, landfill gas, tidal, wave, ocean thermal and anaerobic digestion projects.

3.2 Green lending

The **International Development Finance Club (IDFC)** has been involved in tracking the green finance activities of its members in the period from 2011 up until 2014. For the purpose of tracking, it developed a definition of green finance that is split into three separate categories/themes (IDFC 2015): "Green energy" and mitigation of greenhouse gases (GHG); adaptation to climate change impacts; and other environmental objectives. In order to provide accurate and comparable data for this mapping exercise, a consistent categorisation of mitigation and adaptation activities was agreed by IDFC members. This categorisation takes into account the **MDB-IDFC Common Principles for Climate Mitigation Finance Tracking**³⁸, developed by the IDFC and several Multilateral Development Banks (MDBs) in 2011. While the categories of eligible projects for climate mitigation finance are relatively clearly elaborated, the adaptation and, especially, the "other environmental" themes are less well defined (see Annex I for a detailed description of the classification systems).

Figure 4 shows that green finance commitment of IDFC members (23 national and sub-regional development banks) reached almost **USD 100 billion in 2013 and 2014**. Finance for "green energy" and mitigation of greenhouse gases made up the largest share of green finance, while adaptation and other environmental objectives received less funding. Figure 5 illustrates that concessional and non-concessional loans are the most important instruments for delivering green finance.

Figure 5: Development of green finance commitments of IDFC members (IDFC 2015)

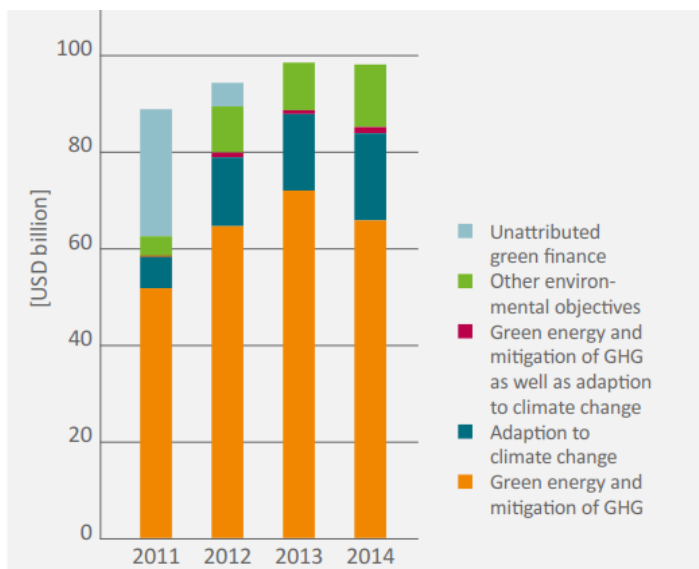
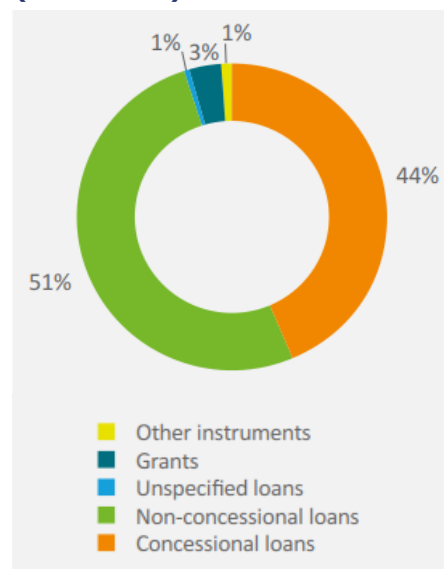


Figure 5: Green finance commitments by instrument in 2014 (IDFC 2015)



³⁷ US Department of Energy: Qualified Energy Conservation Bonds, <https://energy.gov/eere/slsc/qualified-energy-conservation-bonds>; US Department of Energy: New Clean Renewable Energy Bonds <https://energy.gov/eere/slsc/new-clean-renewable-energy-bonds>

³⁸ EIB (2015): Common Principles for Climate Mitigation Finance Tracking (Version 2 – 15th June 2015), http://www.eib.org/attachments/documents/mdb_idfc_mitigation_common_principles_en.pdf

The Climate Policy Initiative (2017), an international not-for-profit organisation working to support nations in developing and implementing effective climate, energy and land use policies, estimates that development finance institutions and commercial financial institutions together channelled USD 165 billion of climate finance in 2015/16 (average of two years' data). More localized data is also available for some countries. For example, according to the green credit statistics prepared by the China Banking Regulatory Commission, green credit made up approximately 10% of the portfolios of China's most important banks at the end of 2015 (Sustainable Banking Network, IFC 2016).

It becomes clear that banks are now involved in providing finance for green purposes. As the Sustainable Banking Network and IFC (2016) note, the definitions of lending with positive environmental impact differ widely between financial institutions and regions. In the following, examples of individual approaches to defining green will be assessed.

3.2.1 Definitions used by banks

Many banks are developing broad **environmental objectives and priorities**. These serve as an overall framework to their understanding of green finance and guide their green lending decisions.

- Environment and climate is one of the four strategic priorities of the **European Investment Bank (EIB)**. It finances projects for the natural and human environment, which includes biodiversity, clean air, clean water, sustainable transport, renewable energy and energy efficiency. At least 25% of its investments are committed to climate change mitigation and adaptation annually³⁹.
- The **African Development Bank (AfDB)**⁴⁰ and **Asian Development Bank (ADB)**⁴¹ are both determined to foster green growth. While guidance by the AfDB is relatively scarce, the ADB describes in more detail which activities contribute to this objective and clusters them under four mutually supportive directions: promoting a shift to sustainable infrastructure; investing in natural capital; strengthening environmental governance and management capacity; responding to the climate change imperative.

Many banks, including multilateral and national development banks, green (investment) banks and general commercial banks, provide **green loans or credit lines** for clients and projects that contribute to the banks' overall green goals. Eligibility for green loans is usually tied to the compliance with technical eligibility criteria. Such eligibility criteria can be accompanied by taxonomies listing technologies or products that can be considered as green without further in-depth assessment. Moreover, specific indicators may be defined in order to measure compliance with, or performance with regard to, certain green issues. The following are examples of green loans or credit lines, including approaches to delineating what may be considered green:

- The **Agence Française de Développement** has been providing green financing programmes in various countries. Under the name of "SUNREF" it offers a range of green finance services to support companies in seizing the opportunities of sustainable use

³⁹ EIB: Climate and environment for everyone's future, <http://www.eib.org/projects/priorities/climate-and-environment/index.htm>

⁴⁰ AfDB: Objectives, <https://www.afdb.org/en/about-us/mission-strategy/objectives/>

⁴¹ ADB (2013): Environment Operational Directions 2013–2020, Promoting Transitions to Green Growth in Asia and the Pacific, <https://www.adb.org/sites/default/files/institutional-document/33869/environment-operational-directions-2013-2020.pdf>

of natural resources and energy finance⁴². Green credit lines under this label are addressed at local banks which on-lend the money to eligible companies and projects. Eligible activities are related to energy management (energy efficiency and renewable energies) and environmental performance (Reduction of pollutant emissions and environmental compliance; development of the environmental certification of services (tourism...); recycling and sanitation for local authorities; high environmental quality housing; conversion to sustainable/organic farming; sustainable forestry exploitation) and can be conducted in four areas (industry, services, individuals and professionals, agriculture). These categories are further refined together with local partner banks according to their expertise and portfolios.

- The **UK Green Investment Bank** (now part of the **Green Investment Group**) was established by the British government in 2012 to attract private funds for green infrastructure, focusing on offshore wind, energy solutions, waste and bioenergy and on-shore renewables in the UK. To be eligible for financing, a project must "make a positive contribution to a recognised green purpose", such as the reduction of greenhouse gas emissions, the advancement of efficiency in the use of natural resources, the protection or enhancement of the natural environment, the protection or enhancement of biodiversity and the promotion of environmental sustainability⁴³.
- Under its environmental lending pillar PlanetBanking, the **Inter-American Development Bank** (IDB) provides loans and guarantees, called Green Lines, to support Financial Intermediaries to promote environmental initiatives in the following sub-sectors: renewable energy; energy efficiency; cleaner production; sustainable buildings; sustainable transport; sustainable agriculture; sustainable tourism; sustainable forestry industry; biomass. Through this initiative, the IDB has approved 17 operations and disbursed US\$475 million for mitigation activities (mostly small renewable energy generation and energy efficiency projects) since 2008⁴⁴.

3.2.2 Definition provided by associations and policy makers

According to the Sustainable Banking Network (a group of banking regulators and associations from 24 emerging markets), banking associations in Brazil, Cambodia, Colombia, Ecuador, Kenya, Mexico, Mongolia, South Africa and Turkey have coordinated industry-led initiatives to develop voluntary guidelines for sustainable banking (International Finance Corporation, 2017). While all guidelines determine principles for managing ESG risks throughout lending activities, none include taxonomies of investment areas for green lending or investment by banks.

Efforts have also been taken by policy makers to promote green lending⁴⁵. National guidance, such as provided by **Indonesia** (Indonesian Roadmap for Sustainable Finance 2015-2019) and **Bangladesh** (Policy Guidelines for Green Banking), usually defines green or sustainable finance very broadly without explaining in more detail which sectors or activities fall under the environmental pillar. Focus is again on the principles of ESG

⁴² AFD: SUNREF, AFD's Green Finance Label https://www.sunref.org/wp-content/uploads/2015/11/AFD_3_volets_SUNREF_VA_v01.pdf

⁴³ Green Investment Group (2017): Our Green Investment Principles, http://greeninvestmentgroup.com/media/180097/giggreen-investment-principles-817_01.pdf

⁴⁴ IDB (2016): Evaluation of IDB's Group Work Through Financial Intermediaries: Green Lending, <https://publications.iadb.org/bitstream/handle/11319/7540/Evaluation-of-IDB-Groups-Work-through-Financial-Intermediaries-Green-Lending-Background-Report.pdf?sequence=1>

⁴⁵ IFC: Sustainable Banking Network – Guidance From SBN Members, http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/company-resources/sustainable-finance/sbn_guidancefrommembers

management. More detailed provisions on the definition of green projects in the context of green lending are provided, for example, by the Netherlands and China:

- **Netherlands:** Launched in 1995 as a joint initiative of four Dutch national ministries⁴⁶, the Dutch Green Funds Scheme is a tax incentive scheme designed to encourage investment in green projects. To be eligible for this scheme, projects must obtain an official Green Certificate. The Green Certificate can be awarded to projects that demonstrate environmental benefits in at least one of the following categories, which together provide a comprehensive (albeit not necessarily exhaustive) concept of "green": nature conservation, organic farming, sustainable agriculture, waste management and recycling, renewable energy, energy efficiency, sustainable building, sustainable mobility, sustainable water management and climate change adaptation⁴⁷.
- **China:** In 2012, the China Banking and Regulatory Commission (CBRC) introduced Green Credit Guidelines, providing clear operational guidance to implement green banking in three categories: E&S risk management, green lending products and services, and greening banks' own operations. CBRC then introduced the Green Credit Statistics System in 2014. Green credit loans are classified into 12 categories with sub-categories. A tool has also been developed for banks to calculate the environmental benefits from green credit lending, including reduction in carbon emissions, water pollution and savings on water use (Sustainable Banking Network, IFC 2016). CBRC further introduced the Green Credit Key Performance Indicators (KPIs) in 2015 to strengthen monitoring and evaluation of green banking.

3.3 Green listed equity

In the equity market, the focus of activities related to defining "green" is on taking a holistic approach to "sustainable investment", also known as "responsible investment". Environmental risks and opportunities make up one pillar of sustainable investment. The definition of sustainable investment can vary considerably between stakeholders, but generally entails applying one of the following strategies (Global Sustainable Investment Alliance 2016):

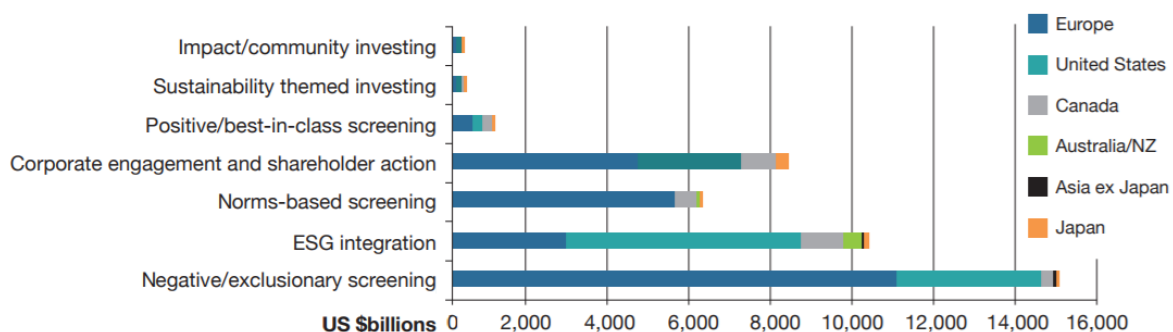
- **Screening:** Screening of potential investments can take place against the investor's objectives to enable exclusion of investment in specific sectors, or companies or projects that show poor ESG performance relative to industry peers (negative/ exclusionary screening) or companies or projects that do not comply with international norms and standards (norms-based screening). Alternatively, positive/best-in-class screening allows investors to identify companies that show strong ESG performance relative to others, or that specifically comply with international norms. The companies selected after the screening are not, per se, "sustainable" companies, but rather, show better management of environmental and social impacts of their core business.
- **ESG integration:** Investors may require systematic and explicit inclusion, by investment managers, of environmental, social and governance factors into investment appraisal. Again, the companies selected under this approach are not pure players in sustainable sectors, but rather show adequate strategies with regards to environmental and social risk management.

⁴⁶ These are the Ministries of Housing, Spatial Planning & the Environment (VROM); Finance (FIN); Agriculture, Nature & Food Quality (LNV) and Transport, Public Works & Water Management (VenW).

⁴⁷ Rijksdienst voor Ondernemend Nederland: Projectcategorieën Regeling groenprojecten, <https://www.rvo.nl/subsidies-regelingen/regeling-groenprojecten/projectcategorie%C3%ABn>

- **Corporate engagement and shareholder action:** Investors may use shareholder power to influence corporate behaviour, including through direct corporate engagement (i.e., communicating with senior management and/or boards of companies), filing or co-filing shareholder proposals, and proxy voting that is guided by comprehensive ESG guidelines.
- **Sustainability themed investing:** Investors might bound investment so that it takes place only in relation to themes, or in assets specifically related to sustainability (for example clean energy, green technology or sustainable agriculture). Most of sustainability themed investing is investment in environmental technology funds.
- **Impact investing:** Investors may undertake targeted investments that intend to create measurable positive social or environmental outcomes alongside financial returns. Impact investors engage directly with companies and/or funds, generally through private market solutions.

Figure 6: SRI assets by strategy and region (Eurosif 2016)



The first three approaches can be described as a “form of ESG or green “overlay” in the general investment process” (OECD 2012) that allows investors to select the most sustainable industries or companies, exclude “dirty” companies and/or motivate “polluters” to improve their ESG performance over time. Sustainability, or environmental themed, investing, and impact investing, in turn, allow investors to invest in specialist companies. Both approaches have very low market shares compared to the other investment strategies (figure 6) but benefit significantly from an increasing awareness of climate change and environmental concerns among investors.

Green themed investing and impact investing can potentially provide important information for the definition of green. Impact investing, however, is currently rather focused on the social dimension⁴⁸, offering limited insights into potential sectors or activities through which positive environmental (rather than social) impact can be achieved. The following sub-chapters thus focus on describing how green index providers, green funds and labelling agencies select eligible investments for green themed investing.

⁴⁸ As the Annual Impact Investor Survey 2016, prepared by the Global Impact Investing Network (2016), shows, nearly half (48%) of impact investors responding to the survey report primarily targeting social impact goals, while the other half (47%) intend to create both social and environmental impact. Reflecting this relatively strong focus on the social dimension, impact investors show a preference for investing into a range of basic services sectors, including food and agriculture, energy, healthcare, education, and housing.

3.3.1 Definitions underlying green equity indexes

An index can provide investment managers and asset owners with a benchmark for active investment decisions. Furthermore, they are the basis for passively managed portfolios, i.e. those tracking a reference index. In recent years, many indexes have been developed to identify and track the performance of, specifically, green industries, firms and investments. Index providers are relatively transparent about the methodologies used to identify green companies for use in their indexes (OECD 2012). Examples of green indexes, and their associated providers, include:

- **FTSE Russell**, which provides various green indexes based on two underlying classification systems – the FTSE Green Revenues (Low Carbon Economy) Classification System, and the FTSE Environmental Markets Classification System. The former recognises eight industry sectors and 60 sub-sectors as contributing to the transition to the green economy. The latter defines seven sectors and 30 sub-sectors based on which “environmental market companies” can be identified and categorised.
- **MSCI**, which provides several green indexes based on varied taxonomies, as well as exclusion criteria. The MSCI Global Environment Indexes Methodology (GEIM) defines five sectors (alternative energy, clean tech, sustainable water, green building, and pollution prevention), while the MSCI Global Climate Index Methodology (GCIM) focuses on three sectors (renewable energy, clean technology and efficiency, future fuels). The main difference between the two is that GCIM aims to include securities that contribute to reducing GHG emissions from current levels, while GEIM focusses on projects that are environmentally beneficial in absolute terms.
- **NASDAQ**, which provides a large number of environmental stock indexes. At the head of the index family is the Nasdaq Green Economy Global Benchmark Index (QGREEN). To be eligible for this index, the security-issuing company “must be involved in the reduction of fossil-sourced fuels, products, services, and lifestyles” and in at least one of the thirteen “green” sub-sectors defined in Nasdaq’s taxonomy. The sectors include advanced materials, bio/clean fuels, energy efficiency, financial, green building, healthy living, lighting, natural resources, pollution mitigation, recycling, renewable energy generation, transport and water. Additionally, the security-issuing company must be classified as participating in the “green economy” by Sustainable-Business.com LLC⁴⁹. No further information is available online on how participation in the green economy is measured.

3.3.2 Definitions underlying green themed funds

A common investment approach is to invest via specialist green or environmental themed funds. According to the Fund EcoMarket database tool, “environmental themed funds significantly integrate environmental issues into their investment strategies, sometimes alongside ethical avoidance criteria”⁵⁰. Green funds have been available in Europe for several decades - for its most recent analysis of the European green funds market, Novethic (2017) analysed over 200 green funds.

Fund managers often define eligible themes in order to select companies with strong environmental credentials. Some funds focus on ‘best-in-class’ companies across several themes, whereas others focus on specialist companies. Yet, earlier research by Novethic

⁴⁹ <http://www.sustainablebusiness.com/>

⁵⁰ Fund Eco Market: Style Name: Environmentally themed, <http://www.fundecomarket.co.uk/help/sri-styles-directory/environmental>

(2012) showed that the methodologies used by environmental funds for defining "green" were often either unclear or questionable. Not only did investment managers publish little information on their green investment criteria, but some also have invested in themes other than those suggested by the fund name. Some also applied questionable definitions in scoping certain themes (e.g. funds investing in clean or alternative energy also often considered gas and nuclear energy eligible). As a consequence, Novethic distinguishes between dark green funds (i.e. the theme implied by the fund's name matches its investment strategy and objective), and light green funds (the securities in the portfolio do not fully correspond to the fund's strategy and/or name).

The results of similar analysis in 2017 (Novethic 2017) show that, since then, the volume of funds deemed "light green" has increased very little in recent years, whilst "dark green" funds have seen their volume almost double since 2014 (see figure 7). Whereas funds in the climate and renewable energy themes are often extended to include other environmental sectors, particularly water, funds do not extend their investment scope beyond the announced theme (figure 8).

Figure 8: Growth of light and dark green funds (AuM by category in € billion)

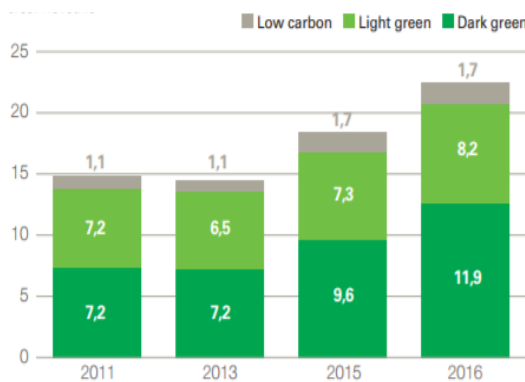


Figure 8: Volumes by themes in € million



3.3.3 Definitions underlying green labels and certifications

A small number of **labels and certification schemes** are available to certify the "greenness" of funds.

- The **Energy and Ecological Transition for the Climate (TEEC) Label**⁵¹ is a certificate which is awarded to green funds by the French Ministry of Environment, Energy and the Sea (now Ministry of Ecological and Solidarity Transition). The scheme assesses the eligibility of applicant funds using a taxonomy of projects that are considered to contribute positively to the required transition in respect of energy and the environment. This taxonomy is based on that developed by the Climate Bonds Initiative. The label also defines exclusion criteria. See Annex I for a detailed overview.

⁵¹ French Ministry of Environment, Energy and the Sea: TEEC Label, Criteria guidelines, https://www.ecologique-solidaire.gouv.fr/sites/default/files/Label_TEEC_Criteria%20Guidelines.pdf

- The **LuxFLAG Climate Finance Label**⁵² is a certificate for funds that invest at least 75% of their total assets in projects "related, or with a clear and direct link, to mitigation and/or adaptation of climate change or cross-cutting activities" according to the taxonomy laid out in the Common Principles for Climate Mitigation Finance Tracking. Eligibility for the **LuxFLAG Environment Label**⁵³ is tied to taxonomies such as the FTSE Environmental Markets Classification System⁵⁴.

3.4 Digression on environmental impact of green finance

The previous chapters mostly described green finance by what it is (i.e. investment into green technologies and activities) and not by what it achieves (financing and investment leading to positive environmental impact). **However, if one takes a view of green finance not as an objective in itself but rather as a tool to improve environmental conditions, the focus is on the potential impact of green investments.**

The expected or real environmental impact of targeted finance can be determined by assessing the impacts of (the portfolio of) projects that are being financed. This is done, for example, by the KfW for its renewable energy portfolio (ZSW 2016). Yet, further efforts need to be taken in order to anchor impact assessment in the financial world.

Assessing impact for untargeted finance and investment is more difficult. Within the sustainable investment universe, impact investment is one investment approach that is based on specifically assessing and reporting on the impacts of an investment (Eurosif 2016). Yet, as depicted in figure 6 (chapter 3.3), impact investing still has a very low market share. Moreover, impact investing is often focused on socio-economic impacts rather than on environmental aspects. Assessing impact for the other sustainable investment approaches (positive or negative screening, ESG integration, etc.) is much more difficult. While it is possible to evaluate the environmental performance of companies via ESG research, it is very hard to determine whether green investment (in alignment with the results of such ESG assessments) has caused a company to better manage environmental risks and opportunities and exactly which environmental impact this has. Even the green impact of investment into specialist green companies is difficult to evaluate, since it is not transparent for which purposes the money is used exactly.

In the following, the available methodologies for assessing the environmental impact of projects and companies will be introduced, followed by a discussion of the mechanisms that foster the positive environmental effects of green investments.

3.4.1 Measuring environmental impact of companies and projects

In order to measure the impact of projects or company activities on the environment, one or more goals, and a set of indicators related to these goals, have to be determined, so that an informative yet manageable picture can be drawn. Moreover, it is important to determine a measurement methodology, data sources and reporting formats to make sure that results can be compared over time and by different stakeholders (Network for Business Sustainability 2011).

⁵² LuxFLAG: LuxFLAG Climate Finance Label, Eligibility Criteria, https://www.luxflag.org/media/pdf/criteria_procedures/LuxFLAG_Climate_Finance_Label_Eligibility_Criteria.pdf

⁵³ LuxFLAG: LuxFLAG Environment Label, Eligibility Criteria, https://www.luxflag.org/media/pdf/criteria_procedures/ENV--Label-Eligibility-Criteria-16062016.pdf

⁵⁴ FTSE Russel: FTSE Environmental Markets Methodology, http://www.ftse.com/products/downloads/FTSE_Environmental_Markets_Classification_System.pdf

Setting targets

Where available, targets are usually expressed qualitatively (climate protection, biodiversity conservation, etc.) rather than quantitatively. For example, the UK Green Investment Group has defined not only priority sectors, but also "green purposes" (reduction of greenhouse gas emissions, advancement of efficiency in the use of natural resources, protection or enhancement of the natural environment and biodiversity, promotion of environmental sustainability), allowing it to prioritize any transaction which demonstrates both a lower risk profile and a higher green impact⁵⁵.

Examples of quantitative targets exist mostly outside of the financial sector - the Paris Agreement determines the goal to limiting global warming to 2°C by 2100; goals for the reduction of greenhouse gases compared to baseline scenarios are specified in many Nationally Determined Contributions (NDCs), while the EU's 7th Environment Action Programme⁵⁶ specifies quantitative targets for deforestation, restoration of degraded ecosystems, etc. Efforts are under way to increase the use of meaningful targets. For example, the **Science Based Targets** initiative is a partnership of the World Resources Institute, the WWF, the UN Global Compact and CDP, which works with companies to strengthen their capacity to set and achieve science-based mitigation goals⁵⁷. The work undertaken by this initiative could be useful to encourage a similar initiative for financial institutions.

Determining indicators

The most common green indicator is total, or avoided, GHG emissions. To facilitate comparison of project results, the **IFI Framework, "Working Towards a Harmonized Framework for Impact Reporting"**⁵⁸, suggests a limited number of core indicators for projects related to energy efficiency (EE) and renewable energy (RE): (1) annual energy savings (EE), (2) annual Greenhouse Gas emissions reduced or avoided (EE and RE), (3) annual renewable energy produced (RE), and (4) capacity of renewable energy plant(s) constructed or rehabilitated (RE).

Besides greenhouse gases, other indicators are required to measure performance in regard to environmental objectives that are not primarily climate-related (although often linked, for example if climate protection contributes to biodiversity conservation, or if habitat conservation – as a means to conserve biodiversity – contributes to adaptive responses). Natural Capital Accounting and Environmental Footprint Analyses show that, besides GHG emissions, the main factors influencing the resilience of ecosystems are fresh water use and land use (CoP FINC 2015). In June 2017, the **GBP's Impact Measurement Working Group** published further potential indicators and benchmarks for measuring the impacts of water and waste water projects (GBP Impact Reporting Working Group 2017).

⁵⁵ Green Investment Group (2017): Green Investment Policy, <http://greeninvestmentgroup.com/media/185861/gig-green-investment-policy.pdf>

⁵⁶ European Union (2013): General Union Environment Action Programme to 2020 'Living well, within the limits of our planet', <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013D1386&from=EN>

⁵⁷ Science Based Targets Initiative: About the Science Based Targets Initiative, <http://sciencebasedtargets.org/about-the-science-based-targets-initiative/>

⁵⁸ AfDB, EIB, IFC, World Bank (2015): Green Bonds - Working Towards a Harmonized Framework for Impact Reporting, https://www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/Green_Bonds_-_Working_Towards_a_Harmonized_Framework_for_Impact_Reporting_-_March_2015.pdf

The **Impact Reporting and Investment Standards** (IRIS)⁵⁹ of the Global Impact Investing Network (GIIN) is an important impact measurement toolkit and indicator catalogue that is used by around 5,000 organisations worldwide. Using IRIS, organisations can operationalise their understanding of "greenness", or sustainability, by choosing from among an array of indicators on environmental and social impact. The **Frankfurt Hohenheimer Leitfaden**⁶⁰ also provides indicators for measuring social, cultural and environmental performance of an investment. Further indicators are available through the **ISO 14000 standards**. ISO 14031 provides guidance on the design and use of environmental performance evaluation, and on identification and selection of environmental performance indicators, for use by all organizations, regardless of type, size, location and complexity.

Assessing performance

Tools and methodologies have been developed to help managers measuring impacts on the environment (Network for Business Sustainability 2011). **Footprint methodologies**⁶¹ allow for measuring an entity's inputs (e.g. resources) or outputs (e.g. GHG emissions). For example, the **carbon footprint** expresses the carbon emissions of a person or business. Over 5,000 companies in 2014 reported to CDP (formerly Carbon Disclosure Project), with most reporting GHG emissions information using the GHG Protocol approach⁶². ISO 14046⁶³ sets guidelines and requirements for **water footprint** assessments of products, processes, and organizations. ASN Bank is currently developing a methodology to measure its **biodiversity footprint** based on GHG emissions, as well as water and land-use (ASN Bank 2016). Accounting standards are required to ensure that footprints are calculated in a standardized way. Yet, it needs to be noted that footprint methodologies are backward-looking, i.e. they do not provide any information on expected alignment with environmental objectives.

3.4.2 Mechanisms for creating environmental impact

So far, relatively little research has been carried out on the impact of green investments. Very few studies and papers try to summarize and provide an overview on the impact (Kahlenborn et al. 2001, US SIF 2016, Wagemans et al. 2012). Some research has been carried out regarding individual aspects of how green investments achieve impact (Kahlenborn et al. 2010, Gilford 2010; Electricis et al. 2014; oekom research 2013; oekom research 2017; Science for Environment Policy 2016). Moreover, some financial service providers have reported on their ESG achievements (especially through the PRI database) and a growing number of banks and bond issuers report on the green impact of their money. Given the complex nature of the matter far more research would be necessary to provide a clear picture on the impact of green investments. However, the existing research is sufficient to provide some insight.

⁵⁹ Global Impact Investing Network: IRIS Data Brief: Focus on Impact Objectives, <https://iris.thegiin.org/research/iris-data-brief-focus-on-impact-objectives/summary>

⁶⁰ Forschungsgruppe Ethisch-Ökologisches Rating: Frankfurt-Hohenheimer Leitfaden, <http://www.ethisch-oekologisches-rating.org/veroeffentlichungen/frankfurt-hohenheimer-leitfaden>

⁶¹ An overview of environmental footprint methodologies for products and organizations is available, for example, through a study conducted for the European Commission (JRC, IES 2011).

⁶² The GHG Protocol Initiative comprises two separate but linked standards: GHG Protocol Corporate Accounting and Reporting Standard (provides a step-by-step guide for companies to use in quantifying and reporting their GHG emissions) and the GHG Protocol Project Quantification Standard (guide for quantifying reductions from GHG mitigation projects).

⁶³ ISO 14046: Environmental management -- Water footprint -- Principles, requirements and guidelines, <https://www.iso.org/standard/43263.html>

One of the critical questions is: how can it be ensured that an investment (and the values conveyed through it) contributes to moving the company in which it is invested towards a greener path? The impact of green investments depends not only on the investment object (the activity or the entity which receives money), but also on the type of financial product (bonds, shares, funds, etc.), and the processes applied in generating these products. Moreover, the environmental impact of an investment is not always closely related to the amount of the green investment (oekom research 2013). Increasing the environmental impact of green investments is as much about increasing the total market and expanding green investment in the various product categories as it is about improving the processes for generating green investments (e.g. data collection to create green shares) and the green investment product features (e.g. customer communication). For the example of climate-friendly institutional investment, 2° Investing Initiative et al. (2016) recommend not to *"equate exposure and impact - modifying a portfolio's exposure to different sectors, companies, technologies, or themes does not directly affect the real economy. The extent to which a climate-friendly objective translates into impact depends on the investor's positioning and signalling."*

Green investments can trigger environmental impact both through purely **financial mechanisms** and through other **non-financial mechanisms**, partly intended and partly not intended. For many of these mechanisms the impacts are difficult to measure due to attribution gaps, but evidence suggests that these effects exist.

Financial mechanisms

- The provision of fresh capital to (new) environmentally friendly projects/activities/companies etc. (e.g. eco venture capital, new emissions of green shares, etc.). The potential environmental impact is high, if the investments would not have received money otherwise, hence if the provided capital is "additional".
- Improved financing conditions for new capital (e.g. green bonds with potentially reduced interest rates, easier investor acquisition and therefore less cost for the acquisition). The impact depends on the amount of cost savings. Whether cost saving can be achieved might also depend on the additional cost for preparing and promoting green bonds or attracting green investments. Issuing green bonds, for example, is perceived by many issuers as more expensive than issuing a conventional bond (due to additional costs for selecting eligible projects, reporting, etc.) while pricing benefits cannot yet be systematically proven due to lack of data⁶⁴.
- Positive influences on the price of the investment product (higher prices for green shares leading to a positive feedback to the company management) – this impact is mostly rather low. Even though growing, the market share of green investments is not yet sufficient to influence the prices of most investment products (Kahlenborn et al. 2010; Capelle-Blancard, Couderc 2009; Vanwalleghem 2013).
- Negative financial conditions (worse capital market conditions) for environmentally damaging activities – mostly the opposite of the above mentioned mechanisms. The environmental impact depends on the market share of green investments. Theoretical research has shown that these effects require a high market share of green investments (above 20%) (Kraus et al. 2001). Capital divestment, for example, could potentially cause a worsening of financial conditions for fossil fuel-based companies if it reaches a level where the companies can no longer attract sufficient investors. So

⁶⁴ Climate Bonds Initiative (2017): Green Bond Pricing in the Primary Market: Q4 2016 snapshot, https://www.climatebonds.net/files/files/March17_CBI_Briefing_Primary_Market.pdf

far, however, the educational effect of divestment mostly works by the negative publicity that it creates for fossil fuel-based companies⁶⁵.

Broadly speaking, environmental impacts through financial mechanisms are most important in cases where fresh capital is raised for new investments. Once the initial investment has been made, usually the environmental impact of green investment through financial mechanisms is rather small.

Non-financial mechanisms

It is usually argued that green investments influence the public discourse and strengthen public policies on environmental and climate protection (see e.g. US SIF 2016). But "green investments" can also strengthen the institutional, strategic and operational basis in private companies for green activities. This impact depends on the kind, intensity, extent and quality of exchange with companies. The exchange can take place intentionally (active ownership: engagement and shareholder resolutions) or unintentionally (information exchange for ESG analysis).

Engagement and shareholder resolutions can be powerful instruments by which green investments can drive the economy towards sustainability. Due to attribution gaps and the closed procedures it is difficult to gauge the environmental impact. However, anecdotal evidence suggests that engagement has been successful especially in influencing large companies (Gilford 2010; Kahlenborn et al. 2010). Through combined engagement activities even those companies can be reached which could not be influenced by a single investor. Engagement (which due to legal reasons is more important in the EU than shareholder resolutions) is gaining momentum. The environmental impact of engagement (and shareholder resolutions) is highest where activities causing high environmental damages can be changed or stopped.

Very important, but little understood, is the environmental impact of **information exchange** for the purpose of ESG analysis. Research has shown that green investments, purely through the information exchange, stimulate companies to improve their environmental performance (Kahlenborn et al. 2001 and 2010, oekom 2013). In practice this can happen through a variety of mechanisms:

- In response to information requests of green investors/asset managers/financial service providers, companies build up or strengthen institutional capacities focusing on their environmental performance. Also, greater prominence is given to the corporate social responsibility (CSR) (or related) departments due to the information requests of green investors.
- The information exchange with green investors/green financial service providers influences corporate strategies and policies. New issues are picked up, and existing policies are reinforced in response to the information requests.
- Companies strengthen their environmental accounting systems to be able to respond more quickly, and with greater precision, to the requests of green investors/green financial service providers. That, in turn, improves internal oversight and understanding regarding environmental problems of production and products, including through the supply chain.

⁶⁵ See, for example, Smith School of Enterprise and Environment (2013) for a discussion of the potential impacts of divestment.

- Eventually, supply chains, production processes and products themselves might be influenced because of the continuous information requests for ESG analysis.

The environmental impact of the information exchange depends on the reputation of the green investor, the quality of the questions, the amount/intensity of the questions, the procedures involved in the exchange process (e.g. any kind of feedback mechanism), etc. Obviously, this form of environmental impact plays a role only for certain financial products (esp. funds/shares, to some extent also bonds). Companies considered as "pure players" (i.e. generating a high percentage of their revenue from "dark green" activities) are less likely to be influenced through these mechanisms than "light green" or even "brown" companies, because the former are already "doing the right thing" (although it is by far not guaranteed that green specialist companies, while offering green products or services, actually operate in an environmentally friendly manner themselves).

In conclusion, although there is a link between 1) the content of the investment and 2) its impact, there is no strong correlation in the sense that the "greener" the sector, technology or activity is, the more environmental impact the invested money has. **Basing a green finance definition only on "what" is financed thus neglects other mechanisms** (e.g. information exchange, shareholder activism) **through which investment products might exert influence on the environmental impact of the companies in which they are invested.** While not the focus of the study, options for making use of such mechanisms through standardization of process criteria will be touched upon in the later chapters.

4 STATUS QUO OF THE SCOPE AND QUALITY OF GREEN

This chapter identifies the characteristics of the different approaches to defining "green" described above and discusses, where relevant, their advantages and disadvantages.

4.1 Means for defining "green"

Stakeholders use different means to identify technologies and activities as "green". These means are often used in combination. For example, taxonomies can come with, or without, exclusion criteria, and may exist alongside indicators and thresholds to distinguish eligible items.

Table 1: Overview of means for defining "green"

| | Description | Advantages and disadvantages |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Objectives | A basic approach to defining "green" is specifying the outcomes (e.g. "climate change mitigation", "resilience", "pollution prevention", etc.) that activities would have in order for them to be considered "green". Case-by-case assessment of whether specific investment items contributed to such purposes would then take place. | (+) Signals the direction into which the green transformation is headed; allows for defining green in ways that are adapted to different stakeholders' individual needs; focuses attention on the aim of environmental improvements (-) Requires stakeholders to evaluate the eligibility of items, which has a cost. Also, if no clear criteria are, or can be, set, the evaluation may be too subjective. Furthermore, there are trade-offs between some of the objectives: for example, biomass energy generation is considered by some to contribute to climate change mitigation, but it may have negative impacts on air quality and biodiversity. |
| Taxonomy | Green taxonomies are classifications of investment areas and items (technologies, sectors, etc.) that are considered to be "green". Taxonomies can have various levels, whereby each level serves to describe, in an increasing level of detail, the items that the upper category is composed of. | (+) Allows stakeholders to easily identify whether certain items fall under the definition of green (-) Difficult to set a rational boundary between what is or is not green; requires constant updating; difficult to address actor- or location-specific variations (e.g. appropriateness of hydropower in different areas); unless E(SG) assessment is required, taxonomies might favour companies in green sectors even if they have a poor environmental performance (e.g. a waste management company which does not dispose waste in a proper way); if limited to dark green sectors / technologies / activities, taxonomies might draw attention away from companies that do not fall under one of the categories in the taxonomy but have large potential for becoming greener. |

| | | |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Exclusion criteria</p> | <p>Exclusion criteria are used to exclude certain sectors, companies, activities, etc. from the definition of "green". Often, exclusion criteria identify specific technologies, such as nuclear energy. Other forms of exclusions can be norms-based (i.e. excluding all investments that are not in line with existing norms and standards).</p> | <p>(+) Allows avoiding lengthy discussions in regard to certain controversial sectors or practices; gives clarity as to where 'red lines' are to be drawn.</p> <p>(-) Difficult to make sure that exclusions are comprehensive; potentially insensitive to location-specific situations and needs (e.g. installed nuclear energy capacity); relative little environmental impact if exclusions not communicated widely and taken up by a large share of financial institutions and investors (i.e. beyond those who identify themselves as green)</p> |
| <p>Indicators</p> | <p>Indicators are metrics for measuring the environmental performance or impacts of activities (energy / water savings, GHG emissions reductions, etc.). Indicators can come with thresholds, or minimum acceptable performance levels, and/or with target values, illustrating the desired performance level. Indicators can allow for backward- or forward-looking performance measurement (e.g. measurement of total water consumption / existence of strategy for environmental management).</p> | <p>(+) Gives a more objective basis for inclusion of investments within the "green" envelope; allows further refining what certain green technologies or activities are meant to achieve and how it can be measured; may improve environmental accounting in companies, and provides a basis for comparison between companies</p> <p>(-) Difficult to select universally meaningful indicators</p> |
| <p>Ratings</p> | <p>Ratings allow for the degree of "greenness" of a firm, technology or financial product to be assessed according to pre-defined criteria.</p> | <p>(+) Stimulates assessment of environmental risks and opportunities of technologies or activities that are not considered "dark green" but that can still support the "greening" of the economy, hence potentially exerting positive effects on investments outside of traditional green sectors; potentially high environmental impact of ratings due to information exchange with companies and due to the effect of rating results on the public perception of the company</p> <p>(-) Difficult to develop widely accepted rating methodologies; data collection required</p> |

These instruments explicitly or implicitly define green by describing the objectives or sectors/technologies/activities that are considered to be green or non-green. **Process criteria**, as introduced in chapter 3.4.2, provide an opportunity for fostering the green impact of finance and investments without specifying exactly which investments are eligible. Instead, they require issuers, investors or creditors to address and communicate the environmental effects of their financial decisions.

4.2 Scope of green objectives and sectors

Many definitions of "green" consist of, or refer to, the objectives that are to be achieved through green investments. Objectives can have a broad or narrow scope, relating only to the most common sectors and technologies or also to less common ones; can directly translate into taxonomies or remain relatively general and unattached to specific guidance; and can be combined with exclusion criteria.

Broad vs. narrow scope of green objectives

Table 2: Overview of broad and narrow objectives

| Description | | Advantages and disadvantages |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Broad | Broad objectives cover a wide range of environmental benefits, e.g. from climate change mitigation to biodiversity protection. | <p>(+) Allows addressing environmental issues whose implications on human wellbeing are not yet fully understood, e.g. biodiversity loss</p> <p>(-) The broader the scope of a green definition, the higher is the potential that investments are made that do not contribute to all objectives at the same time, hence requiring process to manage trade-offs between objectives</p> |
| Narrow | Narrow objectives are focused on a smaller number of environmental themes. A survey by UNEP Inquiry (2016) shows that several respondents currently limit themselves to defining and climate finance, with some focusing even more narrowly on mitigation. | <p>(+) A narrow definition of green allows taking into account the specificities of certain environmental themes and directing all forces towards them</p> <p>(-) A narrow set of objectives (e.g. climate mitigation only) may fail to capture trade-offs with other areas (e.g. air pollution) and lead to stranded assets in these areas (e.g. if stricter air pollution limits are introduced, biomass infrastructure that only took account of the climate aspect may become stranded assets)</p> |

The co-existence of green definitions building on broad or narrow objectives can be illustrated for the green bonds sector. Analysis of the frameworks defined by multilateral banks shows that green bonds are currently mostly limited to mitigation and adaptation projects, even though the banks' overall environmental strategies are often more diverse. This is, for example, the case for green bonds issued by EIB, AfDB and World Bank. It is also reflected in the taxonomy of eligible project categories developed by the CBI, as its focus is specifically on low carbon and climate resilient development. Other green bond frameworks are broader. For the ADB⁶⁶, other objectives besides adaptation and mitigation include natural resources conservation, urban environment improvement, eco-efficiency, fostering of environmental policy and legislation, and disaster risk management. Yet, a broad understanding of environmental objectives does not necessarily imply that the resulting financial decisions cover all green goals equally – issuance is often focused on a narrower set of sectors, above all related to climate.

⁶⁶ ADB: Green Bond Framework, <https://www.adb.org/sites/default/files/adb-green-bonds-framework.pdf>

Common vs. less common objectives, sectors and technologies

Many economic activities and industries are covered by all existing taxonomies that seek to define the scope of what should be considered "green". According to a survey by UNEP Inquiry ((2016)), common consideration of what is "green" includes the following sectors/activities: green buildings, renewable energy, energy efficiency and sustainable forestry/agriculture. Other sectors, such as conservation, carbon capture and storage, transport, and climate change adaptation are less consistently included, especially by the private sector, reflecting also some country-specific variation in the definitions. Some localized definitions include, for example, the following as "green related": noise abatement, storm-water storage, sustainable shipping, capacity building for the identified sectors, and crop insurance (UNEP Inquiry 2016).

Table 3 presents the results of analysis of taxonomies conducted for this study, revealing which sectors are more and less commonly included in taxonomies that seek to define what is "green" (see Annex III for more detail).

Table 3: Overview of sectors and technologies covered by taxonomies

| Common | Less common |
|-----------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Renewable / clean / low-carbon / alternative energy | Energy management, modal & operational shift |
| Energy efficiency | Information Technology and Communications |
| Sustainable / clean / public transport | Non-energy GHG reductions |
| Pollution prevention and control | Adaptation, resilience |
| Waste management | Biodiversity conservation |
| Water and waste water management | Resources conservation & recycling, eco-efficient & circular economy adapted products |
| Green buildings | Ecosystem services protection |
| Agriculture, forestry, land use | Disaster risk reduction |
| | Soil remediation and mine rehabilitation |
| | Local, sectoral or national budget support to a climate change mitigation / adaptation policy |
| | Healthy Living |

Finally, several sectors and technologies are object of controversy. A case in point is nuclear energy: nuclear technology is included in only a few taxonomies, such as FTSE Russell's Low Carbon Economy Industrial Classification System and S&P's Global Ratings Green Evaluation; it is specifically excluded by others. "Clean" coal, natural gas and bio-fuels/bioenergy are also contested areas.

Exclusions and thresholds

Table 4 shows common environmental exclusions, based on an analysis of the European Transparency Codex for sustainable mutual funds (FNG 2016):

Table 4: Common environmental exclusions for sustainable mutual funds

Nuclear energy, chlorine and agrochemicals (biocides), genetic engineering, fossil fuels, aviation and automotive industries, ozone depleting substances, controversial and harmful environmental behaviour, financiers of environmentally harmful projects, industrial livestock and whaling, lobbying to reduce environmental standards, deforestation, biodiversity, uranium and asbestos fibre producers

Such exclusions can have different levels of "strictness" and detail. The CBI taxonomy, for instance, entails sector-specific exclusions. The TEEC Label lists strict and partial exclusions (for suppliers to the excluded sectors). The Nordic Investment Bank defines three categories of projects with adverse social or environmental impacts: category A projects are strictly excluded while category C is subject to discussion.

Besides excluding companies or projects based on the sector in which they are active, or on the technologies that they apply/provide, or on the activities they conduct, it is possible to directly exclude specific companies which do not comply with certain standards and norms (e.g. the UN Global Compact).

Thresholds for "green revenues", in turn, indirectly lead to exclusion. In order to be eligible for green equity indexes and funds, companies need to generate a certain percentage of their revenues from environmentally friendly activities. The cut-off point varies widely: It is 20% in the FTSE Environmental Opportunities Index Series, but 50% in MSCI's Global Environment Index. Meanwhile, other green equity indexes include all companies involved in green sectors without specifying green revenue cut-off points (e.g. NASDAQ OMX Green Economy Global Benchmark Index).

Many best-in-class companies are active in various business areas, so that the company may be engaged in "green" and "non-green" activities at the same time. Funds often work with thresholds of exclusion, allowing controversial topics such as nuclear power, green genetic engineering or alcohol to account only for a certain fraction of revenue generation.

Linkages between objectives and taxonomies

Taxonomies sometimes link sectors with the green objectives that are to be achieved. For example, the taxonomy developed by the IDFC for the purpose of tracking green finance is separated into mitigation, adaptation and other environment. This means that some sectors are listed under more than one objective. Water and waste water-related technologies, for example, appear under all three objectives, yet the contribution comes from different technologies (water for lower carbon and efficient energy generation (contributing to climate change mitigation), water preservation (adaptation), water supply (other environment)). While this increases the complexity of the taxonomy (at least, at first sight), it also allows its users better to understand why certain items are eligible, while others are not, and which environmental benefits they are expected to generate.

The EIB, as a preliminary results of its work on the development of a "Rosetta Stone" for green projects, also suggest that a list of policy objectives is agreed with which the different projects can be aligned⁶⁷. This is against the background that issuers and investors may target different "green" objectives and that they may have different definitions of the same "green" objective. A matrix of objectives and sectors allows for easier differentiation and matching of issuer and investor preferences.

4.3 Level of detail of green definitions

Several taxonomies of eligible green categories are publicly available, above all for green bonds and green equity indexes (see Annexes II and III). These taxonomies have different degrees of detail.

Table 5: Overview of detailed vs. general taxonomies

| Description | | Advantages and disadvantages |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Low (general) | Taxonomies with low detail provide a general overview of eligible sectors, technologies or activities. | (+) Allowing for actor- or location-specific interpretation that caters to individual needs (-) Requires stakeholders to evaluate the eligibility of items themselves, leading to lower degree of standardization; may permit inclusion of activities which are not viewed as "green" by observers |
| High (detailed) | Taxonomies with high detail have several levels, determining not only sectors and sub-sectors but also technology-specific eligibility criteria, examples of eligible projects or other guidance and descriptions. | (+) Easy to check eligibility of items; allowing to harmonise language between the users of the taxonomy (-) Difficult and costly to keep updated; transfer of risk from individual investors to the entity/ies that has/have developed the taxonomy |

Examples of taxonomies with a low level of detail are those provided by the GBP and for the NASDAQ OMX Green Economy Index. Examples of taxonomies with a high level of detail are the taxonomies included in the MDB-IDFC Common Principles for Climate Mitigation Finance Tracking (three levels); the Climate Bonds Standard and Certification Scheme (three levels, with additional sector-specific eligibility criteria); the FTSE Russell Environmental Markets Classification System (three levels); and the China Green Bond Endorsed Project Catalogue (three levels, referring to existing sectoral benchmarks and guidelines). Many classification systems lie between these two poles. For example, the taxonomy underlying the MSCI Global Environment Index specifies two levels for five sectors.

⁶⁷ Personal communication with EIB

4.4 Degrees of greenness

Binary vs. incremental approaches to "greenness"

The degree of "greenness" can be determined in a binary or incremental manner.

Table 6: Overview of binary and incremental approaches to "greenness"

| Description | | Advantages and disadvantages |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Binary | Green investment item – A sector, company or technology is considered as "green", or not. Such an approach is usually applied when selecting projects for labelled green bonds. | (+) Easy to understand; might foster focusing on clearly green items, e.g. zero carbon technologies (-) Does not incentivise benchmarking of green performance and greening of brown sectors; potentially conceals that certain items included in green taxonomies might not be ambitious enough to reach environmental targets, thus increasing risk of stranded assets |
| | Green financial product – A financial product is classified in a binary manner. For example, bonds are usually labelled by issuers, index providers and most second opinion providers as either "green", or not. | |
| Incremental | Green investment item - A sector, company or technology is rated according to a pre-defined methodology. For example, ESG performance of companies is often rated on a scale from 1-5. If thresholds are determined, different shades of green can be assigned. | (+) Allows financing items that are greener than others but still lead to some environmental harm – this can be more beneficial for the environment than focusing on (the small number of) pure players or waiting for technologies that cause absolutely no environmental damages (-) Existing rating methodologies differ significantly, potentially making harmonisation difficult; may lead to confusion among market participants when recognised metrics are not available; tends to be a permissive definition of "green" |
| | Green financial product – A financial product (e.g. green bond, fund) is rated according to a pre-defined methodology. For example, ratings for bonds are provided by CICE-RO and S&P. | |

These approaches are not mutually exclusive – e.g. a bond rated as "light green" could potentially be made up of only "green" or non-green items; a "green" bond (with no rating or shading) could be made up of individual projects with different shadings.

The quality of green is usually determined based on the (avoided) environmental impact of the item or products under assessment. At the same time, there are other options for rating the quality of green – for example, Novethic differentiates between dark and light green depending on how stringently the securities in the portfolio correspond to the fund's strategy and/or name.

For both approaches to determining the type of green – binary and incremental – the assessment of environmental impact plays a major role and is used either to justify the decision to (not) label an item or products as green or to determine its rating.

4.5 ESG management in green finance

Table 7: Overview of ESG management in green finance

| Description | | Advantages and disadvantages |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ESG | For many financial institutions, ESG management is now part of routine due diligence. Additionally, some green definitions explicitly refer to social and governance aspects. For example, the Green Investment Group states in its responsible investment policy: <i>"We expect entities and projects in which we invest [...]to demonstrate that they have the commitment, capacity and management systems to identify, monitor and manage the potential ESG risks facing their business."</i> | (+) Ensures that all investments comply with certain minimum process standards, reducing financial and non-financial risks (-) Limits the number of eligible investment items, and thus the overall size and liquidity of the market |
| No ESG | In other cases, green finance is not linked to compliance with ESG criteria. Green funds, for instance, can sometimes be invested in companies with low ESG performance as long as the required percentage of revenues is generated in environmental sectors. | (+) Increases the number of eligible investment items, leading to increased market size and liquidity (-) Does not take into account the financial and non-financial risks posed by ESG issues; fails to contribute to sustainable development objectives in the longer term |

4.6 Summary of approaches to defining "green"

Table 8 summarizes the different approaches to defining "green" that were discussed in the previous chapters.

Table 8: Overview of the discussed approaches to defining "green"

| Approaches to defining "green" | | | | | |
|--------------------------------|---------------------------------------------------------|-------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------|----------------------------|
| Instruments | Objectives | Taxonomy | Exclusion criteria | Indicators and Ratings | Process criteria |
| Objectives | Broad vs. narrow | Common vs. less common objectives, sectors and technologies | | Linked or not linked to more detailed taxonomies | |
| Taxonomies | Detailed vs. general | | With or without controversial items | | |
| Exclusions | Based on sectors, technologies or compliance with norms | | Working with min. (green) or max. (brown) thresholds | | Full or partial exclusions |
| Greenness | Binary (green/non-green) vs. degrees of greenness | | | | |
| ESG | Taken or not taken into consideration for green finance | | | | |

As the analysis of strengths and weaknesses showed, the following questions can be asked when determining how to design a definition of green in a given context:

- **Environmental impact:** Should only "dark" green items be considered as green or should lighter green items be part of the definition as well? While the former helps avoiding investments in infrastructure or technologies that are not "green" enough to achieve long-term environmental objectives, the latter can help to increase the speed of the green transformation.
- **Degree of control/strictness:** Should individual / local / national interpretations of the definition be allowed or not? Detailed taxonomies define rather clearly what is green, while objectives and exclusion criteria leave room for own analyses. Rating systems allow for different shades of green, thus evaluating an item's degree of compliance or alignment with environmental objectives but not per-se including or excluding it from a list of eligible investments (unless thresholds are defined).
- **Practicability / operability:** Should the definition of green enable stakeholders to decide without further analyses whether an asset is green or can they be asked to conduct own analyses to specify the definition of green according to their needs and circumstances? While the former points towards using taxonomies, the latter is required if only indicators or exclusion criteria are provided.
- **Feasibility:** Is it feasible to develop a taxonomy or exclusion criteria that can be agreed by all involved stakeholders? Is it feasible and effective to cater to several environmental objectives at the same time or will this unnecessarily hamper action, e.g. due to the need for solving controversies?

The interview guideline and the survey questions (see Annex IV) were developed taking these points into account.

Part 2 – Implications for the European Union

5 NEED AND APPROACHES FOR DEFINING GREEN

The following chapters summarize the results of eight expert interviews, and 21 full, or partial, responses to an online survey (see Annex IV for the questions that guided the interviews and survey). Of the respondents, 12 were representatives of asset owners or asset managers, eight were from financial service providers, seven were representatives of NGOs, consultancies or finance-related associations, and two fell into other categories of stakeholder.

5.1 Need for a harmonised definition of green

Most of the eight interviewees were of the opinion that a harmonised definition of "green" can help investors and financial institutions efficiently allocate capital and make well-informed decisions. The survey participants were also mostly supportive of efforts for harmonising the definition of "green", as this is expected to, amongst other things, reduce the risks of greenwashing; reduce confusion caused by the co-existence of various definitions; and allow tracking of green finance flows at the EU level in order to check if these are consistent with, and sufficient to achieve, EU environmental policy objectives.

Most stakeholders perceive harmonisation at an international level to be most effective, as this would allow for greater flows of capital and investments globally. Yet, experts⁶⁸ point out that international harmonisation probably cannot be achieved in practice due to different national priorities and circumstances. Geography, culture and levels of economic development are important, and what is "green" in one place is not necessarily (considered) "green" somewhere else.

Some experts thus suggest working towards concrete harmonisation within the EU first, recognising, and building upon, the work that has already been done by various parties. This harmonisation effort will be an on-going process and has to evolve over time, with regular updates based on feedback from stakeholders. Another argument for first seeking a harmonised definition of "green" at the EU-level is that working towards an international definition could benefit from such a regionally agreed definition. The clearer the European understanding of green finance is, the more European stakeholders can contribute to an international definition. Moreover, it was mentioned that the definition of "green" should be developed collaboratively by stakeholders from the financial industry and other stakeholder groups – this would probably be easier to achieve at a regional level than globally.

At the same time, it was remarked that the EU should not lose sight of the international level. Some experts suggested that it would be helpful if a framework was developed whereby all sectors that were considered as green, globally, were included, such as is being developed by the EIB and partners for climate change mitigation finance. According to experts, such a broad framework could allow for national subsets to be developed according to the development stage, and priorities, of each country. Such national variations could be developed once the supranational approach became available. Transparency about national variations would be important for investors in helping them to understand the specific environmental effects of their investments.

⁶⁸ The terms "expert" and "stakeholder" are used interchangeably.

The EIB approach, in this context, is to agree, at an international level, on policy objectives, activities, and primary indicators for sustainable finance. Policy objectives refer to desired outcomes, such as climate change mitigation, climate change adaptation or pollution reduction and prevention. In a next step, activities would need to be defined by (technical) expert committees which would specify which types of projects, and hence, activities, would be eligible under these policy objectives. These activities would be linked to a primary indicator that allows their performance to be measured in respect of their contribution to the policy goal (e.g. reduction in GHG emissions as result of the activity "increasing energy efficiency in industrial plants" under the policy objective "climate change mitigation"). Finally, different countries could decide on thresholds that needed to be met for a project to be eligible, e.g. a reduction of GHG emissions by at least 30% compared to the status quo. Since it is expected that it would be difficult to arrive at an agreed list of policy objectives, activities and indicators, the EIB has initiated a project in which a conversion table for terminology is developed (see chapter 3.1 for a more detailed description of this "Rosetta Stone"). It aims at showing that different terms being used in different frameworks actually refer to the same policy objectives, activities or indicators. This conversion table can be considered part of the broader approach of EIB to develop a common framework for green finance.

Some experts do not, however, subscribe to the view that the EU should focus on harmonising the definition of "green" to scale up green finance. This is explained, for example, by the fact that the decision between "green" and "non-green" is perceived to be highly subjective and context-dependent, thus, possibly, excluding a range of investments with positive environmental impacts (or – it might be added - including ones whose impact is likely to be, at best, minimal). Consequently, it is proposed that the question should shift from defining green investments ("what is green?") to measuring the level of greenness ("how green is it?"). Moreover, it is also argued that what matters to investors and other financial institutions are expected returns on investment, and risk. Hence, the focus should be on improving the risk/return of sustainable investments, or reducing the return on non-sustainable investments, by putting a (significant) price on carbon and other externalities, rather than on defining "green".

Survey results: At which level is a harmonised definition of "green" for green finance needed?

| | |
|---------------------|---|
| International level | 9 |
| EU-level | 8 |
| Other | 3 |
| Not at all | 2 |

5.2 Constituent elements of a green definition

With regard to what is required and feasible for an EU-wide definition of "green", experts tended to consider it most realistic to develop a conceptual definition with clear environmental objectives, reflected in a widely accepted taxonomy of "green" activities. These objectives, and the related taxonomy, would provide clear signals, and facilitate engagement with a wider group of people.

According to survey participants, a conceptual definition can realistically be developed, whilst not being overly prescriptive. Moreover, they suggested that a definition would help scale up green legislation and would give guidance where regulatory incentives are not provided.

Taxonomies detailing green sectors and subsectors allows for easy grouping, and comparison of companies, or use of proceeds across companies. Moreover, it makes the broad set of green technologies that are already available highly visible. Yet, experts also

note that taxonomies may hamper innovation by disregarding, or only slowly integrating, new technologies or activities. It is thus concluded that sectoral taxonomies will need to be dynamic as industry standards develop.

At the same time, it is noted that several sectors or activities ought only to be considered "green" if they fulfil certain criteria. Hence, more specific technical eligibility criteria have to be made available. Interviewees tend towards "allowing" for such technical eligibility criteria to be determined locally/ nationally as long as compliance with the broader objectives can be demonstrated. Such criteria would make it easier to apply a bottom-up approach through participation of individual stakeholders.

Exclusion criteria are perceived as a helpful complement to a sectoral taxonomy to the degree that the exclusions are not already implicit in the taxonomy. However, it is unclear whether consent on meaningful, and effective, exclusion criteria can be achieved. Additionally, experts highlight that certain controversies might be better addressed through use of other approaches, such as stakeholder engagement and voting.

Both the experts interviewed and the survey participants mentioned the importance of performance, or impact, indicators, and the need to build consensus around how they are measured and calculated. Indicators are perceived to be important instruments for measuring the impact of green finance on the real economy, and to avoid greenwashing, thus making sure that the definition of "green" is effective. Indicators could be referred to in the conceptual definition, or taxonomy, and could build on existing approaches, such as the IFI Harmonized Framework for Impact Reporting, and its further development. Yet, impact measurement is difficult even for greenhouse gas (GHG) emissions, and the quality of results depends on various factors, such as underlying assumptions and data availability. Hence, it might be necessary not only to define measurement methodologies, but also, to create a database that provides a common set of assumptions as a reference source. Since this approach might require constant updating of data, it is perceived that the lack of capacity will be a major hurdle for robust impact measurement.

Another challenge referred to by interview partners is that simply reporting on changes in specific indicators, without taking the broader context into account, might not be helpful. Taking the example of water, simply measuring how much water is used, in total, will not allow non-experts to decide whether such levels of water consumption are sustainable. Several of the experts interviewed thus concluded that quantitative targets, and methods for measuring progress towards such targets, need to be determined in order to make sure that green finance contributes to achieving environmental goals. As the literature review showed, such targets and methodologies are currently under development mostly for climate change mitigation (e.g. Science Based Targets Initiative⁶⁹, Sustainable Energy Investment Metrics methodology⁷⁰), but will need to be extended to ensure alignment with the Sustainable Development Goals (SDGs).

In line with the point brought forward by some stakeholders - that the level of greenness should be measured - a rating system could be developed that illustrates how well investments are aligned with existing environmental targets. This 'relative' approach could provide clarity and transparency on the environmental performance of green assets, acknowledging that not all projects that contribute to sustainable development necessarily provide an immediate and measurable impact.

⁶⁹ <http://sciencebasedtargets.org/>

⁷⁰ A summary of the SEIM methodology is provided, for example, by WWF (2017). Also see the project website <http://seimetrics.org/>

Finally, it is noted by experts that it will also be necessary to develop an "ecosystem" around the definition of "green", above all, through standards and labels. This should build upon the green taxonomy, and would make use of complementary technical eligibility criteria which ensure compliance with the definition, and that are easy for investors to understand.

Survey results: Which approach(es) to defining "green" for green finance would be most appropriate for the EU?

| | |
|--------------------------------|----|
| Conceptual definition | 13 |
| Sectoral taxonomy | 10 |
| Performance/impact indicators | 10 |
| Exclusion criteria | 9 |
| Technical eligibility criteria | 3 |
| Other | 3 |

5.3 Scope of green objectives and sectors

Both the interviews and the survey indicated that climate protection, as well as pollution prevention and control, are urgent priorities for green finance, closely followed by other environmental objectives, such as resource efficiency, protection of natural capital and biodiversity, and climate change adaptation. Several experts note that it is necessary to link green objectives with existing environmental policies at EU level and internationally, such as the Paris Agreement, the EU biodiversity strategy and international Aichi targets, the Water Framework Directive and other water-related directives, the Waste Framework Directive, the Circular Economy Package and related texts, policies related to agriculture and fisheries, as well as other environmental policies. Only about half of survey participants agree, however, that adaptation activities should fall under the definition of green.

There are several potential indicators for each theme, but apart from GHG emissions, the selection of indicators is relatively difficult, particularly for adaptation, and biodiversity. Yet, efforts are under way to develop other indicators, e.g. regarding sustainable water use and biodiversity footprints. It will thus be essential to track these ongoing efforts.

Survey results: Which policy objectives should fall under the definition of "green" for green finance in the EU? Which are the most important indicators for each theme?

| | |
|-------------------------------------------------|----|
| Climate change mitigation: | 18 |
| Pollution prevention and control: | 18 |
| Resource efficiency: | 16 |
| Protection of natural capital and biodiversity: | 16 |
| Climate change adaptation: | 12 |
| Other | 6 |

5.4 Level of detail of green definitions

Several of the survey participants are in favour of a detailed definition of "green". Some experts take the view that there should be minimal room for interpretation, as this would introduce complexity, confusion and risk of greenwashing in the market. Yet, it is also perceived that there are too many different approaches to investment activities for defi-

nitions to be detailed at this stage. Additionally, strict definitions will need constant updates and will be difficult to oversee, needing large resource inputs.

Several experts thus state that a European taxonomy of green technologies and activities should not go into too much detail in order to make sure that the taxonomy is widely used, and is understood by non-technical experts. Leaving room for interpretation will allow for innovation, flexibility and evolution in implementation, also allowing Member States to select the desired projects on a national level. Several experts note that the taxonomy created by the Climate Bonds Initiative, and used for the French TEEC Label, presents a good level of detail that could inform the European green taxonomy. If requested by financial stakeholders, such a taxonomy could become more detailed progressively.

Survey results: The approach for defining "green" for green finance should rather be...

| | |
|-------------------|---|
| Broad & detailed | 9 |
| Broad & general | 7 |
| Narrow & detailed | 2 |
| Other | 1 |

5.5 Degrees of greenness

With regard to the level of ambition of a green definition, experts have different opinions. Essentially, views differ on the question as to whether only "dark" green technologies and activities (e.g. offshore wind power, energy efficiency gains of 30% or more) should be included, or whether a definition should also include "light(er)" green ones (e.g. energy or resource efficient products with low efficiency gains or transition technologies such as clean coal). Views also differ regarding to whether the definition should be binary, i.e. distinguishing between "green" and "non-green", or should acknowledge different degrees of "greenness" according to an item's alignment with environmental objectives.

Some experts are in favour of allowing only **dark green items** to be defined as "green" in the first place as this would contribute to creating trust, and public acceptance, whilst not jeopardising the achievement of EU policy targets on the related issue. In their opinion, including "light" green items in the definition of "green" would reduce the credibility, effectiveness and added value of such a definition.

Other experts are more in favour of applying an approach whereby green assets are those that achieve the **greatest absolute environmental impact** compared to other available technologies, even if their environmental impact does not materialize immediately, or if they still have some detrimental effects on the environment ("best-in-class" approach). Under such an approach, all selected assets still contribute to achieving environmental objectives, but some have a strong impact (e.g. renewables) while others have a more limited impact (e.g. production-side energy efficiency). According to experts, such projects are needed as stepping stones towards sustainable development. Yet, there is controversy around which technologies are "necessary stepping stones". It is, for example, contested whether fossil fuel-based technologies, such as power generation from natural gas, should be applied to mitigate climate change on an interim base, as this may cause carbon lock-ins and increase the risk of stranded assets.

Another question is whether different **degrees of greenness** need to be determined and communicated (e.g. by listing "light" and "dark" green items separately). According to some experts, **valuation and "shading"** (e.g. through colours such as dark, medium and light green), or else, marking the degree of greenness (e.g. ranking from 0-100), can have the following benefits:

- Avoids creating the impression that all green projects are necessarily "perfect", i.e. contributing to the achievement of all determined environmental objectives. A scoring system might be useful to provide the transparency that is needed to help investors meet their preferences.
- Allows prioritizing ambitiously green industries, companies or projects, while not excluding less ambitious (yet possibly more readily available or more easily implementable and financeable) items from financing. Even for dark green projects, a scoring mechanism is possible (for example, prioritizing offshore wind farms over wind farms on land as the former do not affect local communities). By specifically marking the "dark" green investment items or financial products, these can work as best practice cases and show the "mainstream" industry what is possible, and where it should be heading. In order to be most effective, technological and regulatory changes have to be taken into account, and the definition of acceptable levels of green could become stricter over time. While some technologies contribute to delivering EU environmental objectives today, they will gradually become less acceptable as EU policies become stricter (e.g. waste incineration has to gradually shrink to make way for more recycling). Time limits could be used to signal when light green technologies will be erased from the definition of green. This would trigger a dynamic process.
- Possibly stimulates more rigorous assessment and transparent consideration of the risks and opportunities of investments that do not contribute to all identified green objectives at the same time (e.g. acknowledging that measures to reduce GHG emissions may not be positive for biodiversity protection in the short-run) or that have different environmental impacts over their lifetimes (e.g. reduction of GHG emissions through the use of electrical vehicles powered by renewable energy vs. increase in hazardous waste once batteries are discarded).

Several interviewees thus find rating, or scoring systems, which measure the degree of greenness, quite helpful. Such a rating system could ultimately apply to all financing and investment, not just to those that fall under the definition of "green". Others, in turn, are not in favour of green shading, because they do not find it necessary (*"If the project is within the green definition and within social and environmental safeguard regulations, then it is green"*) or because they believe that such differentiation can be too granular and confusing for stakeholders. Another reason brought forward is that shading might not be feasible at the EU or international level within a reasonable timeframe: while different shades can be determined relatively easily when a clear-cut metric is available (e.g. energy efficiency for consumer products), developing a rating methodology is much more complicated when several metrics are involved. Moreover, some experts note that no 'trade-off's or 'offsetting' between environmental objectives should occur, preferring a situation where ratings – if at all used – are restricted to investments with strong environmental performance.

Another aspect of the "quality of green" is the cut-off point for green revenues of companies included in environmental funds. Thresholds signalling different degrees of ambition could be determined, e.g. following the example of the French TEEC label (differentiating between companies with >50% and with 20-50% of revenues from green activities).

Survey results: Would you prefer for the harmonised definition of "green" for green finance to be rather strict and ambitious (i.e. "dark green") or less strict, yet possibly allowing the market to scale up more quickly (i.e. capturing both "dark green" and "light green")?

| | |
|-------------------------------------|----|
| Capturing both dark and light green | 12 |
| Other | 4 |
| Only dark green | 3 |

5.6 ESG management in green finance

The interviewed experts and the survey participants predominantly agree that green projects should comply with social and governance standards, but do not have to contribute, specifically, to advancing such themes. Moreover, experts highlight that it is important not to conflate the definition of "green" with that of "sustainable" as this might dilute the outcome, and lead to confusion among market participants. The definition of green finance is necessarily narrower than that of sustainable finance. As long as certain (minimum) social and governance standards are met, these should not be, or do not have to be, defined within a definition of "green".

At the same time, stakeholders note that the harmonised definition of green finance is only a first step towards harmonising the wider definition of sustainable finance to support achievement of the SDGs. Hence, negative impact on these dimension should be avoided - there should always be diligence to ensure that impacts on environmental, social and governance criteria are appropriately managed even where positive performance is not required. As the example of the French TEEC Label shows, this can be addressed through the standard and labelling (or rating) scheme in which the definition of "green" is embedded. The TEEC Label is built upon a green taxonomy (i.e. using "contribution to the Energy and Ecological Transition for the Climate" as eligibility criterion) but requires that ESG criteria are considered in the construction and life of a portfolio.

Survey results: Does a "green" activity or asset have to fulfil social and governance criteria?

| | |
|-------|----|
| Yes | 12 |
| No | 5 |
| Other | 1 |

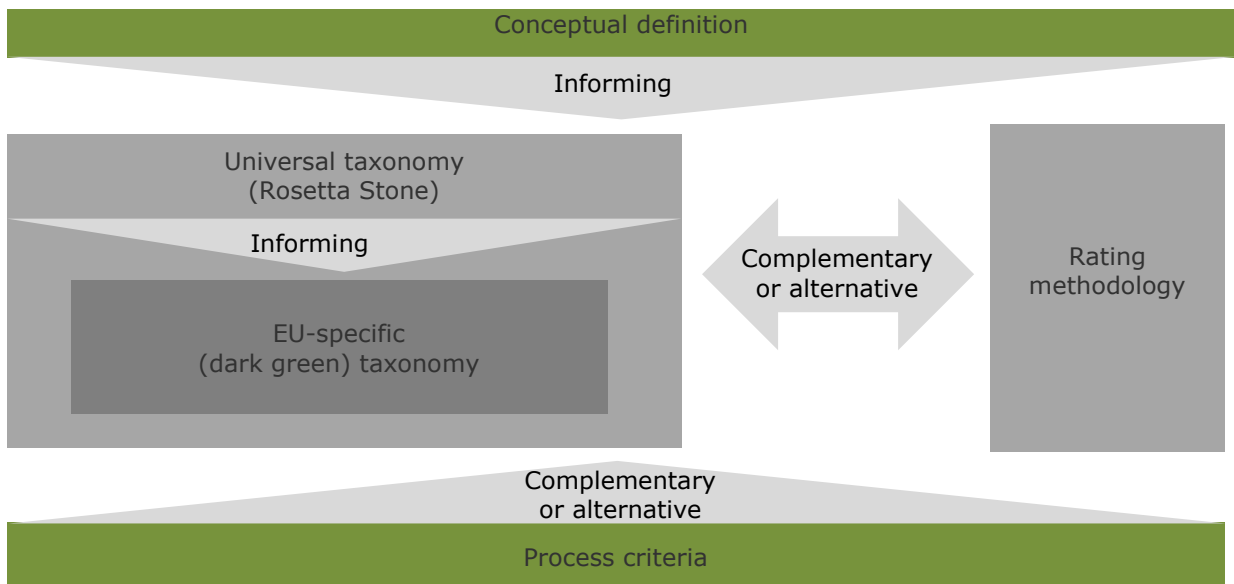
6 SUGGESTED POLICY OPTIONS FOR DEFINING "GREEN" FOR GREEN FINANCE IN THE EU

Based on the information gathered through literature review, as well as the responses from stakeholder consultation, this chapter outlines the following options, or approaches, for the elaboration of a definition of "green" in the context of finance in the EU.

| | |
|---|-----------------------------------------------------------------------------------------------------------|
| 1 | The EC develops a conceptual definition of green finance |
| 2 | The EC endorses a universal taxonomy of "green" |
| 3 | The EC endorses/develops an EU-specific taxonomy of "green" |
| 4 | The EC supports the development of a rating methodology for measuring alignment with green targets |
| 5 | The EC endorses/develops process criteria for green financing and investment |

These options are neither mutually exclusive, nor exhaustive. A conceptual definition of green finance can serve as the overall guideline, according to which taxonomies and other components of the green finance definition may be developed. The narrower, EU-specific taxonomy would be drawn from the broader taxonomy, further specifying sectors and thresholds as appropriate for EU and its Member States. A rating system can be complementary to a taxonomy (e.g. determining the greenness of the items listed in the taxonomy), or an alternative basis for elaborating a definition of "green" (avoiding pre-determined inclusions or exclusions). Process criteria are a complementary component, describing how green financing and investment decisions should be taken and communicated, rather than what needs to be financed. This is illustrated in Figure 9 below.

Figure 9: Interplay of options for defining green for green finance (adelphi/COWI)



Since a lot of effort has already been expended on defining "green", it is not recommended that completely new definitions and approaches are developed. Most stakeholders interviewed or surveyed suggested that it would be appropriate for the EU to recognise, endorse and/or harmonise existing approaches. In the following chapters, the key characteristics of these options are described in more detail.

6.1 Option 1: The EC develops a conceptual definition of green finance

| | |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Approach | <ul style="list-style-type: none"> • Conceptual definition specifying, above all, the environmental policy objectives to which green finance should contribute (on an EU level but also relating, if appropriate, to internationally agreed targets, such as the SDGs related to environmental aspects) • Highlights the importance of creating and measuring impact on the real economy as the core reason and justification of green finance • Serves as the underlying basis for taxonomies, standards, labels and rating methodologies. |
| Level & scope | <ul style="list-style-type: none"> • To be developed at EU-level • Broad – covering environmental objectives beyond climate change mitigation; allowing for integration within a definition of sustainable finance |
| Degrees of greenness | <ul style="list-style-type: none"> • The conceptual definition could note that there is a difference between dark(er) and light(er) green technologies and activities, and roughly describe how they differ, also explaining that the longer an asset lasts, the “darker” green it has to be in order to reach adequate levels of ambitions and to avoid creating stranded assets. |
| Exclusions | <ul style="list-style-type: none"> • Specific exclusions could be included in the conceptual definition, but as this would increase the complexity of both developing such a definition and of the definition itself exclusions are more easily included in a standard or label |
| ESG | <ul style="list-style-type: none"> • The conceptual definition refers to the need to manage environmental, social and governance risks, no matter whether the funding/ investment is awarded for a specific purpose (i.e. green technology/service) or not. |
| Example | <ul style="list-style-type: none"> • International Development Finance Club • G20 Green Finance Study Group • Government of Germany – BMZ and GIZ • Green Investment Group • Deutsches Institut für Entwicklungspolitik (DIE) <p>Please note: These definitions define green finance and its purpose and constituent elements. The structure and key components of these conceptual definitions can inform an EU-wide definition of green finance which entails a broad definition of green through reference to key objectives.</p> <p>See Annex I for the full conceptual definitions provided by these entities.</p> |
| Implementation modalities | <ul style="list-style-type: none"> • To be developed by the EC, together with key stakeholders and Member States • To be reviewed periodically, albeit at relatively low frequency given its conceptual nature, e.g. linked to the review cycle of the EU Environment Action Programme or market developments |

6.2 Option 2: The EC endorses a universal taxonomy of "green"

| | |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Approach | <ul style="list-style-type: none"> Broad, inclusive taxonomy, allowing individual market standards and labels to be applied in different geographies (e.g. by the EU and/or countries), which detail specifics on environmental performance, thresholds and eligibility criteria etc. |
| Level & scope | <ul style="list-style-type: none"> International level Broad and inclusive |
| Categories | <ul style="list-style-type: none"> Reflecting, if possible, the environmental objectives determined in the conceptual definition (if complementary to Option 1) |
| Degrees of greenness | <ul style="list-style-type: none"> Binary, i.e. the items listed in the taxonomy are not marked as dark or light green; this taxonomy is meant to be standard-neutral, i.e. serving as a menu based on which more specific definitions of "green" can be developed according to regional preferences (all using, however, the same language) |
| Exclusions | <ul style="list-style-type: none"> Not included, explicitly, in the universal taxonomy, but would be part of the standard/label |
| ESG | <ul style="list-style-type: none"> Not specifically referred to in the universal taxonomy, but would be part of the standard/label |
| Examples | <ul style="list-style-type: none"> The EIB, in cooperation with several partners, is presently working on this approach (standard-neutral universal taxonomy, which defines eligibility criteria without specifying thresholds). |
| Implementation modalities | <ul style="list-style-type: none"> To be developed by EIB in cooperation with key stakeholders and endorsed by the EC To be reviewed at regular intervals, e.g. once every two years |

Option 2 effectively consists of support for the EIB's ongoing work on the development of a universal green taxonomy, which aims to address the lack of clarity of terms used in green finance. Such a lack can be an obstacle for investors, companies and banks seeking to identify opportunities for green investing. Internationally comparable terminology and indicators are needed for facilitating cross-border and cross-market green investment, for evaluating green performance of financial firms, and for analyzing the macro implications of green finance activities. The universal taxonomy approach thus focuses on comparability and interoperability and needs a shared policy narrative with focus on transparency, accountability and compliance.

The universal taxonomy option covers different global approaches to defining "green" and can be used as a unit of account, while ensuring 1) neutrality against any individual market standard; 2) disentanglement of policy objectives from sector definitions; 3) sufficient sector granularity; 4) comparability of eligibility criteria. It provides a basis for individual standards by including the following:

1. Macro sectors (e.g. lower-carbon and efficiency energy generation)
2. Sectors (e.g. transmission and distributions systems, power plants)
3. Sub-Sectors (e.g. retrofit of transmission lines, retrofit of thermal power plants)
4. Primary eligibility indicators contributing to policy objectives such as climate change mitigation, climate change adaptation, natural resource depletion and pollution prevention and control

The European Investment Bank suggests that, on that basis, individual eligibility conditions/thresholds should be developed for each policy objective and sector. This corresponds to option 3.

6.3 Option 3: The EC develops an EU-specific taxonomy

| | |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Approach | <ul style="list-style-type: none"> • Taxonomy that is built on the basis of the universal taxonomy described under option 2, but which is narrower i.e. it excludes some of the assets included in the universal taxonomy and defines specific thresholds. • Supplemented by an EU standard / label with suggestions for reporting fields and detailed performance thresholds and eligibility conditions |
| Level & scope | <ul style="list-style-type: none"> • EU-level • Detailed, focusing on dark green investments |
| Categories | <ul style="list-style-type: none"> • Reflecting the environmental objectives determined in the conceptual definition (if complementary to Option 1) |
| Thresholds | <ul style="list-style-type: none"> • The taxonomy maps technologies or activities against policy objectives to determine whether an investment <ul style="list-style-type: none"> ○ positively contributes to an objective ○ requires case-by-case analysis ○ needs to comply with certain thresholds to avoid unacceptable trade-offs with environmental objectives that are not the main focus of the activity |
| Exclusions | <ul style="list-style-type: none"> • Controversial sectors, technologies or activities are excluded from the taxonomy and/or complemented by more specific eligibility criteria and thresholds |
| ESG | <ul style="list-style-type: none"> • Not specifically referred to in the taxonomy, but part of supplementary labelling schemes |
| Examples | <ul style="list-style-type: none"> • Climate Bonds Standard & Certification Scheme • French TEEC Label • China Green Bonds Endorsed Project Catalogue • IDFC taxonomy for measuring green finance • FTSE Russel Environmental Markets Classification System • MSCI Global Environment Index • LuxFLAG Climate Finance Label <p>See Annex I for a detailed description of several of the taxonomies listed here (which, however, go beyond dark green). See also Annex III for a comparison of sectors included by these taxonomies.</p> |
| Implementation modalities | <ul style="list-style-type: none"> • To be developed by EC, in cooperation with EU stakeholders • Regular review and update, e.g. annually |

Option 3 implies developing an EU-specific taxonomy, possibly endorsing parts of the taxonomy and criteria underlying the French TEEC label. The taxonomy should be reviewed and adjusted regularly (e.g. annually) so it can reflect ongoing market developments. The first version of the taxonomy should detail green activities that enjoy broad

stakeholder agreement. Then it could gradually be updated to include activities for which further detailed eligibility criteria have to be agreed upon.

All taxonomies, which have been reviewed during this study are listed in Annex 3⁷¹. The analysis demonstrates that the non-climate related sectors (such as biodiversity) are much less developed. However, while the majority of the stakeholders and existing taxonomies are focusing on climate mitigation and, to a lesser extent, on climate adaptation, non-climate related categories such as biodiversity and water would be further detailed in the EU taxonomy of "green".

The first suggestion of a classification system (Table 9) builds on the classification system for green assets and activities used in the TEEC Label developed in France⁷². The TEEC label's taxonomy was designed having in mind the wider European context, and taking into account French legal standards. The taxonomy and label can be applied to financial funds from other countries within, and outside, the European Union. Control and Monitoring Plan Guidelines⁷³ are available to make sure that the control and monitoring methods implemented by certification bodies are equivalent from one certification body to another.

Table 9 represents a sample of sectors and sub-sectors that could be included in a narrower EU-specific green finance taxonomy (with final wording of sectors to be harmonised with the universal taxonomy under development by EIB). Some assets and activities clearly contribute to certain environmental objectives (coloured in green). Other activities must respect certain safeguards for environmental objectives that are not the main focus of the activity – i.e. a "do no harm" principle (coloured in red). Still others require further analysis (i.e. on a case-by-case basis) to ensure that they are contributing to a sufficient extent to a given objective and/or that they are not harmful to other objectives (coloured in orange).

The policy objectives used in the taxonomy correspond to those used for the EIB's universal taxonomy (as of October 2017), to ensure continuation and comparability. The EIB's approach, in turn, strongly correlates with the green objectives specified in the Green Bond Principles. These policy objectives seem also to be relatively well-aligned with the EU's three key environmental objectives from the 7th Action Environmental Programme.

It is important to note that the taxonomy below is far from a full-fledged taxonomy, as the eligibility criteria would need to be set out for the EU context in sufficient detail, and specific thresholds would have to be agreed in consultation with EU stakeholders.

⁷¹ Yet, only definitions in the finance universe have been considered in this study – there are certainly more definitions available, especially in the form of individual sectoral definitions (sustainable agriculture, water, waste, etc.), not as an amalgamated definition of "green".

⁷² See Annex I for a detailed description of the TEEC Label and its underlying taxonomy.

⁷³ Ministry of Environment, Energy and the Sea: TEEC Label – Control and Monitoring Plan Guidelines, https://www.ecologique-solidaire.gouv.fr/sites/default/files/Label_TEEC_Control%20and%20Monitoring%20Plan%20Guidelines.pdf

Table 9: First draft of a narrower EU-specific green taxonomy

| | Climate change mitigation | Pollution prevention and control | Climate change adaptation | Natural resources depletion | Biodiversity loss |
|---------------------------------|-------------------------------------------------------|----------------------------------|---------------------------|---------------------------------------------------------------------------------|----------------------------------|
| ENERGY | | | | | |
| Solar | | | | | |
| Wind | | | | | Not in natural reserves |
| Biomass | Net GHG savings, taking into account biogenic carbon | Thresholds for air pollutants | | In line with existing and emerging sustainability criteria for sourcing biomass | |
| Hydro | | | | | |
| Energy storage | | | | | |
| ... | ... | ... | ... | ... | ... |
| AGRICULTURE AND FORESTRY | | | | | |
| No-till farming | Reduced nitrous oxide emissions, carbon sequestration | | Reduced water usage | | Soil biodiversity and resilience |
| Organic agriculture | | | | | |
| Integrated pest control | | Reduced use of pesticides | | | |
| Precision farming | | | | | |
| ... | ... | ... | ... | ... | ... |
| WASTE MANAGEMENT | | | | | |
| Remanufacturing | | | | | |
| Recycling | | | | Only if remanufacturing not possible - Respect waste hierarchy | |
| Waste to energy | | Thresholds for air pollutants | | Only as a last resort - Respect waste hierarchy | |
| Composting | | | | | |
| ... | ... | ... | ... | ... | ... |
| TRANSPORT | | | | | |
| Rail | | | | | |
| Biofuels | Net GHG savings, taking into account biogenic carbon | Thresholds for air pollutants | | In line with existing and emerging sustainability criteria for sourcing biomass | |

| | | | | | |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-----|-----|-----------------------------------------------|-----|
| Hybrid and electric vehicles ⁷⁴ | Threshold in terms of CO2/km | | | Modular design so can adapt to fully electric | |
| Bicycle transport | | | | | |
| ... | ... | ... | ... | ... | ... |
| INDUSTRY | | | | | |
| Energy efficiency | | | | | |
| Water efficiency | Reduced energy use | | | | |
| Pollution control | | | | | |
| Eco-labelled products | | | | | |
| Co-generation | | | | | |
| ... | ... | ... | ... | ... | ... |
| WATER | | | | | |
| Wastewater - methane capture | | | | | |
| Wastewater - sludge used as fertilizer | | | | | |
| Drinking water infrastructure - reducing leaks | | | | | |
| Water adaptation infrastructure ⁷⁵ | | | | | |
| ... | ... | ... | ... | ... | ... |
| BUILDINGS | | | | | |
| Energy efficiency | | | | | |
| Green roofs | | | | | |
| Alternative construction materials | | | | | |
| ... | ... | ... | ... | ... | ... |
| Legend | Red: Minimum thresholds required as safeguards for environmental objectives that are not the main focus of the activity | | | | |
| | Orange: Case-by-case analysis required | | | | |
| | Green: Positive contribution to the objective | | | | |
| | Neutral - no positive or negative impact on objective | | | | |

Such a taxonomy needs to be embedded in an ecosystem of more specific requirements against which compliance can be labelled. An essential complementary component of Option 3 is thus a reporting framework, specifying comparable environmental impact indicators aligned with the EU environmental policies and priorities. Table 10 presents the

⁷⁴ Note that hybrid vehicles could be excluded as a matter of principle, since they may lead to a carbon lock-in.

⁷⁵ E.g. protection against such as coastal/storm surges

indicators as outlined in the French TEEC label – this overview is for illustrative purposes and has only been adapted slightly (only an indicator on water quality was added, while the indicators for biodiversity were deleted). The reporting framework is aligned with the policy priorities of the taxonomy presented above.

Table 10: Reporting fields, objectives and suggested indicators (adapted from TEEC label)

| Reporting field objective | | Suggested indicators |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Climate change mitigation | <p>Measure the GHG emissions of investments</p> <p>or</p> <p>Ensure that portfolio composition is compatible with the 2°C scenarios.</p> | <p>Statement of scope 1 and 2 GHG standardised emissions + Tier one suppliers and products sold (annual tCO₂eq, or other GHGs if applicable) proportionally to turnover (EUR or USD). If data for scope 3 emissions is not available, one will focus on scope 1 and 2 emissions to begin with;</p> <p>CO₂ emissions avoided (in tonnes/year);</p> <p>Compatible with <2° C climate performance indicator.</p> |
| Pollution prevention and control | <p>Contribute to soil remediation, waste prevention, waste reduction, waste recycling, improving air and water quality (not related to GHG, which is covered above)</p> | <p>To be determined (indicators relating to the prevention and control of air, water and/or soil pollution)</p> <p>A water quality indicator considering levels of nutrients, dissolved oxygen, water clarity, salinity, metals, pH and chlorophyll-a</p> |
| Climate change adaptation | <p>Reduce water consumption while maintaining its quality level</p> <p>Build climate resilient infrastructure</p> | <p>Total water consumption equal to the total measured volume of withdrawn water less the total volume of discharge (liquids, steam). It includes water, which is also a raw material in products or manufacturing and conditioning processes. The results can be provided in relation to an activity unit;</p> <p>Volume of reused water from collected and treated used water, in relation to, where appropriate, an activity unit.</p> |
| Natural resources | <p>Preserve natural resources</p> | <p>Consumption of natural resources including critical resources (tonnes per EUR/USD million of turnover);</p> <p>Share of renewable energies in the energy mix;</p> <p>Production of raw materials from recycling.</p> |
| Biodiversity | <p>Preserve the biodiversity of ecosystems</p> | <p>To be determined</p> |

6.4 Option 4: The EC supports development of a rating methodology for measuring alignment with green objectives

| | |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Approach | <ul style="list-style-type: none"> • Rating methodology to measure alignment with green objectives • Reflects how (on a relative scale) businesses or specific investments are contributing to the environmental objectives determined in the conceptual definition |
| Level & scope | <ul style="list-style-type: none"> • EU-level • Broad and inclusive, i.e. not excluding any sectors, technologies or activities per se, but allowing for an assessment of environmental risks, opportunities as trade-offs as basis for individual decision-making |
| Indicators | <ul style="list-style-type: none"> • Taking commonly accepted frameworks into account (e.g. the UN SDG indicators) |
| Degrees of greenness | <ul style="list-style-type: none"> • Granular, e.g. allowing for 0-100 points, differentiating 3-4 levels, etc. |
| Exclusions | <ul style="list-style-type: none"> • Can be determined via thresholds (e.g. investments below 60 of 100 points are excluded) |
| ESG | <ul style="list-style-type: none"> • Compliance with ESG could be optional (i.e. improving the overall score in case of ESG integration) |
| Examples | <ul style="list-style-type: none"> • World Benchmarking Alliance concept (WBA) • SDG Index (produced by SDSN Secretariat and Bertelsmann Stiftung) • UN Sustainable Development Goals indicators • CICERO Shades of Green • Standard & Poor's Green Evaluation • ESG rating methodologies • Impact measurement indicators defined by the GBP Working Group • IFI Framework for Harmonized impact reporting • Work done by the Science Based Targets (SBT) initiative |
| Implementation modalities | <ul style="list-style-type: none"> • The EC works together with financial institutions as well as other relevant stakeholders from the public and private sector to collect, compare and, where required, further develop a rating methodology • To be reviewed regularly, e.g. annually |

Option 4 focuses on the development of a rating methodology and endorsing specific indicators to measure alignment with environmental targets and to allow the benchmarking of green investments. It requires the development of an open-access and standardised system for reporting performance on environmental or sustainability objectives (e.g. via data platforms)⁷⁶. This could drive change, raise awareness, and foster progress towards environmental objectives.

⁷⁶ When stakeholders use different frameworks it is very difficult to benchmark performance against alternatives, or use high performance scores to build trust.

The methodology could be inspired by the World Benchmarking Alliance concept (WBA)⁷⁷ and existing corporate reporting requirements and frameworks. Once companies report consistent data over time, comparable with others in their respective sectors, benchmarks can be developed. From this position, it is a short step to compiling league tables of companies' progress towards alignment with the UN SDGs. The greater the number of companies in a sector participating in, and leading, this process, the more relevant the benchmarks will become to all the companies in the sector.

Option 4 could also integrate methodological features from the SDG Index (Sustainable Development Solutions Network, Bertelsmann Stiftung 2017) intended for benchmarking governments. The index could give a score of 1 to 100 and a colour rating for each underlying indicator from the SDGs list. The Index also determines quantitative thresholds such as best and worst score, a threshold for the SDG achievement, and a threshold between colour ratings.

The S&P Global Ratings Green Evaluation analytical approach⁷⁸ is also relevant in this context as it provides a relative evaluation of the green quality of financing on a global scale and avoids the pitfalls associated with labelling an investment as "green". It calculates the environmental impacts on a net benefit basis, meaning that each project's negative and positive environmental impacts are considered relative to the regional baseline (for example, the environmental net benefit of a new renewable energy project compared with production from the conventional grid) for relevant environmental KPIs. In addition, it takes into account the environmental impacts over the life cycle of a project (including construction, operations, and decommissioning phases) in order to provide a comprehensive view of a project's environmental impacts. Qualitative analysis based on long term policy targets helps determining what parameters to be considered.

6.5 Option 5: The EC develops process criteria for green financing and investment

A definition of environmentally friendly activities through the use of taxonomies, complemented by overall objectives, exclusion criteria, indicators and thresholds and/or ratings, as outlined in the previous options, can provide orientation mainly for targeted financing that is provided to specific green projects or companies. For untargeted investments such an approach encounters numerous obstacles. Here, a more process-oriented approach seems more suitable. In addition, if framed in the right way, process criteria substantially strengthen the environmental impact of investments and are therefore – from an environmental policy point of view – often even more relevant than content-oriented criteria (for both targeted and untargeted financing).

This option looks specifically at the potential of process criteria⁷⁹ to guide investors, fund managers, and other individuals or firms making implementing investments⁸⁰. Process

⁷⁷ World Benchmarking Alliance: Corporate Sustainability Performance, <https://www.worldbenchmarkingalliance.org/wba/>

⁷⁸ S&P Global Ratings (2017): S&P Global Ratings Green Evaluation: Time to Turn Over a New Leaf?

⁷⁹ According to the HLEG (2017), a **standard on processes** "provides guidelines to integrate the review of ESG risks associated with operations into investment processes" (e.g. SRI label specifications (French SRI Label, LuxFLAG), Equator Principles, PRI, EUROSIF Transparency code). A **product standard**, in turn, "defines the characteristics of financial instruments that invest in sustainable assets (e.g.: what should be the percentage of green revenue of invested companies, associated reporting, etc.)". The term "process criteria", as it is used in this chapter, covers both concepts.

⁸⁰ As already implied by the previous footnote, process criteria can also be developed for other stakeholders and processes. The Green Bond Principles, for example, specify the processes that issuers of green bonds have to follow in order to justify marking their bonds as "green".

criteria, as the term is interpreted here, are used to harmonise the processes that take place before, during and/or after a financial decision is taken and implemented. They determine, for example, that/how investment or rating strategies have to be disclosed, how investors engage with the companies they invest in, etc.

Process criteria can be designed so as to increase the positive environmental impact of investments, e.g. by fostering awareness for environmental risks and opportunities and by strengthening active investor engagement. This is especially important for untargeted investment because the investors are not (directly) involved in determining how the money is used and, thus, have to apply other methods for influencing the environmental impact of their investments.

Voluntary process criteria for sustainable and responsible investment have been developed by several organisations, including investor initiatives and labelling agencies. Compliance with these criteria is often "rewarded" by granting permission to use specific labels, or logos, indicating compliance with certain process criteria. The **European SRI Transparency Code** (Code)⁸¹, for example, allows fund management companies complying with the Code to use its "transparent" logo in their marketing activities. Other voluntary process standards include the **Principles of Responsible Investment** and the **Equator Principles**⁸², both of which have been signed by a growing number of investors. The **UK Stewardship Code**⁸³ is a set of principles aiming to make institutional investors engage in corporate governance in the interests of their beneficiaries. Several of these sets of criteria adopt a "comply or explain" approach, whereby investors who do not comply with any of the principles must explain why they fail to do so. The existing process criteria could be used as the basis for developing EU-wide criteria that boost the environmental impact of green investments.

In order to develop effective process criteria for green investment, the mechanisms by which companies can be influenced have to be understood:

Signalling: Investors can affect companies by communicating their understanding of environmentally friendly investments and by explaining why they have invested, or divested. If companies know which investors have invested or divested in them, and why, they can adapt their behaviour accordingly, thereby (hopefully, depending on the basis for the decision) improving their environmental performance and enhancing the likelihood that they will attract more green investment.

According to this, the following process criteria might be considered useful:

- Investors inform companies / projects / etc. that they are interested in an investment, or that they have invested or divested, and why;
- Investors inform companies / projects / etc. of how they assess the environmental impact of the company / project / etc., if necessary, also, in comparison to other comparable investments

Dialogue: Investors may request information from a company and involve it in a dialogue, particularly focusing on how the company approaches environmental risks and

⁸¹ Eurosif: Transparency Code, <https://www.eurosif.org/transparency-code/>

⁸² Principles for Responsible Investment, https://www.unpri.org/download_report/3847; The Equator Principles – June 2013, http://www.equator-principles.com/resources/equator_principles_III.pdf

⁸³ Financial Reporting Council (2012): The UK Stewardship Code, [https://frc.org.uk/getattachment/d67933f9-ca38-4233-b603-3d24b2f62c5f/UK-Stewardship-Code-\(September-2012\).pdf](https://frc.org.uk/getattachment/d67933f9-ca38-4233-b603-3d24b2f62c5f/UK-Stewardship-Code-(September-2012).pdf)

opportunities. The success of such a dialogue depends on whether the questions being asked address the company's crucial environmental problems and opportunities. The more investors communicate with companies, the more targeted their questions become, and the more likely it will be that companies react by changing their policies.

The following process criteria might be considered useful:

- Investors adhere to quality criteria for information research and exchange with companies (including incorporation of different stakeholder views; use of validated data sources; careful consideration of which environmental aspects are of particular importance for the respective company; etc.)
- Investors commit themselves to a regular and well-structured exchange with the companies on the collected / received data

These criteria should enhance the quality of the dialogue, and the threshold of quality of the information which is considered acceptable (which should help to eliminate green-washing).

Shareholder activism: Investors can use shareholder activism tools (including engagement with company management, shareholder proposals/resolutions, "vote no" campaigns, etc.)⁸⁴ in order to exert pressure on the company so that it changes its business practices. This is in line with the revised Shareholder Rights Directive, adopted by the EU in 2017, which strengthens shareholders' rights and encourages more long-term shareholder engagement⁸⁵.

The following process criteria might be considered useful:

- Investors actively use their shareholder rights to promote positive engagement with environmental issues (by supporting relevant proposals by other shareholders or by submitting their own proposals); a comply or explain rule should apply
- Investors carry out engagement activities (active contact with the management of invested companies / projects / etc.) to strengthen environmental performance; a comply or explain rule should apply
- Investors adopt a policy that defines how they exercise their shareholder rights and how engagement activities are carried out.
- Investors engage in a dialogue with other investors in order to coordinate their approaches and to make engagement (especially divestment) more effective.

In order to support these three points – signalling, dialogue and shareholder activism – a number of overriding process criteria should be established that ensure that the above points are implemented with sufficient ambition. This could include:

- Investors develop a strategy and a program of implementation which determine in detail how the above-mentioned process criteria are implemented;
- In addition, investors should not only adhere to these criteria, but also disclose their green strategies, activities and results to signal to the market what is important and

⁸⁴ See, for example, PWC (2015) for a short introduction to shareholder activism

⁸⁵ European Commission (2017): Shareholders' rights directive Q&A, http://europa.eu/rapid/press-release_MEMO-17-592_en.htm

how it should be done. In this way, one can reach other investors, who also apply these criteria over time;

- Investors develop approaches to ensure that environmental aspects, beyond a 'single issue' of focus, are taken into account: this should aim to ensure that improvement in the 'single issue' is not being achieved at the expense of worsening in other environmental issues;
- Investors commit themselves to regular monitoring and reporting on compliance with the criteria, and establish mechanisms to correct failures in case the process criteria are violated.

Since relevant processes are often (partly) outsourced, the criteria should equally apply to any sub-contractor involved in the investment process.

All process criteria mentioned need to be developed in more detail, for example, by defining which stakeholders should be involved in the implementation of the process criteria; how to ensure data quality and independence of the environmental assessment processes; and clarifying what information should be reported on, and how. In addition, process criteria should be adapted to the different asset classes, making sure that each financial product can exert the highest environmental impact possible. Finally, process criteria could be divided into those considered mandatory and those to be considered voluntary.

7 POSSIBLE IMPLICATIONS OF DEFINING "GREEN"

This chapter outlines possible implications of the different options/approaches described above, considering three dimensions: 1) implications for the market size of green finance and investments; 2) environmental impacts; and 3) policy-making. The findings, and discussion, are mainly informed by the literature review and stakeholder input collected during this study. The potential implications that are outlined point to possible directions for further discussion and research, as more solid evidence and deeper analysis of the complexities are necessary for drawing robust conclusions.

Within each of the 3 dimensions, the potential implications of the five suggested policy options which the European Commission (EC) could consider are discussed. It should be noted, however, that the actions/ options may be complementary rather than mutually exclusive, as they constitute different components of an overall definition of "green". This makes it difficult to draw clear implications of individual options – the effects of a conceptual definition, for example, depend on whether it is complemented by other components. Hence, the impact of possible combinations of Options needs to be considered, rather than assuming the Options are implemented in a standalone manner.

7.1 Implications for the market size of green finance and investments

Two of the major objectives of defining "green" are to stimulate an increase in the number of active green investors, issuers, lenders and financial service providers and to support growth in the overall volume of green finance and investments. Whether this can be achieved depends strongly on the costs and on the level of effort that each stakeholder has to incur for taking the green definition into operation. Moreover, it also depends on the degree to which such a definition actually provides financial stakeholders with guidance beyond the approaches that they have already developed themselves, or would have adopted from the market.

Drawing implications on the costs, and informational value, of the different options for defining "green" is difficult because both aspects depend strongly on the respective stakeholders and the environment in which they are active. The costs of, and ability to adopt, a definition of "green" would, for example, be influenced by the time required, and the capacity, of senior management and other staff to discuss contents, develop and implement data gathering systems, implement new processes, reporting and external consultation, etc. These factors vary significantly across organisations, making it difficult to draw general conclusions. Another challenge for is the lack of data on the costs for aligning with specific definitions that could be used to compare the costs of different options.

Having in mind these reservations, the following overall implications were identified:

- **Implications for costs of alignment with a green definition:** Interviewees point out that different approaches to defining green will come with varying costs. A detailed definition of dark green, for example, makes it easier to identify what is green but, at the same time, makes it harder to find eligible projects, and may further limit the supply of green projects, which is already an issue. Hence, the costs for screening eligible projects could go up, while the actual number of financed green projects could go down. The number of dimensions considered is also relevant– if project eligibility depends on a number of different criteria and indicators, assessing potentially eligible items with regard to all these aspects might be time consuming and expensive. Costs are also related to the need for proving compliance with green definitions through independent assurance as well as reporting. The more detailed such documents are, the more expensive they will be for the organisation that uses them – at least in the short term. It is pointed out that certification based on widely-accepted and consistent approaches (rather than through second opinions with individual definitions) should reduce the costs of compliance over time.

- **Implications for different types of investors:** Interviewees point out that an official definition of "green" will probably be most helpful for investors who have not already developed their own understanding and definition of "green". Those who have done so, such as green banks and green bond issuers, might adapt their definitions accordingly, but will probably not change their entire systems, especially where such systems are stricter or more detailed. Another interviewee, however, highlighted that a definition of "green" will not be sufficient, in and of itself, to stimulate green investment by investors who do not have specific green objectives or mandates. For such non-green financial stakeholders, the extent to which policy is supporting, or is likely to support, what is included in the definition of "green" is decisive: this determines whether certain investment items can be expected to become more or less profitable in the future due to growing, or declining, demand, and policy-related support. Nevertheless, a broad taxonomy could provide such a policy signal while also supporting companies in developing and implementing green projects, thus increasing the supply of new investment opportunities. Experts highlight that such an effect would be helpful, as currently the supply of green investment opportunities is lower than the demand.

Table 11 illustrates possible implications for green finance and investment per option.

Table 11: Possible implications for the volume of green finance and investment

| | | |
|---|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Option 1: The EC develops a conceptual definition of green finance. | <p>A conceptual definition indicates the importance given to green investment by the EU. This might raise the awareness of investors, lenders and financial service providers for this market segment. Moreover, compared to other approaches to defining "green" (e.g. through taxonomies), this approach would allow for flexible implementation by financial institutions and investors, keeping policy risks (i.e. risks that assets become stranded due to unforeseen policy changes such as stricter environmental policy) relatively low, and could hence be more attractive to a broader range of stakeholders.</p> <p>That having been said, a conceptual definition itself is unlikely to have a direct effect on the industry at large since more concrete guidance on what is green is required by stakeholders to clarify the selection process and to avoid greenwashing.</p> |
| 2 | Option 2: The EC endorses a universal taxonomy | <p>The universal taxonomy approach harmonises the market, which creates new opportunities for green investing. Moreover, many investors interviewed support such a broad approach.</p> <p>However, a universal taxonomy is foreseen to work best when complemented by an individual standard, which can ensure the green credentials of the investments. There is no consensus for an appropriate EU standard yet. For untargeted investments (except green funds), this approach seems less suitable.</p> |
| 3 | Option 3: The EC endorses/develops an EU-specific taxonomy | <p>A narrower, EU-specific taxonomy, embedded in a standard or a label, could provide guidance for investors regarding both light and dark green assets. It could also create competition among investors to move towards dark green assets and activities.</p> <p>However, presently, there are many investment approaches and a narrower taxonomy may be perceived as too ambitious for the mainstream investor, as well as too costly to comply with. This may result in fewer green investments since the need to demonstrate alignment with various criteria is likely to give rise to higher costs to ensure compliance. For untargeted invest-</p> |

| | | |
|---|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | ments (except green funds), this approach seems less suitable. |
| 4 | Option 4: The EC supports development of a rating methodology | <p>A common EU rating methodology for measuring alignment with green targets would allow benchmarking of green investments. Moreover, it could create competition between companies, raising awareness, and helping promote new green investments.</p> <p>However, members of the financial community have different preferences for the specific weightings, and other methodological factors, which could pose a challenge to gaining agreement on a common rating methodology which would apply to all in the EU. Also, rating has a direct implication on the financial performance and key financial parameters of the investments. A common methodology would restrict the leeway of investors, and could deter many stakeholders from green investments.</p> |
| 5 | Option 5: The EC develops process criteria for green financing and investment | <p>Process criteria have a more diffuse effect through investors signing up to, or complying with, such criteria (i.e. compliant investors could communicate their engagement as part of their marketing activities). This could help investors better brand themselves as green, which also improves their ability to attract talent. Such benefits incentivize investors to sign up for the criteria and gradually apply them to all of their investment products. Therefore, the market could grow substantially. Yet, the stricter the criteria are (i.e. the more suited they are to create environmental impact), the more likely it is that investors will be hesitant to use them.</p> |

7.2 Implications for environmental impact

Defining "green" aims not only to increase the size of green investments, but also, to increase the environmental benefits of those investments as compared to a situation where only "non-green" finance is provided. As already discussed in chapter 3.4, the mechanisms through which environmental impacts are determined vary between targeted and untargeted finance and investment. Apart from the various aspects described in more depth in chapter 3.4, some further implications emerged from the interviews:

Table 12: Possible implications for environmental impact per option

| | | |
|---|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Option 1: The EC develops a conceptual definition of green finance. | <p>Since the effects on the size of the green finance market would likely be modest, environmental impacts of a conceptual definition are likely to be modest as well, and would depend on the individual interpretation and ambition of its users. Moreover, the openness of such a definition would leave room for interpretation. This might open the door for green washing, limiting the potential for a positive environmental impact. A conceptual definition thus needs to be complemented by other mechanisms such as taxonomies, standards and labels, rating methodologies and/or process criteria in order to make sure that financial flows are aligned with environmental objectives.</p> |
| 2 | Option 2: The EC endorses a universal taxonomy | <p>The universal taxonomy approach suggests environmental eligibility indicators for different sectors and sub-sectors, which will enhance comparability and transparency of the environmental impacts achieved (when the same standard is used).</p> |

| | | |
|---|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | However, different eligibility thresholds may leave room for interpretation in relation to environmental impacts, which may result in controversies. Given that this option is relevant mostly for targeted finance (which represents a fraction of total finance and investments), rather little environmental impact is expected. |
| 3 | Option 3: The EC endorses/develops an EU-specific taxonomy | <p>A narrower, EU-specific taxonomy, embedded in a label, would provide a strong link between different environmental categories and broader sustainability issues. Harmonised reporting requirements would make benchmarking of green performance possible.</p> <p>However, incomplete exclusion criteria could open the door to controversial activities. Furthermore, each Member State may have to develop its own version of the approach to better reflect local environmental issues. As this option is also relevant mostly for targeted finance, limited environmental impact is expected.</p> |
| 4 | Option 4: The EC supports development of a rating methodology | By harmonising an approach for rating the greenness, or sustainability, of finance, competition and progress in this area could be hampered. This could result in reduced interest from the financial service industry which, in turn, could lead to a reduction in the environmental impact. Moreover, it would be difficult to develop an easily applicable, yet informative, approach that fits all market segments. Thus, a one-size-fits-all approach could negatively affect market size and the potential environmental impact. |
| 5 | Option 5: The EC develops process criteria for green financing and investment | <p>If well designed, process criteria can steer investors towards becoming more involved with companies on environmental matters and exchanging information, raising awareness for the growing importance of environmentally-friendly behaviour. This option is thus likely to have the highest environmental impact of the options presented here. The approach can be used for the large market segment of untargeted investments, and will have an environmental impact on industry, especially in areas which still need further greening. The approach directly stimulates the necessary transformation towards a green economy.</p> <p>However, if process criteria are too strict and not adopted by many investors, the overall size, and hence, total impact of those green investments complying with the criteria could remain low.</p> |

7.3 Implications for policy-making

Implementing the suggested options could require establishing new regulation or expanding the responsibilities of regulatory bodies in order to ensure compliance with the definition of "green" by relevant stakeholders. However, very little information on this dimension was gathered during the literature review and stakeholder consultations, given that so far, most efforts to develop definitions of "green" have been undertaken by single, private institutions, and without implications for policy-making.

The following overall implications were identified:

- Possible **need for oversight and regulation**: Regulatory action might be considered to make sure that the framework conditions and policy signals support the green finance agenda e.g. by internalising external costs and benefits to ensure that stakeholders who create externalities include them in decision making. Several interviewees mention that oversight could be necessary to ensure that external reviewers and labelling agencies – responsible for verifying the voluntary compliance with official

green definitions – work in a reliable and transparent manner and produce high-quality, comparable results. Hence, accreditation criteria or professional standards might be required for external reviewers, much as in the case for rating agencies and auditing companies. Disclosure⁸⁶ is another field in which regulation can help to improve framework conditions for green finance, i.e. by increasing transparency, and stimulating market participants to address non-financial aspects when disclosing risks and opportunities. However, the majority of experts point out that any action by the EC should provide guidance, rather than enforce, specific investments or activities. Most interview participants are of the opinion that endorsement of official green approaches by EU institutions, such as the EIB, will stimulate other market participants to apply the definitions and will create a market-driven and self-supporting environment. It is suggested that support for, and compliance with, such definitions can be further fostered by engaging with market stakeholders in creating adequate framework conditions, for example through the joint development of voluntary guidelines.

Table 13: Possible implications for policy-making per option

| | | |
|---|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Option 1: The EC develops a conceptual definition of green finance. | This approach would support mapping investments to environmental objectives of both individual Member States and the European Union, which could also support scaling up new green-friendly legislation. A shared policy narrative would have to be developed to provide clarity. However, harmonisation of the policy priorities of all EU Member States could be difficult. |
| 2 | Option 2: The EC endorses a universal taxonomy | The eligible project categories listed in such a universal taxonomy would go beyond what is considered as "green" in the EU. Hence, more EU-specific guidance could be required in order to make sure that European financial institutions contribute to achieving EU environmental policy objectives. |
| 3 | Option 3: The EC endorses/develops an EU-specific taxonomy | If a narrower, EU-specific taxonomy, embedded in a standard and certification scheme, is established at the EU-level, an EU body would need to be designated as responsible for the review and updating of all documents. Moreover, institutions responsible for certification and quality control would have to be appointed. Oversight could be necessary to ensure that external reviewers and labelling agencies work in a reliable and transparent manner and produce high-quality, comparable results. |
| 4 | Option 4: The EC supports development of a rating | Similar to Option 3, the rating methodology would have to be reviewed and updated regularly. Oversight of the rating agencies entrusted with conducting the ratings might be required. |
| 5 | Option 5: The EC develops process criteria for green financing and investment | A regulatory framework for the procedural criteria might be required in the future. In the beginning, it should be sufficient to provide guidance on that to the industry. With regard to environmental policy, this approach might help to intensify the dialogue with the industry on environmental objectives. |

⁸⁶ Needs and opportunities for improving disclosure on climate risks and opportunities are currently being discussed by the Task for on Climate-Related Financial Disclosures (TCFD). The TCFD develops voluntary, consistent climate-related financial risk disclosures for use by companies in providing information to investors, lenders, insurers, and other stakeholders, <https://www.fsb-tcfd.org/about/>

8 CONCLUSIONS

8.1 The definition of "green" needs to go beyond taxonomies

Green definitions have been developed for green bonds, lending and equity investment. The approaches to defining "green" which have been analysed, have different characteristics and strengths, depending on the dimension that is under consideration. For example, detailed taxonomies help define clearly what is green. Rating systems allow for different shades of green, thus evaluating an item's degree of compliance with environmental objectives, but not including or excluding it, *per-se*, from a list of eligible investments (unless thresholds are defined). Process criteria can steer investors towards becoming more involved with companies on environmental matters and exchanging information, hence raising awareness for the growing importance of environmentally friendly behaviour. These and other aspects affect how easily each approach can be taken into operation by investors, how feasible harmonisation is, and how much control the designer of the definition has over what is considered green and what not. Hence, such characteristics should also be taken into consideration when devising possible options for a definition of "green" for the European Union and its Member States.

Interviews and survey responses show that European and international stakeholders consider that several approaches should be combined for a definition of "green" in the context of green finance. These include environmental policy objectives, taxonomies, exclusion criteria, indicators and ratings, standards and labels and integration of ESG factors. Existing approaches need to be considered, endorsed, harmonised and/or complemented in cooperation with stakeholders of the financial industry and beyond.

A conceptual definition of green finance could be developed that clearly specifies environmental objectives. It would serve as the underlying or overarching guidance document for the development of the other components of a green finance definition. A universal taxonomy that provides a comparative framework and an overview of the sectors and sub-sectors considered as green across geographies and financial segments could also be helpful. Based on such a universal taxonomy (which is currently under development by the EIB in cooperation with a number of partner organisations), an EU-specific taxonomy could be developed that details further sectors, technologies and activities that are perceived as green in the EU. Such an EU taxonomy must serve to identify projects contributing to EU environmental goals, building on progress already made in Europe. Any taxonomy should be embedded in a standards and labelling scheme which details strict eligibility criteria and thresholds.

It should be noted that an EU-specific, mostly "dark green" taxonomy is not perceived as necessary by all interviewees. Some are of the opinion that such a taxonomy could draw attention away from the overall goal of improving the environmental performance of all companies, not just the ones that fall within the sectors specified by such a taxonomy. An essential question is, therefore, how to deal with light green technologies / companies (providing only relative improvement while not necessarily being ambitious and sustainable enough to reach specific targets; not creating immediate environmental benefits; etc.). While some stakeholders favour excluding such items from the definition of "green", others prefer a broad definition that includes light green items, but does not specifically differentiate them from the dark green ones.

Other stakeholders suggest that a most effective solution would be to devise a rating system that allows different degrees of green to be assessed (i.e. how well is a company or project aligned with environmental policy objectives?), while not, *per-se*, excluding any opportunities for investment. Quantifying the environmental impacts of an investment based on a set of key performance indicators provides a comprehensive view of the positive and negative environmental impacts of a project. This approach increases transparency on positive and negative impacts, and allows for assessing the greenness of an investment compared to the relevant long-term environmental goals. This could stimu-

late companies and financial institutions to move from light to dark green. A rating system is also relevant for assessing the environmental friendliness of "regular" financing and investments beyond the green niche.

It should be highlighted that, according to stakeholders, defining green finance is a first step towards defining sustainable finance, and supporting the achievement of the Sustainable Development Goals. Green finance should not be used for purposes that violate minimum environmental, social or governance standards. Yet, it remains unclear how strict such minimum standards should be, acknowledging that, on the one hand, there are not many "perfect" projects, whilst on the other hand, allowing for trade-offs between different green objectives or between environmental, social and governance-related objectives could create stranded assets if definitions become stricter over time.

Based on these insights, this study identifies five non-exclusive options, or specific actions, which the European Commission (EC) could consider:

1. The EC could develop a **conceptual definition** of green finance. The conceptual definition should specify the environmental objectives to which green finance should contribute, signalling the EU's ambitions with regard to creating (and measuring) impact.
2. Aligned with the terms of the conceptual definition, the EC could, in close coordination with the EIB, endorse a **universal taxonomy**, which harmonises the classification of green assets and activities. The universal taxonomy approach would allow for individual market standards/labels to specify detailed requirements applicable to countries both within, and outside of, Europe.
3. Aligned with the terms of the conceptual definition and the proposed universal taxonomy, the EC could develop and endorse an **EU-specific taxonomy**. In order to deliver on this, the EC could adopt an opt-in approach: activities that are unanimously agreed to be green would feature directly in the taxonomy, while those that require further discussion would gradually be included as agreements are reached on the conditions for inclusion in the taxonomy. The EU-specific taxonomy could also identify elements where a case-by-case approach is needed to determine whether they are green or not. Overall, such a taxonomy could be integrated into European standards and labelling schemes for different financial instruments.
4. Aligned with the terms of the conceptual definition, the EC could support the development of a **green rating methodology** for measuring the contribution to environmental or sustainability goals made by activities or companies. A score would reflect, on a relative scale, how businesses, governments or specific investments are contributing to environmental goals. This would allow assessing multiple dimensions, and support benchmarking of environmental performance.
5. The EC could develop **process criteria** for green financing and investment. Such criteria could be focused on fostering signalling, dialogue and shareholder activism as mechanisms for increasing the environmental impact of green finance. More details need to be developed, for example, on defining which stakeholders should be involved in the implementation of the process criteria; how to ensure data quality and independence of the environmental assessment processes; and what information should be reported on, and how.

As the assessment of the implications of each option for 1) the market size of green finance and investments; 2) environmental impacts; and 3) policy-making in chapter 7 showed, not all options are equally appropriate for the EU at this point. A **conceptual definition** can, above all, send the signal that awareness of the need for green finance is growing in the EU. It cannot, however, provide guidance on which investments are specifically considered "green", thus allowing room for (possibly inappropriate) interpretations of "green finance" and failing to support investors in selecting eligible projects. A **universal taxonomy** of green sectors (which is by definition broad and inclusive as it attempts to cover various definitions of green by market participants) that does not dif-

ferentiate between dark green and light green investments can increase coherence of green finance between countries and regions, but does not necessarily stimulate moving towards the "darker" shades of green and may have lock-in effects. An **EU-specific taxonomy**, in turn, may be perceived as too ambitious for the mainstream investor, as well as too costly to comply with. Both types of taxonomy would be relevant mostly for targeted finance and investments (representing only a small fraction of total finance and investments worldwide). This implies limited effects on the overall volume of green finance which, in turn, limits potential environmental impact. A **rating methodology** to assess alignment of investments with environmental or sustainability objectives does not seem to be a viable option for European Commission to develop at the moment, given that its contribution to increasing the volume of green finance and generating environmental benefits is unclear. Finally, **process criteria** could help to increase awareness on the need for managing environmental risks and opportunities among investors and companies at the same time.

8.2 Next steps to focus on policy objectives and impact mechanisms

For next steps, the European Commission could proceed with further initiatives regarding Options 1, 2 and 5. Option 3 could be initiated following, or in parallel, to the work on Option 2.

Concrete next steps with regard to Option 1 (conceptual definition), Option 2 (universal taxonomy) and Option 3 (EU-specific taxonomy) could be:

- **Formulating EU-wide policy objectives in a way that is relevant and meaningful to investors, defining roadmaps:** The European Commission (EC) could work on aligning and clearly communicating EU-wide environmental policy objectives that serve to guide the overall understanding of the positive effects that green finance should contribute to and against which it can be measured. Given that greenhouse gas concentrations have surged to a new record in 2016, potentially causing global warming beyond the climate targets specified in the Paris Agreement (WMO 2017), low-carbon and climate-resilient investments are certainly of high priority. Yet, in line with the understanding of climate, green and sustainable finance as nested concepts, environmental policy objectives should go beyond climate change mitigation, making sure that other urgent environmental priorities are also understood, communicated, and taken into consideration by companies and green finance providers. Such objectives could feed into the development process of the universal taxonomy as well as the EU-specific taxonomy, which would list policy objectives and corresponding eligibility indicators/thresholds.
- **Identifying areas of consensus:** The EC could then identify technologies or activities that are commonly agreed to be green in the EU and Member States. Each item could be mapped against the identified environmental priority objectives, clearly marking the objectives to which the item contributes and whether it could potentially lead to trade-offs with other objectives. Ideally, such activities must not have negative impacts on any of the green policy objectives specified in the conceptual definition. However, in practice, almost any asset or activity would have some negative environmental impact during its lifecycle (e.g. a wind turbine, while contributing to climate change mitigation objectives, may cause serious decline in local bird population). That is why it is important to promote such areas of consensus, while possibly describing which trade-offs are acceptable for each type of activity. The table presented under option 3 (chapter 6.3) could be used as a starting point for this activity.
- **Developing a framework for assessing controversies:** In parallel the EC could systematically determine why certain investments are controversial from different stakeholder perspectives and with regard to different dimensions (e.g. environmental trade-offs, ease of impact measurement). The result of such an activity could consist of a framework that determines which aspects providers of targeted finance need to consider, and how, when assessing the degree of controversy of intended

green investments. This would provide issuers, creditors and investors with an approach for individually analysing (and communicating) why their financial decisions might be controversial, allowing them to address such issues more directly and in a more standardized manner.

Concerning Option 5 (process criteria) next steps could be:

- **Research on how to increase environmental impact through non-financial mechanisms:** Little research exists on the mechanisms by which green finance and investment create environmental impact (such as information dissemination, dialogue and shareholder activism) beyond through targeted financing of green projects. Even less is known on how to maximize the environmental impact of green investments. More research in this area would be helpful in formulating adequate process criteria. The research would need to differentiate between different kinds of investment products and different kinds of investment objects.
- **Dialogue with market actors:** So far, investors and financial service providers active in the green investment market pay rather little attention to the environmental impact of their investment products (with the exception of impact investors - a very small segment of the market). Many of them are probably even unaware of the leeway they have for increasing the environmental impact of their green financial products. At the same time, it needs to be better understood how the information flow between investors and the industry can be shaped in order to increase the environmental impact without hampering the management of the financial products. The EC could conduct a series of workshops to raise awareness on the environmental impact of green investment and to discuss possible measures to this extent in the management of financial products.
- **Pilot implementations:** Based on the outcome of such a dialogue series, the EC could ask market actors together with civil society to develop and test appropriate process criteria (possibly based on current systems). The application of the criteria should be accompanied by an evaluation project. The results of the pilot implementation could form the basis for the final development of such process criteria.

9 ANNEXES

9.1 Annex I – Description and assessment of selected definitions

This annex provides an overview of the following approaches to defining green (sorted by first letter of the "owner" of the approach).

- China Green Bond Endorsed Project Catalogue
- Climate Bonds Initiative: Climate Bonds taxonomy and eligibility criteria
- Deutsches Institut für Entwicklungspolitik
- France: Climate and Energy Transition Label Taxonomy
- FTSE Russel Environmental Markets Classification System
- G20 Green Finance Study Group

| China Green Finance Committee: China Green Bond Endorsed Project Catalogue | |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dimension of green finance | The China Green Bond Endorsed Project Catalogue ("Catalogue") identifies projects that are eligible for (re)financing through green bonds falling under the regulation of the People's Bank of China. |
| Context | <p>The Central Committee of the CPC and the State Council in September 2015 issued the Integrated Reform Plan for Promoting Ecological Progress which, for the first time, clearly stated to initiate the top-level design for the national green financial system, including through the green bond market.</p> <p>Against this background, the Green Finance Committee of China Society of Finance and Banking put forward the Green Bond Endorsed Project Catalogue (2015 Edition). The catalogue aims to provide an explicit guideline for green investment projects. The Committee commissioned CECEP Consulting Co., Ltd. and the Research Centre of Climate and Energy Finance of Central University of Finance and Economics to prepare the Catalogue and undertake relevant research work. During the research stage, the Committee organized four symposiums and solicited feedback in written and other forms from hundreds of organizations including all members of the Committee.</p> |
| Conceptual definition | In addition to challenges from climate change, China is facing other issues such as severe environmental pollution, aggravated resource constraints and deteriorated ecological degradation. Environmental benefits are thus framed to comprise GHG emission reduction, pollution reduction, resource conservation, ecological protection, etc. |
| Taxonomy / sectoral focus | The Catalogue lists six Level-1 categories of projects with marked environmental benefits (Energy Saving; Pollution Prevention and Control; Resource Conservation and Recycling; Clean Transportation; Clean Energy; Ecological Protection and Climate Change Adaption), 31 Level-2 categories as well as a large number of Level-III categories , with detailed explanations and defining criteria as well as links to the national industries classification codes. |
| (Inclusion / exclusion) Criteria | <p>For some categories it is specified which existing sectoral benchmarks and guidelines the technology or activity has to comply with (e.g. as defined in national standard of energy consumption allowance for unit product, Evaluation Standard for Green Building, standard of Chinese organic products, etc.).</p> <p>For Solar Photovoltaic (PV) Power Generation, specific thresholds are defined regarding</p> |

| | |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | conversion efficiency and decay rate. |
| Impact indicators | No impact indicators included in the catalogue. |
| Product / process standards | No product or process standards specified in the catalogue. |
| Investor implications | <p>The catalogue is set out to follow a number of principles, including simplicity and clarity of environmental details tailored to capital market practitioners and alignment with international practice. This probably makes it easier for issuers to implement the taxonomy. Moreover, the Green Bond Endorsed Project Catalogue will be merged with the catalogues of green projects developed by other Chinese institutions, thus further reducing complexity for issuers and investors.</p> <p>In 2016 China's green bonds volume aligned with China's green definitions (but not necessarily with international green definitions, e.g. as determined by the Green Bond Principles) made up USD 36bn or 39% of the global volume.</p> |
| Source | <p>Green Bond Endorsed Project Catalogue (2015 Edition) http://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Preparation-Instructions-on-Green-Bond-Endorsed-Project-Catalogue-2015-Edition-by-EY.pdf</p> <p>CBI (2016): Roadmap for China: Green bond guidelines for the next stage of market growth https://www.climatebonds.net/files/files/CBI-IISD-Paper1-Final-01C_A4.pdf</p> <p>CBI (2017): China Green Bond Market 2016: https://www.climatebonds.net/files/files/SotM-2016-Final-WEB-A4.pdf</p> |

Climate Bonds Initiative: Climate Bonds taxonomy and eligibility criteria

| | |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dimension of green finance | The Climate Bonds taxonomy and sector-specific eligibility criteria are meant to support issuance of / investment in green / climate-aligned bonds . |
| Context | <p>The Climate Bonds Initiative (CBI) supports the growth of worldwide green bond markets through the development and certification of standards, knowledge creation and networking. As part of its Climate Bonds Standard & Certification Scheme it coordinates the development and constant refining of a taxonomy and sector-specific eligibility criteria for 'low carbon and climate resilient' investments.</p> <p>The taxonomy is developed and continuously updated by the CBI team. The eligibility criteria are prepared by Technical Working Groups, made up of scientists, engineers and technical specialists, with support from expert advisory committees. Draft criteria are presented to Industry Working Groups before being released for public comment. Finally, criteria are presented to the Climate Bonds Standard Board for approval.</p> |

| | |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conceptual definition | <p>The Certification Scheme allows investors, governments and other stakeholders to prioritise 'low carbon and climate resilient' investments. Specifically, this includes projects or assets that directly contribute to:</p> <ul style="list-style-type: none"> ▪ Developing low carbon industries, technologies and practices that mitigate greenhouse gas (GHG) emissions consistent with avoiding dangerous climate change ▪ Essential adaptation to the consequences of climate change |
| Taxonomy / sectoral focus | <p>The Climate Bonds Taxonomy identifies 8 sectors that can be eligible for green and climate bonds: energy; buildings; industry; waste, pollution control and sequestration; transport; information technology and communication (ITC); agriculture & forestry; adaptation. For each sector, specific inclusions, exclusions and investment areas for which more work has to be done are defined. Further explanations and restrictions are added for most areas to support selection of eligible investments.</p> |
| (Inclusion / exclusion) Criteria | <p>The investment areas that are specifically marked as "excluded" in taxonomy are: nuclear power, fossil fuels (incl. fossil fuel efficiency and energy savings related to fossil fuel extraction, transport, power generation; rail transport of fossil fuels), landfill and waste incineration without gas/energy capture, timber harvesting, and agriculture on peat land.</p> <p>In order to become certified under the Climate Bonds Standards V2.1 green bonds have to comply with additional eligibility criteria. These are currently available for solar; wind; geothermal; water; low carbon buildings (residential); low carbon buildings (commercial); and low carbon transport. Criteria will be available soon for bioenergy; Land use; hydro-power; marine; waste management; and information technology and broadband. Technical working groups will start working on other eligibility criteria soon.</p> <p>The Criteria are to be reviewed one year after launch. Generally, they are likely to be revised and refined over time, as more information becomes available. For example, the Water Criteria will be reviewed annually for at least the first three years.</p> |
| Product / process standards | <p>The Climate Bonds taxonomy is part of the Climate Bonds Standard & Certification Scheme. In order to become certified, issuers have to comply with a range of pre- and post-issuance requirements, which are largely aligned with the Green Bond Principles.</p> <ul style="list-style-type: none"> ▪ Pre-Issuance Certification: Assessment and certification of the bond issuer's internal processes, including its selection process for projects & assets, internal tracking of proceeds, and the allocation system for funds. ▪ Post-Issuance Certification: Assessment and certification of the bond, which must be undertaken after the allocation of bond proceeds is underway, and includes assurance from the Verifier that the issuer and the bond conform with all of the Post-Issuance Requirements of the Climate Bonds Standard. An issuer may also choose to voluntarily repeat the post-issuance certification process on a periodic basis. |
| Investor implications | <p>Globally, 57 Climate Bonds were certified by September 2017.</p> <p>The Climate Bonds taxonomy is rather detailed and allows fast identification of (in)eligible investment areas. The different sector-specific eligibility criteria, in turn, require more in-depth scrutiny. The criteria are structured differently for each sector which can be particularly challenging for issuers whose bond projects fall into different green categories.</p> |

| | |
|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <p>Benefits for issuers, according to CBI:</p> <ul style="list-style-type: none"> ▪ More diverse investor base: certification signals the low-carbon integrity of the bond and is important for investors looking for climate related investments. Most issuers of Certified Climate Bonds find that the range of investors interested in their bond is much broader. ▪ Easier-to-find: certification allows potential investors to quickly find a credible green / climate bond on Bloomberg and via other providers of market information. ▪ Enhanced reputation: certification allows an issuer to associate its organisation with efforts to scale up financial flows for delivering the low-carbon economy and securing prosperity for future generations. ▪ Lower cost: issuers pay less for certification than for a second opinion, and investors avoid the cost of environmental due diligence. <p>Benefits for investors, according to CBI:</p> <p>Investors can use the Climate Bond Standard as a screening tool to assure the low-carbon nature and integrity of their fixed-income investments.</p> <p>A liquid market of certified Climate Bonds also allows investors to actively participate in the delivery of the Low-Carbon Economy in three key ways:</p> <ul style="list-style-type: none"> ▪ Hedge against future climate risks by financing a low-carbon transition ▪ Signal to the market their appetite for suitably risk-adjusted green deal-flow; ▪ Signal to governments their willingness to invest in the low-carbon transition subject to stable policy frameworks and risk-adjusted returns. |
| <p>Policy implications / EU relevance</p> | <p>The taxonomy and eligibility criteria have been/are being developed with stakeholders from the EU and beyond. They should thus support bond issuers across different countries. So far, bonds from the USA, UK, Australia, Morocco, France, Philippines and global programmes have been certified.</p> |
| <p>Sources</p> | <p>Climate Bonds Standard (V2.1): https://www.climatebonds.net/standards/standard_download</p> <p>Full taxonomy: https://www.climatebonds.net/files/files/cbi-green-climate-definitions-v1_2.xlsx</p> <p>Overview of available eligibility criteria: https://www.climatebonds.net/standard/sector_criteria</p> |

| <p>Deutsches Institut für Entwicklungspolitik</p> | |
|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Conceptual definition</p> | <p>Green finance comprises</p> <p>1) The financing of public and private green investments (including preparatory and capital costs) in the following areas</p> <ul style="list-style-type: none"> ▪ environmental goods and services* (such as water management or protection of biodiversity and landscapes) ▪ prevention, minimization and compensation of damages to the environment and to the |

| | |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <p>climate (such as energy efficiency or dams)</p> <p>2) The financing of public policies (including operational costs) that encourage the implementation of environmental and environmental-damage mitigation or adaptation projects and initiatives (for example feed-in-tariffs for renewable energies)</p> <p>3) Components of the financial system that deal specifically with green investments, such as the Green Climate Fund or financial instruments for green investments (e.g. green bonds and structured green funds), including their specific legal, economic and institutional framework conditions</p> |
| Source | Lindenberg, Nanette (2014): Definition of Green Finance, http://www.die-gdi.de/uploads/media/Lindenberg_Definition_green_finance.pdf |

France: Energy and Ecological Transition for the Climate (TEEC) Label

| | |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dimension of green finance | The label aims to specifically identify investment funds (equity funds, green bond funds, infrastructure funds and private equity) that contribute to the energy and ecological transition. |
| Context | <p>In 2014, the French government announced its intention to create an Energy and Ecological Transition for Climate (TEEC) label and an SRI label. These labels aim to help investors comply with legal requirements to demonstrate the alignment of their portfolio to national and international targets (as specified in the Law N° 2015-992 on Energy Transition for Green Growth, adopted in 2015). The TEEC label was developed by a working group with representatives of important stakeholder groups, on behalf of the French Ministry of the Environment, Energy and Marine Affairs (now: Ministry of Ecological and Solidarity Transition). The first version of the "Criteria Guidelines" was published in 2015.</p> <p>The criteria guidelines specify the following:</p> <ul style="list-style-type: none"> ▪ Eligibility criteria for candidate funds (eligible funds, funds' assets, special cases) ▪ Label criteria "Pillar I - Fund's objectives and methodology for the selection of assets [...]" ▪ Label criteria "Pillar II - Consideration of ESG Criteria in the construction and life of the portfolio" ▪ Label criteria "Pillar III - Highlighting positive impacts on energy and ecological transition" ▪ Appendix 1 - Definition of activities falling within the scope of the energy and ecological transition ▪ Appendix 2 - Strict and partial exclusions ▪ Appendix 3 - Portfolio allocation thresholds between the various allocation categories ▪ Appendix 4 - Information to be submitted regarding environmental impact measurements ▪ Appendix 5 - Requirements for the use of derivative instruments within an TEEC-certified fund ▪ Appendix 6 - List of documents to submit |

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <p>The underlined components specify the items that can (or explicitly cannot) be labelled as "contributing to the energy and ecological transition". In the following, these aspects will be looked at in more detail.</p> |
| Conceptual definition | <p>Funds are only eligible if most of their assets under management (AUM) are invested in companies which support the energy and ecological transition. This is measured through different approaches, including a taxonomy of eligible activities, exclusion criteria as well as impact indicators.</p> |
| Taxonomy / sectoral focus | <p>The taxonomy (provided in Appendix I of the Criteria Guidelines) lists 8 eligible sectors (energy, building, industry, waste management/pollution control, transport, ICT, agriculture & forestry, adaptation). For each sector, further "areas" (e.g. solar energy), "specific categories and activities" (e.g. "PV solar electricity") and descriptions are provided.</p> <p>The taxonomy is the same as that of the CBI with some changes and further specifications:</p> <ul style="list-style-type: none"> ▪ Certain activities listed in the CBI taxonomy have been excluded (fuel efficient vehicles, broadband) [A]; ▪ The descriptions of certain activities appearing in the CBI taxonomy have been specified [B]; ▪ Certain activities considered by the CBI taxonomy as requiring additional work, which are therefore not currently eligible, have been deemed eligible by the EETC taxonomy [C]; ▪ A "Services" category has been added to the "Energy", "Buildings" and "Industry" sectors. |
| (Inclusion / exclusion) Criteria | <p>The exclusion criteria (provided in Appendix II of the Criteria Guidelines) are as follows:</p> <p>Strict exclusion: Companies having activities pertaining to:</p> <ul style="list-style-type: none"> ▪ The exploration-production and exploitation of fossil fuels; ▪ The entire nuclear sector, namely the following activities: uranium extraction, uranium concentration, refining, conversion and enrichment, the production of nuclear fuel structures, construction and use of nuclear reactors, treatment of spent nuclear fuel, nuclear decommissioning and radioactive waste management. <p>Partial exclusion:</p> <ul style="list-style-type: none"> ▪ Service companies and companies involved in the distribution / transportation and the production of equipment and services are excluded, in so far as 33% [inclusive] or more of their turnover comes from clients from the strictly excluded sectors (as defined above). ▪ Companies making 33% [inclusive] or more of their turnover from one of the following activities are excluded: Storage and landfill centres without GHG capture; Incineration without energy recovery; Energy efficiency for non-renewable energy sources and energy savings linked to optimising the extraction, transportation and production of electricity from fossil fuels; Logging, unless managed in a sustainable fashion as defined in appendix 1, and peatland agriculture. <p>Other relevant criteria: As specified in Appendix 3, funds can be labelled as green even if less than 100% of their proceeds are used for green purposes. For example:</p> <ul style="list-style-type: none"> ▪ Funds invested in unlisted securities: At least 75% of the fund's total AUM is invested in companies for which turnover supporting the energy and ecological transition in accordance with the classification is at least 50%. |

| | |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <ul style="list-style-type: none"> ▪ Bond funds: The percentage of AUM invested in green bonds must be at least 83.5% of the fund's total AUM. <p>In case of bond funds, the management company needs to be a member of the Green Bond Principles.</p> |
| Impact indicators | <p>Funds have to measure the actual contribution of their investments and comment on their development, in one of the following four areas, not necessarily exclusively: climate change; water; natural resources; biodiversity. Appendix 4 of the criteria guidelines describes in more detail 1) the objectives of each field and provides 2) suggested indicators. The impact indicators are only indicative and can be developed by each fund individually.</p> <ul style="list-style-type: none"> ▪ Climate change: 1) Measure the GHG emissions of investments or ensure that portfolio composition is compatible with the "+2°C" scenarios; 2) Statement of scope 1 and 2 GHG standardised emissions + tier 1 suppliers and products sold (annual tCO₂eq, or other GHGs if applicable) proportionally to turnover (tCO₂eq/EUR million or USD million of turnover). If data for scope 3 emissions is not available, focus on scope 1 and 2 emissions to begin with; CO₂ emissions avoided (in tonnes/year); Compatible with "+2° C" climate performance indicator. ▪ Water: 1) Reduce water consumption while maintaining its quality level; 2) Total water consumption equal to the total measured volume of withdrawn water less the total volume of discharge (liquids, steam). It includes water which is also a raw material in products or manufacturing and conditioning processes. The results can be provided in relation to an activity unit; Volume of reused water from collected and treated used water, in relation to, where appropriate, an activity unit. ▪ Natural resources: 1) Preserve natural resources; 2) Consumption of natural resources including critical resources (t/EUR million or USD million of turnover); Share of renewable energies in the energy mix; Production of raw materials from recycling. ▪ Biodiversity: 1) Preserve the biodiversity of ecosystems; 2) Percentage of issuers disclosing their expenditure on biodiversity / number of companies represented in the portfolio; Average expenditure of issuers committed to biodiversity, compared to turnover. |
| Product / process standards | <p>Certified funds comply with following seven criteria structured in three pillars:</p> <ul style="list-style-type: none"> ▪ Pillar I: Making available information on the fund's objectives and methodology for selecting assets contributing to the energy and ecological transition: 1) general, financial and environmental objectives embedded in environmental data, 2) methodology for evaluating the green portion of the portfolio, 3) exclusion of assets that go against the energy and ecological transition ▪ Pillar II: Incorporation of ESG criteria into the portfolio's construction and investment choices: 4) Active monitoring of controversial ESG practices and demonstrating the impact on the portfolio's construction and investment choices, 5) Transparency of fund's management practices ▪ Pillar III: Promotion of the positive impacts on the energy and ecological transition: 6) establishment of a mechanism for measuring the actual contribution of the funds' investments to the energy and ecological transition, 7) Reporting, including impact indicators on the benefits in terms of the energy and ecological transition <p>Novethic Research Centre and EY France are the responsible auditors conducting TEEC certification. The certified fund is awarded TEEC certification for one year. After initial certification, a follow-up report is produced to ensure ongoing compliance of guidelines and proper use of the logo.</p> |
| Investor implications | <p>The TEEC Label taxonomy is rather detailed and allows fast identification of (in)eligible investment areas. Given the comprehensive requirements for certification, the number of</p> |

| | |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | certified funds remains low. 15 funds were successfully certified by September 2017. |
| Policy implications / EU relevance | The label is designed to meet French legal standards but can be applied to financial funds from other countries in- and outside the European Union. Control and Monitoring Plan Guidelines have been developed to make sure that the control and monitoring methods implemented by the certification bodies are equivalent from one certification body to another. |
| Source | <p>Criteria guidelines: https://www.ecologique-solidaire.gouv.fr/sites/default/files/Label_TEEC_Criteria%20Guidelines.pdf</p> <p>Homepage of the Ministry of Ecological and Solidarity Transition: https://www.ecologique-solidaire.gouv.fr/label-transition-energetique-et-ecologique-climat</p> <p>Control and Monitoring Plan Guidelines: https://www.ecologique-solidaire.gouv.fr/sites/default/files/Label_TEEC_Control%20and%20Monitoring%20Plan%20Guidelines.pdf</p> |

FTSE Russel: Environmental Markets Classification System

| | |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dimension of green finance | Classification system that aims to help investors define and measure the performance of global environmental market companies providing products and services that deliver solutions to environmental challenges and include environmental technology, also referred to as cleantech. |
| Context | Since 2007 FTSE Russell, a global provider of benchmarking, analytics and data solutions for investors, and Impax Asset Management, a leading investment firm, have been developing the Environmental Markets Classification System (EMCS). The EMCS is used as a basis for the creation of the FTSE Environmental Markets indexes, including both the FTSE Environmental Opportunities (EO) and Environmental Technology (ET) families of indexes. |
| Conceptual definition | Environmental markets definition: Companies that provide products and services offering solutions to environmental problems , or that improve the efficiency of natural resource use . |
| Taxonomy / sectoral focus | Eligible environmental market companies are classified into 7 sectors (Renewable & alternative energy, Energy efficiency, Water infrastructure & technologies, Pollution control, Waste management & technologies, Environmental support services, Food, agriculture & forestry) and 30 sub-sectors . For each sub-sector, a short description of the type and activity of eligible companies is provided. |

| | |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (Inclusion / exclusion) Criteria | <p>In order to qualify for the EO index series companies must derive at least 20% of their business⁸⁷ from environmental market sectors. These activities must show a net environmental benefit.</p> <p>In order to qualify for the ET index series companies must derive at least 50% of their business from environmental market sectors. In addition, the activities must be 'transformational', defined as where they deliver a clear and significant environmental benefit.</p> <p>On this basis the activities in the following are not eligible:</p> <ul style="list-style-type: none"> ▪ Water Utilities ▪ General Waste Management ▪ Diversified Environmental ▪ Hydro power ▪ Steel recycling ▪ Construction companies ▪ Transmission and distribution technology |
| Impact indicators | <p>It is stated that eligible environmental market activities must deliver a (clear and significant) environmental benefit. Yet, it is not specified how this is measured.</p> |
| Investor implications | <p>This classification system can be used by investors globally to assist them in identifying and measuring investment opportunities in environmental markets. The EMCS provides a higher granularity for environmental markets classification than the standard system for classifying companies (Industry Classification Benchmark, ICB) and thus increases opportunities to invest in environmental markets.</p> |
| EU relevance | <p>The EMCS can be applied globally. Regional indexes, all based on the EMCS, are available for the UK, Europe, U.S. and Asia Pacific.</p> |
| Source | <p>FTSE Environmental Markets Methodology: http://www.ftse.com/products/downloads/FTSE_Environmental_Markets_Classification_System.pdf</p> <p>ET index series rules: http://www.ftse.com/products/downloads/FTSE_Environmental_Technology_Index_Series.pdf?513</p> <p>EO index series rules: http://www.ftse.com/products/downloads/FTSE_Environmental_Opportunities_Index_Series.pdf?513</p> |

⁸⁷ The nature of a company's business is usually determined through analysis of 1) Environmental market revenues against total revenues; 2) Environmental market invested capital against total invested capital, 3) Environmental market EBITDA against total EBITDA

G20 Green Finance Study Group

| | |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conceptual definition | On a conceptual level, 'green finance' can be understood as financing of investments that provide environmental benefits in the broader context of environmentally sustainable development. These environmental benefits include, for examples, reduction in air, water and land pollution, reductions in GHG emissions, improved energy efficiency while utilizing natural resources, as well as mitigation of and adaptation to climate change and their co-benefits. Beyond the financing of green investments, green finance also involves efforts to internalize environmental externalities and adjust risk perceptions in order to boost environmental friendly investments and reduce environmentally harmful ones. As regards the functioning of the financial markets, green finance also means an improved understanding and pricing of financial risks related to environmental factors. |
| Source | G20 Green Finance Synthesis Report, http://unepinquiry.org/wp-content/uploads/2016/09/Synthesis_Report_Full_EN.pdf |

9.2 Annex II – List of Definitions

| Application to... | Developed by... | Name | Eligibility assessment based on... | Comment |
|-----------------------------|-------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| All finance / not specified | Guideline / policy | MDB-IDFC Common Principles for Climate Mitigation Finance Tracking | Taxonomy | Important reference framework |
| All finance / not specified | Guideline / policy | IDFC green finance tracking methodology 2014 | Taxonomy | One of the earliest approaches to tracking green finance |
| All finance / not specified | Guideline / policy | UNEP positive impact finance principles | Process standard | The Principles do not prescribe which methodologies and KPIs to use to identify, analyse and verify positive impact. |
| All finance / not specified | Scientific paper | G20 GFSG | Conceptual definition | Widely disseminated and very up-to-date definition, yet only broad conceptual approach. |
| All finance / not specified | Scientific paper | German Development Institute (DIE) | Conceptual definition | Scientific approach that means to integrate existing conceptual definitions |
| Bonds | Labels, certification schemes | Climate Bonds Standard | Taxonomy, exclusion criteria, sector-specific eligibility criteria | Widely acknowledged and detailed approach, good stakeholder integration. |
| Bonds | Labels, certification schemes | LuxFLAG Green Bond Label | Taxonomy (referring to GBP) | Relatively unspecific, taxonomy referring to GBP |
| Bonds | Guideline / policy | Green Bond Principles (GBP) | Taxonomy, process standard | Taxonomy is very short and broad compared to CBI, yet the framework is used widely |
| Bonds | Guideline / policy | China Green Bond Endorsed Project Catalogue | Taxonomy | Very detailed, including controversial sectors that are important for discussion, embedded in wider GF efforts |
| Bonds | Guideline / policy | Morocco Green Bond guidelines | Taxonomy | Very broad taxonomy with exemplary character |
| Bonds | Guideline / policy | US Energy Conservation / Renewable Energy Bonds | Taxonomy | Very narrow focus on energy |
| Bonds | Guideline / policy | EIB Climate Action Bonds | Taxonomy | Based on MDB-IDFC, so no need for extra assessment |
| Bonds | Guideline / policy | Nordic Investment Bank | Taxonomy | Early taxonomy, with focus on emission reductions (beyond CO2) |
| Bonds | Guideline / policy | Working group of eleven International Financial Institutions | Impact metrics | Four impact indicators defined for RE and EE |
| Bonds | Guideline / policy | GBP Impact Reporting Working Group | Impact metrics | Three core indicators for sustainable water and wastewater management, other sustainability indicators |
| Bonds | Index | Bloomberg Barclays MSCI Global Green Bond Index | Taxonomy | Very open and short list of eligible environmental categories |
| Bonds | Index | HSBC Green Bonds | Taxonomy (referring to GBP) | This index required green bonds to be compliant with the Green Bond Principles |
| Bonds | Index | S&P Green Bond Index | Taxonomy (referring to CBI) | This index required green bonds to be in line with the Climate Bonds Standard |
| Bonds | Rating | Cicero Shades of Green | Assessment methodology | Assesses the expected environmental effectiveness / impact of the bond issue (How forward looking is it?) |

| | | | | |
|---------------------|-------------------------------|--------------------------------------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bonds | Rating | S&P Green Evaluation | Assessment methodology | Assesses the expected environmental effectiveness / impact of the bond issue (What are key environmental impacts?) |
| Bonds | Rating | Moody's Green Bond Assessment | Assessment methodology | Assesses the expected environmental effectiveness / impact of the bond issue (How well does the issuer follow the GBP?) |
| Credit | Guideline / policy | Equator Principles | Process standard | Env. impacts not specifically defined - based on IFC Performance Standards and Industry Specific EHS Guidelines; Appendix II provides illustrative list of issues incl. some environmental issues (biodiversity, renewable natural resources, etc.) |
| Credit | Guideline / policy | Nordic Investment Bank | Exclusion criteria | Defining brown rather than green projects (not necessarily excluded, but require additional EIAs) |
| Credit | Guideline / policy | China Green Credit Statistics | Taxonomy | Broad but general taxonomy of eligible sectors, going beyond climate |
| Credit | Guideline / policy | Netherlands Green Funds Scheme | Taxonomy | Very broad taxonomy based on Green Certification scheme |
| Credit | Guideline / policy | Bangladesh Green Banking Guidelines | Taxonomy | Not a clear taxonomy but rather listing of relevant sectors throughout the guideline |
| Credit | Guideline / policy | New York Green Bank | Taxonomy | Very narrow focus on energy |
| Credit / Investment | Guideline / policy | Deutsche Bank CC Investment Universe | Taxonomy | Last version seems to be from 2012; Climate change research team was dissolved in 2012 |
| Credit / investment | Guideline / policy | UK GIB Investment Policy | Taxonomy, green "purposes" | Investment policy specifies green purposes (going beyond climate) that investments are expected to contribute to |
| Investment | Index | FTSE Russell Environmental Markets Class. System | Taxonomy | Relatively detailed, going beyond climate-related sectors |
| Investment | Index | FTSE Russell Low Carbon Economy Class. System | Taxonomy | Limited to climate |
| Investment | Index | MSCI Global Environment Index | Taxonomy | Taxonomy going beyond climate |
| Investment | Index | MSCI Global Climate Index | Taxonomy | Eligible project categories include controversial technologies, such as future fuels |
| Investment | Index | NASDAQ Green Economy Index | Taxonomy | Interesting as applicable to a wide range of financial products, however, very short and broad |
| Investment | Index | HSBC Investable Climate Change Index | Taxonomy | Eligible project categories include controversial technologies, such as fuel efficient cars |
| Investment | Index | S&P Global Eco Index | Taxonomy | Very superficial and open taxonomy |
| Investment | Labels, certification schemes | France Climate and Energy Transition Label | Taxonomy, exclusion criteria, suggestions for impact measurement | Based on CBI, very detailed; comparison with CBI available; embedded in label (assessment thus going beyond taxonomy) |
| Investment | Labels, certification schemes | LuxFLAG Environment Label | Taxonomy (referring to "globally recognised classification systems") | Relatively unspecific, taxonomy based on external approaches |

| | | | | |
|------------|-------------------------------|----------------------------------------------|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Investment | Labels, certification schemes | LuxFLAG Climate Label | Taxonomy (referring to MDB-IDFC Common Principles [...] and CBI) | More detailed than Environment label |
| Investment | Labels, certification schemes | Novethic Green Fund Label | Process standard | Requires applicant funds to define an environmental theme and to sub-divided it into environmental-related activities |
| Investment | Labels, certification schemes | EUROSIF Transparency Code | Process standard | Signatories to the transparency code disclose their sustainability strategies, assessment methods, etc. |
| Investment | Labels, certification schemes | FNG-Siegel | Process standard | Does not entail a definition of green because focus is on awarding those funds with best ESG performance |
| Investment | Labels, certification schemes | Label ISR - Investissement Socialement Resp. | Process standard | Does not entail a definition of green because focus is on awarding those funds with best ESG performance |
| Investment | Labels, certification schemes | Novethic SRI Label | Process standard | Does not entail a definition of green because focus is on awarding those funds with best ESG performance |
| Investment | Labels, certification schemes | Ethibel Excellence Label | ESG rating (by Ethibel) | Does not entail a definition of green because focus is on awarding those funds with best ESG performance |
| Investment | Labels, certification schemes | Ethibel Pioneer Label | ESG rating (by Ethibel) | Does not entail a definition of green because focus is on awarding those funds with best ESG performance |
| Investment | Other | IRIS 4.0 Impact performance metrics | Impact indicators | Catalogue of performance metrics to measure social, environmental, and financial performance of investments |
| Investment | Standard / norm | Principles of responsible investment | Process standard | No definition of the environmental issues considered under ESG described in the Principles. |
| Other | Index | US Clean Technology Index | Taxonomy | Not specifically related to finance |
| Other | Standard / norm | World Bank EHS Guidelines | Standard | Not specifically related to finance |
| Other | Standard / norm | IFC Performance Standard 6 | Standard | Not specifically related to finance |
| Other | Guideline / policy | Sustainable development goals | Taxonomy | Very important framework that will guide development (finance) in the next decade(s) |

Process standard: Applicant must apply certain investment strategies to make sure portfolio shows good environmental performance (ESG assessment, exclusion, etc.)

9.3 Annex III – Comparison of green sectoral taxonomies

| Green Bond Principles | Climate Bonds Initiative | China Green Bonds Endorsed Project Catalogue | FTSE Russel Env. Markets Classification System | MSCI Global Environment Indexes Methodology | NASDAQ OMX Green Economy | HSBC Investable Climate Change Index | LuxFLAG Climate Finance Label | Nordic Investment Bank Green Bonds | Government of Italy |
|---------------------------------------------------------------------------------|--------------------------------------------|-----------------------------------------------------|------------------------------------------------|---------------------------------------------|-----------------------------|--------------------------------------------------------|--------------------------------------------------------------|------------------------------------|---------------------------------------------|
| Renewable energy | Energy | Clean energy | Renewable & alternative energy | Alternative energy | Renewable Energy Generation | Solar; Wind; Geothermal; Hydro; Diversified renewable | Renewable energy; Lower-carbon & efficient energy generation | Renewable energy | Renewable energy |
| Energy efficiency | | Energy saving | Energy efficiency | Energy efficiency | Energy Efficiency | Energy efficient solutions | Energy efficiency | Energy efficiency | Energy efficiency |
| pollution prevention and control | | Pollution prevention and control | Pollution control | Pollution prevention | Pollution Mitigation | Waste and pollution control | | | pollution prevention and control |
| | | | | | Bio/Clean Fuels | Natural gas Biofuels Nuclear Integrated power | | | |
| | | | | | | Fuel cells; Fuel efficiency autos; Power storage | | | |
| | Waste, pollution control and sequestration | | Waste management & technologies | | Recycling | | Waste and wastewater | Waste management | Sustainable waste management |
| Environmentally sustainable management of living natural resources and land use | Agriculture and forestry | Resources conservation & recycling | Food, agriculture & forestry | | Natural Resources | | Agriculture, forestry and land use | | sustainable agriculture and land management |
| clean transportation | Transport | Clean transportation | | | Transport | | Transport | Public transport | Sustainable transport and mobility |
| climate change adaptation | Adaptation | Ecological protection and climate change adaptation | | | | | | | Resilience |
| terrestrial and aquatic biodiversity conservation | | | | | | | | | Biodiversity conservation |
| sustainable water and wastewater management | | | Water infrastructure & technologies | Sustainable water | Water | Water | | Waste water treatment | water management |
| eco-efficient and/or circular | | | | | Advanced Materials | | Low carbon technologies | | |

| | | | | | | | | | |
|-----------------------------------------------------------------|-----------------------------------------------------|--|--------------------------------|----------------|-------------------------------------|-------------------------------------------------------|----------------------------------------------------|-----------------|-------------------------------|
| economy adapted products, production technologies and processes | | | | | | | | | |
| green buildings | Buildings | | | Green Building | Green Building | Building insulation | | Green buildings | Green buildings |
| | | | Environmental support services | | | | | | ecosystem services protection |
| | Industry; Information Technology and Communications | | | | Healthy Living; Financial; Lighting | Investment companies; Agrochemicals Carbon trading | Non-energy GHG reductions; Cross-cutting issues | | |

9.4 Annex IV – Interview and survey guideline

Interview questions

Need for a green finance definition

1. Is a definition of „green“ needed for green finance in the EU? Why (not)?
2. At what level would it need to operate to be effective (EU or international)? Why?

Approaches for identifying green

3. Which existing approaches to defining “green” (e.g. through a conceptual definition, sectoral taxonomy, set of criteria, set of indicators, etc.) do you consider to be best practice and why?
4. What approach would be most appropriate for the EU? Why?

The overall scope of green

5. Which policy objectives (e.g. mitigation / adaptation, biodiversity conservation, pollution control, etc.) should be considered for the definition of “green” in the context of green finance in the EU?
6. Which are the most important indicators for each theme (especially for non-climate sectors)?
7. Should a definition rather be “broad & shallow” or “narrow & deep”⁸⁸?

The quality of green

8. How should the definition of green deal with the tensions that may occur between climate and other environmental objectives (e.g. in the case of biomass use)?
9. Should exclusion criteria / thresholds be introduced (e.g. a technology which leads to severe water pollution would not be considered green even if it is very energy efficient)?
10. Or, on the contrary, should an overall score be taken into account, so that a positive impact in one area could offset a negative impact in another? How could this be done?
11. Should the definition, criteria and/or taxonomy allow for varying degrees of greenness?
12. Would you prefer the definition of “green” to be rather “dark green” (covering only clearly and strongly green assets) or “light green” (less strict, yet allowing the market to scale up quickly)?
13. Should the definition take ESG principles (environmental, social, governance) into account?

⁸⁸ Broad & shallow: covering many sectors/ activities but only superficially, with much room for interpretation
Narrow & deep: covering only selected themes but with detailed indicators and criteria

Assessment of relevant approaches

14. Considering the previous questions, please discuss the advantages and disadvantages of your preferred approach to defining "green" in the context of green finance, i.e. regarding:

- ease of operationalisation (e.g. detailed enough, clear measurement method, etc.);
- cost of implementation (e.g. selection of green assets, monitoring, certification, etc.);
- comparability between different green assets (e.g. in different sectors);
- ease of updating the definition to adapt to evolving circumstances;
- environmental impact (contribution to reaching policy goals); etc.

Implications for investment

15. How could your preferred approach influence

- the investment strategies of green investors?⁸⁹
- the supply and identification of new green assets?
- the number and type of investors pursuing green assets?
- the overall size of green investments in the EU?

Additional questions for investors / asset managers

16. How has the growing availability of (non-uniform) green finance definitions and related taxonomies affected your investment / lending decisions and the composition of your portfolio?

17. How could your portfolio composition change (e.g. within the next 5 years) in a scenario with a (regulatory, voluntary, market driven) EU definition of green?

18. Could you share an example of an implemented green investment project from your portfolio (could be both financially viable and non-viable)?

Compliance

19. What approach would promote the best compliance – regulatory, voluntary, market driven?

20. What would be the extent of the discretionary power that would be conferred to external reviewers in evaluating or certifying the "greenness" of a financial instrument?

⁸⁹ For example: Does the framework encourage investors to increase the share of green assets in their portfolio, to diversify green investments across different sectors, to divest or to implement negative screening, shareholder engagement or advocacy, or positive and/or impact investment?

Survey questions

Need and approaches for identifying "green"

1. At which level is a harmonised definition of „green“ for green finance needed? If possible, please explain your selection.
 - EU-level
 - International level
 - Not at all
 - Other

2. Which approach(es) to defining "green" for green finance would be most appropriate for the EU? If possible, please explain your selection.
 - Conceptual definition
 - Sectoral taxonomy
 - Exclusion criteria
 - Technical eligibility criteria
 - Performance/impact indicators
 - Other

Conceptual definition: Relatively brief written description of what is considered "green", usually referring to green objectives (e.g. pollution prevention).

Sectoral taxonomy: Classification system for investment areas (sectors, activities, assets, etc.) that are considered as green.

Exclusion criteria: List of sectors, companies, activities, etc. that are specifically excluded from the definition of green.

Technical eligibility criteria: Detailed criteria to determine the eligibility of specific companies, activities, etc. Usually including some form of indicators and benchmarks.

Performance/impact indicators: Metrics for measuring the performance / environmental impact of activities. Can come with benchmarks and/or quantified targets.

3. Which existing taxonomies, criteria, indicator sets or other approaches to defining "green" do you know/use that should be taken into account or can serve as examples for the EU/international definition?
 - (open question)

4. Is regulation/oversight required at the EU-level to ensure compliance with the definition of "green" for green finance? If yes, what exactly is required? If no, why not?
 - Yes
 - No

The scope and quality of "green"

5. Which policy objectives should fall under the definition of "green" for green finance in the EU? Which are the most important indicators for each theme?
 - Climate change mitigation:
 - Climate change adaptation:
 - Resource efficiency:

- Protection of natural capital and biodiversity:
- Pollution prevention & control:
- Other

6. Would you prefer for the harmonised definition of "green" for green finance to be rather strict and ambitious (i.e. "dark green") or less strict, yet possibly allowing the market to scale up more quickly (i.e. capturing both "dark green" and "light green")?

- Only dark green
- Capturing both dark and light green
- Other

7. The approach for defining "green" for green finance should rather be...

- Broad & general
- Broad & detailed
- Narrow & detailed
- Other

Broad & general: The definition / taxonomy / etc. covers a broad range of potentially eligible objectives, assets or activities but only superficially and with much room for interpretation

Broad & detailed: The definition / taxonomy / etc. covers a broad range of potentially eligible objectives, assets or activities and specifies or is linked to (more) detailed criteria for each investment area

Narrow & detailed: The definition / taxonomy / etc. covers only clearly eligible ("dark green") sectors or activities and specifies or is linked to (more) detailed criteria and indicators

8. How should the definition of "green" for green finance deal with the tensions that may occur between climate and other environmental objectives? If possible, please explain your selection.

- Unconditional exclusion
- Conditional exclusion
- Scoring
- Other

Unconditional exclusion: Activities or assets that have any detrimental effect on the achievement of any of the underlying environmental objectives are excluded from the definition of "green" in the context of green finance.

Conditional exclusion: Activities or assets that have detrimental effects on the achievement of the underlying environmental objectives are not considered "green" if certain pre-defined baseline criteria cannot be met and/or if thresholds are exceeded.

Scoring: An overall score is taken into account, so that a positive impact in one area could offset a negative impact in another. Depending on the score, the activities or assets are rated, e.g. using a differentiation between "dark green" or "light green" or a more detailed scoring system.

9. Does a "green" activity or asset have to fulfill social and governance criteria as well?
- Yes
 - No
 - Other

Implications for investments

10. Considering your answers to the previous questions, please summarize your preferred approach to defining "green" for green finance:
- (Open question)

For example: Broad and inclusive sectoral taxonomy that captures all acceptable definitions of green and that is internationally agreed; Narrow taxonomy that covers only those assets and activities that are clearly ("dark") green from an EU-perspective; Defining what is brown (through exclusion criteria) rather than what is green; Development of science-based targets for green policy objectives, complemented by a set of impact indicators (rather than a taxonomy); a combination of all of the previous

11. Considering your answer to question 13, please rate the following statement: Investors, issuers or other financial stakeholders can easily use this definition of "green" (for example to select green assets or to determine the "greenness" of a fund).

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Other

12. Considering your answer to question 13, please answer the following question: The costs that investors, issuers or other financial stakeholders have to incur to use this definition of "green" (for example for selecting green assets) are generally:

- Very high
- High
- Medium
- Low
- Other

13. Considering your answer to question 13, please rate the following statement: This definition of "green" can be easily updated to reflect evolving markets and technologies.

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Other

14. Considering your answer to question 13, please rate the following statement: This definition of "green" allows for easy comparability between different green assets (for example in different sectors).

- Strongly agree
- Agree
- Disagree

- Strongly disagree
- Other

15. Considering your answer to question 13, please answer the following question: This definition of "green" will likely encourage investors to...

- Increase the share of green assets in their portfolio
- Diversify green investments across different sectors
- Divest or implement negative screening
- Implement positive and/or impact investment
- Strengthen shareholder engagement or advocacy
- Other

16. Considering your answer to question 13, please answer the following question: This definition of "green" will likely...

- Encourage and enable companies to increase the supply of new green assets
- Encourage and enable investors who are not specifically focussed on green investments to pursue green assets
- Encourage and enable investors with explicit green objectives to pursue (more) green assets
- Increase the overall size of green investments in the EU
- Other

17. If you are an investor or lender, how could your portfolio composition change (e.g. within the next 5 years) in a scenario with a harmonised definition of "green" in the context of green finance?

- (Open question)

18. Please feel free to leave any comments or questions.

- (Open question)

10 PUBLICATION BIBLIOGRAPHY

Reports and studies

2° Investing Initiative; UNEPFI; WRI (2016): CLIMATE STRATEGIES AND METRICS - EXPLORING OPTIONS FOR INSTITUTIONAL INVESTORS.

ASN Bank (2016): Towards ASN Bank's Biodiversity footprint, A pilot project.

Capelle-Blancard, Gunther; Couderc, Nicolas (2009): The Impact of Socially Responsible Investing: Evidence from Stock Index Redefinitions. *The Journal of Investing*. Summer 2009, Vol. 18, No. 2: pp. 76-86.

Climate Bonds Initiative (2016a): Bonds and Climate Change - The state of the market in 2016. Available online at <https://www.climatebonds.net/files/files/CBI%20State%20of%20the%20Market%202016%20A4.pdf>.

Climate Bonds Initiative (2016b): Roadmap for China: Green bond guidelines for the next stage of market growth.

Climate Bonds Initiative (2017): Green Bonds Highlights 2016. Available online at <https://www.climatebonds.net/files/files/2016%20GB%20Market%20Roundup.pdf>.

Climate Bonds Initiative; Luxemburg Green Exchange (2017): THE ROLE OF EXCHANGES IN ACCELERATING THE GROWTH OF THE GREEN BOND MARKET. Available online at <https://www.climatebonds.net/files/files/RoleStock%20Exchanges.pdf>.

Climate Policy Initiative (2015): Global Landscape of Climate Finance 2015.

Climate Policy Initiative (2017): Global Landscape of Climate Finance 2017. Available online at <https://climatepolicyinitiative.org/wp-content/uploads/2017/10/2017-Global-Landscape-of-Climate-Finance.pdf>.

Electris, Christi; Humphreys, Joshua; Johnson, Becky; Korn, Sandra; Lang, Kristin (2014): The Impact of Equity Engagement. Evaluating the Impact of Shareholder Engagement in Public Equity Investing. Available online at https://www.tides.org/fileadmin/user/pdf/IE2_Report.pdf.

Eurosif (2016): European SRI Study 2016. Available online at <http://www.eurosif.org/wp-content/uploads/2016/11/SRI-study-2016-HR.pdf>

G20 Green Finance Study Group (2016): G20 Green Finance Synthesis Report.

GBP Databases and Indices Working Group (2017): Summary of Green Fixed Income Indices Providers.

GBP Impact Reporting Working Group (2017): Suggested Impact Reporting Metrics for Sustainable Water and Wastewater Management Projects. Available online at <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Water-Wastewater-Impact-Reporting-Final-8-June-2017-130617.pdf>

Gilford, J. (2010): Effective shareholder engagement: the factors that contribute to shareholder salience. *Journal of Business Ethics*. 92:79-97.

Global Impact Investing Network (2016): Annual Impact Investor Survey 2016. Available online at

https://thegiin.org/assets/2016%20GIIN%20Annual%20Impact%20Investor%20Survey_Web.pdf.

Global Sustainable Investment Alliance (2016): 2012 GLOBAL SUSTAINABLE INVESTMENT REVIEW. Available online at http://www.gsi-alliance.org/wp-content/uploads/2017/03/GSIR_Review2016.F.pdf.

Green Finance Initiative/City of London Corporation (2016): Globalising green finance: the UK as an international hub.

High-Level Expert Group on Sustainable Finance (2017): Financing a sustainable European economy. Interim Report.

IDFC (2015): IDFC Green Finance Mapping for 2014.

International Finance Corporation (2017): Sustainable Banking Network – Guidance from SBN Members. Available online at http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/company-resources/sustainable-finance/sbn_guidancefrommembers, checked on 8/1/2017.

JRC; IES (2011): Analysis of Existing Environmental Footprint Methodologies for Products and Organizations: Recommendations, Rationale, and Alignment. Joint Research Centre, Institute for Environment and Sustainability. Available online at <http://ec.europa.eu/environment/eussd/pdf/Deliverable.pdf>.

Kahlenborn, Walter; Dierks, Hauke; Wendler, Daniel; Keitel, Matthias (2010): Climate protection through capital investments. Effects of climate and sustainability funds on German stock corporations. Study Commissioned by: German Federal Ministry of Environmental Affairs, Nature Conservation and Reactor Safety. adelphi consult. Berlin.

Kahlenborn, Walter; Klumb, Jan; Interviews, Eduard (2001): Neue Impulse durch Ökologische Geldanlagen. Bericht zum Umweltnutzen von ökologischen Geldanlagen. Umfrage zu ökologischen Aspekten der privaten Altersvorsorge. German Federal Environmental Agency Texte 36/01. Berlin.

Kraus, Alan; Heinkel, Robert; Zechner, Josef (2001): The Effect of Green Investment on Corporate Behavior. In: Journal of Financial and Quantitative Analysis, 36(4), 431 - 449.

Network for Business Sustainability (2011): Measuring and valuing environmental impacts. An Introductory Guide.

Novethic (2012): Green Funds - A sluggish market. Available online at http://www.novethic.com/fileadmin/user_upload/tx_ausynovethicetudes/pdf_complets/green_funds_2012.pdf.

Novethic (2017): The European green funds market. Available online at http://www.novethic.fr/fileadmin/user_upload/tx_ausynovethicetudes/pdf_syntheses/Green-funds-study-Novethic-Ademe-2017.pdf.

OECD (2012): Defining and Measuring Green Investments: Implications for Institutional Investors' Asset Allocations.

oekom research (2013): Der Einfluss nachhaltiger Kapitalanlagen auf Unternehmen.

oekom research (2017): Impact Studie - Einfluss des nachhaltigen Investments auf Unternehmen – eine empirische Analyse. Available online at http://oekom-research.com/homepage/german/oekom-Impact-Studie%202017_DE.pdf.

People's Bank of China (2015): The People's Bank of China Announcement No. 39 [2015]. Available online at <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/PBOC-Announcement-No-39-2015.pdf>, checked on 8/4/2017.

PWC (2015): Shareholder activism - Who, what, when, and how? Available online at <https://www.pwc.com/us/en/governance-insights-center/publications/assets/pwc-shareholder-activism-full-report.pdf>.

Science for Environment Policy 2016 (2016): Environmental impact investment. Future Brief 16. Produced for the European Commission DG Environment by the Science Communication Unit, UWE, Bristol. Available online at <http://ec.europa.eu/science-environment-policy>.

Sustainable Banking Network; IFC (2016): Greening the Banking System - Experiences from the Sustainable Banking Network (Input Paper for the G20 Green Finance Study Group).

Smith School of Enterprise and Environment (2013): Stranded assets and the fossil fuel divestment campaign: what does divestment mean for the valuation of fossil fuel assets? Available online at <http://www.smithschool.ox.ac.uk/publications/reports/SAP-divestment-report-final.pdf>

Sustainable Development Solutions Network, Bertelsmann Stiftung (2017): SDG Index and Dashboards Report 2017: Global Responsibilities. Available online at <http://sdgindex.org/assets/files/2017/2017-SDG-Index-and-Dashboards-Report--full.pdf>
UNCTAD (2014): World Investment Report 2014. Investing in the SDGs: An Action Plan. Available online at http://unctad.org/en/PublicationsLibrary/wir2014_en.pdf.

UNEP Inquiry (2016a): DEFINITIONS AND CONCEPTS - Background Note.

UNEP Inquiry (2016b): Measuring Progress on Green Finance - Findings from a Survey.

UNEP Inquiry (2017): Green Finance Progress Report.

US SIF (2016): The Impact of Sustainable and Responsible Investment. Available online at http://www.ussif.org/files/Publications/USSIF_ImpactofSRI_FINAL.pdf.

Vanwalleghem, Dieter (2013): The real effects of socially responsible investing: Disagreement on the doing well while doing good hypothesis and the cost of capital. Available online at https://faculty.wharton.upenn.edu/wp-content/uploads/2014/10/Vanwalleghem_The-real-effects-of-socially-responsible-investing_1.pdf.

Wagemans, Frank A.J.; van Koppen, C.S.A. (Kris); Mol, Arthur P.J. (2012): The effectiveness of socially responsible investment: a review. *Journal of Integrative Environmental Sciences* Volume 10, 2013, Pages 235-252. Available online at <http://www.tandfonline.com/doi/abs/10.1080/1943815X.2013.844169>.

WWF (2017): EUROPEAN ASSET OWNERS: 2°C ALIGNMENT AND MISALIGNMENT OF PUBLIC EQUITY PORTFOLIOS.

ZSW (2016): Assessment of environmental and social impacts of the "KfW Renewable Energies Programme - Standard" for the year 2014. Evaluation commissioned by KfW Group, Summary Results. Zentrum für Sonnenenergie- und Wasserstoff-Forschung. Available online at https://www.kfw.de/PDF/Download-Center/Konzernthemen/Research/PDF-Dokumente-alle-Evaluationen/Evaluation_Summary_KfW_RE-Standard_2014.pdf.

Other documents

ADB (2013): Environment Operational Directions 2013–2020, Promoting Transitions to Green Growth in Asia and the Pacific, <https://www.adb.org/sites/default/files/institutional-document/33869/environment-operational-directions-2013-2020.pdf>

ADB: Green Bond Framework, <https://www.adb.org/sites/default/files/adb-green-bonds-framework.pdf>

AFD: SUNREF, AFD's Green Finance Label https://www.sunref.org/wp-content/uploads/2015/11/AFD_3_volets_SUNREF_VA_v01.pdf

AfDB, EIB, IFC, World Bank (2015): Green Bonds - Working Towards a Harmonized Framework for Impact Reporting, https://www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/Green_Bonds_-_Working_Towards_a_Harmonized_Framework_for_Impact_Reporting_-_March_2015.pdf

AfDB: Objectives, <https://www.afdb.org/en/about-us/mission-strategy/objectives/>

Asian Development Bank: Green Bond Framework, <https://www.adb.org/sites/default/files/adb-green-bonds-framework.pdf>

Barclays MSCI (2014): Barclays MSCI Green Bond Indices https://www.msci.com/eqb/methodology/meth_docs/Barclays_MSCI_Green_Bond_Indices.pdf

Borsa Italiana (2017): ExtraMOT Market Rules, http://www.borsaitaliana.it/borsaitaliana/regolamenti/extramot/rules20170313.en_pdf.htm

CICERO (2015): Second Opinion on KfW's Green Bond Framework, <https://www.kfw.de/PDF/Investor-Relations/Pdf-Dokumente-Investor-Relations/Second-Opinion-04072014.pdf>

CICERO (2016): Framework for CICERO's 'Second Opinions' on Green Bond Investments, <http://cicero.oslo.no/file/2/CICERO%20Second%20Opinion%20Framework%20280416.pdf/download>

Climate Bonds Initiative: Climate Bonds Standard, Version 2.1, https://www.climatebonds.net/files/files/Climate%20Bonds%20Standard%20v2_1%20-%20January_2017.pdf

EIB (2015): Common Principles for Climate Mitigation Finance Tracking (Version 2 – 15th June 2015), http://www.eib.org/attachments/documents/mdb_idfc_mitigation_common_principles_en.pdf

EIB: Climate and environment for everyone's future, <http://www.eib.org/projects/priorities/climate-and-environment/index.htm>

European Commission (2017): Shareholders' rights directive Q&A, http://europa.eu/rapid/press-release_MEMO-17-592_en.htm

European Union (2013): General Union Environment Action Programme to 2020 'Living well, within the limits of our planet', <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013D1386&from=EN>

Eurosif: Transparency Code, <https://www.eurosif.org/transparency-code/>

Financial Reporting Council (2012): The UK Stewardship Code, [https://frc.org.uk/getattachment/d67933f9-ca38-4233-b603-3d24b2f62c5f/UK-Stewardship-Code-\(September-2012\).pdf](https://frc.org.uk/getattachment/d67933f9-ca38-4233-b603-3d24b2f62c5f/UK-Stewardship-Code-(September-2012).pdf)

Financial Times (August 2017): Green bond funds struggle to put capital to work, <https://www.ft.com/content/5ffab26e-72f1-11e7-93ff-99f383b09ff9>

Forschungsgruppe Ethisch-Ökologisches Rating: Frankfurt-Hohenheimer Leitfaden, <http://www.ethisch-oekologisches-rating.org/veroeffentlichungen/frankfurt-hohenheimer-leitfaden>

French Ministry of Environment, Energy and the Sea: TEEC Label, Criteria guidelines, https://www.ecologique-solidaire.gouv.fr/sites/default/files/Label_TEEC_Criteria%20Guidelines.pdf

FTSE Russel: FTSE Environmental Markets Methodology, http://www.ftse.com/products/downloads/FTSE_Environmental_Markets_Classification_System.pdf

Fund Eco Market: Style Name: Environmentally themed, <http://www.fundecomarket.co.uk/help/sri-styles-directory/environmental>

Global Impact Investing Network: IRIS Data Brief: Focus on Impact Objectives, <https://iris.thegiin.org/research/iris-data-brief-focus-on-impact-objectives/summary>

Green Finance Committee: China Green Bond Endorsed Project Catalogue (2015 Edition), <http://www.greenfinance.org.cn/displaynews.php?cid=79&id=468>

Green Investment Group (2017): Green Investment Policy, <http://greeninvestmentgroup.com/media/185861/gig-green-investment-policy.pdf>

Green Investment Group (2017): Our Green Investment Principles, http://greeninvestmentgroup.com/media/180097/giggreen-investment-principles-817_01.pdf

HM Treasury, Department for Business, Energy & Industrial Strategy (2017): UK government launches plan to accelerate growth of green finance, <https://www.gov.uk/government/news/uk-government-launches-plan-to-accelerate-growth-of-green-finance>

ICMA (2017): The Green Bond Principles 2017, <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/GreenBondsBrochure-JUNE2017.pdf>

IDB (2016): Evaluation of IDB's Group Work Through Financial Intermediaries: Green Lending, <https://publications.iadb.org/bitstream/handle/11319/7540/Evaluation-of-IDB-Groups-Work-through-Financial-Intermediaries-Green-Lending-Background-Report.pdf?sequence=1>

IFC: IFC's Green Bonds Process, http://www.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/about+ifc_new/ifc+governance/investor+relations/ifc+green+bonds+process

IFC: Sustainable Banking Network – Guidance From SBN Members, http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/company-resources/sustainable-finance/sbn_guidancefrommembers

International Standards Organisation: Green bonds - Environmental performance of nominated projects and assets, <https://www.iso.org/standard/43254.html>

International Standards Organisation: New Work Item Proposal: Green Finance - Assessment of Green Financial Projects, <https://share.ansi.org/Shared%20Documents/News%20and%20Publications/Links%20Within%20Stories/ISO%20NWIP%20Assessment%20of%20Green%20Financial%20Projects.pdf>

ISO 14046: Environmental management -- Water footprint -- Principles, requirements and guidelines, <https://www.iso.org/standard/43263.html>

KfW: KfW Green Bond Portfolio, <https://www.kfw.de/nachhaltigkeit/KfW-Konzern/Nachhaltigkeit/Nachhaltige-Unternehmensprozesse/Nachhaltiges-Investment/KfW-Green-Bond-Portfolio/>

Luxembourg Green Exchange, <https://www.bourse.lu/lgx>

LuxFLAG: Green Bond Label, <https://www.luxflag.org/labels/green-bond/>

LuxFLAG: LuxFLAG Climate Finance Label, Eligibility Criteria, https://www.luxflag.org/media/pdf/criteria_procedures/LuxFLAG_Climate_Finance_Label_Eligibility_Criteria.pdf

LuxFLAG: LuxFLAG Environment Label, Eligibility Criteria, https://www.luxflag.org/media/pdf/criteria_procedures/ENV--Label-Eligibility-Criteria-16062016.pdf

Ministry of Environment, Energy and the Sea: TEEC Label – Control and Monitoring Plan Guidelines, https://www.ecologique-solidaire.gouv.fr/sites/default/files/Label_TEEC_Control%20and%20Monitoring%20Plan%20Guidelines.pdf

NASDAQ (2015): NASDAQ SUSTAINABLE BOND LIST, http://business.nasdaq.com/media/sustainable-bonds_tcm5044-17903.pdf

Nordic Investment Bank (2014): NIB Environmental Bond Framework https://www.nib.int/filebank/a/1410449130/c14f001e548bdeef346b853a6cd82c2a/3986-NEB_Framework.pdf

Novethic : NOVETHIC GREEN FUND LABEL, Rules of procedure 2015, http://www.novethic.com/fileadmin/user_upload/tx_ausynovethicfondssocietes/documents/Rules-of-procedures-Green-Fund-Novethic.pdf

Principles for Responsible Investment, https://www.unpri.org/download_report/3847; The Equator Principles – June 2013, http://www.equator-principles.com/resources/equator_principles_III.pdf

Rijksdienst voor Ondernemend Nederland: Projectcategorieën Regeling groenprojecten, <https://www.rvo.nl/subsidies-regelingen/regeling-groenprojecten/projectcategorie%C3%ABn>

S&P Global Ratings (2017): S&P Global Ratings Green Evaluation: Time to Turn Over a New Leaf?, <https://www.spratings.com/documents/20184/1481001/Green+Evaluation/bbcd37ba-7b4f-4bf9-a980-d04aceffa6b>

Science Based Targets Initiative: About the Science Based Targets Initiative, <http://sciencebasedtargets.org/about-the-science-based-targets-initiative/>

See Vierra, Stephanie (2016): Green Building Standards And Certification Systems:
<https://www.wbdg.org/resources/green-building-standards-and-certification-systems>

Sustainalytics (2017): Banco De Comercio Exterior De Colombia (Bancoldex) - Green Bond Framework,
http://www.bancoldex.com/documentos/9984_Bancoldex_Green_Bond_Second_Opinion.pdf

Sustainalytics (2017): Renovate America Green Bond - Hero Green Bond Framework,
http://www.sustainalytics.com/wp-content/uploads/2017/04/RA-Framework_Second-Opinion_HERO-Green-Bond.pdf

Task for on Climate-Related Financial Disclosures, <https://www.fsb-tcf.org/about/>

US Department of Energy: Qualified Energy Conservation Bonds,
<https://energy.gov/eere/slsc/qualified-energy-conservation-bonds>; US Department of Energy: New Clean Renewable Energy Bonds <https://energy.gov/eere/slsc/new-clean-renewable-energy-bonds>

World Benchmarking Alliance: Corporate Sustainability Performance,
<https://www.worldbenchmarkingalliance.org/wba/>

