Testing Draft EU Ecolabel Criteria on UCITS equity funds

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List of Abbreviations

AIF	Alternative Investments Funds
AIFM	Alternative Investment Fund Managers Directive
AUM	Assets under Management
CAPEX	Capital Expenditure
CO2	Carbon Dioxide
COM	European Commission
DG FISMA	Directorate-General for Financial Stability, Financial Services and Capital Markets
DNSH	Do No Significant Harm
EEA	European Economic Area
EFTA	European Free Trading Association
ESG	Environmental, Social and Governance
ETF	Exchange Traded Fund
EU	European Union
EU Action Plan	EU Action Plan on Financing Sustainable Growth
EU-ETS	European Union Emission Trading System
EV	Earned Value
FNG	Forum Nachhaltige Geldanlagen
gCO2e/kWh	Gram Carbon Dioxide Equivalent per Kilowatt Hour
GHG	Greenhouse Gas
HLEG	High-Level Expert Group on Sustainable Finance
HQT	Hard Qualitative Threshold
ISO	International Organization for Standardization
JRC	Joint Research Centre
MF	Mutual Funds
NACE	Statistical Classification of Economic Activities in the European Community (Nomenclature statistique des activités économiques dans la Communauté européenne)
NAICS	North American Industry Classification System
OPEX	Operational Expenditure
PRIIP	Packaged Retail and Insurance-based Investment Products
PV	Photovoltaics
QT	Quantitative Threshold
SDGs	Sustainable Development Goals
SIC	Standard Industrial Classification
SQT	Soft Qualitative Threshold
TCFD	Taskforce on Climate-related Financial Disclosure
tCO2e/t	Tonnes of Carbon Dioxide Emissions
TEG	Technical Expert Group on Sustainable Finance
TNA	Total Net Assets
TR	Thomson Reuters
TRBC	Thomson Reuters Business Classification
TSC	Technical Screening Criteria
UCITS	Undertakings for Collective Investments in Transferable Securities
UN	United Nations

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Abstract (EN)

The objective of this study is to carry out a test run in relation to the draft EU Ecolabel criteria for financial products and in particular to test the application of draft criterion I for equity funds to a sample of 101 "green" UCITS equity funds domiciled in the EU27. Focused on the EU environmental objective "climate change mitigation", we analyse the share of EU Taxonomy aligned revenues of these funds' constituents and hence provide insights into the potential qualification of the equity funds under draft criterion I. The results show that from the sample, only three "green" UCITS equity funds qualify under draft Ecolabel criterion I. This finding is driven by two main factors. First, a lack of relevant data disclosed by the constituents of the "green" UCITS equity funds, and second, the (as of yet) limited scope of the EU Taxonomy, which has so far only been defined for a subset of economic sectors. Disclosure obligations under the EU Taxonomy and the Non-Financial Reporting Directive will help address data gaps (at least for large and publicly listed EU companies), while the expansion of the EU Taxonomy to other environmental objectives will enlarge the universe of potentially EU Taxonomy eligible economic activities.

We gratefully acknowledge support provided by JRC. In particular, we acknowledge support provided by Roberto Panzica (JRC Ispra) for screening the MSCI ESG database.

Abstract (FR)

L'objectif de cette étude est d'effectuer un test en relation avec le projet Critère 1 de l'Écolabel européen pour les produits financiers et, en particulier, de tester l'application du projet Critère I pour les fonds d'actions à un échantillon de 101 fonds d'actions d'OPCVM "verts" domiciliés dans l'UE27. Centrés sur l'objectif environnemental de l'Union Européen d'atténuation du changement climatique", nous analysons la part des revenus alignés sur la taxonomie de l'UE des constituants de ces fonds et donnons ainsi un aperçu de la qualification potentielle des fonds d'actions au titre du projet Critère I. Les résultats montrent que, sur l'échantillon, seuls trois fonds d'actions d'OPCVM "verts" sont qualifiés au titre du projet Critère I du label écologique. Cela résulte d'un manque de données pertinentes divulguées par les constituants des fonds d'actions "verts" d'OPCVM, mais aussi du champ d'application (encore) limité de la taxonomie de l'UE, qui n'a été définie jusqu'à présent que pour un sous-ensemble de secteurs économiques. Les obligations de divulgation de données ESG prévues par la directive sur l'information non financière contribueront à combler les lacunes en matière de données (au moins pour les grandes sociétés européennes et les sociétés cotées en bourse), tandis que l'extension de la taxonomie européenne à d'autres objectifs environnementaux élargira l'univers des activités économiques potentiellement éligibles à la taxonomie européenne.

1. INTRODUCTION

The EU takes a leading role in transforming the financial system to align with the goals of the Paris Climate Accord and the United Nations (UN) Sustainable Development Goals (SDGs). In this respect, the European Commission adopted its Action Plan on Financing Sustainable Growth (EU Action Plan). Two components of the Action Plan are highly relevant to this study: first, the development of the EU Ecolabel, which should be extended to financial products to increase access to sustainable financial products by retail investors (Action 2), and second, the development of the EU Taxonomy, which defines what constitutes environmentally sustainable economic activities (Action 1).

The objective of this study is to support the work of the European Commission services involved in developing EU Ecolabel criteria[1] for financial products. In particular, the study serves as a test run for the Draft Criterion I "Investment in green economic activities" for UCITS equity funds of the upcoming EU Ecolabel for financial products. In this study, Draft Criterion I is tested on a sample of 101 "green" UCITS equity funds, domiciled in the EU27. The analysis of this sample provides an excellent basis for understanding both the feasibility and involved challenges of applying Draft Criterion I in practice.

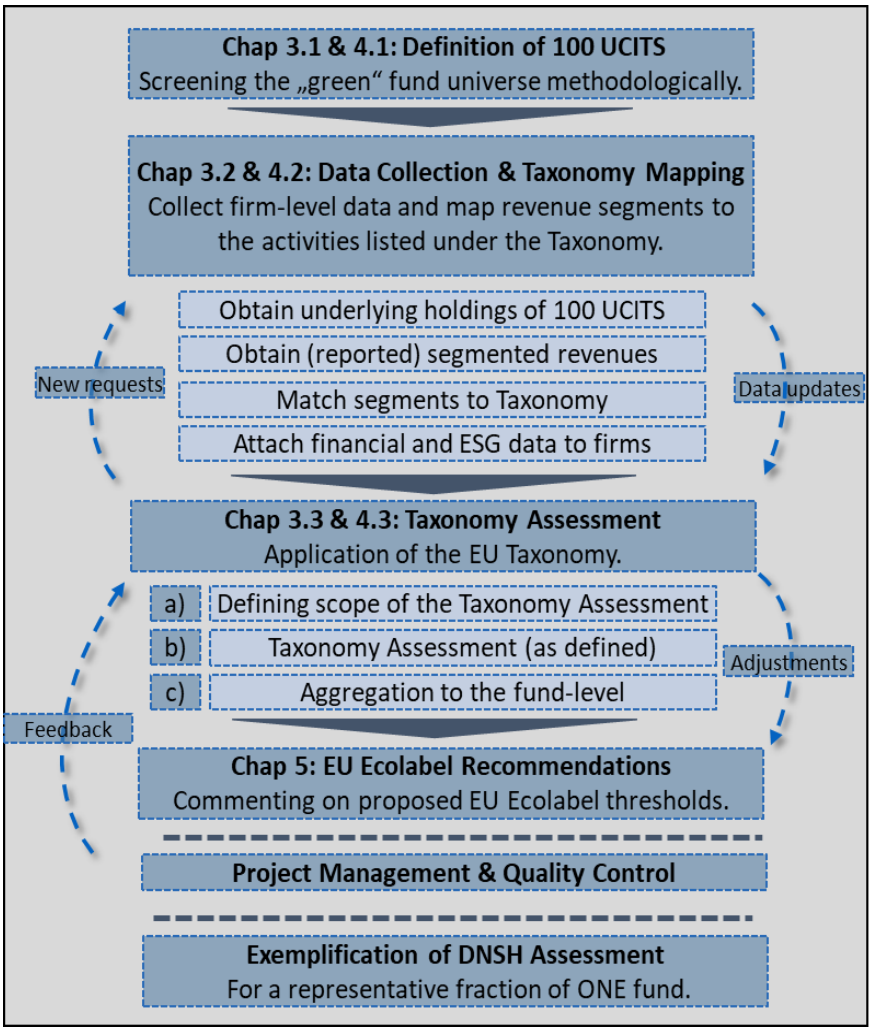
As specified in the tender[2], the study tests the feasibility of the application of Draft Criterion I of the upcoming EU Ecolabel for financial products to marketed UCITS equity funds. As Draft Criterion I builds on the EU Taxonomy, the analysis requires an in-depth assessment of the economic activities of all underlying constituents of the "green" UCITS equity funds to determine whether their share of "green" (i.e. EU Taxonomy-aligned) economic activities is sufficient to qualify for the EU Ecolabel by satisfying the thresholds as set out by Draft Criterion I. Specifically, this study only assesses economic activities in regards to their substantial contribution to the environmental objective climate change mitigation.

The purpose of this thorough investigation is to understand whether Draft Criterion I strikes an appropriate balance between promoting environmental excellence of financial products and allowing the best-in class existing financial products to be eligible under the upcoming EU Ecolabel. The study identifies key challenges such as data availability issues and a lack of disaggregated disclosure that must be considered in the final stages of developing the EU Ecolabel for financial products. Such hurdles are expected to be reduced when large EU-based companies are required to report in accordance with the EU Taxonomy form 31 December 2021. There is the need to understand the level of EU Taxonomy compliance before that date to adjust and re-calibrate Draft Criterion I to allow the finalisation of Criterion I to be carried out with the appropriate degree of rigor and reliability.

This study is structured as follows. **Chapter 2** provides additional background information on the EU Ecolabel for financial products and the EU Taxonomy. **Chapter 3** describes the methodological steps and **Chapter 4** presents corresponding results. *First*, the analysis screens the universe of "green" funds to derive a final sample of 101 UCITS equity funds and obtain reported revenue segments for all underlying constituents (section 3.1). *Second*, the study links the revenue segments to the activities defined by the EU Taxonomy and clusters their respective screening criteria to determine the scope of the assessment against the backdrop of data restrictions (section 3.2 & 4.2). *Third*, having established a revenue mapping the EU Taxonomy-aligned share for each constituent is as far as possible derived (section 3.3 & 4.3). Afterwards, the funds are assessed against their compliance with Draft Criterion I in **Chapter 5**. Since insufficient company disclosure did not allow a complete evaluation of the Taxonomy's screening criteria, the study conducts a scenario analysis. **Chapter 6** concludes and provides policy suggestions.

1 JRC. Development of EU Ecolabel criteria for Retail Financial Products. Technical Report 2.0: Draft proposal for the product scope and criteria. (link).
2 https://ec.europa.eu/info/tender/191129-ecolabel-ucits-equity-funds_en

Figure 1 - Structure of the study



Source: Own elaboration.

2. BACKGROUND

The development of the upcoming EU Ecolabel for financial products is part of a larger effort by the EU towards driving and promoting the objectives of the EU sustainable finance strategy, as outlined in the EU Action Plan (link). This chapter introduces key aspects of the EU Ecolabel and the EU Taxonomy, both highly relevant for the Draft Criterion I of the upcoming EU Ecolabel for financial products.

2.1. The EU Ecolabel

As part of the EU Action Plan (Action 2.3), the Commission aims to expand the EU Ecolabel, which currently exists for various goods and services, to financial products. Through this, the Commission aims to increase both transparency on environmental performance and the accessibility of "green" financial products for a broader range of stakeholders.

The EU Ecolabel, which signals environmental excellence, was established in 1992 by the European Commission. The label is awarded to products and services that meet high environmental standards throughout their lifecycle, including the materials of products, the production, distribution and disposal. Additionally, it provides crucial guidelines for companies wishing to decrease their environmental impact.

Labelling of "green" or "environmentally focused" financial products has increased over the last years. The Commission refers to various studies that indicate a retail investors' growing demand for this type of information as investors aim to include ESG considerations in their investment decisions. Such labelling schemes have been in use at national and international level for years: the German

FNG label was launched in 2015 while other existing labels at national level include the Austrian Ecolabel, Greenfin, Nordic Swan Ecolabel, and LUXflag Climate Finance (see brief overview in Table 1 below). They can be particularly useful for retail investors enabling them to invest according to their sustainability preferences. The EU Action Plan however rightly pointed out the lack of an EU-wide environmental label for financial products. The upcoming EU Ecolabel for financial products will serve as a new, EU-wide label, and will thus elevate market transparency and enhance consumer choice. Expanding the EU Ecolabel to financial products is furthermore linked to relevant existing EU regulation such as the UCITS[3] and the AIFM Directives[4], the Non-Financial Reporting Directive (NFRD)[5] and the PRIIP regulation[6].

Table 1 - Overview over the relevant national Green- or ESG-related fund labels

Label	Labelling body	Purpose of the label (according to the website)

FNG Label (Germany)	FNG (QNG - Qualitäts-sicherungs-gesellschaft Nachhaltiger Geldanlagen mbH)	"One of the core tasks of the FNG is to further develop and continuously improve quality standards for sustainable investment products in order to ensure the quality of sustainable investments."
		
		The criteria underlying the FNG label are structured as follows:
		• Minimum requirements:
		  ○ Exclusions
		  ○ Sustainability coverage
		  ○ Transparency
		• Stage model:
		  ○ Institutional credibility
		  ○ Product standards
		  ○ Impact

Austrian Ecolabel	Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology	The Austrian ecolabel assesses whether an investment fund qualifies for an award in the following sectors: • climate, • water, and • renewable energy and environmental technologies. The Ecolabel is built around three main pillars: • Positive environmental and social performance, • Qualification and integrity of auditors, • Transparency.
Greenfin (France)	Novethic supported by Ministère de la Transition écologique et solidaire	"Its creation has been guided by a desire to promote "green" funds in order to further steer savings towards energy and ecological transition and the fight against climate change, either by drawing attention to existing investment funds or by giving rise to the creation of such funds. It is a guarantee, for investors and individual savers in particular, of the quality and transparency of the environmental characteristics of the funds distinguished in this way and of their contribution to the energy and ecological transition and the fight against climate change. As a public label, the Greenfin Label must be ambitious. In addition, although covered by French legal standards, this label can be applied to financial funds from other countries in the European Union or non-member countries. The Criteria Guidelines centres on the following concepts: • Eligibility criteria in terms of scope; • Pillars – Label criteria; • Definition of the activities falling within the scope of the energy and ecological transition and the fight against climate change; • Strict and partial exclusions;

3 https://www.esma.europa.eu/databases-library/interactive-single-rulebook/ucits
4 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32011L0061
5 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014L0095
6 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014R1286

		• Requirements for the use of derivative instruments within the framework of Greenfin management."
Nordic Swan Ecolabel	Nordic Ecolabelling	"The Nordic Swan Ecolabel provides consumers with guidance about investment funds that have taken on a role and function in influencing companies and capital markets to act in a more sustainable way. Everything that a Nordic Swan Ecolabelled fund must attain - the exclusion of unsustainable companies, the inclusion of more sustainable companies and acting in a transparent manner - is undertaken to encourage companies and capital markets to act more sustainably in the long run. A Nordic Swan Ecolabelled investment fund has to comply with requirements within three areas: • Exclusions • Inclusion • Transparency & Ownership"
LUXflag Climate Finance (Luxembourg)	LUXflag	"The primary objective of the LuxFLAG Climate Finance Label is to reassure investors that the Investment Product invests at least 75% of total assets in investments related, with a clear and direct link, to mitigation and/or adaptation of climate change or cross-cutting activities." Criteria for eligibility are: • Focus (i.e. the 75% benchmark) • Transparency • Monitoring • ESG • Exclusion • Fund objective • Legal structure • Regulatory framework

JRC's second technical report "Development of EU Ecolabel criteria for Retail Financial Products Technical Report 2.0: Draft proposal for the product scope and criteria" includes a draft version of the proposed six criteria:

- Criterion I: Investment in green economic activities
- Criterion II: Exclusions based on environmental aspects
- Criterion III: Social and governance aspects
- Criterion IV: Engagement
- Criterion V: Retail investor information
- Criterion VI: Information appearing on the EU Ecolabel

JRC will revise its technical report and present the final criteria to the EU Ecolabelling board. The revised criteria are then to define the minimum level of environmental performance of this product group, based on the requirements of the EU Ecolabel Regulation 66/2010.

2.2. The EU Taxonomy

The EU Taxonomy is a central element of the EU's goal to promote sustainable finance. It specifies to what extent certain economic activities can be deemed environmentally sustainable. As such, the EU Taxonomy will be used by regulators on EU and national level as well as by any financial market participant offering environmentally sustainable financial products.

With the establishment of the EU Taxonomy, the European Commission aims to address, inter alia, the following challenges:

- A lack of clarity on what can be considered an environmentally sustainable economic activity for investment purposes makes it costly for investors to identify truly sustainable investment opportunities, which impedes faster scaling of "green" investment.
- In the absence of any binding guidelines on what constitutes "green" financial products, there is a risk of greenwashing and inefficient capital allocation

Against this backdrop, the legislative proposal requires an environmentally sustainable economic activity to fulfil the following requirements:

- Contribute substantially to at least one of the six environmental objectives set by the Commission, as demonstrated in Figure 2;
- Do not significantly harm any of the other environmental objectives;
- Comply with a number of minimum social and governance safeguards;
- Comply with quantitative or qualitative Technical Screening Criteria.

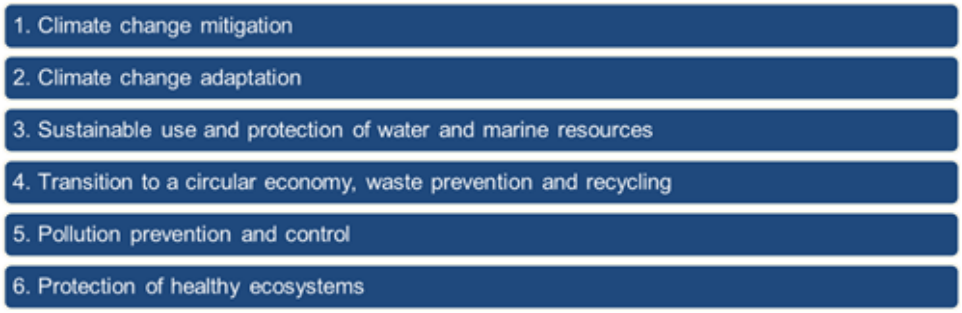
Nomenclature EU Taxonomy

EU Taxonomy eligibility: an economic activity could potentially fall under the EU Taxonomy due to its industry classification

EU Taxonomy alignment: an economic activity meets the substantial contribution technical criteria as set out in the technical annex to the EU Taxonomy Report by the TEG

EU Taxonomy compliance: an economic activity meets all criteria as set out in the technical annex to the EU Taxonomy Report by the TEG

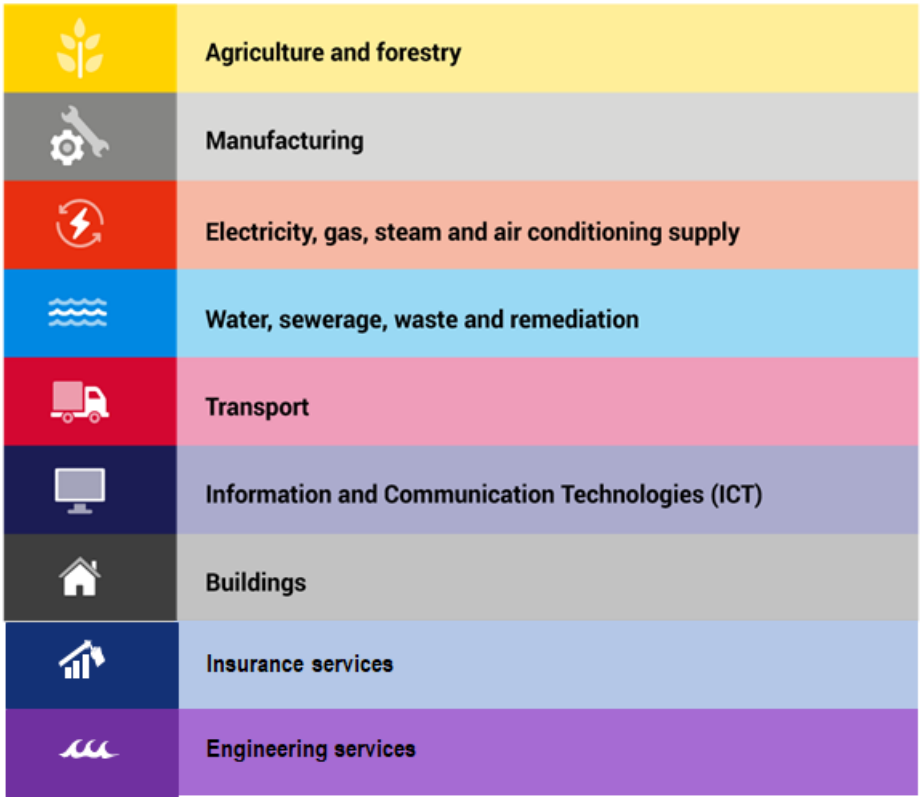
Figure 2 - Six environmental objectives outlined in the EU Taxonomy proposal



Source: Own elaboration based on the EU Taxonomy Regulation.

The Technical Expert Group on Sustainable Finance (TEG) supports the Commission among other aspects with the development of the Technical Screening Criteria (TSC) for each of the environmental objectives. The TEG published its final EU Taxonomy Technical Report on 9 March 2020, which further elaborates on the Technical Screening Criteria and provides additional guidance for their application. In the report, the TEG proposes criteria for the first two of the six environmental objectives, i.e. climate change mitigation and climate change adaptation. The following sectors are considered in the EU Taxonomy (Figure 3).

Figure 3 - Economic Sectors covered by the EU Taxonomy



Source: TEG elaborations from final EU Taxonomy report presentation, 9 March 2020.

Climate Change Mitigation

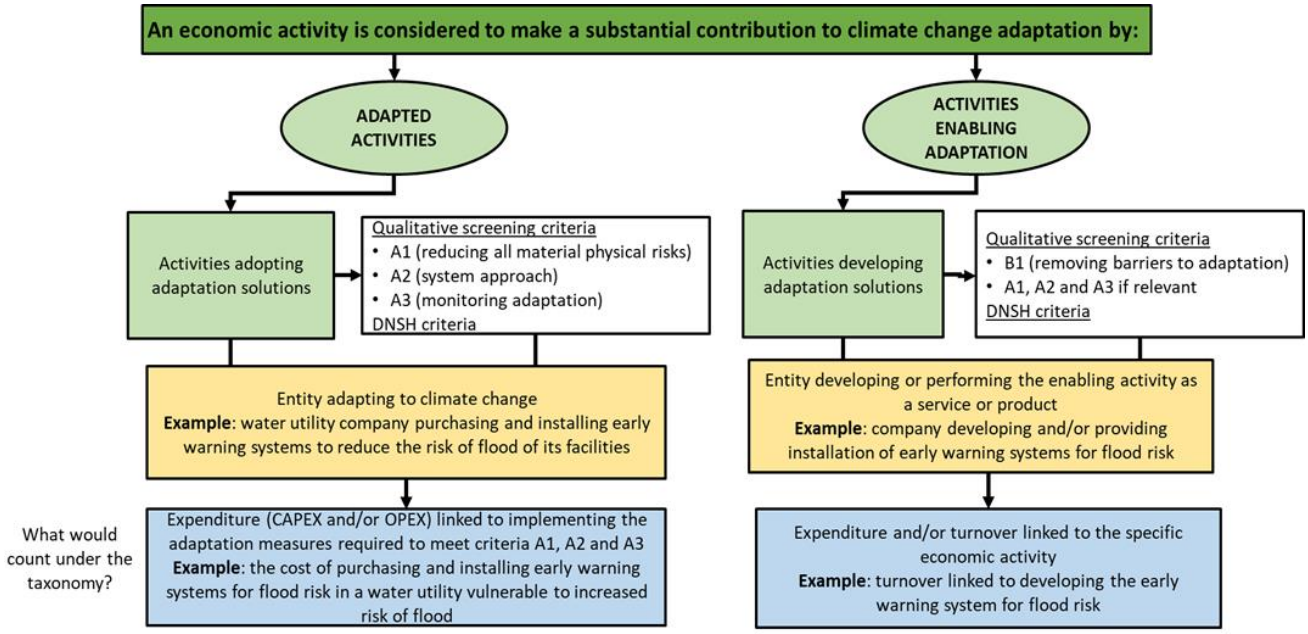
To develop Technical Screening Criteria for mitigation, the TEG first identified priority sectors based on the "*Nomenclature statistique des activités économiques dans la Communauté européenne*" (NACE). Then, the TEG identified and defined activities within these sectors that substantially contribute to the environmental objective of climate change mitigation. The developed technical screening criteria have two main components:

- Principles: Underlying rational for contribution and/or avoidance of harm
- Metrics and Thresholds: Methods of measurement and respective boundary and qualitative or quantitative conditions that must be met

Climate Change Adaptation

In recognition of the context- and location-specific nature of climate change adaptation activities, the development of an exhaustive list of eligible activities is limited. Thus, the TEG suggests a set of guiding principles and qualitative Technical Screening Criteria to assess the potential contribution of an economic activity to climate change adaptation. The TEG has created Do No Significant Harm (DNSH) criteria for the 68 adaptation criteria. Similar to the 'greening of´ and `greening by' approach in the case of climate change mitigation activities as illustrated above, the following distinction is made (Figure 4):

Figure 4 - EU Taxonomy Approach towards Climate Adaptation



Source: TEG elaborations from final report presentation, 9 March 2020.

2.3. Objectives

The overall objective of this study is to support the JRC and European Commission Services in their task of developing Draft Criterion I for an EU Ecolabel for financial products that will increase transparency of such products to (retail) investors and support the flow of investments to environmentally sustainable economic activities. This study intends to test Draft Criterion I on a sample of 101 UCITS equity funds, either labelled as "green" or having a "green" theme.

A thorough analysis of the sample aims to understand the specific challenges arising from applying the Draft Criterion I to financial products. The study aims to evaluate where adjustments and recalibrations to the proposed Draft Criterion I may be taken into consideration, including the respective benchmarks and sectoral scopes. In line with the tender specifications and the underlying rationale, this study intends to support the Commission in finding the right balance between promoting environmental excellence of financial products and allowing for a meaningful proportion of existing (green) financial products to satisfy the criteria of the upcoming EU Ecolabel for financial products.

In a first step, the availability of required data in the appropriate quality is evaluated. As only a fraction of companies discloses the data required for the analysis, estimates on a range of both financial and non-financial firm-level variables are necessary. Hence, the study broadens the strict scope of the assessment as defined in the tender specifications by including the additional (explicit) objective of testing different methodological approaches to address the data-related challenges of applying the Draft Criterion I for financial products.

3. METHODOLOGY

3.1. Definition of the sample

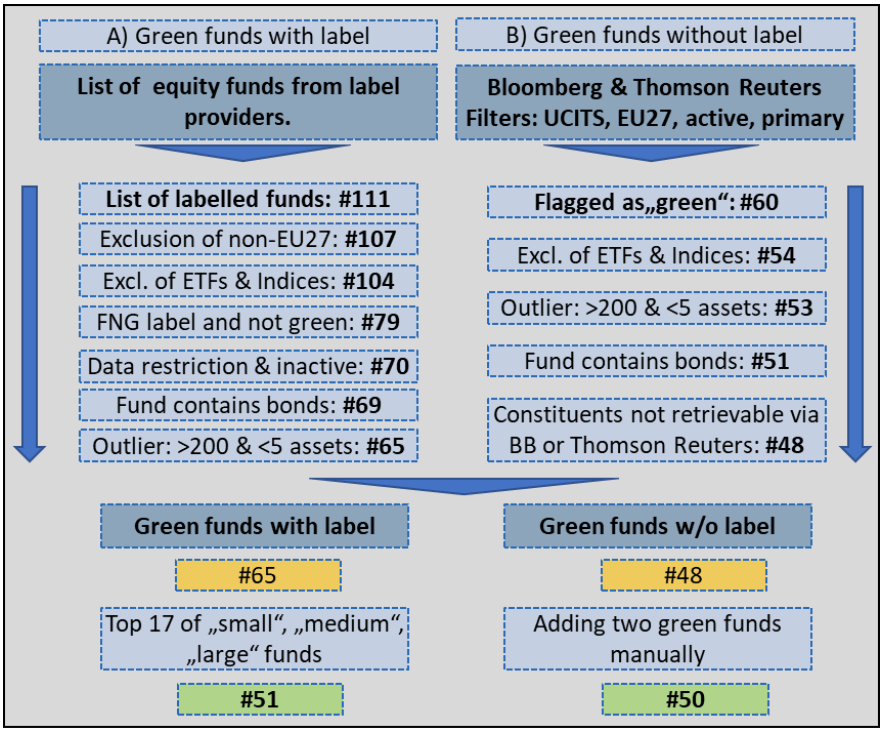
In order to test the proposed Draft Criterion I of the EU Ecolabel for financial products, a sample of "green" UCITS equity funds, domiciled in the EU27 was defined. To ensure a representative data set, the sample comprises two categories:[7]

A. **Category A – Green funds with (eco)label:** approximately 50 "green" UCITS equity funds already awarded one of the following national (eco)labels: Austrian Eco Label (Umweltzeichen), FNG-Siegel, Greenfin, Luxflag Climate Finance and Nordic Swan.

B. **Category B – Green funds without (eco)label:** approximately 50 "green" UCITS equity funds without a national (eco)label.

The funds with national labels (category A) are taken from a list of all UCITS equity funds that received one of the labels mentioned above[8]. Since the FNG label is the only label among the six that is primarily "sustainable" and not exclusively "green" (i.e. not explicitly focused on environmental performance), fund prospectuses and fund names of FNG-labelled funds were screened manually. Following, only funds labelled by the FNG with an explicit focus on environmental performance were included. Additional exclusion criteria were applied as stated in Figure 5. Furthermore, nine funds from category A were excluded due to the unavailability of their constituents from neither Bloomberg nor Thomson Reuters.

Figure 5 - Defining the sample of 100 UCITS equity funds



Source: Own elaboration.

For the selection of funds marketed as green but without a national label (category B), the entire fund universe available in Bloomberg and Thomson Reuters was assessed according to four specific criteria: i) the fund is active; ii) the fund is domiciled in the EU27; iii) the fund's share class is

7 In line with the tender specifications (link), all UCITS equity funds are domiciled in the EU 27 with at least one fund domiciled in Austria, Denmark, France, Germany, Ireland, Luxembourg and Sweden.

8 The list consisted of 125 equity funds. 14 received two labels and were mentioned twice (= 111). 4 are domiciled in non-EU27 countries (=107). 3 are ETFs (=104). 25 are FNG-labelled but not explicitly green (=79). For 8 funds underlying assets could not be retrieved in both databases (=71). 4 were excluded in the outlier-treatment with >200 or <5 constituents (=67). 1 is inactive as of today (=66) and another contained a share of bonds, although it was labelled a pure equity fund (=65).

designated as "primary" [9]; and iv) the fund is designated with at least one of the attributes "clean energy", "climate change" and "green" by either Bloomberg or Thomson Reuters. This approach resulted in a list of 60 funds designated with green attributes by Bloomberg and Thomson Reuters. In the next step, funds that are not actively managed, those holdings bonds (i.e. funds that were mistakenly designated as "equity funds" in the databases), those with more than 200[10] or less than 5 constituents (deemed outliers in terms of the number of constituents since the mean number of constituents is 55.7), and those with constituents not retrievable from Bloomberg and Thomson Reuters were excluded from. The distribution of constituents across the sample is presented in Table 2 below.

Following the steps outlined in Figure 5, a list of 65 green funds in category A and 48 in category B was obtained from a universe of 113 green UCITS equity funds. Although this number may seem low considering other sources[11], it is nonetheless justified given the narrow definition of "green" and the explicit exclusion of UCITS equity funds related to "sustainable" or "ESG".[12] To reach a balanced sample, the 65 funds of category A were divided into three groups *small*, *medium* and *large*, based on the funds' Total Net Assets (TNA). Following, the top 17 funds of each group were chosen, resulting in 51 labelled green funds. For category B, two green UCITS equity funds were manually added, given their name and fund prospectus.[13]

Finally, the resulting sample of 101 funds was screened to ensure this sample included at least one fund for each of the countries required: Austria, Denmark, France, Germany, Ireland, Luxembourg and Sweden (see Table 16). A list of all funds included in the final sample is provided in Table 15 of Annex V.

Sample Description

Following the methodology described above, a sample of 101 UCITS equity funds was obtained; 51 of them have at least one national label and another 50 are marketed as green funds without a label.

This results in a list of 1831 distinct companies, in which these funds are invested.[14] As shown in Table 2 approx. 30% (i.e. 519 companies) of these companies are part of both, labelled and non-labelled funds. Conversely, around 70% of these unique companies are either part of the labelled funds (i.e. 749 companies) or the non-labelled funds (i.e. 563 companies).

Table 2 - Distribution of constituents by sub-samples

	Frequency	Total Share of Companies (%)
Part of Labelled & Non-Labelled Funds	519	28.35
Labelled funds only	749	40.91
Non-Labelled funds only	563	30.75
Total	1831	100

Source: Own elaboration.

To evaluate the regional composition of the sample, the share of Total Net Assets (TNA) invested in six geographical regions (i.e. Africa, America, Asia, EU 27, Europe non-EU 27 and Oceania) was calculated according to the constituents' headquarters. Table 3 summarizes the geographical distribution of the funds' TNA. Comparing labelled vs. non-labelled funds, the former subgroup invests almost 50 % of its share in Europe, which could be driven by the fact that only European labelling schemes are considered. The non-labelled funds have a higher share in North and South America.

9 Some funds are launched in different categories (e.g. only for retail investors or only for institutional investors, different currencies). This means that multiple versions of a fund exist with the same holdings. Data providers therefore distinguish between the first version of the fund that was launched (i.e. "primary") and the following versions.
10 E.g. the Russell Investments Global Low Carbon Equity Fund has 973 holdings and would bloat our firm-level analysis.
11 Bloomberg, for instance, has identified 421 UCITS equity funds currently marketed as green or sustainable. (Source: JRC 2019. Technical Report 2.0: Draft proposal for the product scope and criteria; Section 2.4.2). Our experience has confirmed the higher number of "sustainable" or "ESG" funds.
12 The study focusses on « green » related funds instead of « sustainable » and « ESG » funds as the objective was to test Draft Criterion I (i.e. investment in green economic activities) of the EU Ecolabel.
13 Namely, we added i) SEB Finlandia Optimized Low Carbon (MF) and ii) THEAM Quant - Equity Europe Climate Care.
14 In order to provide comparability, all relevant funds- and company-level data (e.g. the fund holdings and their corresponding weights or reported company revenue segments) are based on the values of March 5th, 2020.

Table 3 - Geographical Distribution of Funds TNA

TNA share (%) invested in…	All Funds (#101)	Labelled (#51)	Non-Labelled (#50)
Africa	0.47	0.86	0.08
(North & South) America	37.54	34.89	40.24
Asia	15.16	13.98	16.37
EU 27	33.39	35.92	30.82
Europe (non-EU27)	11.54	12.87	10.18
Oceania	0.79	0.69	0.89
N/A	0.17	0.18	0.16
Cash	0.94	0.62	1.26
Total	100	100	100

Source: Own elaboration.

The last section of this chapter describes the sectoral distribution of all constituents according to the NACE nomenclature[15] and the respective share of TNA. The NACE code, obtained from the Thomson Reuters database, refers to the primary turnover segment of each company. More than 43% (i.e. 795 companies) of all companies generate their primary turnover from activities assigned to NACE-section C (i.e. *manufacturing*). This corresponds to an average weight of 52.3% of a fund's TNA. In descending order, 8.4% of TNA are invested in *information and communications* (NACE section J) and 7% in *electricity, gas, steam and air conditioning* (NACE section D). Although these numbers imply that the economic (macro) sector itself is covered by the EU Taxonomy, it does not mean that all economic activities falling under, for example *manufacturing*, are EU Taxonomy-eligible (e.g. Adidas, NACE code 15.20, "Manufacturing of footwear"). These non-eligible TNA shares - in combination with the 518 companies, or 18.9% of the average TNA share, under a NACE section not yet covered by the EU Taxonomy (i.e. NACE-sector A, E, F, H, L resp.[16]) – will restrict the analysis as EU Taxonomy-alignment (i.e. "green") cannot be evaluated. A detailed overview is provided in Table 4 below.

Table 4 - Distribution of TNA by NACE sectors

NACE-Sector	Description	No. of Companies	% of Companies	Avg. TNA (%)[17]	Labelled (#51)	Non-Labelled (#50)
A	Agriculture, Forestry and Fishing	8	0.44	0.17	0.16	0.18
C	Manufacturing	795	43.42	52.31	48.13	56.58
D	Electricity, Gas, Steam and Air Conditioning	92	5.02	6.98	3.70	10.32
E	Water Supply, Sewerage, Waste Management and Remediation Activities	39	2.13	4.23	2.98	5.51
F	Construction	67	3.66	2.52	1.97	3.08
H	Transportation and Storage	49	2.68	1.86	2.12	1.60
J	Information and Communication	147	8.03	8.44	11.05	5.78
L	Real Estate Activities	116	6.34	3.72	4.84	2.58
Rest	Not yet covered by the Taxonomy	518	28.29	18.83	24.42	13.12

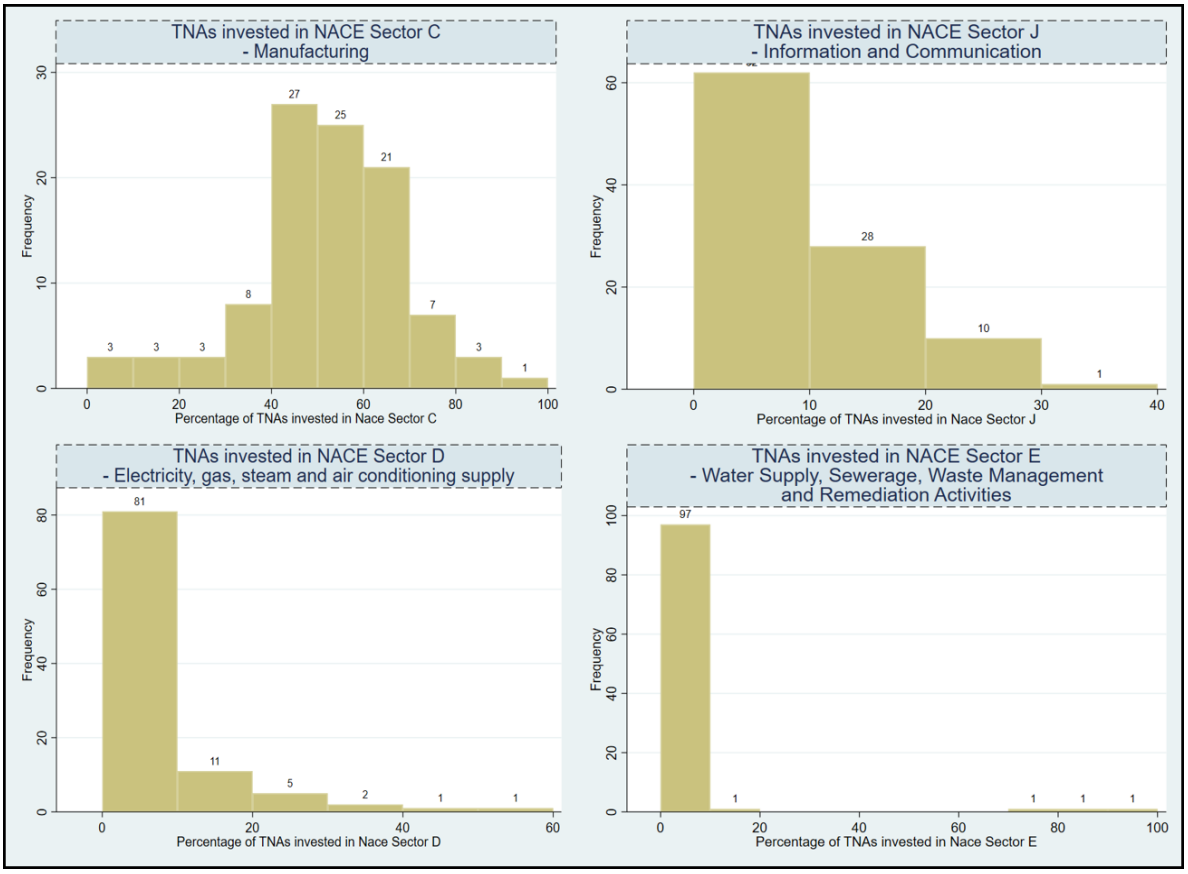
15 The NACE Code, obtained from the Thomson Reuters database, refers to the primary segment of the specific company. Unfortunately, the reported NACE-Code classification for each company is not necessarily equal to the primary revenue segment the companies report.
16 Within the group of sectors not yet covered by the taxonomy, the largest proportion of TNA is invested in sector K "Financial and Insurance Activities" (7.75%), G "Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles" (3.44 %) and M "Professional, Scientific and Technical Activities"(2.04%).
17 The methodology used to calculate the average weight of TNA that are invested in each NACE-sector is the same methodology described in the previous section.

NACE-Sector	Description	No. of Companies	% of Companies	Avg. TNA (%)	Labelled (#51)	Non-Labelled (#50)
Cash				0.94	0.62	1.26
Total		1831	100	100	100	100

Source: Own elaboration.

While Table 4 summarises statistics for the entire sample and subsamples, it is also worth to explore the distribution of the sectoral compositions across all funds. Figure 6 examines the distribution of TNA invested in *manufacturing* (upper left), *information and communication* (upper right), *electricity, gas, stream and air conditioning* (lower left) or *water supply, sewerage, waste management and remediation activities* (lower right) companies. 73 funds in the sample invest between 40% and 70% in *manufacturing* companies. The other NACE sections present right-skewed distributions. Investments in *electricity, gas, stream and air conditioning* are generally low (i.e. 81 funds with less than 10%) but relatively high in a handful of thematic renewable energy funds.

Figure 6 - Distribution of TNA invested in four (macro) sectors (C, D, J, E)



Source: Own elaboration.

Companies that fall under the NFRD

Approximately 6,000+ companies in the EU fall under the NFRD, meaning they already have to abide to stricter disclosure obligations and will be further required to disclose information regarding their economic activities' alignment and compliance with the EU Taxonomy on climate change mitigation and climate change adaptation.[18] Therefore, it is worth having a closer look at their share in the sample. Even though different rules apply in a few EU member states, this study uses "number of employees > 500" and "company is headquartered in the EU27" as a NFRD proxy. Table 5 presents the mean and median of constituents per fund and the companies that fall under the NFRD. In comparison to funds without a label, labelled funds (i.e. those with a higher share invested in EU27, see Table 3) have more companies falling under the NFRD (20.27% vs. 12.78% on average) in their portfolio and also have a higher TNA share invested (33.6% vs. 27.25%).

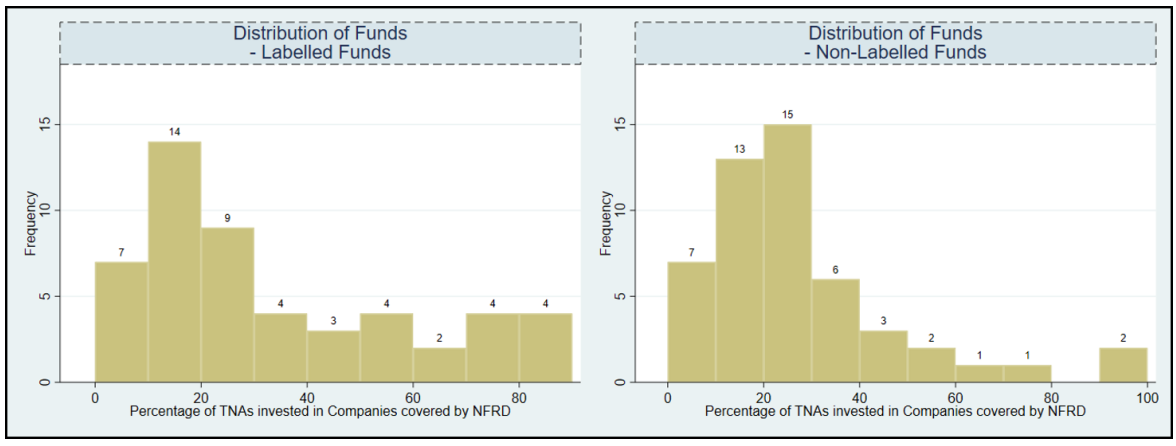
Table 5 - Average constituents per fund

	Entire Universe (#115)	Sample (#101)	Labelled (#51)	Non-Labelled (#50)
Companies (Mean)	54.48	54.19	57.18	51.14
Companies (Median)	50.00	51.00	55.00	50.00
Companies under NFRD (Mean)	16.93	16.56	20.27	12.78
TNA in Companies under NFRD (Mean)	31.71%	30.46%	33.60%	27.25%

Source: Own elaboration.

Complementing the summary statistics in the table above, Figure 7 presents the distribution of TNA invested in companies under the NFRD across all funds.

Figure 7 - Distribution of TNA invested in companies falling under NFRD



Source: Own elaboration.

3.2. Mapping of Revenue Segments to the Taxonomy Activities[19]

To assess the degree of EU Taxonomy eligibility (i.e. economic activities covered by the EU Taxonomy) and potential EU Taxonomy alignment (i.e. economic activity is eligible and complies with the EU Taxonomy's Technical Screening Criteria for substantial contribution to climate change mitigation) of each fund according to the proposed Draft Criterion I of the EU Ecolabel for financial products, the share of green turnover of each underlying company must be determined. Hence, one

18 The EU Taxonomy includes six environmental objectives, as stated earlier. To this date, specific criteria have been defined for only two of them, namely climate change mitigation and climate change adaptation. Since the TEG understands climate change mitigation objectives to be consistent with the commitments under the EU Green Deal and due to the explicit focus of this study on climate change mitigation, this study refers to the part of the EU Taxonomy for substantial contribution to climate change mitigation whenever "EU Taxonomy" is mentioned.

19 Note for clarification : Taxonomy MAPPING is not to be confused with Taxonomy ASSESSMENT. This subchapter solely describes the methodology of MAPPING revenue segment (i.e. economic activities) to activities of taxonomy relevance.

needs to link companies' economic activities (i.e. reported turnover segments) accurately to the activities described in the EU Taxonomy before one can start labelling turnover segments as "green".

To determine the green turnover share according to the EU Taxonomy, firm-level turnover segments obtained from Thomson Reuters[20] were used. As part of an accurate data preparation, one needs to match the given turnover segments for each company with the economic activities in the NACE nomenclature system[21], which builds the bridge to the EU Taxonomy.

The NACE code system is the statistical classification of economic activities in the European Community. It consists of a four-digit classification framework in order to accumulate and present statistical data on productive economic activities, breaking down the economic activities into sections (alphabetical code), divisions (two-digit code), groups (three-digit code) and classes (four-digit code).

Thomson Reuters provides "sales" data for up to ten product segments[22], with sales being defined as "*the total revenue from the product line*". The obtained segments are clustered i) according to the company's own description and ii) according to the Standard Industry Classification System (SIC), which has been replaced by the North American Industry Classification System (NAICS) in 1997 but is still used for company reporting and by data providers. Therefore, in the absence of company data reported under the EU Taxonomy, the challenge is to link SIC via NAICS to NACE, and then, ultimately, to the corresponding activities under the EU Taxonomy.

Before this procedure is explained in more detail, the current data situation provides a simplification used in this study. In the databases, each firm is classified by *one* single NACE and Thomson Reuters Business Classification (TRBC) code, which captures the firm's *primary* activity. As the sales reported in the first segment represent per default the largest share among all segments, the primary share for $company\ i$ and segments j (j = 1,…,10) is defined as:

$$PrimaryShare_i = \frac{Sales_{i,1}}{\sum_1^{10} Sales_{i,j}}$$

After mapping the industry classification codes, the share of the company's primary activity was recalibrated, given that the activity falls under the EU Taxonomy, and added to the share of other segments for which the mapping routine yields the same activity. This may be the case if a company reports sales of a certain activity for different regions in the sales segments. This procedure allows a smoother data processing as it reduces the number of activities that need to be assessed. Expressed more formally, the primary share of the economic activity j under the EU Taxonomy for $company\ i$ is derived from sales in segment 1 and all other segments that can be linked to the same activity j.

$$PrimaryShare_i = \frac{Sales_{i,1} + \sum_2^{10} Sales_{i,j}}{\sum_1^{10} Sales_{i,j}}$$

After the primary activity has been classified, a SIC-to-NAICS-to-NACE-to-EU Taxonomy mapping was conducted for all other segments that are not captured by the primary activity. For this routine, a correspondence table linking SIC codes to EU Taxonomy activities was created, which comes with the following challenges:

a) Since an immediate SIC to NACE conversion table does not exist, we relied on a SIC to NAICS, and second, a NAICS to NACE correspondence table.

b) It is evident that this mapping can be ambiguous for certain activities. Due to the different structures of the classification systems, certain SIC codes, which are a starting point for identifying economic activities' revenue shares correspond with several and not one unique

20 Thomson Reuters was used here due to its better usability. However, firm-level revenue segments are identical in Thomson Reuters and Bloomberg according to a manual comparison of a handful of companies.

21 https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Statistical_classification_of_economic_activities_in_the_European_Community_(NACE).

22 If a company has more than ten product segments, all remaining segments are included in product segment #10. However, this is rarely the case.

NAICS codes. For the second mapping step of the procedure, certain NAICS codes correspond with several NACE codes.

c) To reduce the ambiguity, a table displays all 73 Taxonomy activities and their respective NACE codes (see Annex I), which allows for the following simplifications:

   i. if one SIC code can be mapped to, for example, three different NACE codes, but all NACE codes unambiguously refer to the same EU Taxonomy activity, the mapping routine is unambiguous;

   ii. if one SIC code can be mapped to, for example, three different NACE codes, but all NACE codes do not fall under the EU Taxonomy, an unambiguous result for the purpose of the analysis was retrieved as this SIC code does not fall or is not eligible under the EU Taxonomy;

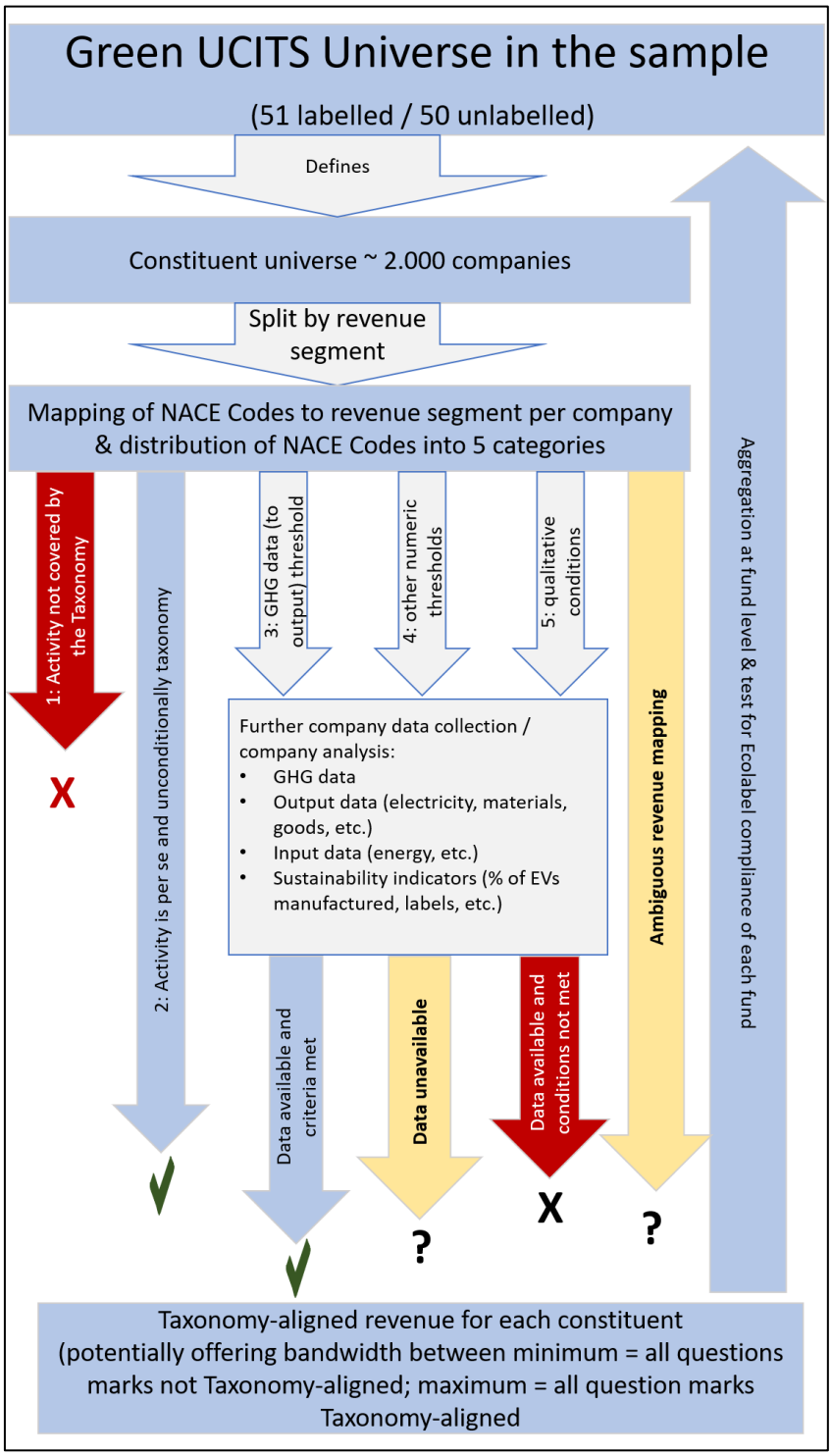
   iii. if the mapping remains ambiguous, manual research was undertaken whether or not a clear assignment is feasible within the budget and time constraints of this project. All remaining SIC codes are not verifiable, considering the project's limited budget and duration.

This complex exercise is illustrated in Annex IV and presents the "default option". However, further workarounds were implemented in case of data restrictions (e.g. missing NACE code for some companies) and manual research was carried out in case it was feasible. All "further steps" are listed at the end of Annex IV.

3.3. Assessment of EU Taxonomy compliant activities

Clustering of the EU Taxonomy Activities

Figure 8 - Analytical approach to determining EU Taxonomy eligibility and compliance



Source: Own elaboration.

The activities from the EU Taxonomy relevant for climate change mitigation can be mapped to NACE sections A-J (excl. B, G, I) (i.e. *agriculture, forestry and fishing; manufacturing; electricity, gas, steam and air conditioning supply; water supply, sewerage, waste management and remediation activities; construction, real estate activities; transportation and storage; information and communication*).

In order to map the activities according to NACE with the EU Taxonomy activities, the observed NACE activities were analysed using the following classification categories:

0. Ambiguous mapping
1. Activity is not covered by the EU Taxonomy
2. Activity is per se and unconditionally EU Taxonomy compliant
3. Activity is evaluated against a GHG intensity threshold[23]
4. Activity is evaluated against another numeric threshold
5. Activity is evaluated against qualitative criteria

Category 0 "Ambiguous mapping". This category captures all economic activities for which the mapping routine (see section 3.2) did not yield an unambiguous result. The economic activity could fall under the EU Taxonomy (but several activities are possible) or it is not covered (but it is not certain)[24].

Category 1 "Activity is not covered by the EU Taxonomy, i.e. not eligible" covers all activities of the NACE code system that are not mentioned in the EU Taxonomy to this date. While activities such as "raising of dairy cattle" are part of the EU Taxonomy, "marine aquaculture" is not. This is particularly relevant for sectors such as pharmaceuticals, which represent a large share of many green funds, but are not covered by the EU Taxonomy under its current focus on substantial contribution in terms of climate change mitigation and adaptation.

Category 2 "Activity is per se and unconditionally EU Taxonomy-compliant" shows all activities in the NACE code system that are EU Taxonomy-compliant without the additional requirement to meet thresholds or that are currently derogated from thresholds. This includes for example "production of electricity", which is partly derogated as low carbon/ renewable energy sources tend to perform below the given threshold of 100 gCO_2e/kWh of electricity produced nearly all the time.[25] Access to more granular company data would allow to classify more activities into this category such as but not limited to some waste activities.

Category 3 "Activity is evaluated against a GHG data intensity threshold (generally GHG emissions/ output)" includes all NACE activities that need to fulfil GHG data thresholds in order to be EU Taxonomy aligned. GHG data thresholds are in most cases compared to an output variable such as tonnes of iron produces. For example, "manufacturing of other inorganic chemicals" requires a maximum GHG emission per unit of products (tCO_2e/t) according to the methodology of the EU-ETS benchmarks to be aligned with the EU Taxonomy. Electricity generation from liquid fossil fuels falls under this category as well.

Category 4 "Activity is evaluated against another numeric threshold" classifies all NACE activities that achieve EU Taxonomy alignment through non-GHG numeric thresholds. This includes for instance "casting of iron" where no threshold is applicable if at least 90% of the final product is sourced from scrap steel. For this activity, two non-GHG input variables are required, namely total steel input material and total scrap steel used.

Category 5 "Activity is evaluated against qualitative criteria" shows all NACE activities that need to demonstrate EU Taxonomy alignment under qualitative/ non-numerical thresholds or conditions. This category includes, for instance, check-the-box tests such as the existence of a certain forestry management plan in the forestry EU Taxonomy criteria.

Annex I present makes the classification of EU Taxonomy activities transparent and assigns one (or several) categories to each activity. In case multiple categories applied, the bold category (see Annex I) was used which present the dominant metric.

23 In general, this threshold is calculated as follow: GHG emissions/output.
24 The illustration in Annex IV makes it clear.
25 Category 2 does only apply to the production of electricity / heat / co-generation as all other potential fields of application do not allow for an outside assessment of whether revenues are purely dedicated to category 2 activities. For the production of electricity / heat / co-generation, TRBC does classify revenues in sufficient detail so that e.g. production of electricity from solar PV and production of electricity from gas can be distinguished.

Data availability as a key challenge[26]

Access to adequate data represents the key challenge in the assessment of EU Taxonomy eligibility and alignment of economic activities in this study. Key data challenges were identified and cross-checked with various stakeholders, including various asset managers, ESG data providers, and other experts.

Main data challenges include:

Different levels of disaggregation in turnover data: companies' reporting on their turnover share differs widely in quality and depth. Some companies report just one revenue segment whereas other companies break down their turnover by single economic activities. This may be driven by varying levels of turnover diversification between companies and different granularity of the reporting (requirements). In order to apply the EU Taxonomy in an appropriate manner on economic activities, all companies would need to report turnover at a four-digit NACE level. However, this would not be sufficient for all activities and reporting would need to be even more detailed. For instance, a company that is producing electricity might report at NACE level 35.11 (i.e. *Production of electricity*). However, this does not allow to analyse for eligibility with the EU Taxonomy for economic activities as a further breakdown into production of electricity from gas, solar, wind etc. is required, but is not foreseen in the NACE system.

Data gaps at installation and single activity level: the mandate of the TEG includes the development of the Technical Screening Criteria for the EU Taxonomy with a single activity or installation perspective. Here a bottom-up analysis to check for eligibility with the EU Taxonomy is pursued (i.e. using data from the installation or the single activity). Current reporting by companies does not allow testing the criteria at the installation and single activity level. The only viable option is the utilisation of company level data from databases. However, this does not allow for a comprehensive top-down application of the methodological approach as suggested in the TEG usability guidance.

For categories 3 to 5, the availability of relevant data is scarce. The classification of EU Taxonomy-aligned economic activities as performed in the section above is already hinting at the key challenge of data availability for categories 3 to 5. What the initial research shows is that the matching of turnover data to emissions data or other input and output data is quite challenging (i.e. as would be required for evaluating economic activities falling into categories 3 and 4). At the level of qualitative condition (category 5), data availability is even more challenging.

Time lag in databases: Reporting of EU Taxonomy-relevant data is not up to date. Companies tend to report annual data usually in the first or second quarter of the following year. Thus, several months lay between company reporting and data availability in databases such as Thomson Reuters and Bloomberg. Therefore, data available in databases is usually at least one year old and therefore does not necessarily reflect the level of EU Taxonomy eligibility of 2020 but rather of 2018.

Bridging data gaps through estimation models

In the framework of this study, the attempt to estimate CO_2-emission data for non-disclosing companies to evaluate EU Taxonomy alignment was undertaken. This applies at least for screening criteria related to carbon intensities for manufacturing companies already today.

In line with the existent literature (e.g. Griffin, 2017)[27] and our own experience with modelling emissions estimates, a model estimating CO_2 scope 1 emissions for 915 non-disclosing companies was built (out of 1831 distinct companies in the sample).[28]

For this approach, the estimation model on European time-series data covering 2010-2018 was trained and CO_2 scope 1 emission data for non-disclosing companies based on the following covariates was estimated, including total revenue, cost of goods sold, long term debt, total assets,

26 One again we gratefully acknowledge support provided by Roberto Panzica (JRC Ispra) for screening the MSCI ESG database.
27 Griffin, P. A., Lont, D. H., & Sun, E. Y. (2017). The relevance to investors of greenhouse gas emission disclosures. Contemporary Accounting Research, 34(2), 1265-1297.
28 N.B : While is it firmly outside the scope of this study to develop fully fledged estimation methods, we do however want to go beyond just the available, disclosed data, to be able to derive at least order of magnitude estimates to guide the further work of DG ENV, DG FISMA and the JRC on the EU Ecolabel.

capital expenditure, depreciation expense and property plant equipment net (see Annex III – Data Sources).

$$\ln(CO2\_Scope1_{i,t}) = \beta_0 + \beta_1 \ln(REV_{i,t}) + \beta_2 \ln(CAPEX_{i,t}) + \beta_3 \ln(PPEDP_{i,t}) + \beta_4 \ln(IntanAssets_{i,t}) + \beta_5 GMAR_{i,t} + \beta_6 LEV_{i,t} + \sum_{k=1}^{n} \gamma_k Sector_{k,i,t,} + \varepsilon_{i,t}$$

CO2_Scope1	*CO2 Scope 1 emissions per company*
REV	*revenue as reported by company*
CAPEX.....	*capital expenditure*
PPEDP	*property, plant, equipment net divided by depreciation expense*
IntanAssets...	*intangible assets*
GMAR.....	*gross margin [defined as (1- cost_of_goods_sold / REV)]*
LEV.....	*leverage ratio [defined as long_term_debt/total_assets]*
Sector.....	*sector fixed effects at 4-digit level (i.e. NACE-4)*

The purpose of this exercise was to make an evaluation of EU Taxonomy activities, mainly falling under category 3, possible if CO2 emissions are not disclosed.

Effects on the scope of the analysis – Introduction of different scenarios

Findings from the application of the envisaged methodology show that a full assessment of compliance with the EU Taxonomy is not possible at current reporting levels. As the EU Taxonomy's Technical Screening Criteria are very detailed, one is not in a position to evaluate all of them adequately at this stage as outlined in the data-related challenges above. Therefore, the following three scenarios about compliance of funds' constituents' activities with the EU Taxonomy[29] are introduced: (i) a *baseline assessment*, which sticks as closely as possible to the EU Taxonomy's screening criteria; (ii) a *baseline plus scenario,* which evaluates the non-verifiable share of the baseline assessment with reasonable assumptions and proxies; and (iii) a *MSCI proxy scenario,* which solely relies on green revenue estimates on company-level by a reliable data provider.

The *baseline assessment* suggests the undertaking of best efforts to estimate the range in which the EU Taxonomy could potentially apply to companies' activities. This entails:

- identifying non-EU Taxonomy eligible activities (i.e. category 1), which results that this activity cannot be green.
- focusing on economic activities in categories 2 to 4. Economic activities falling under category 5 will only be covered partially.
- if an evaluation is not possible due to data restrictions (e.g. "tonnes of produced cement" not available for a cement producing company), the share of these activities is clustered as "not verifiable".

T*he baseline plus assessment* slightly differs from the EU Taxonomy's definition of "green" in order to rate the "non-verifiable" share of the baseline assessment as EU Taxonomy aligned or not aligned while taking reasonable assumptions or relying on proxies. In most instances, green revenue estimates by MSCI ESG serve as proxies for revenue derived from green activities. The full methodology is presented in Annex II.

The *MSCI proxy scenario* solely relies on green revenues per company estimates from MSCI ESG and goes beyond a strict evaluation of the EU Taxonomy climate mitigation criteria. It serves as a quality check and delivers results if a broader definition of "green" is applied, as the EU Taxonomy's definition of green is stricter than what is currently used by data providers. This scenario solely relies on the MSCI variable "CT_TOTAL_MAX_REV" (see Annex III), which aggregates the (estimated) green revenue derived from the sum of five environmental themes (alternative energy, energy efficiency, green building, pollution prevention, sustainable water).

29 Important to remember also at this point that the EU Taxonomy, in terms of activities' substantial contribution, has only yet been elaborated by the Technical Expert Group, for climate action (adaptation and mitigation). In this study we are, accordingly, focussing on testing the application and applicability of ecolabel criterion I to equity funds and their underlying assets in relation to climate change mitigation only!

4. DATA ANALYSIS

4.1. Mapping of economic activities: the distribution of EU Taxonomy activities

Mapping the obtained revenue segments as described in section 3.2, one retrieves mapping results for the companies' primary segments (i.e. a NACE four-digit code as a starting point) and the remaining segments 2 to 10 (i.e. SIC codes as a starting point)[30]. The resulting numbers are presented in Table 6 below. Results are weighted according to the company's weight in the sample and the revenue-share of the economic activity within the company. For example, if Tesla's weight across the entire sample equals 1% and its second revenue-segment, classified as category 5 (see section 3.3), accounts for 20% of its revenue, Tesla's second revenue-segment would contribute with 0.2% to the respective cell under category 5 "Activity is evaluated against qualitative criteria".

Table 6 - Clustering of Revenue Segments

Revenue-weighted share of activities Category	Entire Sample (#101)			Labelled (#51)			Non-Labelled (#50)		
	Primary (1)	Segments 2-10 (2)	Total (3)	(1)	(2)	(3)	(1)	(2)	(3)
0: Ambiguous Mapping	2.3	11.3	13.7	1.8	10.9	12.7	2.8	11.8	14.6
1: No Taxonomy exposure	50.1	2.6	52.7	57.4	2.5	59.9	42.7	2.6	45.4
2: Per se Green	6.8	0.6	7.4	3.7	0.4	4.1	9.9	0.8	10.7
3: GHG intensities	1.7	0.2	1.9	1.6	0.2	1.8	1.7	0.2	2.0
4: Numeric	2.9	0.0	2.9	3.7	0.0	3.8	2.0	0.0	2.0
5: Qualitative	13.1	2.0	15.0	12.5	1.9	14.4	13.7	2.0	15.7
*Energy Production**	3.9	1.5	5.4	1.9	0.7	2.6	5.9	2.3	8.2
Data restrictions	*No firm data obtained*		0.1			0.1			0.1
	Cash / Currencies		1.0			0.7			1.3
			100			**100**			**100**

***** *Energy production is listed separately since several activities fall under NACE code 35.11 (i.e. "ambiguous mapping"). Nonetheless, an evaluation of energy production activities with the proposed methodology described in section 4.3 is possible.*

Source: Own elaboration.

For the entire sample, the largest share is by far category 1 "Activity not covered by Taxonomy" (52.6%). This large share is partly subject to the study's focus on climate mitigation, whereas an extension of the analysis to the other objectives of the EU Taxonomy (e.g. water or biodiversity) might decrease this share. For 13.7% of the sample, an ambiguous mapping to the Technical Screening Criteria for substantial contribution to climate change mitigation of the EU Taxonomy is obtained. This can be explained since certain SIC or NACE codes may potentially fall under more than one EU Taxonomy activity or because of insufficient reporting (e.g. the SIC Code is defined as "9999", which is not covered by correspondence tables). Without further manual research, it is not possible to evaluate the latter activities.

Activities that fall under "energy production" are listed separately, since the top-down mapping routine yields several possible EU Taxonomy activities for NACE code 35.11 (e.g. production of electricity from solar PV, wind power, ocean energy, among others). An evaluation is nonetheless possible (see sectoral discussion below).

An important limitation is the scope of some EU Taxonomy activities. "Manufacture of low carbon technologies", for instance, yields the highest share among all. This is partly because it corresponds with 13 different NACE codes (see Annex I). This does not mean that every company, identified in the mapping routine, is linked to this activity per se. It solely means that the $revenue\ segment_i$ of $company_j$ falls potentially under this activity. A good example is NACE code 29.10 *Manufacture of motor vehicles* - Tesla would fall under that activity, whereas Renault would not. The same is true for "Data-driven climate change monitoring solutions", linked to nine underlying NACE codes, ranging

30 Again, the link to the EU Taxonomy is based on all activities and corresponding NACE code presented in Annex I.

from *Wired telecommunication activities* (61.10) to *Computer programming activities* (61.01). Determining whether one of them contains "climate change monitoring solutions" requires further research.

From this angle, zooming into categories 2 to 5 (i.e. the economic activities that could potentially be mapped to an EU Taxonomy activity), Table 7 below presents the distribution of possible activities, sorted in descending order by macro sectors. The results from the baseline assessment are already attached and will be explained in the discussion in the next section.

Table 7 - Share of (potentially) identified EU Taxonomy Activities

Sector & Weight *	**EU Taxonomy Activity**	**(Potential) companies***	**Weight[1]**	**Aligned [2]**	**Not aligned[2]**	**Non-verifiable[2]**
		# of distinct companies	*Revenue-weighted share*	*Results Baseline Assessment[2]*		
C 15.4	Manufacture of low carbon technologies*	202	13.20	6.35	0.02	6.86
	Manufacture of other organic basic chemicals	31	1.33	0.00	0.00	1.33
	Manufacture of Iron and Steel	18	0.30	0.01	0.00	0.29
	Manufacture of Biogas or Biofuels	2	0.23	0.00	0.00	0.23
	Manufacture of Cement	11	0.17	0.01	0.05	0.12
	Manufacture of plastics in primary form	1	0.07	0.00	0.00	0.07
	Manufacture of Aluminium	4	0.04	0.00	0.01	0.04
	Manufacture of fertilizers and nitrogen compounds	2	0.02	0.00	0.00	0.02
D 5.6	Energy Production[3]	74	5.36	2.29	0.82	2.25
	Retrofit of Gas Transmission and Distribution Networks	12	0.26	0.00	0.00	0.26
J 4.7	Data-driven climate change monitoring solutions*	126	4.42	0.00	4.42	0.00
	Data processing, hosting and related activities	4	0.26	0.00	0.26	0.00
L 2.9	Acquisition and ownership of buildings	130	2.89	0.00	0.00	2.89
E 1.9	Water collection, treatment and supply	18	1.36	0.00	0.00	1.36
	Separate collection and transport of non-hazardous waste in source segregated fractions	8	0.53	0.53	0.00	0.00
H 0.8	Freight Rail Transport	8	0.35	0.00	0.23	0.11
	Passenger Rail Transport (interurb.)	4	0.22	0.00	0.00	0.22
	Public transport	5	0.10	0.00	0.00	0.10
	Operation for low carbon transport (air)	7	0.07	0.00	0.00	0.07
	Passenger cars and commercial vehicles	4	0.04	0.00	0.00	0.04
	Interurb. scheduled road transport	3	0.03	0.00	0.00	0.03

		Operation for low carbon transport (land)	2	0.03	0.00	0.00	0.03
F	0.2	Construction of new buildings	6	0.13	0.00	0.00	0.13
		Infrastructure for low carbon transport (land transport)	7	0.08	0.00	0.00	0.08
A	0.1	Growing of non-perennial crops	5	0.07	0.00	0.00	0.07
		Livestock production	1	0.01	0.00	0.00	0.01
		Forestry (no findings)	0	0	0	0	0

** Activities marked with "**" are only potentially linked to this activity. See explanations in the text.*
1) the weight of this activity across the entire sample
2) Foreshadowing the results of the baseline assessment. Green = EU Taxonomy aligned based on screening criteria; Brown = not aligned with EU Taxonomy (but an assessment has been done); Grey = no assessment possible.
3) Energy production covers solar, wind, geothermal etc.

Source: Own elaboration.

Thus, the mapping procedure identifies 26 activities in the sampled funds out of the 73 total activities covered by EU Taxonomy. Several activities are captured by "Energy Production" since NACE code 35.11 *Production of electricity* corresponds with twelve EU Taxonomy activities.

4.2. Assessment of compliance with EU Taxonomy screening criteria at sectoral level

Once the revenue segments are successfully mapped to their corresponding EU Taxonomy activities (see Table 7), they need to be evaluated against criteria such as GHG emissions per tonnes of production (category 3), other numeric thresholds such as MWh per tonnes of production (category 4), or various qualitative criteria (category 5).

Given current company reporting, it is simply not possible to evaluate the sometimes complex screening criteria of identified activities. Against this background, the following assessments were undertaken in line with the scenarios introduced in section 3.3:

i. A *baseline assessment*, which sticks as closely as possible to the EU Taxonomy. Activities that cannot be evaluated are clustered as "non-verifiable".

ii. Secondly, a *baseline plus scenario* which moves beyond the strict screening criteria and rates the non-verifiable share of the baseline assessment with reasonable proxies and assumptions. In doing so, more companies can be assigned into one pocket.

iii. Thirdly, a *MSCI proxy scenario* which solely relies on MSCI ESG variables with estimates on the share of green revenue derived from various activities.

In the following, the identified activities of each sector are discussed and presented in the *baseline* and *baseline plus scenario*. The entire discussion and implications for the *baseline* and *baseline plus assessment* are summarized in Annex II.

Forestry and Agriculture

The EU Taxonomy sets out criteria for forestry and agriculture separately. Due to the relatively low weight of both sectors in the sample, findings are presented jointly.

Particularly, two activities are represented in the sample: "Growing of non-perennial crops" and "livestock production". Given the current disclosure by companies in the sample, an assessment of alignment with the Technical Screening Criteria and thresholds is not feasible due to a lack of data and information on the companies in question. For a successful assessment of the screening criteria, the following information or the confirmation of alignment with those would be required:

- Deployment of essential management practices;
- Provision of a clear GHG emissions reductions pathway in line with the recommendations by the TEG;
- Exclusion of business in certain areas.

As a result, agricultural activities are excluded in the *baseline assessment*. In the *baseline plus* and *MSCI proxy scenario*, the MSCI's estimates on the revenue derived from "agricultural goods produced using certified sustainable or organic practices"[31] are used. In case this variable is missing, it is pragmatically assumed that 5% of revenues are derived from EU Taxonomy-aligned activities. The proxy is based on (i) the comparison to the German organic food revenue share[32] in the total food market in 2017 of 5.1%, and (ii) the assumption that the green skewedness of the sample will compensate Germanys' above average consumption of organic food. Considering the lack of data, further analysis on these two sectors would be recommended.

Manufacturing

While the assessment of manufacturing companies is straight-forward and intuitive, data availability presents the main obstacle. The EU Taxonomy defines EU-ETS benchmarks for manufacturing companies. To derive the company's GHG intensity from the production of the good i, data on the produced tonnes output of good i and the CO_2 scope 1 emissions from the production process is required.

$$CO2\ Intensity_i = \frac{CO2\ (production_i)}{Output_i}$$

Where CO_2 scope 1 emissions are unavailable, CO_2 emissions based on the methodology presented in section 3.3 were estimated, given that all financial variables that mimic the production are available. However, the more challenging part is to retrieve the produced tonnes of output of aluminium, cement, or steel. Even after retrieving data from Thomson Reuters and Bloomberg, output data was still missing for the majority of companies.

Thus, in the *baseline assessment*, all activities were evaluated for which CO_2 data (reported or estimated) and production data (reported) is available. The remaining activities were classified as "non-verifiable". In the *baseline plus scenario,* the MSCI proxy on revenue derived from alternative energy or energy efficiency was used to assign the non-verifiable share into "EU Taxonomy aligned" or "not aligned".

Manufacture of low carbon technologies

Furthermore, the mapping routine identified numerous companies that are potentially falling under "Manufacture of low carbon technologies". In total, this activity contributes with 13.2% to the entire sample. This activity is an umbrella term and combines several subgroups with different screening criteria and data requirements (see Table 8 below).

Table 8 - Manufacture of low carbon technologies

	Subgroups	Screening Criteria
(1)	Manufacturing of items essential for renewable energy technologies	Per se green. Requires identification of the activity.
(2)	Manufacture of low-carbon transport vehicles	Tailpipe emissions: g CO2 / km, among others.
(3)	Energy Efficiency Equipment	Product-specific data required (e.g. U value of windows or products with EU Energy Label)
(4)	Manufacture of items resulting in substantial GHG reduction	Third-party carbon footprint assessment.

Source: Own elaboration.

Activities which fall under subgroup (1) due to the mapping routine are identified based on relevant TRBC codes. The identification includes a buzzword screening on turnover segments such as "wind turbine manufacturing" or "solar power projects". Determining the alignment of subgroups (2), (3) and (4) with the EU Taxonomy was obstructed by two aspects. Specifically, a lack of downstream value chain information and a general lack of disclosed data on low carbon vehicles.

For instance, if data on low carbon vehicles (2) is available, then companies usually disclose an aggregated number of total vehicles sold since the vehicles market introduction (e.g. of the Toyota

31 See variable CT_SUST_AG_MAX_REV in Annex III.
32https://www.boelw.de/fileadmin/user_upload/Dokumente/Zahlen_und_Fakten/Brosch%C3%BCre_2018/ZDF_2018_Inhalt_Web_Einzelseiten_kleiner.pdf

Prius) or a rough estimate of average annual sales numbers. Due to this lack of data and the generally low share of low carbon vehicles (e.g. 1.2% of total vehicle sales of Renault), this assessment excluded vehicle manufacturers in the *baseline assessment*. Subgroups (3) and (4) were bot excluded since product-specific data is not easily available in the used databases. In the *baseline plus* and *MSCI proxy assessment*, the sum of (estimated) green revenue derived from green buildings, energy efficiency and alternative energy was used.

This activity's Technical Screening Criteria encompass the manufacturing process of not only low carbon technologies themselves, but also of their respective key components. This significantly impairs the feasibility of a correct assessment of companies supplying manufacturers of renewable technologies (e.g. wind turbines) due to a lack of available downstream value chain information. For example, a company may produce key components for renewable technologies or electric vehicles (e.g. semiconductors, software, etc.), but it is unclear what share of revenue is derived from the sale to such downstream manufacturers, thus making an assessment impossible.

Electricity, Gas, Steam and Air Conditioning Supply

The EU Taxonomy covers production of electricity and heat / cool from solar PV, concentrated solar power (CSP), wind power, ocean energy, hydropower, geothermal, (natural) gas and bioenergy. The screening threshold is currently set at a product carbon footprint of 100 gCO2e/kWh for both production of electricity and production of heat / cool. Solar PV, CSP, wind power, ocean energy and hydropower with a power density above 5 W/m2 are currently derogated from performing any test of this threshold. Since the NACE system only covers the umbrella term "production of electricity", a methodology was developed within the scope of this assessment to approximately determine the proportion of the EU Taxonomy-aligned revenue share while relying on ASSET4-ESG variables on the purchased and produced amount of (renewable) electricity (see Annex III – Data sources). The following methodology applies for companies falling under NACE code 35.11 or 35.14[33]. For those falling under NACE 35.12 and 35.13 a different Taxonomy activity applies ("Transmission and distribution of electricity").

First, the share of energy produced in the company's total supply was calculated. The resulting share was further divided into energy produced from renewable sources and energy produced from fossil fuels. In order to take the share of bioenergy produced into account – for which a threshold applies - the respective country's share of bioenergy produced[34] from the share of generated renewable energy was subtracted. The remaining share of renewable energy produced was used as the share of the EU Taxonomy-aligned revenue of the respective company.

Since data is available for approximately 50% of these companies (i.e. NACE code 35.11 or 35.14), the assessment relies on the TRBC nomenclature of the company's primary activity, when data was not available. Regarding energy production, TRBC differentiates between production of energy using i) renewable energy sources (e.g. Renewable IPP`s), ii) fossil energy sources (e.g. Fossil Fuel IPP`s) and iii) a third group, where no precise information on the energy source is given (e.g. Electric Utilities). In the latter case, the revenue is classified to be in category 4, which indicates that further assessment and data is needed.

For companies with a primary NACE codes that equals 35.12 or 35.13 (i.e. companies that generate the largest proportion of their revenues by transmitting and distributing energy), the following procedure applies. Since the interconnected European System meets the Technical Screening Criteria[35], the underlying revenues were assessed as EU Taxonomy-aligned for all companies with headquarters in the EU27 and the UK. The remaining, non-EU27 based companies were screened manually while taking IRENA[36] data on (renewable) electricity generation and capacity into account.

Since both methodologies provide a satisfying EU Taxonomy screening, no further assumptions are made in the *baseline plus assessment*.

33 Production of electricity (35.11) or Trade of electricity (35.14)
34 https://www.irena.org/Statistics/Download-Data
35 TEG Report p. 238
36 The database of the International Renewable Energy Agency (IRENA) publishes detailed statistics on renewable energy capacity, power generation and renewable energy balances. Data is collected from members using the IRENA Renewable Energy Statistics questionnaire. IRENA provides access to comprehensive and up-to-date renewable energy data.

Water Supply, Sewerage, Waste Management and Remediation Activities

The assessment includes 18 companies with *Water collection, treatment and supply* (NACE 36.00) as primary activity. A manual screening reveals that the majority of companies do neither report (i) the average energy consumption of their water systems, (ii) the decrease of their average energy consumption of water systems, (iii) their Infrastructure Leakage Index (ILI) nor (iv), the required data to determine their ILI, which is required to evaluate the EU Taxonomy's screening criteria[37].

Against this background, all respective activities are categorised as "non-verifiable" in the *baseline assessment*. For the *baseline plus scenario*, MSCI's estimates were used for revenue derived from activities related to "sustainable water" (see Annex III*).*

Moreover, eight companies dedicated to the *collection of non-hazardous waste* (NACE 38.11) are identified. While the ASSET4 database contains datapoints regarding waste management such as "Total recycled and reused waste", all of them are missing values. The Technical Screening Criteria for this economic activity is of qualitative nature and rather vague (i.e. EU Taxonomy-aligned if "waste is separately collected with the aim of preparing for reuse and/or recycling"). Thus, the evaluation is based on, first, whether the company headquarters' country pursues recycling efforts[38] and second, whether the company itself discloses recycling activities on the website. Against these criteria, all companies are EU Taxonomy-aligned.

Transportation and Storage

The assessment covers companies in *Passenger rail transport* (NACE 49.10), in *Freight rail transport* (NACE 49.20) and *Public transport* (NACE 49.31). Due to the similarity of the Technical Screening Criteria for these economic activities, similar issues arose in the assessment. Evaluating the eligibility under the first Technical Screening Criteria is possible if the firm operates a unified zero direct emissions fleet. However, the assessment shows that companies with a heterogenous fleet do neither disclose the exact split of the utilised forms of transport nor the share of revenues derived from zero direct emission trains or activities, thus making a correct assessment impossible. Moreover, rail companies usually do not report emissions per freight ton or passenger kilometer. Hence, an assessment of the second Technical Screening Criterion is not feasible due to a lack of data availability.

For "Freight rail transport" activities, an additional exclusion criterion applies for companies engaging in the transport of fossil fuels. The findings show that this can be easily assessed, as freight rail companies disclose the types of freight transported.

Information and Communication

The EU Taxonomy lists the activities "Data-driven solutions for GHG emission reductions" and "Data processing, hosting and related services". Since no threshold applies for the former, the task is to identify the revenue share of "ICT solutions that are aimed at collecting, transmitting, storing data […] when these activities are exclusively aimed at the provision of data and analytics for decision making […] enabling GHG emissions reduction"[39]. This activity presents a relatively high share in the sample (approx. 5%, see Table 7), since the TEG suggested numerous NACE codes in its spreadsheet to identify this activity. Even though a keyword screening across reported revenue segments was applied, none could be identified as EU Taxonomy-aligned since the available description lacks information on the nature of the solutions and products (i.e. whether they are climate-related or not).

Regarding the latter, data centres need to follow the "European Code of Conduct for Data Centre Energy Efficiency".

37 TEG Report, p. 293
38 OECD (2019), "Waste: Municipal waste"
39 TEG Report, p.365

Table 9 - Information and Communication

Activity	Baseline Assessment	Baseline Plus Scenario
Data-driven solutions for GHG emissions reductions	Identify relevant segments through buzzwords ("GHG", "CO2", "climate" and other appropriate). None are identified.	Baseline Plus: MSCI variable CT_CC_TOTAL_MAX_REV (see Annex III) as a proxy for the green revenue share of IT companies.
Data processing, hosting and related activities	Non-EU: not aligned with EU Taxonomy; EU28: manual research whether company applies the Code of Conduct.[40]	Same as in baseline assessment.

Source: Own elaboration.

Construction & Real Estate Activities

The assessment includes all companies listed under the EU Taxonomy activity "Building acquisition and ownership" (NACE 68.10 and 68.20). In order to define the performance of buildings, the environmental performance of the buildings is required. Building acquisition and ownership is EU Taxonomy-aligned if the building performance falls in the top 15% of local stock or a certification scheme is available, such as Environmental Performance Certification EPC for companies operating in the EU is available that falls into the top 15%.

Data on environmental performance of buildings (in kWh/m2/y) is available in many cases. However, to be able to determine whether a building or portfolio falls into the top 15% of local stock, (i) a (regional) benchmark and (ii) the distribution of the environmental building performance of other companies in the peer group is required.

For companies operating outside of the EU, the EU Taxonomy lists no equivalent certification schemes. For companies operating in the EU, the EU Taxonomy defines currently one certification scheme (EPC) but leaves room for interpretation. Thus, to be able to assess the companies according to the EU Taxonomy, a narrower specification of the suitability of equivalent certificates is required.

Access to databases such as GRESB (Global Real Estate Sustainability Benchmark) would allow to identify the performance of many companies and their performance in their peer group. Data on the distribution of certificates such as EPC, BREEAM or LEED for companies in North America would allow to assess the companies further.

40 List of participants https://e3p.jrc.ec.europa.eu/communities/data-centres-code-conduct

5. FUND ASSESSMENT AND RESULTS

Having discussed the assessment at a firm and economic activity level, this chapter aggregates the results at the fund level.

By applying draft criterion I, as included in the JRC's Technical Report 2.0[41] (see box below), each fund's constituents are assigned to either i) a green pocket if at least 50% of the revenue is determined to be "green" revenue, ii) a transition pocket if between 20% and 49% of the revenue is determined to be "green" revenue or iii) a diversification pocket if less than 20% of the revenue is from green activities, other assets or cash. After the allocation, the weight of each pocket is aggregated at the fund-level to calculate the percentage of the fund's portfolio invested in each pocket. A decision can then be made about whether a fund could obtain the Ecolabel, based on criterion I from the current draft. Other EU Ecolabel criteria[42] are beyond the scope of this study (e.g the exclusion criterion would exclude companies that derive more than 5% of their revenue from a list of excluded activities, which requires sufficient reporting).

> *"At least 60% of the total portfolio asset value under management (AuM) shall be invested in companies whose economic activities comply with the following thresholds i. and ii.:*
>
> *i. At least 20% of the total portfolio shall be invested in companies deriving a revenue of at least 50% from "green" economic activities,*
>
> *ii. between 0-40% of the total portfolio asset value under management shall be invested in companies deriving a revenue of at least 20 - 49% "green" economic activities*
>
> *The remaining proportion of the total portfolio shall consist of companies that are not complying with points i. or ii., or other assets or cash."*

However, depending on the company's economic activity and the quality of reporting, it was at times not possible to stringently assess their alignment with the EU Taxonomy objective on substantial contribution to climate change mitigation. In these cases, these activities were clustered (i.e. revenue share) as "non-verifiable". This could make a clear-cut assignment into the three pockets impossible – depending on the size of the "non-verifiable" share.[43] Given this restriction, the following six pockets are defined to for the analysis:

1. Pocket "green": a company derives at least 50% of its revenues from EU Taxonomy-aligned activities.
2. Pocket "green or transition": a company derives at least 20% to below 50% of its revenue from EU Taxonomy-aligned activities ("green" revenue). The remaining economic activities are EU Taxonomy eligible but are not verifiable due to data restrictions, at least to a certain degree. Due to the non-verifiable share, the company may also be assigned to the green pocket. Based on this uncertainty, the company is classified in the "green or transition" pocket.
3. Pocket "transition": a company generates at least 50% and up to 80% of its revenue from activities not aligned with EU Taxonomy thresholds or activities not eligible under the EU Taxonomy. Further, it achieves at least 20% and below 50% EU Taxonomy-aligned ("green") revenues. Given both conditions, the company is in the "transition" pocket.
4. Pocket "transition or diversification": a company derives more than 50% to maximum 80% of its revenues from activities that are either not covered by the EU Taxonomy or not aligned with EU Taxonomy thresholds. In addition, at least 20% of its reported revenues are not verifiable. This indicates that the company could still fall into "transition".
5. Pocket "diversification": a company derives more than 80% of its revenue from activities not covered by the EU Taxonomy or not aligned with EU Taxonomy thresholds. In other words, this means that less than 20% of the company's revenue is from green activities. In this case, the total share of currencies for each fund in this pocket was added.

41 JRC. Development of EU Ecolabel criteria for Retail Financial Products. Technical Report 2.0: Draft proposal for the product scope and criteria. (link).
42 Criterion 2: Exclusions based on environmental aspects; Criterion 3: Social and governance aspects; Criterion 4: Engagement; Criterion 5: Retail investor information; Criterion 6: Information appearing on the EU Ecolabel.
43 Two examples. 1) Company A derives 51% green revenue. The remaining 49% is non-verifiable. A clear-cut assignment is possible. Company A is assigned to the green pocket. 2) Company B derives 10% green revenue. The remaining 90% is non-verifiable. The company could potentially fall into every pocket. A clear-cut assignment is impossible.

6. Pocket "potentially everything": The proportion of "non-verifiable" activities is too large (i.e. larger than 80% of total revenue) to narrow down to possible pockets. Following, these companies are classified as "potentially everything".

From these six pockets defined above, the following conditions under which a fund is aligned or not aligned with criterion I of the EU Ecolabel can be derived:

- A fund is compliant with the thresholds of criterion I if the total share of TNA invested in companies of pocket 1) (i.e. "green" companies") is at least 20% and the accumulated share of pocket 1), 2) and 3) (i.e. "green", "green or transition" and "transition" companies) exceeds 60%.
- A fund is not compliant with the thresholds of criterion I, if the share of TNA in pocket 5) (i.e. "diversification" companies) exceeds 40%; or total share of TNAs invested in pocket 3), 4) and 5) (i.e. no "transition", "transition or diversification" and "diversification") exceeds 80%.

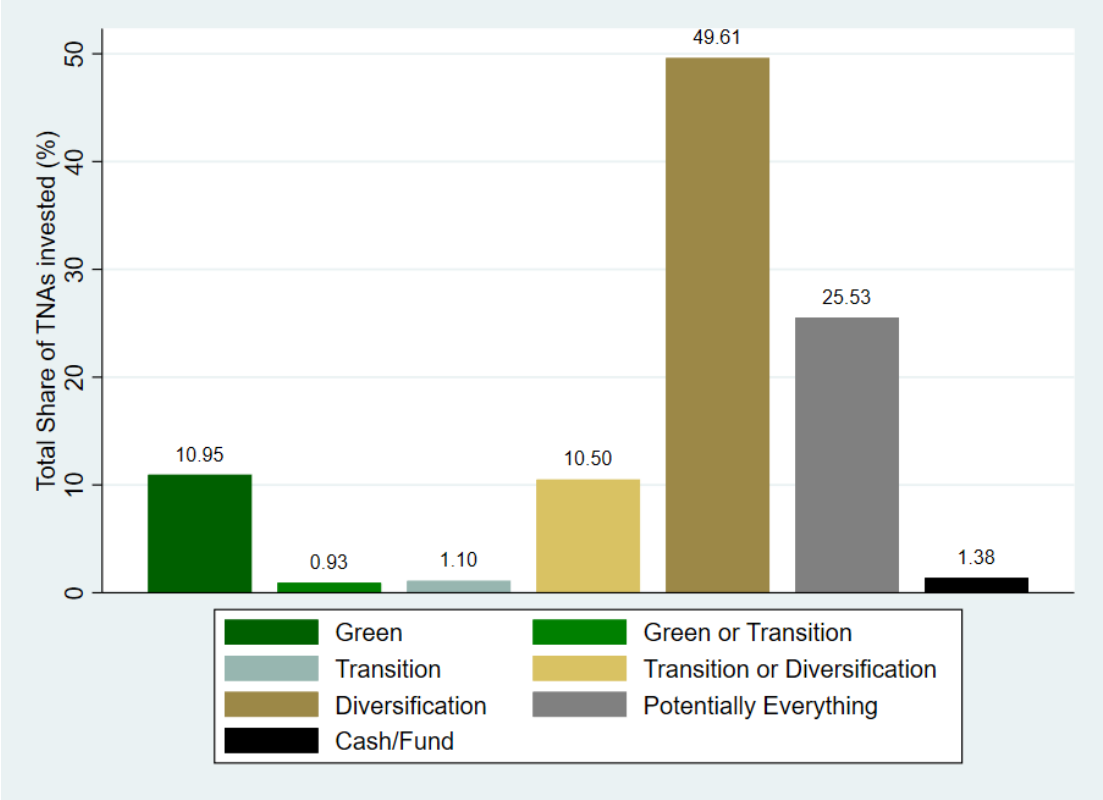
In the following, this logic is taken into account in three scenarios to evaluate if a company's activities satisfy the screening criteria of the EU Taxonomy. The logic of the three scenarios is illustrated below:

- The *baseline assessment* follows the EU Taxonomy as closely as possible. Activities that are not able to be evaluated are classified as "non-verifiable";
- The *baseline plus assessment* evaluates the "non-verifiable" share of the baseline assessment with MSCI ESG proxies and further assumptions (see Annex II for all the details);
- The *MSCI proxy scenario* does not build on the previous assessments and is not closely linked to the EU Taxonomy. The Ecolabel eligibility assessment is based on firm-level MSCI proxies. These proxies provide an estimate of companies' green revenue derived from five environmental impact themes (alternative energy, energy efficiency, green building, pollution prevention, sustainable water).

Baseline Assessment

Given the "pocket logic" explained above, each company is assigned to one pocket. Aggregating the share of all six pockets for the entire sample obtains the numbers presented in Figure 9.

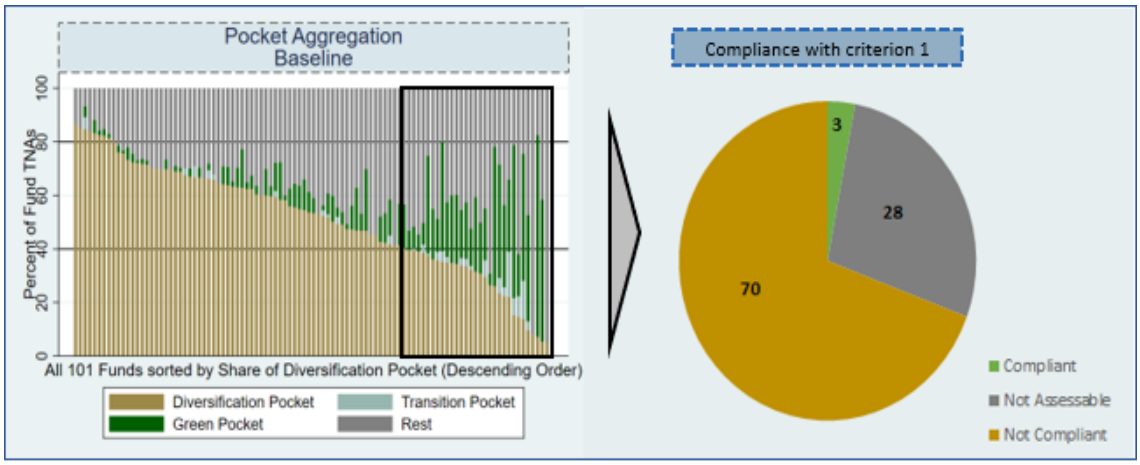
Figure 9 - Weight of assigned pockets across sample, Baseline



Source: Own elaboration.

Two pillars are striking: the share of the "diversification" pocket (which is mainly due to companies with a high share of activities which are not EU Taxonomy-eligible) and the share of "potentially everything" (i.e. companies with a high share of "non-verifiable" revenue segments). The latter pillar especially restricts the ability of evaluating Ecolabel compliance with criterion I for each fund. Since Figure 9 presents the aggregated weight of each pocket (i.e. companies assigned to pocket 1-6) across the entire sample of 101 UCITS equity funds, it is also worth looking at the distribution *across all funds* presented in Figure 10. For a better overview, only the three "Ecolabel pockets" are presented – and all others (i.e. "Green or Transition", "Transition or Diversification", "Potentially Everything") are accumulated in "Rest". The black rectangle highlights those funds, which have less than 40% invested in the "diversification" pocket, that would still have the chance to satisfy EU Ecolabel criterion I if the other companies' activities in the portfolio were verifiable and were in the green or transition group.

Figure 10 - Pocket Aggregation, Baseline



Source: Own elaboration.

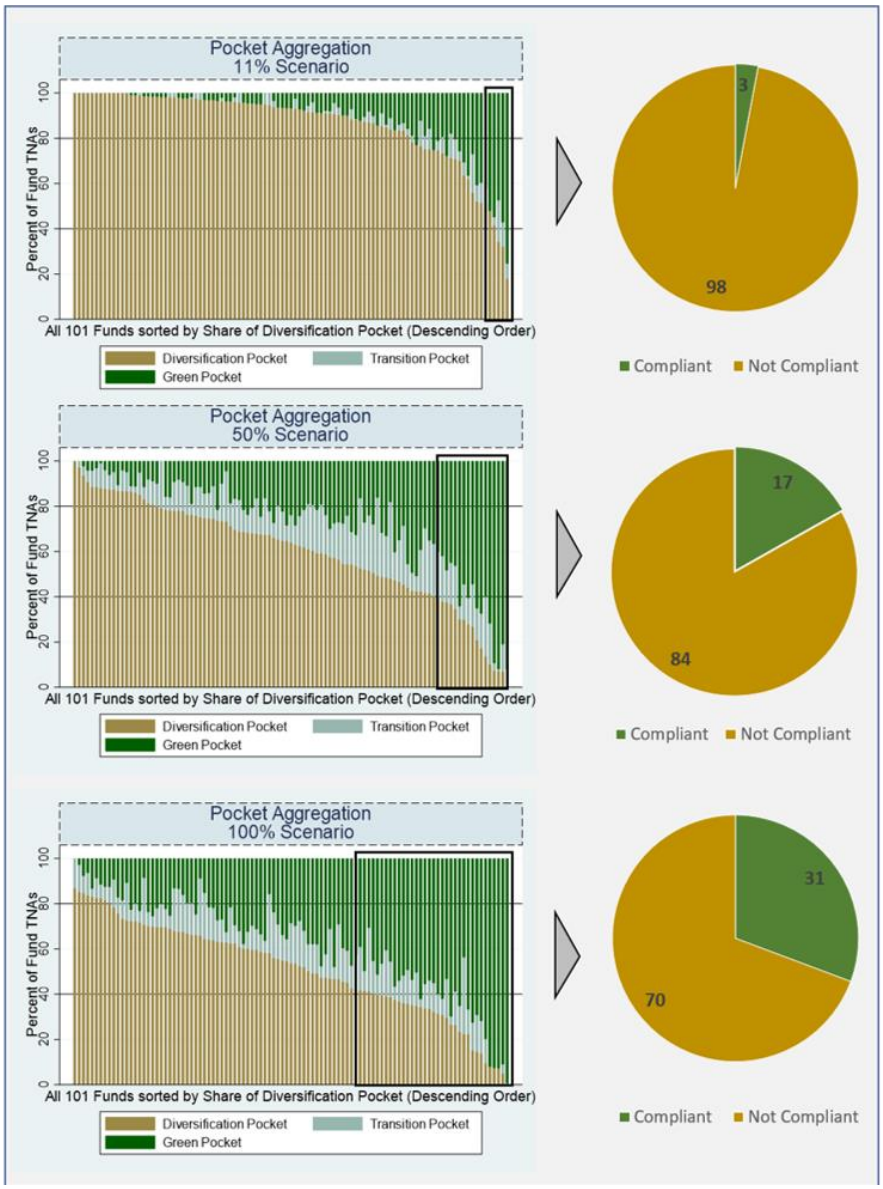
Having checked the share of the green and transition pockets, three funds would satisfy criterion I given the baseline scenario. Moreover, 70 funds can be categorically excluded due to the high share of the portfolio in the "diversification" pocket, while for 28 funds, it was not possible to assess compliance with criterion I of the EU Ecolabel due to insufficient disclosure.

Aiming to explore the large share of "non-verifiable" activities a bit further and submit it to a hypothetical sensitivity analysis, three "what if" cases have been tested:

- What if 11% of the "non-verifiable" share per company was green (and 89% not EU Taxonomy-aligned); a rather realistic case resembling the 10.95% of the green pocket across the sample (see Figure 9);
- What if 5% of the "non-verifiable" share per company was green (and 50% not EU Taxonomy-aligned); the "classic" we-do-not-know the distribution case (E (green share) = 0.5);
- What if 100% of the "non-verifiable" share per company was green (and 0% not EU Taxonomy-aligned); the "maximum" case: what if all "non-verifiable" assets happened to be green.

This hypothetical sensitivity analysis leads to the following distribution of the funds' underlying pockets.

Figure 11 - Pocket Aggregation for each Scenario



Source: Own elaboration

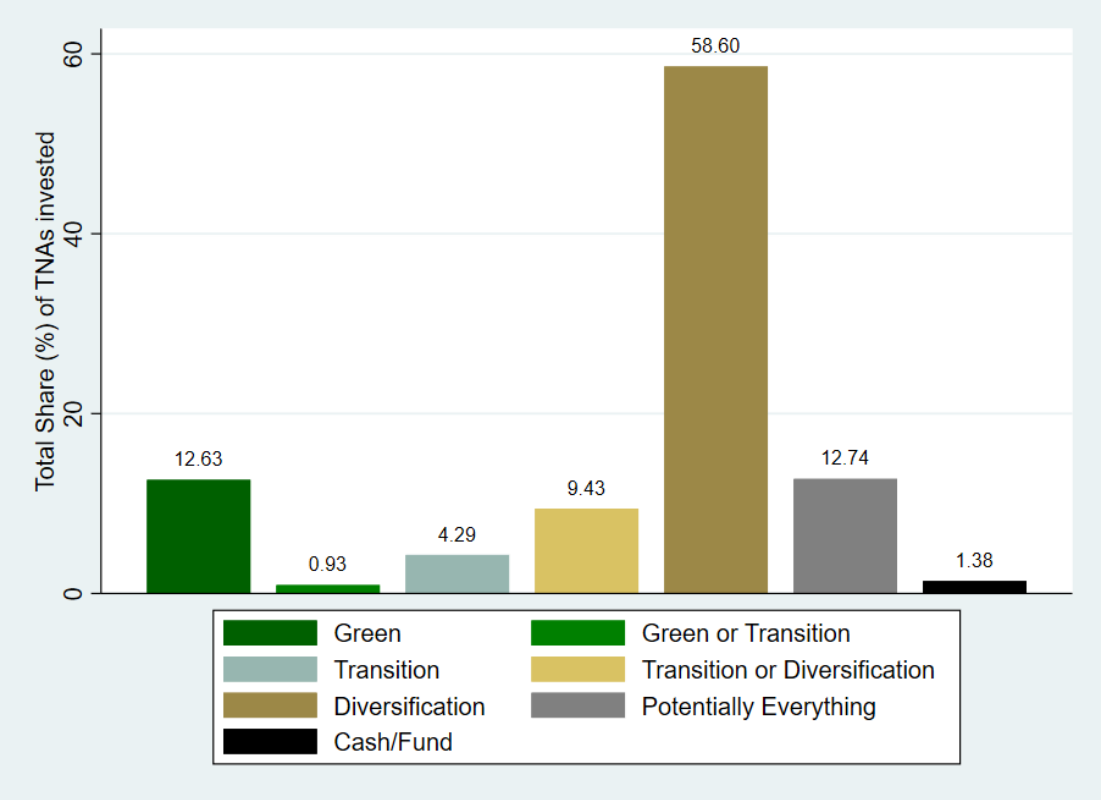
Based on the distributions above, three funds could potentially satisfy criterion I in the 11% test case. This is equal to the number in the baseline scenario. For the 50% (100%) cases, the number of funds compliant with criterion I increases to 17 (31) funds.

The first sensitivity test is the most "realistic" as it is the closest to the sample distribution with its green share of approximately 11% (see green pocket in Figure 9). In addition, as shown below, the sensitivity test renders a number of funds in the same order of magnitude as the baseline and baseline plus assessment. As the distribution for the "non-verifiable" assets is unknown, the 100%-sensitivity test is the only robust test, in the sense that it shows the (unrealistic but theoretical and robust) maximum green share; and based on that, the maximum number of funds which could theoretically qualify as "significantly contributing to climate change mitigation" if all "non-verifiable" activities happened to be green.

Baseline Plus Assessment

To better evaluate the "non-verifiable" share, results from the baseline assessment are taken. The baseline plus slightly shifts away from the strict EU Taxonomy screening criteria for the "non-verifiable" activities by using reasonable proxies and assumptions. In doing so, one can classify a higher share as "green" or "not aligned" with the EU Taxonomy. The proxies in use are listed in Annex II. For the entire sample of 101 UCITS equity funds, the following share of TNA are invested in the six pockets (see Figure 12).

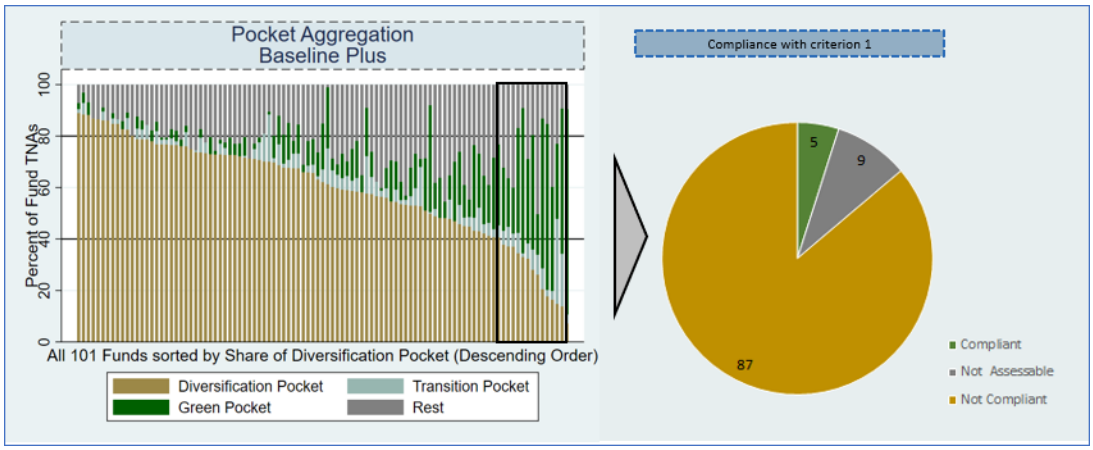
Figure 12 - Weight of assigned pockets across sample, Baseline Plus



Source: Own elaboration.

An increase of the "diversification" pocket (from ~49.6% to ~59%) is observed since the share of non-verifiable activities share decreases. The sample aggregation builds on the distribution across funds presented in Figure 13. The share of non-assessable funds decreases significantly (from 28 to 9) and 5 instead of 3 funds satisfy criterion I.

Figure 13 - Pocket Aggregation, Baseline Plus



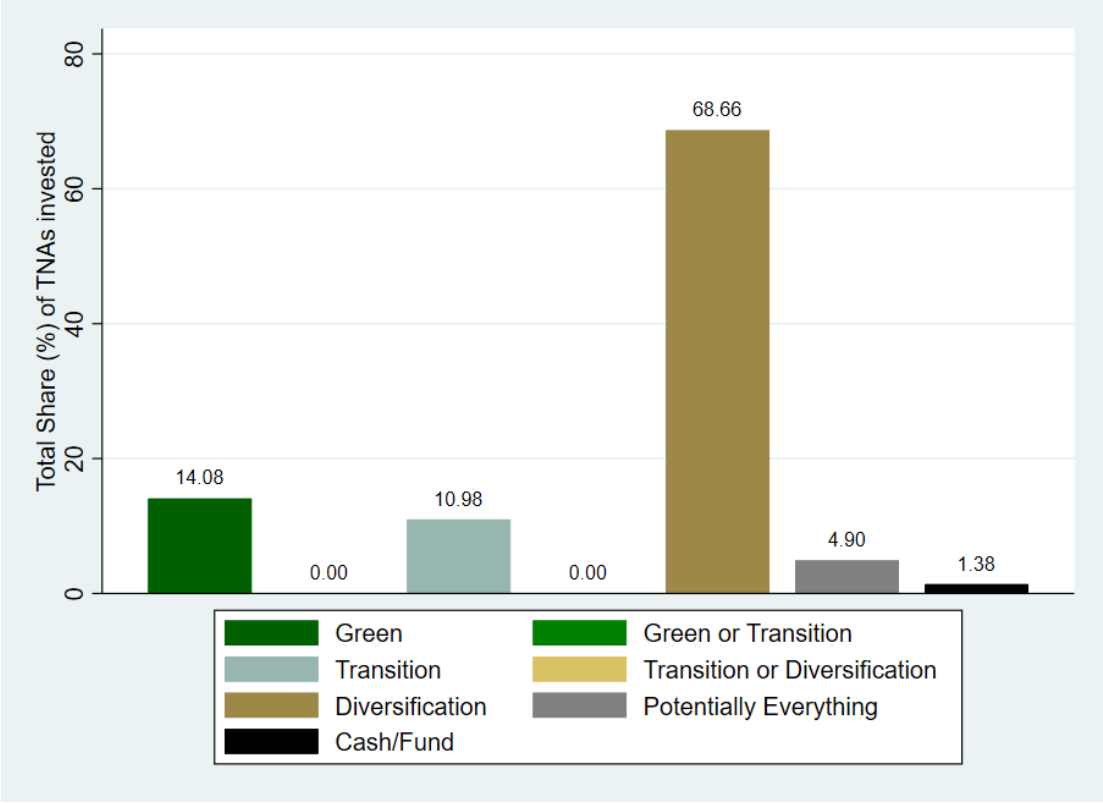
Source: Own elaboration.

MSCI Proxy Scenario based on MSCI-ESG variables

In this sub-section, light is shed on the results one would obtain if one had done this analysis solely based on MSCI estimates. For this purpose, data was obtained from MSCI through JRC for all constituents of the sample. MSCI has developed thorough estimation models on a company-level, covering the five clean tech schemes; alternative energy, energy efficiency, green building, pollution prevention and sustainable water. This scenario analysis solely relied on the MSCI variable "CT_TOTAL_MAX_REV" (see Annex III), which aggregates the (estimated) revenue derived from the sum of all themes. This being said, the analysis did *not* stick strictly to the EU Taxonomy in this scenario, but the results obtained from a reliable data provider.

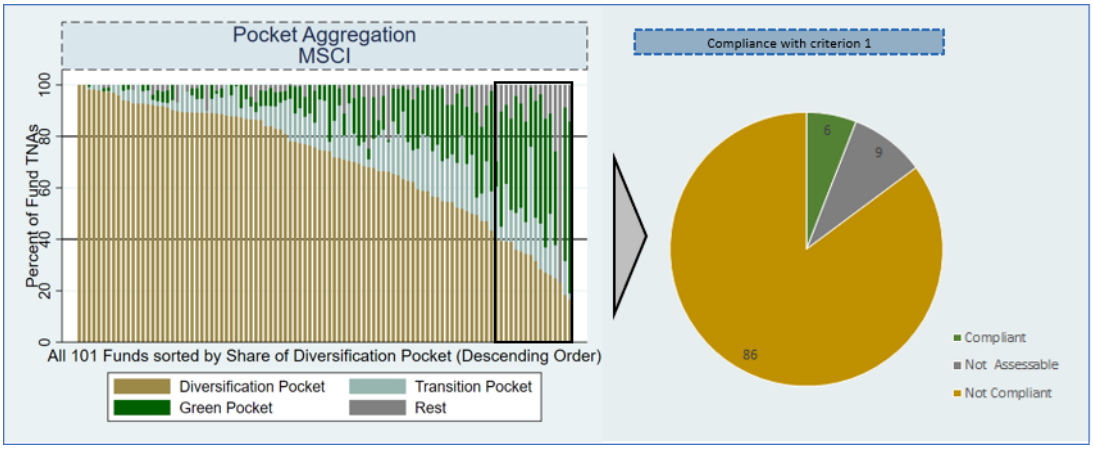
The variable CT_TOTAL_MAX_REV offers a comprehensive coverage but is missing for roughly 10% of the companies in the sample (in this case the firm is assigned into the pocket "potentially everything"). The assignment of the remaining companies is straight forward: green pocket if >=50%; transition pocket if 20-49%; and diversification if 0-19%.

Figure 14 - Weight of assigned pockets across sample, MSCI Proxy Scenario



Source: Own elaboration.

Figure 15 - Pocket Aggregation, MSCI



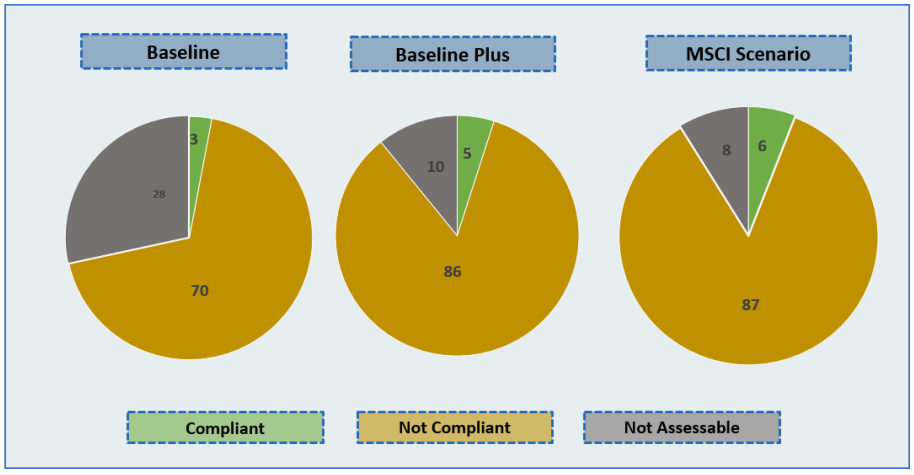
Source: Own elaboration.

Given that the MSCI estimates provides either a precise number of "green revenue", each company is assigned to green, transition, diversification or, if missing, "potentially everything" (see Figure 14). Looking at the distribution across funds, 6 would be compliant with criterion I (see Figure 15).

Compliance with criterion I - Baseline vs. Baseline Plus vs. MSCI Proxy Scenario

Aggregating the three assessments, the obtained results are presented in Figure 16 below. According to the baseline assessment, three funds comply with draft criterion I of the Ecolabel. This number can potentially increase given that a final statement for 28 funds due to data restrictions and current company disclosure was not feasible. In further analysis (with a less strict application of the EU Taxonomy and use of proxies), the share of unclassified funds was reduced (10 and 8 respectively).

Figure 16 - Results: Baseline Assessment, Baseline Plus, MSCI Proxy Scenario



Source: Own elaboration.

Table 10 below lists all funds that are compliant with draft criterion I in at least one of the three scenarios, namely Baseline, Baseline Plus or MSCI. Only one fund (the *Kepler Umwelt Aktienfonds* in bold letters) has already received a national label (i.e. the Austrian Ecolabel).

Table 10 - Funds aligned with criterion I in at least one scenario

Ecolabel Alignment	**Baseline**	**Baseline Plus**	**MSCI Scenario**
LSF – Solar & Sustainable Energy Fund (MF)	1	1	0
Luxembourg Selection Fd – Active Solar (MF)	1	1	1
Quaero Capital Funds (Lux) – Accessible Clean Energy (MF)	1	1	1
Lyxor New Energy	0	1	1
green benefit – Nachhaltigkeit Plus	0	1	1
Guinness Alternative Energy Fund	0	0	1
KEPLER Umwelt Aktienfonds (Austrian Ecolabel)	0	0	1

Source: Own elaboration.

Zooming into the sectoral composition of these 7 funds (see Table 11) reveals a shift towards manufacturing (67.2% vs. 52.3%) and electricity production (18.3% vs. 7%) compared to the entire sample. This is in line with Table 4 indicating the same shift for the non-labelled funds, and Table 7, indicating that most of the "green" share comes from "Manufacture of low-carbon technologies" of renewable energies.

Table 11 - Sector Distribution of Funds that are aligned with criterion I

Macro Sector	**Description**	**Number of Constituents**	**Total Share of TNA (%)**	**Avg. Sample (%)**
C	Manufacturing	79	67.19	52.31
D	Electricity, Gas, Steam and Air Conditioning	26	18.30	6.98
F	Construction	7	4.14	4.23
E	Water Supply, Sewerage, Waste Management and Remediation Activities	7	2.04	2.52
H	Transportation and Storage	4	1.70	1.86
J	Information and Communication	3	1.06	8.44
L	Real Estate Activities	2	0.54	3.72
A	Agriculture	0	0.00	0.17
Others	Not Included in Taxo	17	4.74	18.83
Cash			0.28	0.94
			100	100

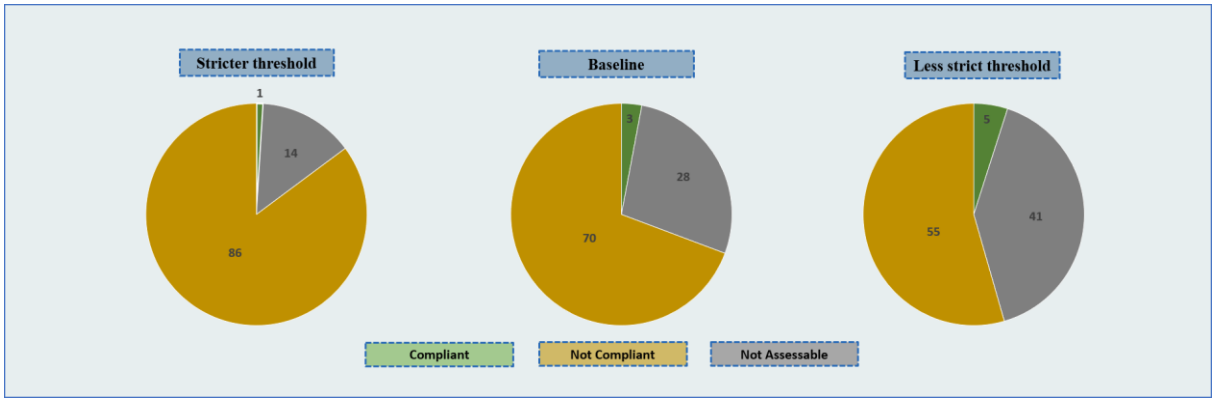
Source: Own elaboration.

Changing the EU Ecolabel draft criterion

In a last step of the analysis a shift of the thresholds at the level of company's activities compliant with EU Taxonomy was applied in order to test possible implications on fund-level. In a first sensitivity analysis, the thresholds are assumed to be stricter (i.e. a sum of at least 70% of the green and transition pocket) than specified in the current draft. This modification results in only one fund being compliant with these stricter thresholds. Further, in a second analysis, thresholds are assumed to be "less strict" (i.e. a sum of 50% of green and transition pocket). Loosening the thresholds for the sum of "green and transition" pocket results in 5 funds being compliant with these thresholds. A comparison of fund-level compliance with criterion I in case of different thresholds is provided in Figure 17 below.[44]

44 Note that in both scenarios the required 20% of fund TNA invested in "green" companies were not changed. The mentioned modifications refer exclusively to the sum of the green pocket and the transition pocket.

Figure 17 - Changing the EU Ecolabel Draft Criterion I



Source: Own elaboration.

6. CONCLUSION AND SUGGESTIONS ON DRAFT CRITERIA

In this study, a first large-scale test of the draft EU Ecolabel criterion I (i.e. the criterion defining green shares in equity funds) was conducted. The study shows results of some initial lessons and challenges related to applying the EU Taxonomy's substantial contribution criteria for climate change mitigation to green UCITS equity funds and their constituents.

While a range of organisations are (apparently) currently involved in similar assessments, no results or respective studies about a large-scale application of the EU Ecolabel and/or the EU Taxonomy criteria on listed EU companies have as of yet been published. Some initial assessments of individual companies are slowly emerging.[45]

From the analysis and the corresponding results above it becomes clear that the principle approach in the draft Ecolabel criteria proposed by the responsible European Commission services provides a potentially feasible framework for evaluating the environmental performance of equity funds, as far as criterion I (covered under the scope of this study) is concerned. The results presented above also show however that currently due to data limitations (in particular limited reporting) and the limited coverage of the EU Taxonomy, the evaluation of funds against criterion I of the draft Ecolabel proposal is limited. 28/101 funds fall in the first category (they are not fully assessable based on available data) and 70/101 of the funds from the sample are excluded due to the latter constraint (falling into the "diversification" pocket). Only three funds would qualify for draft Ecolabel criterion I, having a sufficiently large share of EU Taxonomy aligned and green (i.e. falling into the "green" or "transition" pocket) activities. This number even remains unchanged if it is assumed that 11% of the "non-verifiable" share per company was green as per EU Taxonomy (and 89% not EU Taxonomy aligned), leading to 98 excluded and 3 qualified funds.

The conducted additional scenario analysis, deviating from the strict EU Taxonomy based application of criterion I, confirms in principle the order of magnitude, leading to 5 (baseline plus) and in total maximum 6 (MSCI scenario) out of 101 funds complying with criterion I. Interestingly, only one of the 51 funds, which already qualified for a national eco-label, is included in this final group.

It is noteworthy that despite the fact that all funds are marketed as green or even have obtained a national eco-label, it is difficult to evaluate their greenness (at least in the sense of draft Ecolabel criterion I linked to the EU Taxonomy) based on available data from the major ESG data providers. If one agrees with the plausibility of the EU Taxonomy indicators and thresholds proposed by the TEG and serving as a basis for criterion I, the interpretation of this fact would lead to the conclusion that transparency around green (labelled and unlabelled) funds can be improved. Another interpretation would be that the indicators proposed for the EU Taxonomy and those being used by, for example, ("green") equity fund managers and "green" label providers differ substantially. A third interpretation would be that the latter are at least obtained through other means than using data available from the most common and established ESG data providers (including the likes of Bloomberg, ISS_ESG, MSCI or Refinitiv/Thomson Reuters, etc.).

To make best use of the analysis presented in this report for the further development of the EU Ecolabel, it will be important, however, to take account of a set of key observations:

1. Data gaps

As the delegated act on the EU Taxonomy criteria will become effective in 2022, the data availability problem for the verification of the compliance of companies' activities with the EU Taxonomy, will most likely be largely solved due to the corresponding disclosure obligation, at least for large and publicly listed companies. Until the required data is being disclosed by relevant[46] companies, the identification of EU Taxonomy eligible economic activities via different industry classification systems will continue to present the first obstacle. In terms of evaluation, the lack of disaggregated company data, such as but not limited to product-specific data on energy efficiency equipment, limits a comprehensive evaluation.

45 One example is this report of Acciona https://mediacdn.acciona.com/media/3592143/acciona-case-study-eu-taxonomy-report-feb-2020.pdf.
46 Relevant in this context refers to companies with economic activities relevant for the environmental dimensions of the taxonomy.

While this challenge could be addressed once EU Taxonomy-specific reporting by companies becomes more common (e.g. through mandatory EU-reporting), key limitations still apply. The relevance of non-EU companies for EU investors, as shown in the sample of 101 UCITS equity funds, points at the limitation of introducing mandatory reporting for EU companies only, as no globally agreed sustainable finance taxonomy is on the horizon, which could quickly solve this issue.

2. Limited coverage and scope of the EU Taxonomy

The current coverage and scope of the EU Taxonomy also limits its economy wide applicability. Whereas the TEG defined the relevant sectors in descending order of GHG emissions, this does not necessarily coincide with the sectoral distribution of UCITS equity funds. Looking at the mapping results in Table 6 ("Clustering of revenue segments"), more than 50% of the revenue-weighted activities are not covered by the EU Taxonomy. This implies that 50% do by definition not count against the green revenue share. This can partly be explained by the fact that the focus of this study is on draft Ecolabel criterion I (and the "climate part" of the EU Taxonomy) and therefore only a limited number of activities can be considered. Only climate change mitigation was considered in this study as one out of six EU Environmental objectives. Climate change adaptation criteria are probably more difficult to evaluate, as, opposed to greenhouse gas emissions, no comparable well-established market for tradeable certificates or regulation targeting emissions or their disclosure exists for adaptation. With exceptions like SO2, the same holds for the other four objectives ecosystems, water, pollution and circular economy, for which specific criteria and indicators are yet to be defined.

Limitations of this study

This study is obviously not free from limitations. The assessments approach primarily relied on publicly available data for selected companies and accessible data from Bloomberg and Thomson Reuters for the entire sample. In addition, MSCI data was used for the extended analyses. This contrasts the approach suggested by the TEG (i.e. utilising EU Taxonomy-aligned turnover shares as disclosed by companies) and limits the precision of this analysis (e.g. the share of ambiguous mapping which could technically be solved with more resources and greater use of manual research such as screening of annual reports).

While the application of the DNSH criteria was not part of this assignment, the pilot assessment of DNSH criteria already identified important data limitations, which made it difficult to estimate the potential effect of DNSH criteria today. Moreover, the application of the EU Taxonomy's "Social Safeguards" were also outside the scope of this analysis. Considering that hence additional constraints (namely compliance with DNSH and social safeguards criteria) would be added in a full assessment of EU Taxonomy compliance, it is reasonable assume that the share of EU Taxonomy aligned activities (and correspondingly, funds) would further decrease once a "full" EU Taxonomy assessment is feasible.

Other limitations include the time lag in reporting, as all firm- and activity level data is from end of 2018, and data coverage. This is since promising variables such as "total recycled waste" or simply the "produced tonnes of cement" are available but the poor coverage restricts an evaluation. Furthermore, the quality of reported revenue segments was not superb.

However, these limitations can largely be addressed and in the final section of the conclusions, some possible solutions are discussed, and corresponding suggestions provided.

Outlook and suggestions

The challenges and limitations discussed above underline first of all the need for further work on understanding the data and analytical basis from which thresholds for Criterion I can be derived, and can secondly set at a high level of confidence. Potential for further research includes:

- Applying the EU Taxonomy and the EU Ecolabel Criterion I to further financial products.
- Verifying studies' findings with individual companies of the sample, which might help to gain further insights into the degree of companies' Taxonomy-compliant operations.
- Applying further EU Taxonomy criteria for the other five EU Environmental Objectives. Such work could be closely designed along technical discussions at the Platform on Sustainable Finance.

Derived from the extensive research and analysis carried out for this study, this part includes suggestions on the further development of the EU Ecolabel. Due to the challenges and limitations of the study, it is difficult to derive concrete suggestions for the setting of the threshold values in the EU Ecolabel Criterion I. The analysis has shown that only few "green" UCITS equity funds would comply with Criterion I given currently available data. However, do-no-harm criteria, social safeguards and other provisions of the draft Ecolabel proposal and the underlying, corresponding EU Taxonomy proposal was outside the scope of this study. Applying additional conditions would however change the number of eligible funds only downwards.

Therefore, a careful approach in determining Criterion I thresholds should be sought. In support of setting the threshold values for the final Criterion I for equity funds for the EU Ecolabel for financial products with a high level of confidence, further work is most likely necessary to better understand the data and the equity fund universe with respect to the potential share of EU Taxonomy compliant activities. Firstly, a verification of these studies' data at the individual firm level might help to derive a more accurate share of companies' EU Taxonomy-compliant turnover and thus improve the informative value to the development of Criterion I. Secondly, final decisions on the EU Ecolabel Criterion I for equity funds need to be made in the absence of EU Taxonomy disclosure by companies. Therefore, the utilisation of a fully-fledged estimation model might help to bridge data gaps (e.g. for GHG emissions or other output variables), decreasing the share non-verifiable revenue. Thirdly (and most importantly), for a full understanding of potentially qualifying equity funds under the three-pocket logic of the Draft Criterion, a further analysis applying the EU Taxonomy criteria for the other five EU Environmental Objectives is needed, coincidentally expanding the applicability of the taxonomy to sectors not yet covered by the EU Taxonomy. Such work could be closely designed along technical discussions at the Platform on Sustainable Finance.

In the absence of such additional analysis and the conceivable challenge of carrying out this work within the proposed timeframe for the Ecolabel application to financial instruments, the final proposal for the Ecolabel (in general) and criterion I (in particular) might need to leave sufficient flexibility regarding the review options, once additional data and analysis becomes available and the scope of the EU Taxonomy is expanded.

ANNEX I – EU TAXONOMY ACTIVITIES, NACE CODES AND CATEGORIES

The following table makes the classification of EU Taxonomy activities transparent. For each activity, the metrics and thresholds were examined and assigned to a category (see section 3.3). In addition, it was determined whether multiple thresholds must be met (see AND/OR). For the descriptive statistics in chapter 4.1 the latter category was used (in case multiple categories applied, see **bold** figure in respective column). To determine corresponding NACE Codes, the TEG Spreadsheet was used (tab "TRBC"), which lists NACE codes that are not mentioned by the EU Taxonomy report (e.g. the EU Taxonomy report does not define NACE codes for "Manufacture of low carbon technologies").

Table 12 - Classification of EU Taxonomy Activities

Source: EU Taxonomy			*Clustering of Metrics*		*Source: EU Taxonomy or TEG Spreadsheet*
NACE	**Activity**	**Link to Taxonomy**	**Category**	**AND/ OR**	**Corresponding NACE Codes**
A2	Afforestation	p. 52	3, **5**	AND	02.10; 02.20; 02.30; 02.40
A2	Rehabilitation, Reforestation	p. 60	3, **5**	AND	02.10; 02.20; 02.30; 02.40
A2	Reforestation	p. 68	3, **5**	AND	02.10; 02.20; 02.30; 02.40
A2	Existing forest management	p. 76	3, **5**	AND	02.10; 02.20; 02.30; 02.40
A2	Conservation forest	p. 85	3, **5**	AND	
A1.2	Growing of perennial crops	p. 112	3, **5**	AND	01.21 – 01.29
A1.1	Growing of non-perennial crops	p. 126	3, **5**	AND	01.11 – 01.16; 01.19
A1.4	Livestock production	p. 140	3, **5**	AND	01.41 – 01.47; 01.48
C	Manufacture of low carbon technologies	p. 162	**5**		20.12; 25.30; 26.11; 27.90; 28.11; 28.12; 28.25; 28.30; 28.92; 29.10; 29.32; 38.21; 42.44
C23.5.1	Manufacture of Cement	p. 167	**3**, 5	AND	23.51; 23.52; 23.61; 23.62; 23.64; 23.65; 23.69
C24.4.2	Manufacture of Aluminium	p. 172	**3**, 4, 5	AND	24.42
C24.5.1 C24.5.2	Manufacture of Iron and Steel	p. 176	**3**, 4	OR	24.10; 24.20; 24.31 – 24.34; 24.51; 24.52; 25.92
C20.1.1	Manufacture of Hydrogen	p. 180	**3**, 4	AND	20.11
C20.1.3	Manufacture of other inorganic basic chemicals – Manufacture of carbon black	p. 183	2, **3**	AND	20.13
C20.1.4	Manufacture of other inorganic basic chemicals – Manufacture of disodium carbonate (soda ash)	p. 183	2, **3**	AND	20.13; 20.14
C20.1.5	Manufacture of other inorganic basic chemicals – Manufacture of chlorine	p. 183	2, **3**	AND	20.13; 20.14
C20.1.4	Manufacture of other organic basic chemicals	p. 189	**3**, 5	AND	20.11; 20.12; 20.14; 20.16; 20.30; 20.51; 20.52; 20.59; 20.60, 26.11
C20.1.5	Manufacture of fertilizers and nitrogen compounds	p. 196	3		20.15
C20.1.6	Manufacture of plastics in primary form	p. 200	**3**, 4, 5	AND	20.16
D35.1.1	Production of Electricity from Solar PV	p. 212	2		35.11

D35.1.1	Production of Electricity from Concentrated Solar Power	p. 215	2		35.11
D35.1.1	Production of Electricity from Wind Power	p. 218	2		35.11
D35.1.1	Production of Electricity from Ocean Energy	p. 221	2		35.11
D35.1.1	Production of Electricity from Hydropower	p. 224	3, **4**	OR	35.11
D35.1.1	Production of Electricity from Geothermal	p. 228	3		35.11
D35.1.1	Production of Electricity from Gas (not exclusive to natural gas)	p. 231	3		35.11
D35.1.1	Production of Electricity from Bioenergy (Biomass, Biogas and Biofuels)	p. 234	3, **5**	AND	35.11
D35.1.2 D35.1.3	Transmission and Distribution of Electricity	p. 238	2, **3**	OR	35.12; 35.13
D	Storage of Electricity	p. 243	2		
D	Storage of Thermal Energy	p. 245	2		
D	Storage of Hydrogen	p. 247	5		
D35.2.1	Manufacture of Biogas or Biofuels	p. 249	3, **5**	AND	20.14; 35.21
D35.2.1 H49.5.0	Retrofit of Gas Transmission and Distribution Networks	p. 252	5		35.21; 49.50
D35.3.0	District Heating/Cooling Distribution	p. 255	4, **5**	OR	35.30
D35.3.0	Installation and operation of Electric Heat Pumps	p. 258	2		35.30
D35.1.1 D35.3.0	Cogeneration of Heat/cool and Power from Concentrated Solar Power	p. 260	2		35.11; 35.30
D35.1.1 D35.3.0	Cogeneration of Heat/Cool and Power from Geothermal Energy	p. 263	3		35.11; 35.30
D35.1.1 D35.3.0	Cogeneration of Heat/Cool and Power from Gas (not exclusive to natural gas)	p. 266	3		35.11; 35.30
D35.1.1 D35.3.0	Cogeneration of Heat/Cool and Power from Bioenergy (Biomass, Biogas, Biofuels)	p. 269	3		35.11; 35.30
D35.3.0	Production of Heat/cool from Concentrated Solar Power	p. 273	2		35.30
D35.3.0	Production of Heat/cool from Geothermal	p. 275	3		35.30
D35.3.0	Production of Heat/Cool from Gas Combustion (not exclusive to natural gas)	p. 278	3		35.30
D35.3.0	Production of Heat/cool from Bioenergy (Biomass, Biogas, Biofuels)	p. 281	3		35.30
D35.3.0	Production of Heat/cool using Waste Heat	p. 285	2		35.30
E36.0.0	Water collection, treatment and supply	p. 293	4, **5**	AND	36.00
E37.0.0	Centralized wastewater treatment	p. 296	4, **5**	OR	37.00
E37.0.0	Anaerobic Digestion of Sewage sludge	p. 298	5		37.00

E38.1.1	Separate collection and transport of non-hazardous waste in source segregated fractions	p. 300	5		38.11
E38.2.1	Anaerobic digestion of bio-waste	p. 302	5		38.21
E38.2.1	Composting of bio-waste	p. 305	5		38.21
E38.3.2	Material recovery from non-hazardous waste	p. 307	4, **5**	AND	38.32
E39.0.0	Landfill gas capture and utilization	p. 309	5		39.00
E39.0.0	Direct Air Capture of CO2	p. 311	2		39.00
E39.0.0	Capture of anthropogenic emissions	p. 313	2		39.00
E39.0.0	Transport of CO2	p. 316	2, **4**	OR	39.00
E39.0.0	Permanent Sequestration of captured CO2	p. 319	2		39.00
F41.1 F41.2	Construction of new buildings	p. 375	4, **5**	OR	41.10; 41.20; 43.21; 43.22; 43.29; 43.31–43.34; 43.39; 43.91; 43.99
F41.1 F41.2	Building renovation	p. 379	4, **5**	OR	41.20
F41.2	Individual renovation measures, installation of renewables on-site and professional, scientific and technical activities	p. 383	5		41.10; 41.20; 43.21; 43.22; 43.29; 43.31 – 43.34; 43.39; 43.91; 43.99
L68	Acquisition and ownership of buildings	p. 387	4		68.10; 68.20; 68.31 – 68.32
F42.9.1	Infrastructure for low carbon transport (water transport)	p. 356	3, **5**	AND	42.91
F42.1.1 F42.1.2 F42.1.3	Infrastructure for low carbon transport (land transport)	p. 336	3, **5**	AND	42.11 – 42.13
H49.1.0	Passenger Rail Transport (Interurban)	p. 328	3, **5**	OR	49.10
H49.2.0	Freight Rail Transport	p. 331	3, **5**	OR	49.20
H49.3.1	Public transport	p. 333	3, **5**	OR	49.31
H49.4.1	Freight transport services by road	p. 343	3, **5**	OR	49.41
H49.3.9	Interurban scheduled road transport	p. 346	3, **5**	OR	49.39
H50.3.0	Inland passenger water transport	p. 350	3, **5**	OR	50.30
H50.4.0	Inland freight water transport	p. 353	3, **5**	OR	50.40
H	Passenger cars and commercial vehicles	p. 339	3, **5**	OR	49.32; 77.11 – 77.12
J63.1.1	Data-driven climate change monitoring solutions	p. 365	2, **5**		61.10; 61.20; 61.30; 61.90; 62.01 – 62.03; 62.09; 63.11
J63.1.1	Data processing, hosting and related activities	p. 363	5		63.11
n/a	Operation for low carbon transport (land)	n/a	3, **5**	AND	52.21 (mentioned by TEG Spreadsheet)
n/a	Operation for low carbon transport (water)	n/a	3, **5**	AND	52.22 (mentioned by TEG Spreadsheet)
n/a	Operation for low carbon transport (air)	n/a	3, **5**	AND	52.23 (mentioned by TEG Spreadsheet)

Source: Own elaboration.

ANNEX II– BASELINE VS BASELINE PLUS – METHODOLOGY AND ASSUMPTIONS

This Annex complements the sectoral discussion in section 4.3 and provides a detailed overview on the analysis in the *baseline* and *baseline plus* assessment.

Table 13 - Assessment in the baseline and baseline plus scenario

Activity	**Weight** ***across sample (%)***	**Screening Criteria / Data points**	**Baseline**	**Baseline Plus**
Manufacture of Low Carbon Technologies	13.27	An "umbrella activity" capturing different sub-activities: (1) Items essential for RE technologies (per se green) (2) Low-carbon transport vehicles (g CO2 / km, a.o.) (3) Energy Efficiency Equipment (product-specific data required) (4) Manufacture of items resulting in substantial GHG reduction (third-party carbon footprint assessment)	- Identification of "green" activities via the mapping routine incl. buzzword screening. - Non-verifiable for the remaining activities. *(as explained in the study, if the mapping routine links a revenue segment to this activity, it does not mean the activity is EU Taxonomy-aligned per ser)*	Results from the baseline assessment, plus: - insert MSCI green revenue estimates for energy efficiency, alternative energy, and green building for the non-verifiable share (i.e. clustering into "green" and "brown")
Energy production	4.09	For production of electricity and heat/cool, a threshold of 100gCO2e/kWh applies. RE technologies are partly or fully derogated from the assessment of this threshold and automatically deemed EU Taxonomy-aligned.	Methodology explained in section 4.3.	Same as in baseline assessment.
Data-driven solutions for GHG emissions reduction	4.45	No threshold applies. Activity is EU Taxonomy-aligned ICT solutions "exclusively aimed at the provision of data and analytics for decision making […] enabling GHG emissions reduction".	Since it's "just" about identifying the nature of the activity (i.e. whether it is climate-related or not), we apply a buzzword screening of appropriate terms across all reported revenue segments. Not a single segment could potentially be assigned to that activity (i.e. all are assigned to the diversification pocket).	Since the methodology in the left cell is rather vague, we use the MSCI proxy CT_CC_TOTAL_MAX_REV (see Annex III) as a proxy for the green revenue share of IT companies.

Acquisition of ownership and buildings	2.77	Building acquisition and ownership is EU Taxonomy-aligned if the building performance falls in the top 15% of local stock or a certification scheme is available, such as Environmental Performance Certification EPC (for EU) is available that falls into the top 15%.	Non-verifiable due to lack of spatial and environmental (building performance) data. (i) a (regional) benchmark is required and (ii) the distribution of the environmental building performance of other companies in the peer group is required	MSCI proxy CT_GREEN_BLDG_MAX_REV.
Manufacturing	1.91	Manufacture of other organic basic chemicals; Iron and Steel; Cement; Aluminium; fertilizers and nitrogen compounds $CO2\ Intensity_i = \frac{CO2\ (production_i)}{Output_i}$	- Obtaining CO2 Scope 1 emission data from BB and TR; and output data from Bloomberg. - Estimation of CO2 data for non-disclosing companies. - Assessment against EU-ETS product benchmark if output data is available. - "Non-verifiable" if output data is missing.	Results from the baseline assessment plus: - MSCI proxy on energy efficiency and pollution prevention for the non-verifiable share (CT_POLL_PREV_MAX_REV + CT_ENERGY_EFF_MAX_REV).
Water collection, treatment and supply	1.37	(i) the average energy consumption of their water systems, (ii) the decrease of their average energy consumption of water systems, (iii) their Infrastructure Leakage Index (ILI) nor (iv), the required data to determine their ILI – which is required to evaluate the EU Taxonomy's screening criteria.	Non-verifiable due to lack of energy consumption data. Calculation of ILI further requires the provision of company data on CARL (current amount real losses) and UARL (Un-avoidable real losses), including pipe in meter, pressure, etc.	MSCI proxy rev_sum_ct_water
Transmission and distribution of electricity	1.05	EU Taxonomy-aligned if "more than 67% of newly connected generation capacity in the System is below the generation threshold value of 100 g CO2e/kWh";	Deemed as EU Taxonomy-aligned if the company is in the EU27 (plus UK). Manual assessment of remaining companies, while taking IRENA data on electricity generation	Same as in baseline assessment.

		EU Taxonomy-alignment for the interconnected European System per se.	and capacity into account. (link)	
Separate collection and transport of non-hazardous waste in source segregated fractions	0.54	EU Taxonomy-aligned if "waste is separately collected with the aim of preparing for reuse and/or recycling".	EU Taxonomy-aligned if (1) company headquarters' country pursues recycling efforts (OECD (2019), "Waste: Municipal waste") and (2) if company itself engages in recycling activities as disclosed on the website.	Same as in baseline assessment.
Freight Rail Transport	0.32	Trains are EU Taxonomy-aligned if they have (a) zero direct emissions or (b) "direct emissions per tonne-km (g CO2e/tkm) are 50% lower than average reference CO2 emissions of HDVs as defined for the Heavy-Duty CO2 Regulation" Exclusion criterion if company engages in transport of fossil fuels.	Manual screening whether a company transports mainly fossil fuels.	Same as in baseline assessment.
Data processing, hosting and related activities	0.25	EU Taxonomy-aligned if it follows the "European Code of Conduct for Data Centre Energy Efficiency".	Not EU Taxonomy-aligned if company is based outside Europe. If based in EU28: manual research whether company applies the Code of Conduct[47].	Same as in baseline assessment.
Growing of perennial crops & Livestock production	0.2	Deployment of essential management practices; Provision of a clear GHG emissions reductions pathway in line with the recommendations by the TEG; Exclusion of business in certain areas.	Classified as non-verifiable.	We make use of MSCI's estimate on the revenue derived from "agricultural goods produced using certified sustainable or organic practices" (CT_SUST_AG_MAX_REV). In case this variable is missing, we pragmatically assume that 5% of

47 List of participants https://e3p.jrc.ec.europa.eu/communities/data-centres-code-conduct

				revenues are derived from EU Taxonomy-aligned activities. The proxy is based on (i) the comparison to the German organic food revenue share[48] in the total food market in 2017 of 5.1% and (ii) the assumption that the green skewedness of the sample will compensate Germanys' above average consumption of organic food.
Remaining (identified) activities not mentioned in this list.	~ 1 %	(excluded of further assessment due to insignificant weight in the sample)	Classified as non-verifiable.	Classified as non-verifiable.

Source: Own elaboration.

48 https://www.boelw.de/fileadmin/user_upload/Dokumente/Zahlen_und_Fakten/Brosch%C3%BCre_2018/ZDF_2018_Inhalt_Web_Einzelseiten_kleiner.pdf.

ANNEX III – DATA SOURCES

The ESG data contained herein is the property of MSCI ESG Research LLC (ESG). ESG, its affiliates and information providers make no warranties with respect to any such data. The ESG data contained herein is used under license and may not be further used, distributed or disseminated without the express written consent of ESG.

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Table 14 - Variables used, their description and source

Mapping routine		
Name	*Description*	*Source*
SIC to NAICS	SIC to NAICS 2017 correspondence table.	Naics.com (link)
NAICS to NACE	NACE REV. 2 to NAICS 2017 correspondence table.	Eurostat – Ramon (link)
TRBC to NACE	Mapping of (EU Taxonomy relevant) TRBC codes to NACE.	TEG Spreadsheet, sheet "TRBC" (link)
NACE to EU Taxonomy activities	Link between activities under the EU Taxonomy and the NACE nomenclature.	Technical annex to the TEG final report on the EU Taxonomy (link); supplemented by TEG spreadsheet.
Funds & Constituents		
Name	*Description*	*Source*
Weight of constituents	The weight of each holding in corresponding fund (March 2020). We screened the UCITS equity fund universe in Bloomberg and Thomson Reuters and downloaded the composition of portfolios in alignment with our methodology.	Bloomberg & Thomson Reuters
Revenue segments (Sales)	Sales in up to 10 different product lines. (End of year 2018 due to time lag in reporting).	Worldscope (WC19501, WC19511, …, WC19591)
Revenue segments (Description)	Description of the product line as reported by the company.	Worldscope (WC19500, …, WC19590)
Revenue segments (SIC)	The Standard Industry Classification of the product line.	Worldscope (WC19506, …, WC19596)
Variables used for Taxonomy Assessment		
Name	*Description*	*Source*
CO2 Scope 1	CO2 Scope 1 emissions (insert definition)	Thomson Reuters (ENERDP024) & Bloomberg ()
Renewable Energy Variables	Electricity Purchased (ENRRDP0401); Electricity Produced (ENRRDP0402); Total Renewable Energy (ENRRDP060); RE produced (ENRRDP0452); RE purchased (ENRRDP0451); RE use ratio (ENRRO06V)	Thomson Reuters (ASSET4)
CO2 estimation variables	Time-series variables from 2010-2018 to parametrise the CO2 estimation model: Total Revenue (WC01001); Cost of goods sold (WC01051); Intangible Assets (WC01149); Long Term Debt (WC03251); Total Assets (WC02999); Capital Expenditure (WC04601); Depreciation Expense (WC02401); Property Plant Equipment Net (WC02501)	Thomson Reuters (Worldscope)

Geographic Segments	The sales in geographic regions to determine the revenue share in and outside of Europe.	Geographic Segment 1 to 10 – Sales (WC19601, … WC19691)
Variables used in baseline plus & MSCI proxy scenario		
Name	*Description*	*Source*
Energy Efficiency	Maximum (estimated) percentage of revenue derived from products, services, infrastructure, or technologies that proactively address the growing global demand for energy while minimizing impacts to the environment.	MSCI (CT_ENERGY_EFF_MAX_REV)
Alternative Energy	Maximum (estimated) percentage of revenue derived from products, services, or infrastructure projects supporting the development or delivery of renewable energy and alternative fuels.	MSCI (CT_ALT_ENERGY_MAX_REV)
Green Building	Maximum (estimated) percentage of revenue derived from design, construction, redevelopment, retrofitting, or acquisition of 'green' certified properties – subject to local green building criteria.	MSCI (CT_GREEN_BLDG_MAX_REV)
Pollution Prevention	Maximum(estimated) percentage of revenue derived from products, services, or projects that support pollution prevention, waste minimization, or recycling as a means of alleviating the burden of unsustainable waste generation.	MSCI (CT_POLL_PREV_MAX_REV)
Sustainable Agriculture	Maximum(estimated) percentage of revenue derived from agricultural goods produced using certified sustainable or organic practices	MSCI (CT_SUST_AG_MAX_REV)
Sustainable Water	Maximum (estimated) percentage of revenue derived from products, services, and projects that attempt to resolve water scarcity and water quality issues, including minimizing and monitoring current water use and demand increases, improving the quality of water supply, and improving the availability and reliability of water.	MSCI (CT_SUST_WATER_MAX_REV)
Climate Change	Total of all (estimated) revenues derived from any of the climate change environment impact themes including alternative energy, energy efficiency or green building.	MSCI (CT_CC_TOTAL_MAX_REV)
Environmental Impact Solutions	Total of all (estimated) revenues derived from any of the five clean tech themes including alternative energy, energy efficiency, green building, pollution prevention, or sustainable water.	MSCI (CT_TOTAL_MAX_REV)

Source: Own elaboration.

ANNEX IV – MAPPING ROUTINE

Illustration of the mapping procedure ("the default")

To clarify the mapping procedure, the routine for four exemplary companies is illustrated below. The mapping procedure starts with a list of all activities defined under the EU Taxonomy and their corresponding NACE codes (see Annex I for the full list). The list is reshaped to obtain a mapping table of NACE codes and their links to EU Taxonomy activities, as shown in Table 1.1 in Figure 18. Following, the EU Taxonomy activities are clustered with numeric identifiers for smoother data processing (see Table 1.2).

Figure 18 - NACE Codes to Taxonomy

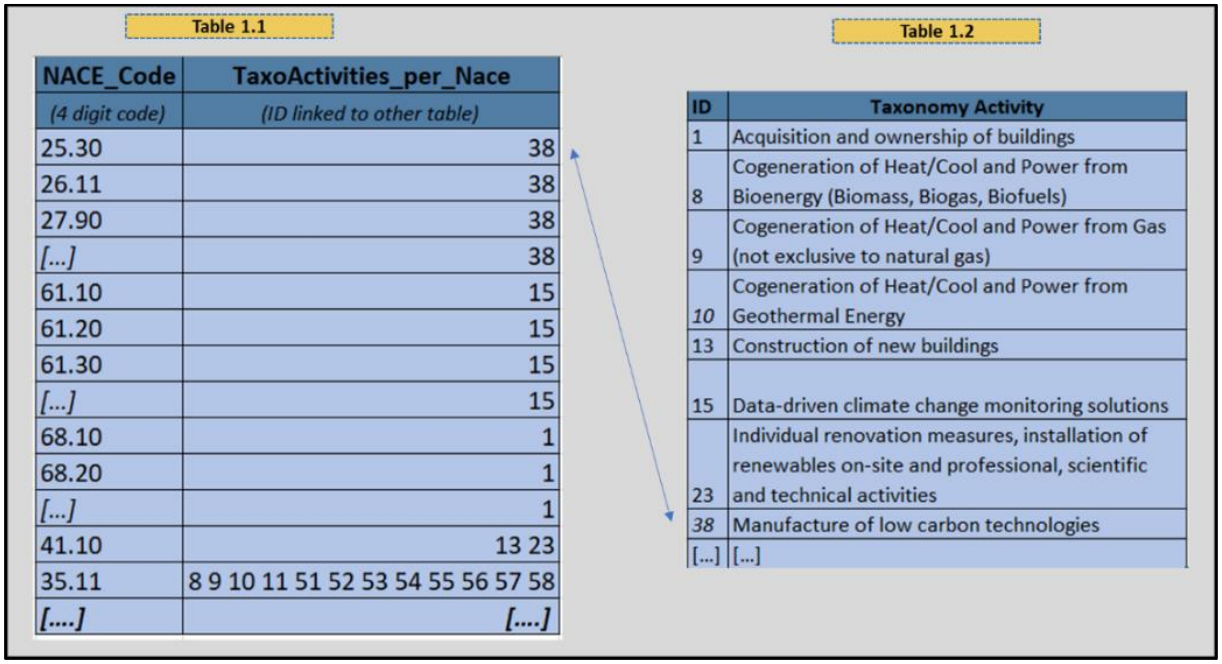


Table 1.1

NACE_Code	TaxoActivities_per_Nace
(4 digit code)	*(ID linked to other table)*
25.30	38
26.11	38
27.90	38
[…]	38
61.10	15
61.20	15
61.30	15
[…]	15
68.10	1
68.20	1
[…]	1
41.10	13 23
35.11	8 9 10 11 51 52 53 54 55 56 57 58
[….]	*[….]*

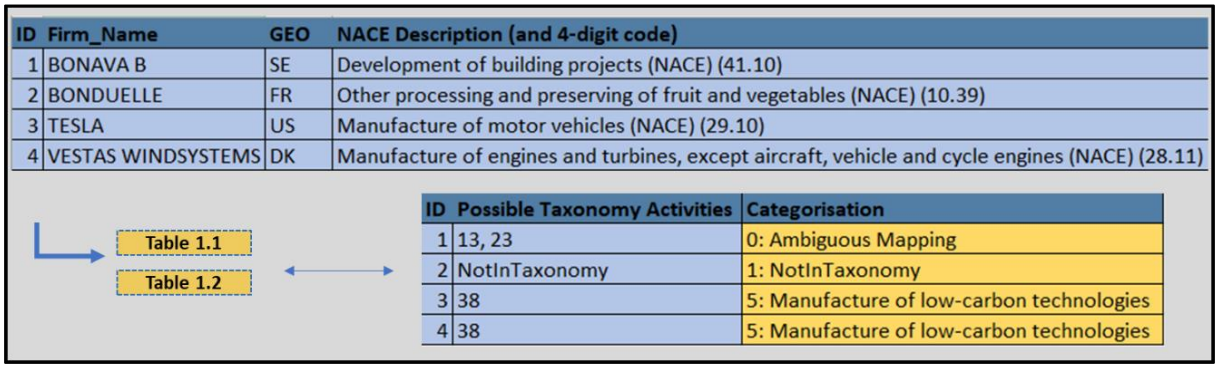
Table 1.2

ID	Taxonomy Activity
1	Acquisition and ownership of buildings
8	Cogeneration of Heat/Cool and Power from Bioenergy (Biomass, Biogas, Biofuels)
9	Cogeneration of Heat/Cool and Power from Gas (not exclusive to natural gas)
10	Cogeneration of Heat/Cool and Power from Geothermal Energy
13	Construction of new buildings
15	Data-driven climate change monitoring solutions
23	Individual renovation measures, installation of renewables on-site and professional, scientific and technical activities
38	Manufacture of low carbon technologies
[…]	[…]

Source: Own elaboration.

After obtaining disaggregated company-level data from data providers such as Bloomberg and Thomson Reuters, the companies' *primary* activities, classified with a four-digit NACE code, were screened (see Figure 19 below). Taking Table 1.1 and 1.2 into account, activities that potentially fall under the EU Taxonomy were mapped to their NACE counterparts. For instance, the Swedish company Bonava (NACE code 41.10; *Development of building projects*) can fall under both EU Taxonomy activity 13 ("Construction of new buildings") and 15 ("Individual renovation measures, installation of renewable on-site and professional, scientific and technical activities"). Thus, the mapping is ambiguous and requires further research.

Figure 19 - Mapping of Primary Activities



ID	Firm_Name	GEO	NACE Description (and 4-digit code)
1	BONAVA B	SE	Development of building projects (NACE) (41.10)
2	BONDUELLE	FR	Other processing and preserving of fruit and vegetables (NACE) (10.39)
3	TESLA	US	Manufacture of motor vehicles (NACE) (29.10)
4	VESTAS WINDSYSTEMS	DK	Manufacture of engines and turbines, except aircraft, vehicle and cycle engines (NACE) (28.11)

Table 1.1

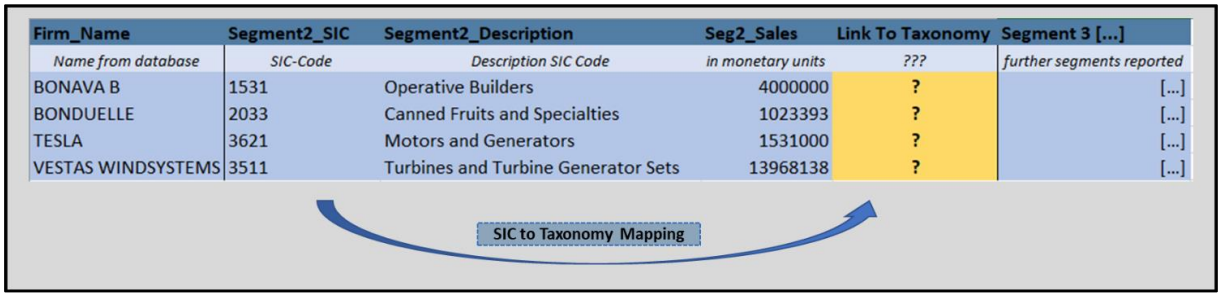
Table 1.2

ID	Possible Taxonomy Activities	Categorisation
1	13, 23	0: Ambiguous Mapping
2	NotInTaxonomy	1: NotInTaxonomy
3	38	5: Manufacture of low-carbon technologies
4	38	5: Manufacture of low-carbon technologies

Source: Own elaboration.

For the remaining up to ten different, non-primary segments, clustered via SIC codes, the mapping routine is more complex. Looking at Figure 20 below, one needs to link each SIC code to the EU Taxonomy or conclude that the activity is not EU Taxonomy eligible.

Figure 20 - Example of reported SIC Segments



Firm_Name	Segment2_SIC	Segment2_Description	Seg2_Sales	Link To Taxonomy	Segment 3 [...]
Name from database	*SIC-Code*	*Description SIC Code*	*in monetary units*	*???*	*further segments reported*
BONAVA B	1531	Operative Builders	4000000	?	[...]
BONDUELLE	2033	Canned Fruits and Specialties	1023393	?	[...]
TESLA	3621	Motors and Generators	1531000	?	[...]
VESTAS WINDSYSTEMS	3511	Turbines and Turbine Generator Sets	13968138	?	[...]

Source: Own elaboration.

As a first step, the NAICS to NACE correspondence table was used to aggregate all corresponding NACE codes into one column (see Table 2.2 in Figure 21). In a second step, Table 2.2 was mapped to Table 2.1 in order to obtain the same information on the SIC code level.

Figure 21 - Exemplary SIC to EU Taxonomy Mapping I

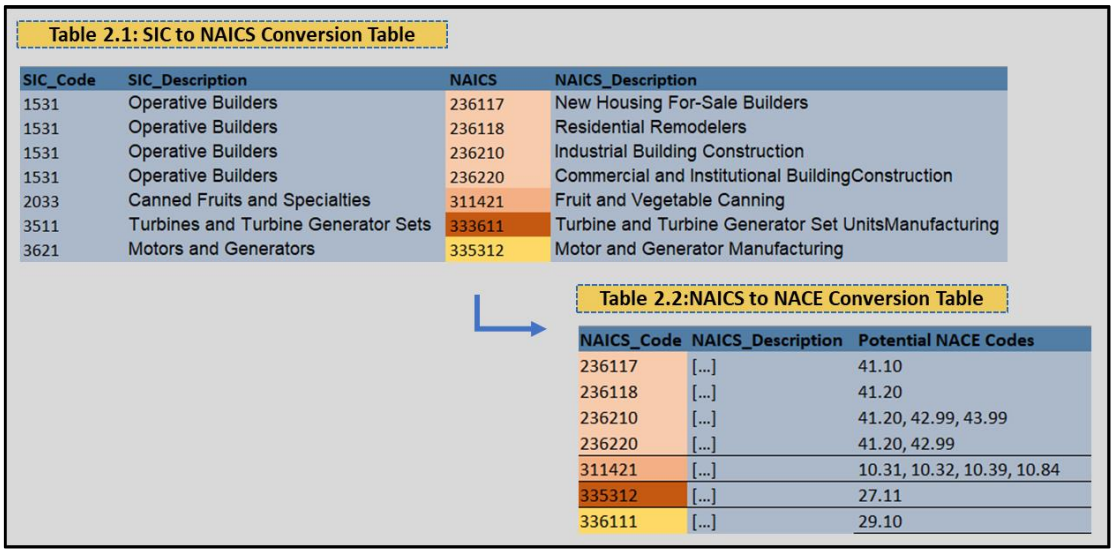


Table 2.1: SIC to NAICS Conversion Table

SIC_Code	SIC_Description	NAICS	NAICS_Description
1531	Operative Builders	236117	New Housing For-Sale Builders
1531	Operative Builders	236118	Residential Remodelers
1531	Operative Builders	236210	Industrial Building Construction
1531	Operative Builders	236220	Commercial and Institutional BuildingConstruction
2033	Canned Fruits and Specialties	311421	Fruit and Vegetable Canning
3511	Turbines and Turbine Generator Sets	333611	Turbine and Turbine Generator Set UnitsManufacturing
3621	Motors and Generators	335312	Motor and Generator Manufacturing

Table 2.2:NAICS to NACE Conversion Table

NAICS_Code	NAICS_Description	Potential NACE Codes
236117	[...]	41.10
236118	[...]	41.20
236210	[...]	41.20, 42.99, 43.99
236220	[...]	41.20, 42.99
311421	[...]	10.31, 10.32, 10.39, 10.84
335312	[...]	27.11
336111	[...]	29.10

Source: Own elaboration.

Figure 22 - Exemplary SIC to EU Taxonomy Mapping II

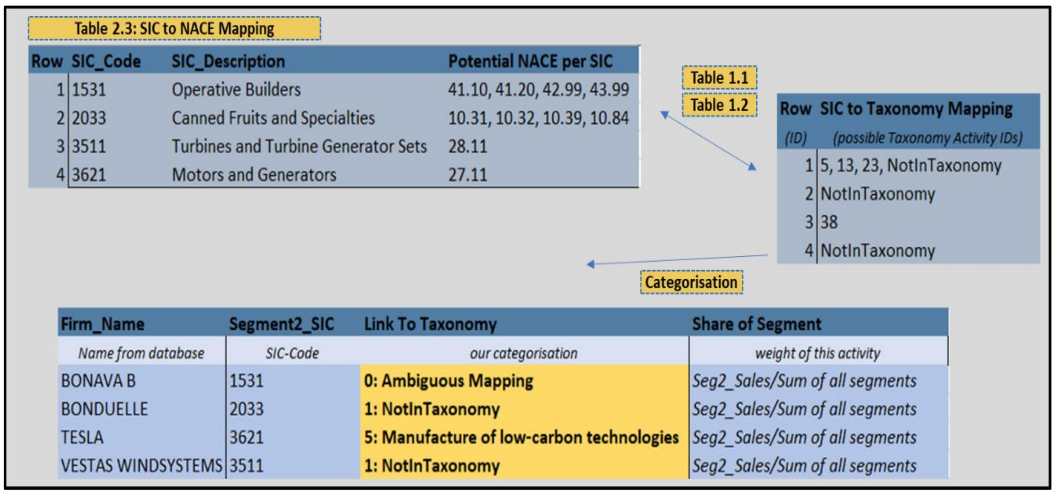


Table 2.3: SIC to NACE Mapping

Row	SIC_Code	SIC_Description	Potential NACE per SIC
1	1531	Operative Builders	41.10, 41.20, 42.99, 43.99
2	2033	Canned Fruits and Specialties	10.31, 10.32, 10.39, 10.84
3	3511	Turbines and Turbine Generator Sets	28.11
4	3621	Motors and Generators	27.11

Row	SIC to Taxonomy Mapping
(ID)	(possible Taxonomy Activity IDs)
1	5, 13, 23, NotInTaxonomy
2	NotInTaxonomy
3	38
4	NotInTaxonomy

Firm_Name	Segment2_SIC	Link To Taxonomy	Share of Segment
Name from database	*SIC-Code*	*our categorisation*	*weight of this activity*
BONAVA B	1531	**0: Ambiguous Mapping**	*Seg2_Sales/Sum of all segments*
BONDUELLE	2033	**1: NotInTaxonomy**	*Seg2_Sales/Sum of all segments*
TESLA	3621	**5: Manufacture of low-carbon technologies**	*Seg2_Sales/Sum of all segments*
VESTAS WINDSYSTEMS	3511	**1: NotInTaxonomy**	*Seg2_Sales/Sum of all segments*

Source: Own elaboration.

Table 2.3 in Figure 22 presents the result. For example, SIC code 2033 refers to four NACE codes, according to both correspondence tables. To simplify the mapping, the methodology refers again to Table 1.1 and 1.2 and moves from a SIC to NACE mapping to a SIC to EU Taxonomy mapping as the final objective of the analysis.

For the company Bonduelle, for example, all potential NACE codes of SIC code 2033 are not covered by the EU Taxonomy. For Bonava, the mapping is ambiguous. For Tesla, one can map the SIC code unambiguously to NACE code 27.11, which falls under the EU Taxonomy activity "Manufacture of low-carbon technologies", which falls under category 5[49] (see Annex I).

The procedure just described presents the "default option" and illustrates the underlying logic and data situation. However, further workarounds were implemented in case of data restrictions (e.g. missing NACE code for some companies) and manual research was carried out in case it was feasible. All these "further steps" are listed in the section below.

Further steps

This part complements section 3.2 and describes all other steps and assumptions that go beyond the "default" option.

Leveraging on TRBC codes

Since the NACE nomenclature does not always capture the level of granularity of the EU Taxonomy activities, the assessment also leveraged on the sometimes more disaggregated TRBC nomenclature. The TEG has provided a spreadsheet containing a TRBC to NACE correspondence table for all EU Taxonomy-eligibile activities. All TRBC codes were identified that are capturing economic activities that are per se defined as "green". Following, a TRBC-to-NACE-to-EU-Taxonomy conversion table was created and these results in the following instances inserted:

- the TRBC code identified an activity per se deemed as green;
- if the NACE code for $company_i$ was missing;
- if the NACE code for $company_i$ resulted in an ambiguous mapping.

Buzzword screening

Activities were identified as green once the segment contained buzzwords such as "wind power" and other appropriate. Further, revenue segments containing terms as "fossil fuels", "oil" etc. were "blacklisted" during the screening process.

Quality of reported revenue segments

For some companies, sales among product lines (i.e. turnover segments) could not been retrieved. This was either because $company_i$ does not report them or because it was not available in Thomson Reuters. In this case, the primary NACE code (or TRBC if not available) was used and it was assumed that 100% of the companies' turnover is derived from this particular activity.

Manual research

To reduce the amount of "ambiguous" mapping cases, manual research for activities potentially linked to two EU Taxonomy activities was conducted. For example, in case of NACE 63.11 *Data processing, hosting and related activities*, the mapping routine yields two potential EU Taxonomy activities (i.e. "Data-driven solutions for GHG emissions reduction" and "Data processing, hosting and related activities"). Results from manually screening these cases were incorporated into the data processing structure.

49 A description of the 5 categories used is provided in section 3.3.

ANNEX V – DATA DESCRIPTIVES

Fund Descriptives:

Table 15 below lists the name of all funds included in the entire sample (#101) and the allocation into the six pockets (i.e. (1) "green", (2) "green or transition", (3) "transition", (4) "transition or diversification", (5) "diversification" and (6) "potentially everything", see Section 5) for the baseline assessment (B), the baseline plus assessment (1) and the MSCI proxy scenario (2). The column "Label" indicates if a fund has received one of the mentioned national labels (1) or not (0).

Table 15 - Scenario Overview (Fund-Level)

Name of Fund from data providers	Label	Sce.	(1)	(2)	(3)	(4)	(5)	(6)
3 Banken Mensch & Umwelt Aktienfonds (AT0000A23YE9)	1	B	8.7	0.0	0.0	11.3	54.9	25.1
		B+	8.7	0.0	1.7	10.1	69.7	9.7
		MSCI	6.3	0.0	5.4	0.0	86.4	2.0
3 Banken Nachhaltigkeitsfonds (AT0000701156)	1	B	0.0	0.0	0.0	9.9	83.7	6.4
		B+	0.0	0.0	0.0	9.9	86.1	4.1
		MSCI	0.8	0.0	1.0	0.0	98.2	0.0
3 Banken Verantwortung + Zukunft 2024 (AT00ZUKUNFT5)	1	B	15.9	2.9	0.0	21.9	46.9	12.4
		B+	15.9	2.9	0.0	19.3	54.7	7.2
		MSCI	7.7	0.0	10.7	0.0	77.0	4.7
Amundi Funds Global Ecology ESG (LU1883318666)	0	B	6.4	0.0	0.0	5.2	46.8	41.6
		B+	9.5	0.0	4.5	5.2	59.2	21.7
		MSCI	8.5	0.0	13.6	0.0	77.4	0.6
Amundi Oeko Sozial Stock (MF) (AT0000A06Q23)	1	B	0.0	0.0	0.0	13.1	86.9	0.0
		B+	0.0	0.0	0.0	13.1	86.9	0.0
		MSCI	0.0	0.0	0.0	0.0	100.0	0.0
BGF Sustainable Energy Fund (MF) (LU0124384867)	0	B	19.0	0.0	0.0	7.0	30.9	43.1
		B+	19.0	0.0	7.6	7.0	37.2	29.2
		MSCI	20.9	0.0	16.9	0.0	54.6	7.7
BMO Responsible Global Equity (MF) (LU1890813915)	0	B	0.0	1.1	0.0	14.0	66.2	18.7
		B+	0.0	1.1	0.0	12.9	80.2	5.9
		MSCI	2.7	0.0	6.7	0.0	89.3	1.3
BNP Paribas Climate Impact (MF) (LU0406802339)	0	B	8.8	0.0	0.0	15.3	55.6	20.3
		B+	11.2	0.0	1.6	9.9	67.7	9.6
		MSCI	26.9	0.0	17.5	0.0	52.2	3.3
BNP Paribas Easy FTSE EPRA Nareit Developed Europe ex UK Green (LU2008764073)	0	B	0.0	0.0	0.0	0.0	0.7	99.3
		B+	23.7	0.0	13.9	0.0	61.4	1.0
		MSCI	23.7	0.0	15.7	0.0	59.5	1.0
BNP Paribas Energy Transition (MF) (LU0823414718)	0	B	36.6	0.8	0.6	5.2	37.6	19.2
		B+	41.5	0.8	0.6	2.0	49.8	5.2
		MSCI	45.4	0.0	14.4	0.0	35.9	4.3
Bellevue F (Lux) BB Adamant Sustainable Healthcare (LU1819586261)	1	B	0.0	0.0	0.0	11.9	85.2	2.9
		B+	0.0	0.0	0.0	11.9	86.5	1.6
		MSCI	0.0	0.0	0.0	0.0	100.0	0.0

CB - Save Earth (LU0354788688)	1	B	5.7	2.7	0.0	16.9	53.4	21.4
		B+	5.7	2.7	5.5	16.9	59.1	10.2
		MSCI	13.9	0.0	14.2	0.0	71.9	0.0
CROWN SIG-SUS QUAL EQ (IE00BYVTJT56)	0	B	0.0	0.0	0.0	6.9	80.5	12.6
		B+	0.0	0.0	1.8	4.6	84.8	8.8
		MSCI	0.0	0.0	3.0	0.0	97.0	0.0
Crown S EQ (IE00BYVTJF11)	0	B	4.0	0.0	4.5	3.0	84.8	3.6
		B+	4.0	0.0	4.5	3.0	88.5	0.0
		MSCI	1.1	0.0	0.0	0.0	97.6	1.3
DNB Fund ECO Absolute Return (LU0547714286)	0	B	15.8	1.4	7.7	8.4	14.7	52.0
		B+	15.8	1.4	7.7	8.4	26.2	40.4
		MSCI	33.1	0.0	6.7	0.0	49.5	10.7
DNB Fund Renewable Energy (LU0302296149)	1	B	39.7	0.0	3.4	7.3	9.6	40.1
		B+	40.5	0.0	3.4	7.3	16.5	32.4
		MSCI	44.8	0.0	5.5	0.0	39.4	10.3
DWS Invest ESG Climate Tech (MF) (LU1863264070)	0	B	14.1	1.0	0.0	5.2	58.4	21.3
		B+	17.8	1.0	4.9	5.2	62.2	8.8
		MSCI	24.0	0.0	17.6	0.0	56.6	1.7
DWS SDG Global Equities (MF) (DE0005152466)	0	B	9.9	0.0	0.0	7.6	60.0	22.5
		B+	14.4	0.0	5.4	7.6	58.4	14.2
		MSCI	26.5	0.0	23.0	0.0	49.9	0.6
Deka-UmweltInvest (DE000DK0ECS2)	0	B	12.2	5.3	3.2	11.6	35.8	31.9
		B+	12.7	5.3	3.3	11.6	45.1	22.0
		MSCI	17.6	0.0	16.1	0.0	64.9	1.5
Didner & Gerge Global (SE0004167567)	1	B	4.9	0.0	0.0	3.4	83.2	8.5
		B+	4.9	0.0	0.0	3.4	88.3	3.4
		MSCI	0.0	0.0	3.4	0.0	89.8	6.8
EB-Oeko-Aktienfonds (MF) (LU0037079380)	1	B	2.5	0.0	3.2	5.9	66.2	22.2
		B+	2.5	0.0	5.5	5.9	76.1	10.1
		MSCI	0.0	0.0	7.2	0.0	92.8	0.0
ERSTE RESPONSIBLE STOCK DIVIDEND (AT0000A1QA61)	1	B	2.4	0.0	0.0	15.9	62.5	19.3
		B+	4.1	0.0	1.5	8.5	76.5	9.4
		MSCI	1.7	0.0	4.5	0.0	93.8	0.0
ERSTE RESPONSIBLE STOCK EUROPE (AT0000645973)	1	B	3.6	0.0	0.0	8.2	69.8	18.4
		B+	3.6	0.0	2.6	6.8	76.5	10.4
		MSCI	2.4	0.0	4.8	0.0	92.8	0.0
ERSTE RESPONSIBLE STOCK GLOBAL (AT0000646799)	1	B	4.7	0.0	0.0	8.2	73.3	13.8
		B+	4.7	0.0	4.1	7.7	78.8	4.7
		MSCI	3.7	0.0	6.4	0.0	88.7	1.2
East Capital China Environmental Fund (LU0289591256)	1	B	21.1	1.5	2.7	9.8	33.6	31.3
		B+	31.4	1.5	4.8	9.8	40.6	12.0
		MSCI	25.9	0.0	10.6	0.0	47.2	16.3
Ecofi Enjeux Futurs (MF) (FR0010596759)	0	B	3.5	0.0	2.7	10.1	49.3	34.4
		B+	4.6	0.0	6.5	7.7	60.2	21.0
		MSCI	11.1	0.0	12.5	0.0	76.5	0.0

Energies Renouvelables (FR0010244160)	0	B	17.9	4.6	2.8	7.9	33.8	33.0
		B+	17.9	4.6	5.0	6.7	37.1	28.7
		MSCI	5.7	0.0	14.0	0.0	66.5	13.7
FBG 4Elements (MF) (LU0298627968)	0	B	7.9	0.0	0.9	15.2	52.0	24.0
		B+	7.9	0.0	3.7	15.2	56.0	17.2
		MSCI	0.5	0.0	11.7	0.0	87.8	0.0
Green Effects - NAI Werte Fonds (IE0005895655)	0	B	23.1	0.0	0.0	24.2	46.8	5.9
		B+	23.1	0.0	0.0	24.2	47.0	5.8
		MSCI	30.8	0.0	22.4	0.0	39.1	7.7
Guinness Alternative Energy Fund (IE00B2PGVJ29)	0	B	40.8	3.2	3.9	7.2	35.3	9.6
		B+	40.8	3.2	7.9	7.2	34.5	6.4
		MSCI	50.3	0.0	17.7	0.0	28.4	3.6
Gutmann Aktien Nachhaltigkeitsfonds (AT0000A15M75)	1	B	2.4	0.0	0.0	6.2	82.3	9.1
		B+	2.4	0.0	1.5	4.4	89.0	2.7
		MSCI	0.0	0.0	1.8	0.0	98.2	0.0
HMT Euro Aktien defensiv ESG (MF) (DE000A2DR2Q1)	1	B	0.0	2.8	0.0	2.0	60.2	35.0
		B+	4.3	2.8	0.0	0.0	78.0	14.9
		MSCI	4.3	0.0	5.2	0.0	89.3	1.2
HSBC Europe Equity Green Transition (MF) (FR0000982449)	1	B	9.4	3.9	0.0	9.9	42.7	34.1
		B+	9.4	3.9	7.5	7.9	47.9	23.4
		MSCI	16.9	0.0	22.1	0.0	58.9	2.1
HSBC GIF Global Equity Climate Change (MF) (LU0323240290)	0	B	10.6	0.0	2.1	7.1	59.6	20.7
		B+	11.3	0.0	5.8	5.6	67.5	9.8
		MSCI	10.4	0.0	11.0	0.0	77.9	0.7
Handelsbanken Hallbar Energi (SE0005965662)	1	B	52.1	0.0	0.0	3.6	26.1	18.2
		B+	56.4	0.0	1.4	1.4	33.0	7.7
		MSCI	50.0	0.0	9.8	0.0	27.1	13.1
IQAM Equity Emerging Markets (MF) (AT0000823281)	1	B	1.8	0.0	2.1	18.0	52.4	25.7
		B+	4.0	0.0	5.3	15.6	59.8	15.4
		MSCI	2.1	0.0	5.4	0.0	92.5	0.0
Impax Asian Environmental Markets (Ireland) Fund (IE00B3MGK730)	0	B	8.1	0.0	0.7	13.3	39.5	38.4
		B+	12.4	0.0	4.0	9.9	58.7	15.1
		MSCI	16.2	0.0	11.3	0.0	67.7	4.7
Impax Environmental Markets (Ireland) Fund (IE00B04R3307)	0	B	7.6	0.0	0.0	17.7	53.7	20.9
		B+	9.2	0.0	1.3	13.1	63.2	13.2
		MSCI	19.7	0.0	12.2	0.0	62.4	5.7
JSS Sustainable Equity - Europe (MF) (LU0058891119)	1	B	2.6	1.6	0.0	12.3	76.1	7.4
		B+	2.6	1.6	0.0	12.3	76.1	7.4
		MSCI	1.1	0.0	7.7	0.0	88.9	2.3
JSS Sustainable Equity - Global Thematic Fund (MF) (LU0229773345)	1	B	1.6	0.0	0.0	5.9	81.5	11.0
		B+	1.6	0.0	3.4	3.7	86.2	5.1
		MSCI	0.0	0.0	5.2	0.0	92.9	1.9
JSS Sustainable Equity - Water Fund (MF) (LU0333595436)	1	B	0.0	5.0	0.0	13.9	45.3	35.8
		B+	1.0	5.0	2.3	13.9	56.5	21.2
		MSCI	5.7	0.0	19.6	0.0	74.7	0.0

JSS Sustainable Equity Real Estate Global (MF) (LU0288928376)	1	B	0.0	0.0	0.0	0.0	7.9	92.1
		B+	11.2	0.0	8.1	0.0	68.7	12.0
		MSCI	13.2	0.0	16.1	0.0	66.5	4.2
Jupiter Global Ecology Growth (MF) (LU0231118026)	0	B	11.1	5.1	0.0	14.8	42.4	26.6
		B+	10.2	5.1	2.8	12.7	48.8	20.3
		MSCI	18.2	0.0	28.4	0.0	51.9	1.5
KBC Eco Alternative Energy (BE0175280016)	0	B	42.3	0.6	5.7	5.7	23.5	22.2
		B+	44.5	0.6	7.8	5.0	28.1	14.0
		MSCI	39.0	0.0	12.4	0.0	34.3	14.3
KBC Eco Climate Change (BE0946844272)	0	B	19.3	1.0	6.2	11.0	29.6	32.9
		B+	21.0	1.0	9.1	9.8	43.1	15.9
		MSCI	22.2	0.0	18.4	0.0	50.9	8.5
KBI Institutional Energy Solutions Fund (MF) (IE00B2Q0LH16)	0	B	30.7	0.0	3.3	7.5	22.4	36.1
		B+	32.8	0.0	5.9	7.5	32.4	21.4
		MSCI	40.6	0.0	17.0	0.0	35.3	7.1
KBI Institutional GRS Fund (MF) (IE00B3QJ9N79)	0	B	14.0	0.0	1.4	11.3	32.3	41.1
		B+	14.8	0.0	5.0	11.3	41.3	27.7
		MSCI	19.3	0.0	18.6	0.0	54.5	7.7
KEPLER Ethik Aktienfonds (AT0000675657)	1	B	3.8	0.0	0.0	10.6	59.7	25.9
		B+	3.7	0.0	5.1	6.0	76.9	8.3
		MSCI	5.5	0.0	8.7	0.0	83.0	2.8
KEPLER Umwelt Aktienfonds (AT000UMWELT5)	1	B	25.2	0.0	0.0	9.2	34.8	30.8
		B+	24.6	0.0	5.4	9.2	37.8	23.0
		MSCI	39.0	0.0	23.9	0.0	26.1	11.1
LBBW Global Warming (DE000A0KEYM4)	1	B	1.9	0.6	0.0	9.3	63.4	24.9
		B+	1.9	0.6	6.9	7.7	70.7	12.2
		MSCI	0.0	0.0	8.1	0.0	89.4	2.6
LBPAM Responsable action environnement (FR0010750901)	1	B	18.8	3.0	0.0	12.1	36.2	30.0
		B+	18.8	3.0	3.6	10.1	42.2	22.4
		MSCI	21.7	0.0	23.2	0.0	47.1	8.0
LSF - Solar & Sustainable Energy Fund (MF) (LU0405846410)	0	B	47.4	1.7	14.2	0.0	13.9	22.8
		B+	56.5	1.7	20.4	0.0	13.9	7.5
		MSCI	35.6	0.0	12.4	0.0	39.0	13.1
La Francaise LUX - Inflection Point Carbon Impact Global (MF) (LU1523323605)	0	B	1.4	0.0	0.0	5.8	68.9	23.9
		B+	2.1	0.0	4.5	5.8	82.6	5.1
		MSCI	5.5	0.0	7.7	0.0	86.7	0.0
Lansforsakringar Sverige Aktiv (SE0000837221)	1	B	0.0	0.0	0.0	20.2	64.5	15.2
		B+	1.5	0.0	0.0	20.2	72.9	5.4
		MSCI	1.5	0.0	0.4	0.0	97.2	0.9
Luxembourg Selection Fd - Active Solar (MF) (LU0377296479)	0	B	75.4	3.0	0.0	0.0	7.2	14.4
		B+	79.8	3.0	3.5	0.0	7.2	6.5
		MSCI	59.8	0.0	13.2	0.0	18.4	8.6
Lyxor New Energy (FR0010524777)	0	B	27.0	0.0	16.9	17.0	22.1	17.1
		B+	29.1	0.0	33.1	17.0	14.8	6.0
		MSCI	23.1	0.0	42.0	0.0	34.0	0.9

MAJ INVEST GLOBAL SUNDHED (DK0060852887)	0	B	14.4	0.0	0.0	4.6	62.9	18.2
		B+	14.4	0.0	3.1	4.6	67.7	10.2
		MSCI	23.6	0.0	7.0	0.0	69.4	0.0
Matthews Asia Funds-China Small Companies Fund (MF) (LU0721876364)	0	B	0.0	0.0	0.0	7.7	53.1	39.2
		B+	0.0	0.0	0.0	7.0	75.0	18.1
		MSCI	4.2	0.0	3.0	0.0	68.0	24.8
Meridio Funds – Meridio Green Balance P (MF) (LU0117185156)	0	B	15.6	0.0	0.0	27.9	41.4	15.1
		B+	15.6	0.0	0.0	27.9	48.2	8.2
		MSCI	36.5	0.0	12.9	0.0	24.8	25.8
Mirova Europe Environmental Equity Fund (MF) (LU0914733059)	1	B	11.5	0.2	0.0	9.7	54.5	24.1
		B+	11.0	0.2	4.7	8.3	54.5	21.4
		MSCI	17.5	0.0	9.4	0.0	68.4	4.7
Monega Fair Invest Aktien (DE0007560849)	0	B	0.0	0.0	2.5	13.7	67.7	16.1
		B+	2.2	0.0	3.8	13.7	71.2	9.1
		MSCI	2.2	0.0	3.8	0.0	94.0	0.0
NSF SICAV Climate Change Plus Fund (LU1320042267)	1	B	16.4	0.0	0.0	14.5	40.2	28.9
		B+	20.3	0.0	0.0	14.5	51.1	14.1
		MSCI	22.1	0.0	3.6	0.0	74.3	0.0
Nordea 1 - Global Climate and Environment Fund (MF) (LU0348926287)	0	B	7.1	4.5	0.0	8.9	39.7	39.8
		B+	7.1	4.5	1.6	7.8	53.5	25.4
		MSCI	4.0	0.0	8.2	0.0	87.8	0.0
ONE Sustainable Fund -Global Environment (MF) (LU0594231770)	0	B	0.0	0.0	0.0	8.6	41.6	49.8
		B+	0.0	0.0	5.7	8.6	56.6	29.1
		MSCI	7.1	0.0	7.9	0.0	83.9	1.2
OP-Clean Water (MF) (FI4000048442)	0	B	4.4	4.9	0.0	14.6	26.5	49.6
		B+	6.8	4.9	3.7	14.6	44.9	25.1
		MSCI	9.9	0.0	26.2	0.0	63.4	0.5
OekoWorld Water for Life (LU0332822492)	0	B	25.7	4.1	0.0	3.4	34.4	32.3
		B+	28.2	4.1	5.1	3.4	43.2	16.0
		MSCI	28.5	0.0	15.6	0.0	54.8	1.1
PARVEST Green Tigers (LU0823437925)	0	B	4.6	0.0	0.0	12.8	49.2	33.4
		B+	9.9	0.0	3.2	9.4	65.7	11.8
		MSCI	13.7	0.0	10.9	0.0	70.2	5.2
PRIMA - Global Challenges (MF) (LU0254565053)	1	B	1.9	0.0	0.0	4.9	47.4	45.8
		B+	3.0	0.0	15.2	4.9	52.8	24.1
		MSCI	5.3	0.0	16.5	0.0	78.1	0.0
Pictet - Global Environmental Opportunities (MF) (LU0503631714)	1	B	9.0	5.7	0.0	10.4	47.3	27.7
		B+	11.0	5.7	3.6	10.4	53.0	16.3
		MSCI	7.1	0.0	22.4	0.0	70.5	0.0
Pictet-Clean Energy (LU0280430660)	0	B	20.4	2.3	2.1	12.6	34.9	27.7
		B+	20.6	2.3	7.5	12.6	45.8	11.2
		MSCI	19.9	0.0	21.4	0.0	58.7	0.0
Pictet-European Sustainable Equities (LU0144509717)	1	B	1.6	0.0	0.0	8.7	82.6	7.2
		B+	3.5	0.0	3.9	8.7	78.8	5.2
		MSCI	5.9	0.0	3.9	0.0	90.2	0.0

Quaero Capital Funds (Lux) - Accessible Clean Energy (MF) (LU1633832503)	0	B	57.1	0.0	6.4	5.7	15.3	15.5
		B+	58.2	0.0	8.2	5.7	20.5	7.5
		MSCI	45.4	0.0	16.8	0.0	31.6	6.2
Quest Cleantech (LU0346063406)	0	B	6.6	0.0	0.0	20.2	56.0	17.2
		B+	6.6	0.0	0.0	20.2	58.2	14.9
		MSCI	9.8	0.0	20.2	0.0	40.3	29.7
Raiffeisen-Nachhaltigkeit-EM-Aktien (AT0000A1TB34)	1	B	3.2	0.0	0.0	7.1	60.4	29.3
		B+	3.2	0.0	0.0	4.3	82.7	9.8
		MSCI	4.2	0.0	1.5	0.0	91.7	2.6
Raiffeisen-Nachhaltigkeit-Momentum (AT0000A1PKP3)	1	B	5.0	0.0	0.0	8.0	62.4	24.5
		B+	5.0	0.0	5.7	6.4	67.6	15.4
		MSCI	4.2	0.0	10.4	0.0	82.8	2.7
Raiffeisen-Nachhaltigkeitsfonds-Aktien (MF) (AT0000677901)	1	B	2.1	1.5	0.0	7.9	68.9	19.5
		B+	2.1	1.5	2.7	6.8	72.8	14.2
		MSCI	3.6	0.0	13.0	0.0	81.0	2.4
Raiffeisen-PAXetBONUM-Aktien (AT0000A261K9)	1	B	0.0	1.9	0.0	6.3	70.1	21.7
		B+	0.0	1.9	5.6	6.3	78.7	7.5
		MSCI	0.0	0.0	10.6	0.0	89.4	0.0
RobecoSAM Sustainable Water Fund (MF) (LU0133061175)	0	B	0.0	5.1	0.0	14.9	45.5	34.6
		B+	1.6	5.1	1.9	14.9	53.4	23.2
		MSCI	5.9	0.0	19.4	0.0	74.5	0.2
SEB Finlandia Optimized Low Carbon (MF) (FI0008802558)	0	B	0.0	0.0	1.9	23.3	66.0	8.8
		B+	0.8	0.0	1.9	17.8	76.8	2.7
		MSCI	0.8	0.0	11.5	0.0	66.3	21.4
Schroder ISF Global Climate Change Equity (MF) (LU0302445910)	0	B	13.4	0.0	3.2	15.9	41.8	25.7
		B+	13.4	0.0	6.8	14.4	53.0	12.4
		MSCI	20.5	0.0	15.1	0.0	62.7	1.7
Skandia Sverige Hallbar (SE0010547943)	1	B	1.8	0.0	0.0	26.1	58.2	13.9
		B+	2.9	0.0	0.0	26.1	66.0	5.0
		MSCI	3.8	0.0	3.0	0.0	86.4	6.8
Steyler Fair Invest - Equities (MF) (DE000A1JUVL8)	1	B	3.2	0.0	0.0	4.9	72.4	19.5
		B+	3.2	0.0	5.8	3.0	73.6	14.4
		MSCI	5.8	0.0	7.9	0.0	84.0	2.3
Sustainable Real Estate Securities (LU1586242577)	1	B	0.0	0.0	0.0	4.0	5.0	91.0
		B+	18.8	0.0	14.5	2.9	57.7	6.0
		MSCI	22.6	0.0	20.4	0.0	56.4	0.6
Swedbank Robur Ethica Global (MF) (SE0000537680)	1	B	6.8	0.0	0.0	14.3	63.9	15.1
		B+	6.8	0.0	0.0	14.3	72.7	6.2
		MSCI	5.4	0.0	5.5	0.0	89.1	0.0
Swedbank Robur Ethica Global Mega (SE0001003864)	1	B	6.7	0.0	0.0	14.3	64.1	14.9
		B+	6.7	0.0	0.0	14.3	73.0	6.0
		MSCI	5.4	0.0	5.4	0.0	89.2	0.0
Swedbank Robur Humanfond (SE0000708950)	1	B	3.0	0.0	0.0	18.9	67.1	11.0
		B+	4.3	0.0	0.0	18.9	72.7	4.1
		MSCI	4.3	0.0	1.9	0.0	91.8	2.0

Swedbank Robur Transition Sweden (SE0000709016)	1	B	3.6	0.0	0.0	18.8	66.7	10.9
		B+	5.0	0.0	0.0	18.8	72.2	4.0
		MSCI	5.0	0.0	1.7	0.0	91.2	2.0
Swisscanto (LU) Equity Fund Global Climate Invest (MF) (LU0275317336)	0	B	27.8	0.0	0.0	8.5	31.6	32.1
		B+	27.8	0.0	3.1	8.5	40.8	19.8
		MSCI	39.0	0.0	15.2	0.0	43.4	2.3
Swisscanto (LU) Equity Fund Sustainable Emerging Markets (MF) (LU0338548034)	1	B	2.0	0.0	0.0	5.1	71.8	21.2
		B+	2.0	0.0	2.1	5.1	84.8	6.1
		MSCI	2.0	0.0	2.1	0.0	92.2	3.8
Swisscanto (LU) Equity Fund Sustainable AA (LU0136171559)	1	B	7.2	0.0	0.0	10.0	63.1	19.7
		B+	7.2	0.0	0.7	10.0	71.7	10.4
		MSCI	9.0	0.0	3.5	0.0	87.5	0.0
Sycomore Selection Responsable (FR0010971705)	1	B	1.5	0.0	0.0	16.7	71.6	10.3
		B+	1.5	0.0	4.2	12.3	72.9	9.2
		MSCI	3.8	0.0	5.1	0.0	86.5	4.6
Sycomore Shared Growth (MF) (FR0007073119)	1	B	0.0	0.0	0.0	20.8	69.9	9.3
		B+	0.0	0.0	0.7	16.2	73.8	9.3
		MSCI	0.0	0.0	0.7	0.0	89.2	10.1
TBF SMART POWER (MF) (DE000A0RHHC8)	0	B	6.4	3.3	0.0	20.4	39.1	30.8
		B+	6.4	3.3	0.0	16.4	48.2	25.8
		MSCI	8.6	0.0	9.4	0.0	71.0	11.0
THEAM Quant - Equity Europe Climate Care (LU1353195891)	0	B	0.0	0.0	4.2	9.2	66.8	19.8
		B+	0.0	0.0	4.2	9.2	73.4	13.3
		MSCI	0.0	0.0	4.2	0.0	95.8	0.0
Templeton Global Climate Change Fund (MF) (LU0029873410)	1	B	9.6	0.4	0.0	11.8	50.3	28.0
		B+	9.6	0.4	2.7	6.8	65.9	14.7
		MSCI	12.5	0.0	9.6	0.0	75.7	2.2
Tundra Sustainable Frontier Fund (MF) (SE0004211282)	1	B	0.0	0.0	0.0	10.4	69.6	20.0
		B+	0.0	0.0	0.0	10.4	71.3	18.3
		MSCI	0.0	0.0	0.0	0.0	23.0	77.0
Vontobel Fund - Clean Technology (MF) (LU0384405519)	0	B	8.1	1.8	3.0	12.7	38.7	35.7
		B+	9.8	1.8	6.6	10.4	57.5	13.9
		MSCI	12.9	0.0	20.5	0.0	65.4	1.3
eQ Blue Planet 1 (MF) (FI0008806112)	0	B	1.1	0.0	0.0	7.0	75.7	16.2
		B+	1.1	0.0	18.4	7.0	70.0	3.4
		MSCI	6.7	0.0	20.5	0.0	71.6	1.3
green benefit - Nachhaltigkeit Plus (LU1136260384)	0	B	53.0	5.4	0.0	0.0	5.4	36.1
		B+	64.5	5.4	2.4	0.0	17.8	9.8
		MSCI	66.8	0.0	2.4	0.0	16.6	14.2
s EthikAktien (AT0000681176)	1	B	0.9	0.0	0.0	7.8	72.2	19.1
		B+	0.9	0.0	1.8	6.6	76.8	13.9
		MSCI	0.0	0.0	2.1	0.0	97.9	0.0
terrAssisi Aktien (DE0009847343)	1	B	0.0	0.0	0.0	4.5	70.0	25.5
		B+	0.0	0.0	10.9	3.6	70.2	15.3
		MSCI	0.0	0.0	11.9	0.0	88.1	0.0

Source: Own elaboration.

The following Table 16 describes the composition of funds regarding their fund domiciles. During the analyses, it was differentiated between the four different samples mentioned in section 4.1. Obviously, the distribution of funds domiciles varies widely across the sample of labelled and non-labelled funds.

Table 16 - Distribution of Fund Domiciles

Fund Domicile	Entire Sample	Labelled	Non-Labelled
Austria	16	16	0
Belgium	2	0	2
Denmark	1	0	1
Finland	3	0	3
France	7	4	3
Germany	8	4	4
Ireland	8	0	8
Luxembourg	47	18	29
Sweden	9	9	0
Total	101	51	50

Source: Own elaboration.

ANNEX VI – PILOT: DO NO SIGNIFICANT HARM

This pilot is aimed at assessing in how far do no significant harm (DNSH) considerations of the EU Taxonomy can be applied at the fund level.

Methodology - Pilot Application of the DNSH principle under the EU Taxonomy

In a first step of this pilot, all UCITS equity funds from the fund universe under the scope of this study with an unambiguous revenue mapping of at least 90% of the total turnover are listed. One representative fund of the fund universe is to be selected from the sample for the analysis of this pilot. The pilot focuses on one fund only due to the high degree of manual analysis going into the constituents of the fund.

In preparation of the analysis, DNSH criteria for all EU Taxonomy activities are classified in a binary manner to establish which DNSH criteria are directly covered by existing EU legislations on climate and environmental issues and international standards. Furthermore, all DNSH criteria proposed under the EU Taxonomy are classified into the following three categories in preparation of the analysis:

1. Quantitative Threshold (QT): DNSH criteria has a quantitative threshold, such as the "compliance with the limit of 170 kg nitrogen application per hectare" for livestock production.
2. Hard Qualitative Threshold (HQT): includes DNSH criteria such as minimum / maximum or other hard requirements like, the implementation and adherence to ISO standards in manufacturing.
3. Soft Qualitative Threshold (SQT): DNSH criteria that are relatively open and cannot easily be checked by the provision of documentation such "as identifying and managing risks related to water quality at the appropriate level" for e.g. manufacturing processes (i.e. it leaves room for interpretation).

The classification will help to identify the level of difficulty for obtaining by top-down measures about non-existent information on DNSH. Generally, one can assume that from classification one to three an outside assessment is assumed to become more difficult as more direct data and or concrete statements (e.g. statement of intent or document of certain action) will be necessary at the asset or company level. The effect is expected to vanish as soon as companies report bottom-up data.

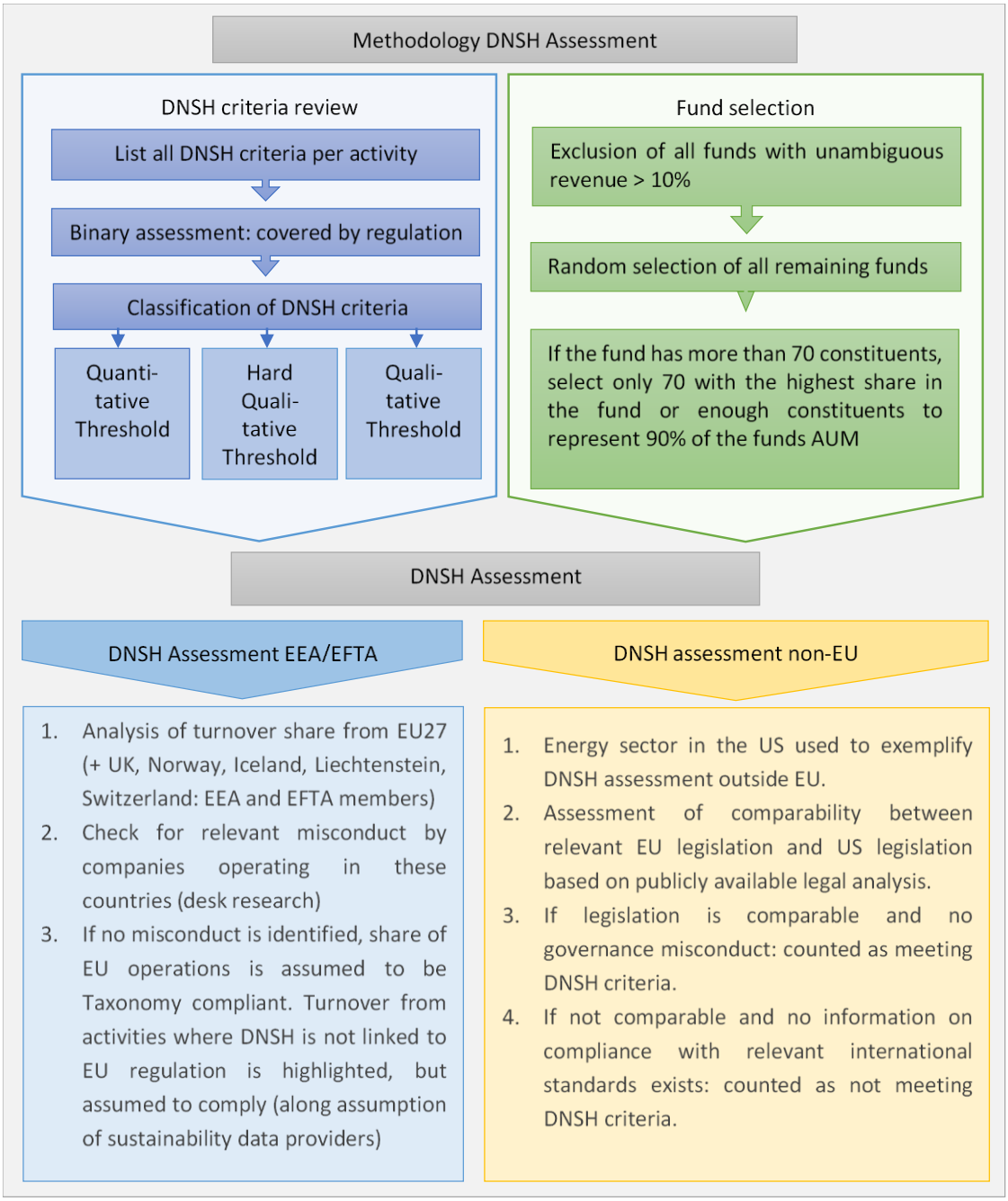
In the next step, a DNSH assessment for the EU is conducted on the selected fund. The pilot of DNSH adherence in the EU is potentially simpler compared to the outside EU DNSH assessment as the TEG has largely built DNSH criteria on the basis of EU legislation. For this, the turnover share of each constituent's operation in the EU has to be derived. In addition to the EU27 countries, the UK, Norway, Iceland, Liechtenstein and Switzerland are also considered as EU compliant as they form part of the EEA and / or EFTA.

To determine whether constituents of the selected fund meet EU legislation on climate and environmental issues, desk-based research is conducted to identify relevant governance misconducts, which would lead to a flagging of the respective companies' meeting of the DNSH criteria. If no evidence of misconduct can be found, the assumption is that the turnover share of EU operations is compliant with the DNSH criteria. In addition, turnover from activities where DNSH is not linked to EU regulations is highlighted, which could potentially not meet the criteria however is assumed to do so. This assumption is in line with assumption taken by sustainability data providers.

Next, a DNSH application for operations outside in the US is exemplified for the energy sector. For this sector, the comparability of EU legislation with the legislation of the US legislation is assessed based on publicly available legal analysis. If the legislation outside the EU is comparable with EU legislation (in terms of requirements and obligations) and no governance misconduct is found, the revenue is counted as meeting the DNSH criteria. If the legislation is not comparable and / or no information on compliance with relevant international standards exist, it is assumed that the share of the revenue does not comply with DNSH considerations.

Figure 23 below summarises and illustrates the methodology described in this chapter.

Figure 23 - Methodology of the DNSH Assessment

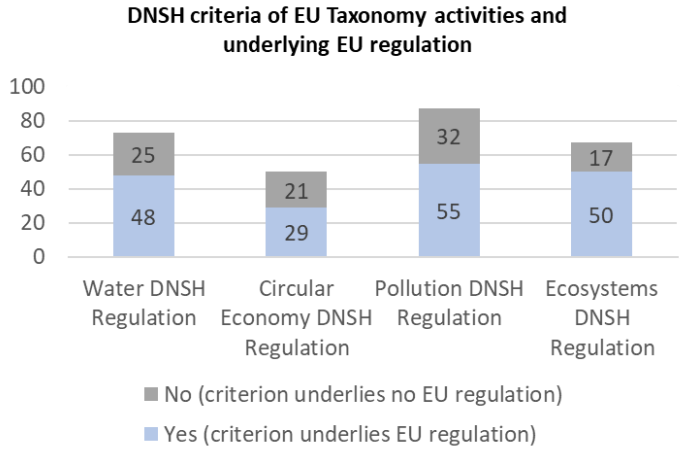


Source: Own elaboration.

Exemplification - DNSH

The reference to EU legislation to assess compliance with the by DNSH criteria and the differentiation between different types of DNSH criteria provides an overarching picture of the complexity of applying DNSH criteria from an outsider's perspective. Although the majority of the DNSH criteria references an EU legislation, the official matching by the TEG still leaves ample room for further assessment needs beyond EU legislation. Therefore, the analytical shortcut through assuming that DNSH criteria should be met as long as companies EU operations comply with EU legislation could be questionable. Furthermore, most DNSH criteria are not quantitative by nature but rather qualitative with the extra challenge that a high share of criteria only applies soft qualitative criteria resulting in ambiguous outside verification of those criteria. This pilot did not take DNSH criteria for adaptation into account due to the principle-based nature of the DNSH for adaption to mitigation. In addition, these criteria are not easily quantifiable and are this beyond the scope of this study.

Figure 24 - DNSH criteria of EU Taxonomy activities and underlying EU regulation

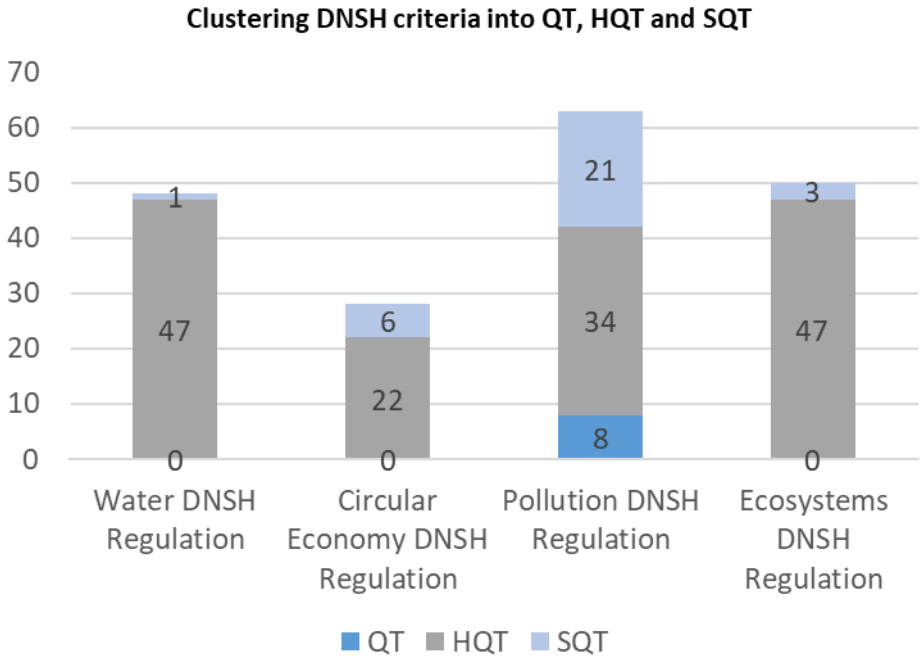


Source: Own elaboration.

Out of a total of 73 relevant activities in the EU Taxonomy for Water, approximately 66% of the activities with DNSH criteria under the EU Taxonomy for Water fall at least under one EU regulation.

For Circular Economy criteria, Pollution criteria and Ecosystems criteria, these percentage are 40%, 76% and 69%, respectively. DNSH criteria for adaptation are not listed as they are equal throughout the EU Taxonomy and probably not testable from an outside perspective.

Figure 25 - Clustering DNSH criteria into QT, HQT & SQT



Source: Own elaboration.

The division of DNSH criteria into "Quantitative Thresholds" (QT), "Hard Qualitative Thresholds" (HQT) and "Soft Qualitative Thresholds" (SQT) (see definition in chapter 3) highlights the qualitative nature of DNSH criteria. For an outsider's assessment, qualitative DNSH criteria seem particularly challenging to verify as those criteria are similar to category five substantial contribution criteria and require in-depth information on operations at the asset level. Hence a bottom-up reporting by companies to assess compliance with DNSH is necessary in order for those DNSH criteria to be tested in Europe (in the absence of regulation) and the rest of the world.

Policy environment comparison EU / US in the energy sector

As part of the pilot DNSH analysis, a policy environment comparison between the EU and US are conducted in order to streamline the top-down DNSH analysis. The analysis shows that the policy environments for energy production are largely comparable between the EU and the US and that key DNSH criteria should be fulfilled by US legislation. For instance, wind and solar PV projects in the US have to submit environmental impacts assessments, which seem to fulfil key criteria laid-out by the EU Taxonomy. Further analysis and stakeholder dialogues should verify this finding and make the EU Taxonomy more easily applicable for companies operating outside the EU.

The analysis also highlights the difficulties in assessing compliance with DNSH criteria from a top-down (or outside-in) perspective. A key challenge remains divergent information levels between project / asset level requirements through the DNSH criteria and the aggregated information reported by companies. For example, the adaptation criteria or the circular economy criterion for wind are site-specific, which simply cannot be assessed through the regulatory framework or at the company level. A compliance assessment-useful data collection would either require an analysis of energy projects operated by each company (given sufficient project-specific information is available in public registers) or require statements by energy companies confirming compliance with DNSH criteria.

Table 17 - Comparison between relevant EU and US legislation (Solar PV)

Solar PV	EU Taxonomy Criteria	Referenced Taxonomy Criteria	EU Regulation	US Regulation	Assessment
Adaptation	Refer to the screening criteria for DNSH to climate change adaptation.				Very difficult to assess from a top-down perspective.
Water					
Circular economy	•Ensure PV panels and associated components have been designed and manufactured for high durability, easy dismantling, refurbishment, and recycling in alignment with 'Manufacture of Renewable Energy Equipment' for DNSH criteria. •Ensure reparability of the solar photovoltaic (PV) installation or plant thanks to accessibility and exchangeability of the components.	Embodied carbon emissions should represent less than 50% of the total carbon emissions saved by the use of the energy efficient equipment. Carbon emissions and savings at the end-of-life stage are not included in the assessment for this criterion (too uncertain).	N/A	State of Washington -solar stewardship bill ESSB 5939: requiring manufacturers selling solar products into the state to have end-of-life recycling programs for their own products	Possible however geographically limited and only partially covering the criteria
Pollution					
Ecosystems	Ensure an Environmental Impact Assessment (EIA) has been completed in accordance with the EU Directives on Environmental Impact Assessment (2014/52/EU) and Strategic Environmental Assessment (2001/42/EC) or in the case of activities located in non-EU countries other equivalent national provisions or international standards for activities in non-EU countries (e.g. IFC Performance Standard 1: Assessment and Management of		EU Directive (2014/52/EU) Environmental Impact Assessment	Local Planning and Natural Resources Departments collect Environmental Forms for all large solar PV installations.	The requirements in assessed forms seem to match the requirements by the Taxonomy Criteria. A further comparative analysis should be sought.

	Environmental and Social Risks) – including ancillary services, e.g. transport infrastructure and operations). Ensure any required mitigation measures for protecting biodiversity/eco-systems have been implemented. [for the remainder please refer to the final EU Taxonomy report by the TEG]				

Source: Own elaboration.

Table 18 - Comparison between relevant EU and US legislation (Wind)

Wind	EU Taxonomy Criteria	Referenced Taxonomy Criteria	EU Regulation	US Regulation	Assessment
Adaptation	•Refer to the screening criteria for DNSH to climate change adaptation.				Very difficult to assess from a top-down perspective.
Water	•Identify and manage risks related to water quality and/or water consumption at the appropriate level. Ensure that water use/conservation management plans, developed in consultation with relevant stakeholders, have been developed and implemented. •In the EU, fulfil the requirements of EU water legislation.		General EU water legislation	Guidelines provided by the Bureau of Ocean Energy Management (e.g. see: Link)	BOEM seems to require information fulfilling the Taxonomy Criteria.
Circular economy	State ambition to maximise recycling at end of life based on waste management plans, dismantling/decommissioning processes at time of decommissioning (e.g. through contractual agreements with recycling partners, reflection in financial projections or official project documentation).		N/A	N/A	The criterion is site-specific.
Pollution					
Ecosystems	Ensure an Environmental Impact Assessment (EIA) has been completed in accordance with the EU Directives on Environmental Impact Assessment (2014/52/EU) and Strategic Environmental Assessment (2001/42/EC) or in the case of activities located in non-EU countries other equivalent national provisions or international standards for activities in non-EU countries (e.g. IFC Performance Standard 1: Assessment and Management of Environmental and Social Risks) – including ancillary services, e.g. transport infrastructure and operations). Ensure any required mitigation measures for protecting biodiversity/eco-systems have been implemented. [for the remainder please refer to the final EU taxonomy report by the TEG]		EU Directive (2014/52/EU) Environmental Impact Assessment	Guidelines provided by the Bureau of Ocean Energy Management (e.g. see: Link)	BOEM seems to require information fulfilling the Taxonomy Criteria. A detailed comparison between US and EU regulation should be sought.

Source: Own elaboration.

Do No Significant Harm (DNSH) Pilot application Results

The DNSH criteria of the EU Taxonomy have been applied at the fund level via a top-down analysis on the underlying constituents of the *3 Banken, Mensch & Umweltfonds* (ISIN: AT0000A23YE9). The fund is based in Austria and holds the Austrian Ecolabel certificate indicating that the company's operations comply with comprehensive environmental criteria and guidelines throughout the life cycle process of the respective product, including its manufacturing, usage and recycling.[50] The fund holds 62 companies, of which 24 show green turnover shares above or equal to 20%.

The 24 companies' headquarters are primarily based in Europe, the United States and Asia (Japan, People's Republic of China, Hong Kong). Their economic activities, including sales, are in many cases not bound to these geographical locations. The majority of the funds' underlying constituents can be allocated to manufactural activities, the remaining constituents have activities in energy, water management or transport. Four of the companies listed in the fund show an EU Taxonomy-aligned turnover share above 50%. The observed data suggests that the majority of revenue turnover is generated in the EU, the United States and Asia, in particular China and Japan. Nevertheless, a minor share of the companies' turnover is generated in geographical regions such as the Middle East, Africa or Latin America.

In a first step of the DNSH pilot application, it was assessed whether the company has committed any violation against the relevant environmental, health and safety guidelines in 2018 (i.e. the proxy for compliance in the EU with the criteria). This assessment was based on the publicly available information (in Thomson Reuters and Bloomberg) regarding:

- environmental fines received by the company,
- information on compliance misconducts provided in their annual reports and
- independent third sources such as newspapers or misconduct databases.

Out of the 24 companies, findings show that four companies may be subject to environmental compliance violations. Nevertheless, due to insufficient disclosure and collection of relevant information these numbers may not represent the actual amount of companies violating environmental, health or safety regulations. Hence, more comprehensive disclosure or data collection would be necessary in order to utilise this proxy reliably. For this pilot analysis, the assumption was made that all relevant violations are captured in the data base.

In a second step, it was evaluated whether the company complies with the DNSH criteria outside the EU. As outlined above, an in-depth comparison of policy environments might support the a DNSH assessment outside the EU with similar proxies as inside the EU. Future research might look into creating a harmonisation between environmental regulations of countries outside the EU with those of the EU for this purpose.

In order to develop a first impression of where compliance with DNSH criteria outside the EU might be more easily feasible, a sector-based analysis was conducted. The analysis shows that some DNSH criteria might be more straight-forward to assess given the current data availability (e.g. compliance with ISO Standards, which are partly reported) whereas other aspects are asset/ project-specific and hence testing is currently highly difficult.

50 https://www.umweltzeichen.at/en/for-companies/guidelines/

A clear conclusion can be drawn for top-down DNSH assessments. Currently, it is not possible to assess the EU Taxonomy alignment to EU Taxonomy compliance ratio, i.e. the effect of DNSH on the reduction of EU Taxonomy shares in funds.

Sector-specific findings on DNSH

Manufacturing Sector

The majority of companies in this sector operates in the segment *Manufacture of low carbon materials*, such as manufacture of semiconductors, turbines and air conditioning equipment. Most of the manufacturing companies have diversified production lines with turnover generated all over the globe. From data available, it is not always assessable in which regions the economic activity generates what degree of turnover. For example, a company may generate 66% of its turnovers through the manufacture and sale of electronic equipment for life care products, but information on where turnover is generated is only given for the company as a whole.

Most DNSH criteria in the manufacturing sector are difficult to assess as they are not reported or not consistently reported. For example, information on whether and to what extent manufactures use *Best Available Technologies* in their facilities is not readily available. As the use of technologies according to relevant Best Available Techniques (BAT) Reference Documents builds the core of the majority of the pollution related-DSNH criteria, comprehensive reporting on this aspect would be a prerequisite for EU Taxonomy-compliance. One can draw similar conclusions for disclosure for EU Taxonomy relevant water and ecosystem regulations.

Information on compliance with REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) Regulation (1272/2008/EC) and the RoHS (Restriction of Hazardous Substances) Regulation (2002/95/EC) is relatively easy to retrieve, as most assessed manufacturing companies publicly disclose this documentation. For an in-depth assessment of the compliance with REACH- or RoHS-related DNSH criteria, a careful analysis of compliance statements would need to be conducted. Assessing whether a company has obtained specific certifications, like ISO 14001 (Environmental Management System) to comply with hard qualitative thresholds is also relatively straightforward to retrieve. In the assessment, 83% of the companies displayed the obtained certificates on their website.

Considering the numerous reporting deficits, it can be concluded that reporting in the manufacturing sector needs to be much more detailed and comprehensive in order to allow for a DNSH assessment. From this pilot study, it is only possible to derive EU Taxonomy compliance statements for two out of the 13 companies studied for the manufacturing sector. It is very likely that those two do not fulfil the DNSH criteria, as they had to pay fines due to environmental misconduct in 2018. For the remaining companies in the manufacturing sector, too little information to support a DNSH assessment is available at this point.

To offer another perspective on the assessment, third-party assessments of sustainability and ESG for the observed companies was also taken into account. For example, a cross-check was conducted on whether the relevant companies received notable awards, such as the FORBES Sustainability Award[51], or had a high ESG score (e.g. in the S&P ESG Rating). Here, the assumption was made that the higher the ESG score or the more sustainability awards a company has received, the more likely it is to not have been involved in environmental misconduct. Whereas the S&P ESG Assessment[52] does important work for assessing a company's ESG profile, access to the underlying methodology of the S&P ESG Assessment was not available and cannot further verify the assumption. The S&P ESG Assessment further allows companies to compensate low ESG scores in e.g. environmental performance with high ESG scores in e.g. social matters, which further lowers the significance of their assessment for the pilot assessment of DNSH criteria. Is it nonetheless striking, that 35% of the assessed companies received a distinction from the S&P ESG Assessment.

51 https://www.forbes.com/sites/karstenstrauss/2019/01/22/the-most-sustainable-companies-in-2019/#20a994cf6d7d
52 https://www.spglobal.com/esg/csa/yearbook/ranking/

Energy Sector

The fund includes four EU Taxonomy-aligned energy companies. Of those, two companies primarily operate transmission and distribution (T&D) systems and two primarily produce (and sell) electricity. Whereas T&D operators only generate turnover on one continent, electricity producers are globally active potentially increasing ease of assessing DNSH compliance of T&D companies.

Generally, the electricity DNSH criteria tend to be facility specific and require statements from electricity producers or underlying manufacturers on respective low carbon technologies. As a result, an assessment of DNSH compliance at the company level is difficult. An exemplified assessment of Environmental Impact Assessments as part of this pilot shows that data at the energy project level is partly available. For a restricted amount of energy constituents in a fund, it might be feasible to assess DNSH criteria in a relatively high level of detail if energy companies operate in countries with a good coverage of public fillings and companies report their project portfolios. Such an approach would however involve a high time commitment by analysists which appears to relatively inefficient given the uncertainty about the usefulness of outcomes.

Water sector

The fund includes two EU Taxonomy-aligned companies, primarily focused on the collection, treatment and supply of water. Since the companies are based outside of the EU and their respective revenues are generated in Hong Kong and the US, EU regulations on environmental impact assessment do not apply in those cases. Equivalent regional regulations would require in-depth analysis. The companies do not openly disclose whether or not they comply with other (international) guidelines such as the IFC Performance Standards (Standard 6), as recommended by the EU Taxonomy for non-EU based companies. A reliable further assessment regarding the DNSH criteria would therefore involve direct communication with the companies.

Transport Sector

The fund holds two companies from the transport sector, more precisely in Freight Rail Transport as well as Urban and Suburban Passenger Land Transport. For these activities, the EU Taxonomy provides detailed minimum thresholds for pollution and noise for the operating vehicles of the respective companies as well as the reference to compliance with EU regulations. As the companies in this example operate outside the EU, the regulations of the EU Taxonomy do not apply and equivalent regional regulations would require in-depth analysis. Furthermore, companies do neither provide general information on the noise level of their vehicle fleet nor on the noise level of the different vehicle kinds in their fleet, as requested by the EU Taxonomy. Thus, further assessment would involve direct communication with the companie

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