TURUN YLIOPISTO
Oikeustieteellinen tiedekunta

Building a sustainable internal market on the EU Taxonomy

Analysis of promises, obligations, and effectiveness

Environmental law

Master's thesis

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Tiivistelmäsivu

OTM-tutkielma

Oppiaine: Ympäristöoikeus; EU-oikeus
Tekijä: Kasper Sass
Otsikko: Building a sustainable internal market on the EU Taxonomy – Analysis of promises, obligations and effects
Ohjaaja: Anne Kumpula
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Tässä tutkielmassa tarkastellaan vuonna 2020 voimaan tullutta Euroopan unionin taksonomia-asetusta ja siihen läheisesti liittyviä unionin oikeudellisia instrumentteja, kuten Euroopan komission delegoituja asetuksia, kestävän rahoituksen tiedonantoasetusta ja kestävyysraportointidirektiiviä. Tarkastelun keskiössä ovat taksonomia-asetuksen asettamat oikeudelliset velvoitteet, joihin tulkinnallista lisäsisältöä luovat edellä mainitut EU-oikeudelliset instrumentit.

EU-oikeudellisia instrumentteja tarkastellaan tässä tutkielmassa lainopillista tutkimusmenetelmää hyödyntäen. Ympäristöoikeudelle ominaista metodista pluralismia käytetään tarkasteltaessa taksonomia-asetuksen asettamia velvoitteita metsäalan yritykselle ja varainhoitajalle, kuten myös tutkielman lopussa toteutuvassa sääntelykokonaisuutta koskevassa tehokkuusarvioinnissa, jossa taksonomia-asetuksen tehokkuutta arvioidaan ekonomisen tehokkuuden, ekologisen tehokkuuden, tasa-arvon ja poliittisen hyväksyttävyyden näkökulmista. Lopuksi tässä tutkielmassa esitetään taksonomia-asetusta koskevia lainsäädännöllisiä parantamisehdotuksia, de lege feranda.

Tässä tutkielmassa havaittiin, että taksonomia-asetus on rakennettu sisämarkkinoiden lähentämiseksi sekä Euroopan unionin ympäristöpoliittisten tavoitteiden saavuttamiseksi. Taksonomia-asetuksessa havaittiin yhdistyvän vuosikymmenien mittainen ympäristönsuojelua koskeva tieteellinen kirjallisuus ja lukuisat standardit, joiden nojalla säädöksen soveltamisalaan kuuluvien toimijoiden on arvioitava ekonomisten toimintojensa kestävyys kattavan arviointikehikon mukaisesti. Taksonomia-asetuksessa havaittiin tehokkuusvajeita soveltamisalan osalta tehdyssä lainsäädäntöratkaisussa sekä standardiin perustuvan lähestymistavan säilymisessä kannustavana. Taksonomia-asetuksen havaittiin hyödyttävän eniten suuria yrityksiä, joiden toiminnot ovat jo kestävällä pohjalla, toisin kuin niitä, jotka tavoittelevat toimintojensa kestävyyttä.

Taksonomia-asetuksella havaittiin olevan mahdollisuus päästä sääntelylle asetettuihin tavoitteisiin päivittämällä taksonomia-asetuksen teknisiä arviointikriteerejä riittävän usein ja luomalla siirtymä- ja mahdollistaville toiminoille asteittainen polku kohti kestävyyttä. Lisäksi havaittiin, että taksonomia-asetuksen tehokkuusvajeita voidaan vähentää säätämällä kestävyysraportointidirektiiviin kestävyystietojen julkaisuvelvoitteita koskeva päästöintensiteettiin perustuva soveltamisedellytys nykyisten edellytysten sijasta, jotka eivät liity yrityksen kestävyyteen. Lopuksi tässä tutkielmassa havaittiin, että on perusteltua odottaa taksonomia-asetuksen velvoitteiden täysimääräistä noudattamista ennen merkittävien lainsäädännöllisten muutosehdotusten tekemistä, sillä taksonomia-asetuksen nojalla tuotettu tieto on toistaiseksi epätäydellistä. Kun riittävästi tietoa taksonomia-asetuksen käytännön tehokkuudesta on saatavissa, taksonomia-asetuksen tehokkuutta voidaan parantaa lisäinstrumenteilla tai muilla sääntelyteknisillä toimenpiteillä.

Avainsanat: Kestävä rahoitus, EU Taksonomia, Euroopan Unionin taksonomia-asetus, tehokkuus, tehokkuusarviointi

Master's thesis

Subject: Environmental law; EU law
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This thesis examines the EU Taxonomy, which entered into force in 2020, and is closely related to other EU legislative instruments, such as the European Commission's Delegated Acts, the Sustainable Finance Disclosures Regulation, and the Corporate Sustainability Reporting Directive. The focus of the analysis is on the legal obligations imposed by the EU Taxonomy, with the above-mentioned EU legal instruments providing additional interpretative content.

The instruments of EU law are examined in this thesis using the legal dogmatics research method. Methodological pluralism, common in environmental law, is used to examine the obligations imposed by the EU Taxonomy for a forestry undertaking and an asset manager, as well as to assess the effectiveness of the EU Taxonomy from the perspectives of economic efficiency, ecological efficiency, equity, and political acceptability. Lastly, this thesis presents proposals for legislative improvements, de lege feranda.

This thesis found that the EU Taxonomy was built to harmonize the EU's internal market and to achieve the environmental policy objectives of the EU. The EU Taxonomy was found to combine decades of scientific literature on environmental protection with numerous standards, which require undertakings covered by the EU Taxonomy's scope to assess the sustainability of their economic activities under comprehensive technical screening criteria. This thesis identified inefficiencies in the legislative approach to the scope of the EU Taxonomy and in the difficulty of a standards-based approach to remain incentivizing in terms of sustainability. The EU Taxonomy was found to benefit large undertakings whose operations are already sustainable, as opposed to those pursuing sustainability in their operations.

It was found that the EU Taxonomy has the potential to achieve its objectives by updating the technical screening criteria of the EU Taxonomy frequently enough and by creating a gradual path towards sustainability for transitional and enabling economic activities. In addition, it was found that the inefficiencies of the EU Taxonomy identified in this thesis can be addressed by introducing an emission intensity-based requirement for sustainability disclosure obligations in the Corporate Sustainability Reporting Directive, instead of the current requirements, which are not related to sustainability. Lastly, this thesis found that it is appropriate to wait for the full entry into force of the obligations of the EU Taxonomy before proposing any significant legislative reforms. Once sufficient information on the practical effectiveness of the EU Taxonomy is available, the effectiveness of the EU Taxonomy can be improved by additional instruments or regulatory technical measures, such as those mentioned above.

Key words: Sustainable Finance, EU Taxonomy, European Union Taxonomy Regulation, Effectiveness, Effectiveness Assessment

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Abbreviations

AIF	Alternative Investment Fund
CapEx	Capital expenditure
CJEU	Court of Justice of the European Union
CSR	Corporate Social Responsibility
EEA	European Environment Agency
EC Treaty	Treaty establishing the European Community
EIB	European Investment Bank
ESA	European Supervisory Authority
ESG	Environmental, Social and Governance
ETS	Emission Trading System
EU	European Union
EUR	Euro
FAO	Food and Agriculture Organization
FY	Financial year
FSC	Forest Management Certificate
HLEG	EU High-Level Expert Group on Sustainable Finance
IBIP	Insurance-based investment product
IPCC	Intergovernmental Panel on Climate Change
IFRS	International Financial Reporting Standards
ILO	International Labour Organization
KPI	Key Performance Indicator
NACE	Statistical Classification of Economic Activities
NFDR	Non-Financial Reporting Directive
OECD	Organisation for Economic Co-operation and Development
OpEx	Operating expenditure
PEFC	Programme for the Endorsement of Forest Certification
PEPP	Pan-European personal pension product
SDG	United Nations Sustainable Development Goal
SME	Small and Medium-sized Enterprise
TEG	Technical Expert Group on Sustainable Finance
TEU	Treaty on European Union

TFEU	Treaty on the Functioning of the European Union
UCITS	Undertakings for collective investment in transferable securities
UN	United Nations
US	United States
USD	United States Dollar
WHO	World Health Organization

1 Introduction

1.1 Background

The focus of this thesis is the European Union (EU) Regulation 2020/852[1] on the establishment of a framework to facilitate sustainable investment (hereinafter 'the EU Taxonomy'). The EU Taxonomy entered into force on 18 June 2020 with the aim of creating an internal market based on the principles of sustainable development. This thesis examines how the EU Taxonomy is structured, the entities it covers, the obligations it imposes and the impact of such measures.

First, it is appropriate to clarify what is meant by term *taxonomy,* since it may provide some illustration on what this thesis is about. The term taxonomy is originally "from the Greek *taxis*, meaning arrangement or division, and *nomos*, meaning law". Taxonomy is a system of classification based on science, providing a catalog of information that can be used in academic discussion. Such catalog enables the analysis and retrieval of information related to specific activities.[2]

The EU Taxonomy is part of the reform of the EU's financial system, which was initially inspired by the 2015 Paris Climate Agreement[3] and the United Nations (UN) Global Agenda for Sustainable Development[4]. On 5 October 2016, the EU formally committed to the objectives of the Paris Agreement, including the goal of keeping the global average temperature increase below 2°C compared to pre-industrial levels and trying to limit the temperature increase to 1.5 °C.[5] Later on, in its Communication of 22 November 2016, the EU expressed its commitment to the goals of the UN's Global Agenda for Sustainable Development (UN 2030 Agenda).[6]

The reform of the EU's financial markets began arguably in November 2016, with consideration given to the UN 2030 Agenda,[7] where the need for investments has been identified in various

[1] Regulation (EU) 2020/852 of the European Parliament and of the council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088.

[2] European Parliament Think Thank, Sustainable finance – EU taxonomy: A framework to facilitate sustainable investment, p. 2.

[3] UN 2015, Paris Agreement.

[4] UN 2015, A/RES/70/1.

[5] EU 2016/1841, Article 1. See also: EU 2016/590, p. 1.

[6] COM(2016) 739 final, p. 3.

[7] Ibid.

Sustainable Development Goals (SDGs).[8] According to the European Commission, the UN 2030 Agenda necessitated an integrated approach to the EU's external and internal policies and coherence in its financial instruments with notion given to the principle of subsidiarity, which governs the exercise of EU competences.[9]

In its November 2016 Communication Next steps for a sustainable European future the European Commission established a High-Level Expert Group (HLEG) to advise on the development of a comprehensive strategy for sustainable finance. The primary focus of the HLEG was to address the challenges posed by climate and environmental risks to the EU's financial system, with the objective of ensuring the EU maintains its international leadership in the development of sustainable financial markets. The monitoring period for the HLEG's work was set for the 2017 mid-term review of the Capital Markets Union,[10] originally launched in 2015[11] with the purpose of to strengthen the European economy by creating better incentives for investment.[12] In June 2017, the European Commission published a communication on the Mid-Term Review of the Capital Markets Union Action Plan, acknowledging the necessity of strengthening and reforming the EU's Capital Markets Union Action Plan, which could be achieved by using financial technology and directing private capital towards sustainable investment. Regarding the work of the HLEG, the Commission stated that the group would publish its recommendations for an EU strategy for sustainable finance by the first quarter of 2018.[13]

HLEG published its final report on 31 January 2018, in which HLEG states that achieving the EU's target of a 40 percent reduction in carbon dioxide emissions necessitates an annual

[8] UN 2015, A/RES/70/1, pp. 14–27. See for example: goal 1(5b), goal 2(5a), goal 7(3a), goal 10(7b), goal 17(5).

[9] COM(2016) 739 final, p. 3. See also C 326/13, art 5(3): "Under the principle of subsidiarity, in areas which do not fall within its exclusive competence, the Union shall act only if and in so far as the objectives of the proposed action cannot be sufficiently achieved by the Member States, either at central level or at regional and local level, but can rather, by reason of the scale or effects of the proposed action, be better achieved at Union level."

[10] Ibid., p. 10.

[11] COM(2015) 468 final, pp. 29–30.

[12] Ibid., pp. 3, 16: Despite Europe and the United States (US) being considered equal in size of economy in 2015, European stock markets were less than half the size of US stock markets, and debt markets were less than a third of the size of US debt markets. The objective of the 2015 Action Plan was to implement an investment plan through which the European Fund for Strategic Investments would launch 315 billion euros worth of new investments in the EU between 2015 and 2017.

[13] COM(2017) 292 final, pp. 2–3, 15, 20.

investment of over 180 billion euros, which cannot be reached solely by public resources. The report emphasises that fulfilling the EU's objectives requires a reform of the entire EU financial system, and as one of the key recommendations, the HLEG proposes the establishment of a unified sustainability classification system – the EU Taxonomy.[14]

The EU Taxonomy has since been recognized as a part of the European Green Deal[15], where the European Commission committed to mobilizing a total of 1 trillion euros for sustainable investments between 2020 and 2030 with two standards: the EU Taxonomy and the European Green Bond Standard.[16] Further, the EU committed to expand the corporate disclosure obligations and strengthen them through three regulatory mechanisms: 1) Sustainability-related disclosure in the financial services sector regulation (hereinafter 'SFDR')[17]; 2) Corporate sustainability reporting directive (hereinafter 'CSRD')[18]; and by 3) EU labels for ESG benchmarks.[19]

To better understand the EU Taxonomy, it is in place to clarify these EU instruments for sustainable finance and what their role is in connection to the EU Taxonomy. The SFDR obliges financial market participants, such as fund managers, to disclose sustainability information to their investors and stakeholders. For financial market participants to be able to disclose this information, they need sustainability information from their investees.[20] According to the CSRD, the undertakings within its scope are required to disclose: 1) the amount of turnover; 2) their capital expenditure (CapEx); and 3) operating expenditure (OpEx) associated with EU Taxonomy-aligned activities in an open and accessible digital format.[21] This disclosure provides financial market participants with the means to assess the sustainability of their

[14] HLEG 2018, pp. 2–3, 15–25. See also: EUCO 169/14, p. 1; MSCI 2016, Principles for Responsible Investment: Global Guide to Responsible Investment Regulation, pp. 21-23.

[15] COM(2019) 640 final, p. 17.

[16] COM(2021) 391 final.

[17] Regulation (EU) 2019/2088 of the European Parliament and of the Council of 27 November 2019 on sustainability-related disclosures in the financial services sector.

[18] Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting.

[19] European Commission, Sustainable finance.

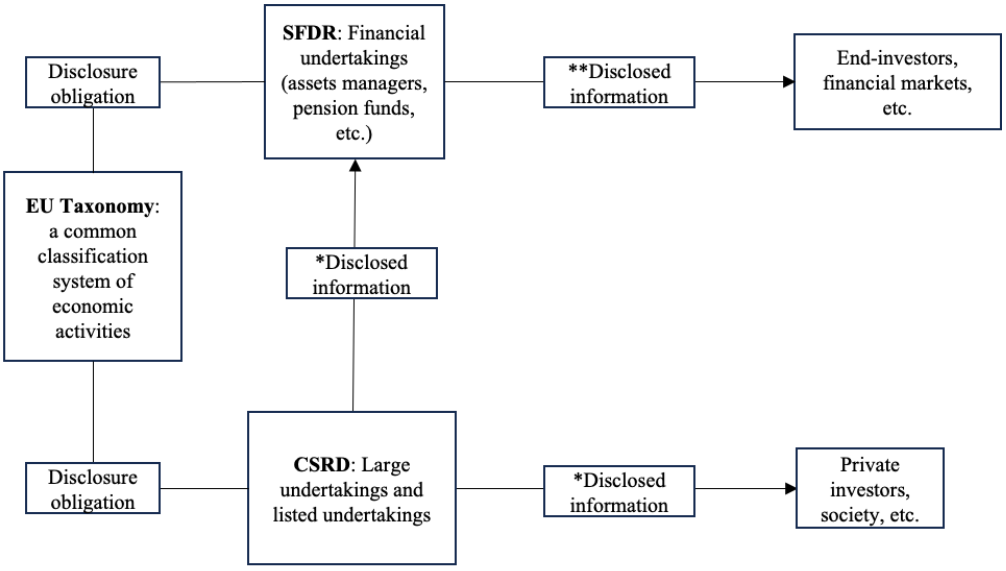
[20] COM(2021) 189 final, pp. 4–5.

[21] Directive (EU) 2022/2464, paras 30, 55.

financial products for their stakeholders. Further, the SFDR regulates how financial market participants must disclose their degree of sustainability under the EU Taxonomy.[22]

For the sake of clarity, the place of the EU Taxonomy in the European Green Deal regulatory framework can be illustrated by the following figure:

Figure 1*:* European Green Deal framework for sustainable financial markets[23]



* proportion of turnover, capital and operating expenditure, which is considered sustainable

**financial-product level disclosure and entity-level disclosure

As can be observed, the EU Taxonomy is a classification system designed to define what is considered sustainable in the EU's financial markets. Meanwhile, SFDR and CSRD specify who, how and what kind of information should be disclosed.

To conclude, the EU Taxonomy can be described as a kind of classification science that creates a basis for analytical discussion about sustainable finance. In this context, Aulis Aarnio have aptly stated about science and the nature of knowledge. According to Aarnio, our understanding of the possibilities of scientific knowledge is largely omnipotent since we have little doubt about the veracity of scientifically created knowledge.[24] Therefore, it is important to shed light on the

[22] EU 2022/1288, paras 22, 33ç35.

[23] Harvard Law School Forum on Corporate Governance, EU Taxonomy and the Future of Reporting.

[24] Aarnio 1978, pp. 22–24.

foundations and practical compliance of the EU Taxonomy, and to avoid the arbitrariness, a scientific theory must be chosen as the approach to the issue.

1.2 Approach to the EU Taxonomy

The research questions of this thesis are divided into sub-questions in the order in which they are addressed in this thesis:

1. What is the legal basis and objectives of the EU Taxonomy, and how they have affected the final version of the EU Taxonomy?
2. What is the scope of the EU Taxonomy?
3. How are the sustainable economic activities defined under the EU Taxonomy, and what obligations they impose to the entities under EU Taxonomy's scope?
4. What is the effectiveness of EU Taxonomy, and can it be improved?

To answer the first (1), the second (2), and the third (3) research question, this thesis uses the *legal dogmatics.*[25] Through the legal dogmatics approach, the objective is to provide an interpretation of the provisions set out in the EU Taxonomy, its preparatory material, and its Delegated Acts. Specifically, the focus is on EU Taxonomy's provisions, which define the scope of EU Taxonomy, and its Delegated Acts, which specify the features of the sustainable economic activity and its disclosure obligations. This thesis also examines other legislative instruments closely related to the EU Taxonomy, such as the SFDR and the CSDR, to the extent that they complement the application of the EU Taxonomy.

Iain Dobinson and Francis Johns describe doctrinal legal research as method to examine specific areas of law.[26] In the context of this thesis, the focus is on the EU Taxonomy, which aims to achieve the objectives of the European Green Deal through financial regulation.[27] EU Taxonomy is adopted on the basis of Article 114 of Treaty on the Functioning of the European Union (TFEU), which concerns the harmonization of the internal market.[28] Hence, it is

[25] Aarnio 1997, p. 75. See also Kokko 2014, p. 289.

[26] Dobinson – Johns 2017, pp. 20-26. See also: Baht 2020, pp. 155–161.

[27] European Commission, EU Taxonomy: JRC supports the EU taxonomy classification system, establishing a list of environmentally sustainable economic activities.

[28] COM(2018) 353 final, pp. 3–4.

important to understand how EU Taxonomy falls within the EU's competence and how the Article 114 of TFEU has influenced EU Taxonomy's implementation. Having clarified the legal basis of the EU Taxonomy, this thesis examines the provisions and definitions contained in the EU Taxonomy and its Delegated Acts. The examining of the EU Taxonomy leads to discussion through analysis of the findings. Lastly, this thesis provides suggestions for reforms of the EU Taxonomy based on the findings derived from this analysis.

The doctrinal legal research, described above, has been criticized for its detachment from social realities, such as the intended purposes and impacts of legislations in society.[29] Alf Ross has stated that, "law must be recognized as an empirical social science", which roughly means that interpretations of the law must be derived from the social facts, and in the case of the law, from the actions of the courts.[30] Aarnio further suggest, that in the modern state, the interpretation of the law can also be carried out by administrative judicial organs of a state.[31] In line with this perspective, the EU Taxonomy is also examined from the standpoint of the entities which fall in the scope of the EU Taxonomy, as well as the perspective of the Court of Justice of the European Union (CJEU).

The EU Taxonomy is part of the European Green Deal's financial regulation, which means that it is also firmly connected to the EU's environmental policies.[32] It has been noted that when it comes to the control exercised by the authority on environmental aspects of the given regulation, the traditional legal dogmatic approach is often insufficient. According to Kai Kokko, examination of environmental legislation goes beyond interpreting and systematizing existing laws; it requires a forward-looking approach that uses various research methods to propose new legal ideas, *de lege feranda*. Kokko considers environmental law research as an interdisciplinary and collaborative effort that involves working with other fields of law and academic disciplines, known as *methodological pluralism*.[33] In this thesis, methodological pluralism occurs by examining the EU Taxonomy with a legal dogmatic approach and by

[29] Baht 2020, p. 155–161.

[30] Ross 1959, p. 40. See also: Aarnio 1997 pp. 67–74.

[31] Aarnio 1997, pp. 67–68.

[32] EU 2020/852, paras 1–3.

[33] Kokko 2014, pp. 286–288.

employing methods of *evaluation and policy study*. The research questions (3) and (4) of this thesis uses methodical pluralism in the following manner.

According to Tapio Määttä, the aim of the evaluation and policy study is generally to examine the rationale behind the selection of a specific policy instrument. Määttä suggests that this can be accomplished by assessing the most appropriate policy instruments for a given matter, considering their implementation, and examining the factors that have influenced their development from various perspectives.[34] In response to research question three (3), the EU Taxonomy is assessed from the perspective of entities falling within the scope of the EU Taxonomy. In response the research question four (4), this thesis uses a framework developed by Mike Young and Neil Cunningham, which can be summarized into four perspectives: 1) ecological effectiveness; 2) economic efficiency; 3) equity; and 4) political acceptability.[35] In this respect, the aim of this thesis is to assess the effectiveness of the EU Taxonomy from these four different perspectives.

Leila Suvantola has further clarified the framework by Young and Cunningham by noting that the assessment of the *ecological effectiveness* of regulation comprises several components, which are: 1) reliability; 2) prudence; and 3) dynamic and continuous incentives. In practice, *reliability* means that the regulatory instrument can effectively achieve the stated objectives of conservation. *Prudence* ensures that the policy can mitigate significant or irreversible consequences, even in situations, where there is no scientific certainty about the regulation's impacts. *Dynamic and continuous incentives* require that the policy encourages technological innovation and conservation beyond formal targets, while also adapting to changing technology, prices, and climatic conditions.[36]

According to Suvantola, the evaluation of the *economic efficiency* includes several factors, including: 1) productive efficiency; 2) allocative efficiency; 3) low information and administrative costs; 4) communicative simplicity; and 5) transparency of decision-making associated with the instrument. To summarize these aspects, the economic efficiency

[34] Määttä 2015, pp. 21–26.

[35] Suvantola 2005, pp. 32-36. See also: Gunningham – Grabosky 1998, pp. 28–29.

[36] Suvantola 2005, p. 34. See also: OECD 1996, p. 84; Gunningham – Young 1997, pp. 252–253; Gunningham – Grabosky 1998, pp. 28–32.

necessitates that production and environmental conservation activities are carried out with minimal cost, ensuring that alternative methods of property rights or cost allocation would not provide better outcomes. Furthermore, the control and information costs related to the instrument should be low, administrative enforcement should be cost-effective, the conditions for implementing the instrument should be easily understandable, and the decision-making process regarding its usage should be transparent.[37]

Suvantola notes that in evaluation and policy approach the *equity* necessitates ensuring that no group of people, including future generations, are not unfairly disadvantaged, or advantaged by a policy, and that the costs of protection are fairly distributed between generations. Within a generation, equity means the fairness in the distribution of costs, while between generations, it can be defined as a prerequisite for sustainable development.[38] In this respect, it can be noted that this thesis is based on a human-centered approach, where equity is seen as an intergenerational obligation between human beings.[39]

According to Suvantola, the *political acceptability*, requires that the policy instrument motivates the community to ensure that the preservation objectives are both legitimate and achievable. The policy instrument should promote community peace and be consistent with other political commitments. Permanence is also a key factor in securing community commitment to policy objectives in the long run. Therefore, the policy needs to have broad political support to withstand changes in the political balance of power. Political acceptability can also be considered to include the requirements of ecological effectiveness, economic efficiency, and fairness of the control measures.[40]

The Organisation for Economic Co-operation and Development (OECD) has noted that when evaluating legislation using frameworks like Young and Cunningham's, described above, the framework should not be regarded as a rigorous checklist but rather as a tool for considering

[37] Ibid.

[38] Ibid., pp. 34–35.

[39] Ibid., p. 35: Equity could also be examined in the relationship between humans and nature, but it has been noted that adopting a human-centered approach can lead to similar environmental political solutions as in nature-centered approach. The differences between these approaches are therefore mostly theoretical.

[40] Ibid., p. 35. See also: OECD 1996, p. 84; Gunningham – Young 1997, pp. 252–253; Gunningham – Grabosky 1998, pp. 28–32.

the impacts of specific instruments. Since it is challenging to fulfill all the objectives mentioned above with a single instrument, the OECD suggests that it is preferable to approach a problem with a combination of different instruments based on the best available information and the involvement of relevant stakeholders and experts, rather than relying merely on a single all-inclusive instrument.[41]

Through the means described above, the aim of this thesis is to examine the effectiveness of the EU Taxonomy, considering different aspects of its effectiveness. Given the challenge of fulfilling all aspects of effectiveness simultaneously, as stated by the OECD, the assessment of the EU Taxonomy's effectiveness in this thesis takes a holistic approach, considering both the content of the EU Taxonomy and the surrounding regulatory framework of the European Green Deal. As highlighted in chapter 1.1, the EU Taxonomy is not the sole regulatory instrument of the EU concerning sustainable finance, and therefore, it may not provide an all-encompassing framework to address all aspects of sustainable finance. Thus, if a deficiency is identified in the assessment of the effectiveness of the EU Taxonomy, proposals for improvement may also involve changes to legislative instruments outside the EU Taxonomy.

To summarize, this thesis uses two main research methods; the first is the traditional legal dogmatics, while the second is the evaluation and policy method, typical for examination of environmental law and environmental policies. Legal dogmatics serves as the foundation for this thesis, providing clarification on the EU's competences regarding the EU Taxonomy and the content of the EU Taxonomy and its Delegated Acts. The evaluation and policy approach provides a deeper insight into EU Taxonomy's enforcement and compliance in practice, as well as the results, which can be achieved with the EU Taxonomy. Lastly, the EU Taxonomy is assessed from the perspectives of ecological, economic, equity and political acceptability, and if it is found that the EU Taxonomy is not working sufficiently as it could, this thesis proposes legislative reforms, *de lege feranda*.

1.3 Thesis structure

The first part of this thesis focuses on the examination of the legal framework of the EU Taxonomy, its basis, and provisions of EU Taxonomy, by the methods of legal dogmatics

[41] OECD 1999, pp. 67–69.

(chapters 2–4), while the second part examines the compliance of the EU Taxonomy by the entities within the scope of the EU Taxonomy (chapters 4–6) by the means of methodological pluralism described in previous chapter (1.2).

The second (2) chapter of this thesis consists of the assessment of the legal framework of EU Taxonomy, particularly EU legislation related to internal market and EU's environmental policies. Within this context, the Article 114 of TFEU and relevant case law has been put under scrutiny. The third (3) chapter of this thesis examines the scope of EU Taxonomy, enabling the assessment of compliance in chapter four (4) and five (5). The chapter six (6) of the thesis assesses the effectiveness of the EU Taxonomy, based on the findings of the previous chapters as well from scientific literature on EU Taxonomy from economic, ecological, equity and political perspectives.

In response the first (1) research question, the EU competences under provisions of the Treaty on the European Union (TEU), Treaty on the functioning of the European Union (TFEU), and relevant case law are discussed in the second (2) chapter of this thesis. After the examination of the EU's competence and its limitations, this thesis examines the scope of the EU Taxonomy to provide answer for the research question two (2) in the chapter three (3) of this thesis. Once the scope of the EU Taxonomy has been defined this thesis examines the compliance with EU Taxonomy's obligations in chapters four (4) and five (5) to provide answer for research question three (3). Lastly, chapter six (6) of this thesis examines the effectiveness of the EU Taxonomy to provide answer the research question four (4). The seventh (7) chapter of this thesis is reserved for presenting conclusions and possible improvements to the EU Taxonomy.

2 About EU Taxonomy

2.1 Normative basis

2.1.1 EU's competence

As this thesis is based on EU law, the discussion of the competences of the EU cannot be avoided. In some fields, the EU's competence is exclusive, which means that only the EU has legislative power in those areas. For example, in the field of the environment, the EU has exclusive competence to regulate the conservation of marine biological resources under the common fisheries policy.[42]

When discussing the competences of the EU, three principles of the TEU emerge: the principle of conferral under Article 4(1) and Article 5(2), the principle of subsidiarity under Article 5(3), and the principle of proportionality under Article 5(4). The principle of conferral provides the basis for EU competence, because without a competence explicitly conferred on the EU, the EU would have no legislative power on the subject matter. The principle of subsidiarity and the principle of proportionality define the limits of the EU's competence, complementing the conferral principle.[43]

According to Article 4(2) of TFEU, the *internal market* falls to the field of shared competence between the EU and its Member States, which means that the EU must justify why it is more appropriate to regulate a certain issue at the EU level rather than the national level. The EU Taxonomy has been adopted under Article 114 of the TFEU, which specifies that the objective of a legislative measure, such as the EU Taxonomy, should be "the establishment and functioning of the internal market". The justification for the EU Taxonomy is explained by the European Commission due to the difficulty investors face in distinguishing so-called *sustainable investments*. According to the European Commission, Member States used varying classification systems to identify sustainable investments, and some did not have such systems in place at all, which created challenges for investors in comparing investments across Member States, while companies faced different obligations to comply depending on the Member State.[44]

[42] Van Calster – Reins 2017, pp. 6–7. See also: C 326/01, Article 3(1)(d); Article 4(2)(e); Article 4(2)(i).

[43] Ibid., p. 7.

[44] COM(2018) 353 final, pp. 3–4.

In relation to the subsidiarity principle of Article 5(3) of the TFEU, the European Commission states that harmonization measure at EU-level, is only justified if its objectives cannot be better achieved at the national level. In this context, the European Commission views that problems arising from the lack of a uniform interpretation of sustainable investment at the EU level could worsen if Member States attempt to address the issue independently. The European Commission sees the widely adopted 2015 Paris Agreement as an incentive for the Member States to develop their own taxonomies tailored to their national interests, and given the potential existence of numerous classification systems, the European Commission considers the adoption of a common EU-wide classification system, as an appropriate solution for the functioning of the EU's internal market.[45]

Regarding the principle of proportionality under Article 5(4) of the TEU, the Commission notes that the EU Taxonomy creates incentives for sustainable investment without a punitive aspect for non-sustainable investments. In the view of the European Commission, the EU Taxonomy will improve the ability of investors to compare the sustainability of their investments across Member States, meanwhile reducing harmful greenwashing. As for the costs of the EU Taxonomy, the European Commission notes that the disclosure obligation under the EU Taxonomy will only apply to those offering financial products claimed to be sustainable. Additionally, the European Commission considers that Member States will have flexibility to decide on the details of national sustainability labeling, such as determining how sustainable a particular financial product is under the EU Taxonomy. For these reasons, the European Commission views the EU Taxonomy to be in line with the principle of proportionality.[46]

As regards the regulatory instrument chosen (regulation), the European Commission considers that a Directive would not have been appropriate to achieve the objectives of the EU Taxonomy, as a legislative measure aiming only at minimum harmonization would have left the definition of a sustainable investment too much to the discretion of Member States, whereby an unsustainable investment might have been seen as sustainable in one Member State but not in another. Consequently, the European Commission concludes that an EU-wide uniform standard for sustainable investments is necessary to achieve the objectives of the EU Taxonomy.[47]

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[45] Ibid.

[46] Ibid., pp. 4–5.

[47] Ibid., p. 5.

2.1.2 Article 114 of TFEU

Since the EU Taxonomy is adopted under Article 114 of the TFEU,[48] it is appropriate to clarify what the provision entails. Article 114 of the TFEU was originally known as Article 100a in the Treaty establishing the European Community (EC Treaty), later becoming Article 95, before being knows as Article 114 in the TFEU. Article 114 explicitly addresses the building of the internal market, but also includes provisions related to the obligation to consider a high level of welfare and environmental protection.[49] Article 114(1) of the TFEU states that:

> "The European Parliament and the Council shall […] adopt the measures for the approximation of the provisions laid down by law, regulation or administrative action in Member States which have as their object the establishment and functioning of the internal market."

Moreover, Article 114(3) of the TFEU states that:

> "The Commission, in its proposals envisaged in paragraph 1 concerning health, safety, environmental protection and consumer protection, will take as a base a high level of protection, taking account in particular of any new development based on scientific facts. Within their respective powers, the European Parliament and the Council will also seek to achieve this objective."

Article 114 of TFEU can be seen as having two objectives, which may be occasionally in conflict with each other. First objective of Article 114 is the market integration and the second is the protection of public interests, such as health, safety, and *environmental protection*.[50] The Advocate General *Nial Fennelly* has noted that the "internal market is not a value-free synonym for general economic governance",[51] but it can also be used to pursue non-economic interests,[52] such as environmental protection. The EU Taxonomy can also be

[48] Ibid., pp. 3–4.

[49] Maletić 2013, pp. 18–19.

[50] Ibid., pp. 56–57, 94. See also: Weatherill 2017, p. 84–85.

[51] Opinion of Advocate General Fennelly in joined cases C-376/98 and C-74/99, para 83.

[52] Maletić 2013, pp. 56–57, 94.

seen as having this kind of dual purpose, aiming for market integration on one hand and environmental protection on the other.[53]

Given its flexibility, the Article 114 of TFEU is the most frequently used legal basis for EU legislation.[54] While much of the EU's legislative power is defined by sector in the TFEU, this is not the case for Article 114, which theoretically has an unlimited scope. In order to achieve the harmonization of the EU internal market, almost all regulations (excluding e.g., taxation and the free movement of persons) can be harmonized. The requirement for harmonization under Article 114 is that the regulation must, in some way, promote the functioning of the EU internal market.[55] However, this is not entirely true in practice, as highlighted in in the next chapter 2.1.3.

2.1.3 Case law concerning the Article 114 of TFEU

In the *First Tobacco Advertising Case*[56], the CJEU clarified the competence granted by Article 114 of the TFEU to the EU. Isadora Maletić interprets the CJEU's judgment as stating that Article 114 of the TFEU does not create a general competence for the EU but provides competence to adopt measures aimed at establishing the internal market and improving its conditions of functioning. According to Maletić, the mere finding that there are differences between national rules and the abstract risk of obstacles to fundamental freedoms of the EU is not sufficient to support the application of Article 114.[57]

The *First Tobacco Advertising Case* was about EU's efforts trying to improve human health on the basis of Article 95(1) of EC Treaty (currently known as Article 114 of TFEU). In the case, the CJEU ruled that Directive 98/43/EC[58] to be annulled because its legal basis did not withstand a closer examination. The CJEU concluded that the Directive 98/43/EC could have been enacted to promote the free trade of newspapers and magazines, since the Member States

[53] EU 2020/852, paras 4, 9, 11.

[54] Lamadrid de Pablo – Fernández 2021, p. 577.

[55] Weatherill 2017, p. 84.

[56] C-376/98.

[57] Maletić 2013, pp. 29.

[58] EU Directive 98/43/EC of the European Parliament and of the Council of 6 July 1998 on the approximation of the laws, regulations and administrative provisions of the Member States relating to the advertising and sponsorship of tobacco products.

had started to issue regulations restricting tobacco advertising to an increasing extent, hampering the functioning of the internal market, but this was not clearly the mere objective of the Directive.[59] In the *Second Tobacco Advertising Case,* the CJEU ruled that EU intervention concerning tobacco advertising was justified due to the divergences between the national rules of Member States concerning tobacco product advertising and sponsorship. One of the reasons for the divergences was that, at the time of the adoption of the revised Directive 2003/33/EC[60], some Member States had ratified the World Health Organization's (WHO) Framework Convention on Tobacco Control, while others had not.[61] A similar situation exists with the EU Taxonomy and the Paris Agreement, where its widespread adoption has raised concerns within the EU that Member States will start to develop their own taxonomies for assessing sustainable investments.[62]The CJEU's positioning in the tobacco adverting saga explains the justifications of the EU Taxonomy as a legislative measure to remove market barriers and promote sustainable investments rather than merely as a legislative project to protect the environment or the heath of citizens of the EU. It also explains the justifications in terms of the prevention of current and future barriers.[63]

The original legislative proposal for the EU Taxonomy states that the absence of EU-level regulation concerning sustainable investments results in divergencies between Member States and create barriers to the functioning of the EU's internal market.[64] In this respect, the European Commission's reasonings can be considered as justified, since prior to EU Taxonomy's adoption, the EU had identified a total of 21 different EU-based and international frameworks, which were used for sustainability reporting.[65] Thus, the European Commission's concerns about the use of multiple sustainability frameworks are not entirely far-fetched.

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[59] Case C-376/98, paras 97–100.

[60] EU Directive 2003/33/EC of the European Parliament and of the Council of 26 May 2003 on the approximation of the laws, regulations and administrative provisions of the Member States relating to the advertising and sponsorship of tobacco products.

[61] Case C-380/03, paras 1, 45–52. See also: Joined cases C-154/04 and C-155/04, para. 3. See also: Case C-434/02, para. 34; C-210/03, para. 33. Both cases issued on 14 December 2004.

[62] EU 2020/852, paras 11–12.

[63] Ibid.

[64] COM(2018) 353 final, pp. 3–4, 18.

[65] COM(2017) C 215/01, pp. 2–4.

From the cases discussed above, it can be noted, that the EU's harmonization power under Article 114 of the TFEU is not unlimited. Rather, according to Maletić, the CJEU has maintained that Article 114 of the TFEU gives the EU the discretion to harmonize the laws of its Member States in an appropriate manner, when it takes into account the context and specific circumstances of the legislative measure. The discretionary power of harmonization is particularly justified when the legislative measure requires consideration of physical, chemical, and biological analyses, as well as the latest technological developments,[66] which position has been taken in CJEU's case C-66/04, concerning the annulment of EU Regulation 2065/2003 for smoke flavorings.

In case C-66/04, the CJEU determined that harmonization measures by the EU were justified due to existing legislative divergences among Member States concerning the use of smoke flavorings in food. Furthermore, the CJEU established two key conditions for legislative measures at the EU level involving multiple stages, such as the establishment of general criteria followed by a scientific assessment based on the criteria and the creation of a catalog for authorizes smoke flavoring products. Firstly, the essential elements of the harmonization measure had to be clearly defined. Secondly, the harmonization measure had to be structured in a manner that the result of harmonization aligns with Article 95 EC (currently Article 114 of TFEU). In practice, this meant that the EU was obliged to establish detailed rules for each stage of harmonization and ensure that the European Commission has the final decision-making authority, particularly in the context of creating a catalog of authorized and unauthorized products.[67]

The EU Taxonomy does not exclude unsustainable investment products from the financial markets,[68] as the regulation concerning harmful smoke flavorings, but it sets precise, science-based criteria to determine sustainable investments, in which case the conclusions of the CJEU regarding smoke flavorings had to be considered in creation of EU Taxonomy and its various stages. In the different stages of the EU Taxonomy, the power of the European Commission to take decisions is set out in Article 23 of the EU Taxonomy, which delegates the power to the European Commission to adopt so-called Delegated Acts, which are needed:

[66] Maletić 2013, p. 36.

[67] Case C-66/04, paras 45–49.

[68] COM(2018) 353 final, p. 4.

> "In order to specify the requirements set out in this Regulation, and in particular to establish and update for different economic activities granular and calibrated technical screening criteria for what constitutes 'substantial contribution' and 'significant harm' to the environmental objectives".[69]

According to Article 23(4) of the EU Taxonomy, the European Commission shall gather all necessary expertise before and during the adoption of Delegated Acts, which is conducted through consultations under the Better Regulation Agenda[70]. Article 20 of the EU Taxonomy mandates the establishment of the Platform on Sustainable Finance (hereinafter 'the Platform') which includes representatives from the private sector, the public sector, and civil society. The Platform's primary role is to provide advice to the European Commission in the development of the technical screening criteria. Additionally, the HLEG, which played a key role in advising the European Commission during the development of the EU Taxonomy, will continue its work as a formal EU body, continuing to advise the European Commission on the development of technical screening criteria and Delegated Acts.[71]

2.1.4 Conclusion

In response to research question 1 of this thesis – "What is the legal basis and objectives of the EU Taxonomy, and how they have affected the final version of the EU Taxonomy?" – it is found that the legal basis of EU Taxonomy is the Article 114 of TFEU, under which the justifications for EU Taxonomy are primarily focused on improving the functioning of the EU's internal market, rather than environmental protection, even though the EU Taxonomy is part of the European Green Deal and EU's environmental policies[72].

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[69] EU 2020/852, paras 38, 54, Article 19.

[70] European Commission, Better regulation: why and how: "The Better Regulation agenda ensures evidence-based, transparent EU law-making based on the views of those impacted. The Commission evaluates and improves EU laws, focusing on delivering where it matters the most. […] The Commission has been seeking evidence and feedback from citizens, businesses, and stakeholders at all stages of the legislative and policymaking process since 2015". See also: European Commission, Law-making process: The EU's law-making process includes: 1) planning and proposing laws; 2) adopting EU laws; 3) evaluating and improving existing laws; and 4) evaluations and fitness check by the Regulatory Scrutiny Board.

[71] EU 2020/852, para 13, 38, 50–53. See also: Case C-217/04, paras 44–45. The legal status of EU bodies, such as the Platform and the HLEG, providing non-binding advice has been confirmed by the so-called *ENISA Case,* in which the CJEU stated that the establishment of bodies promoting and supporting harmonization measures is appropriate as long as their work is closely related to the approximation of laws, regulations and administrative provisions of the Member States concerning sufficiently specific field of approximation.

[72] COM(2019) 640 final, pp. 17–22.

Article 114 of the TFEU provides the EU with the competence to adopt measures aimed at establishing the internal market and improving its conditions of functioning while also taking legitimate public interest into account. In the light of the relevant case law concerning Article 114 of the TFEU, it can be concluded that the removal of existing and future internal market barriers by the EU Taxonomy can be considered as a justifiable measure under Article 114 of the TFEU. The analysis also reveals that the harmonization measure, which includes precise science-based metrics such as the EU Taxonomy, must be clearly defined at all stages of the harmonization procedure, and the authority to make decisions must be explicitly addressed to the European Commission, as has been done under Article 23 of the EU Taxonomy.

2.2 Objectives and mechanisms of the EU Taxonomy

2.2.1 The objectives

The main purpose of the EU Taxonomy is arguably to redirect capital to sustainable destinations as stated in Article 1 of EU Taxonomy. However, the EU Taxonomy also includes other objectives that are less clearly stated and are largely inspired by EU environmental policies, representing an important step toward achieving the EU's climate neutrality targets by 2050. In this context, the EU Taxonomy refers to the conclusions of the European Council of 12 December 2019 on the European Union's policies regarding climate change.[73]

The European Council has concluded that the pursuit of climate neutrality originates from the 2015 Paris Agreement, and while the Council sees many ways to achieve these targets, it emphasizes that substantial public and private investments will be required to achieve such targets.[74] If we step back and briefly examine the 2015 Paris Agreement, we can see that its goal was to limit global warming to less than 2°C compared to the pre-industrial era, with an aim of limiting global warming to 1.5 °C.[75] The 1.5 °C target was recommended by the Intergovernmental Panel on Climate Change (IPCC)[76] and adopted by the EU[77].

[73] EU 2020/852, para 3.

[74] EUCO 29/19, paras 1–4.

[75] UN 2015, Paris Agreement.

[76] IPCC 2018, Special Report on the impacts of global warming of 1.5 °C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty, p. 8.

[77] European Parliament, What is carbon neutrality and how can it be achieved by 2050? See also: Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for

On this basis, it can be assumed that the assessment of sustainable investment by the tools of EU Taxonomy would consider the assessment of various activities that in some manner contribute to greenhouse gas reductions. These activities might involve the direct reduction of greenhouse gas emissions, the absorption and storage of greenhouse gases, or the offsetting of emissions in other sectors. However, the EU Taxonomy also expresses a commitment to the UN 2030 Agenda, which covers three dimensions of sustainability: economic, social and environmental (ESG) sustainability, which should be considered in a balanced way in all EU actions and policy initiatives, suggesting that the sustainability assessment under the EU Taxonomy must also consider other aspects than just the mere reduction of greenhouse gas emissions.[78]

2.2.2 Mechanisms and of the EU Taxonomy

The European Commission's approaches incorporated in the EU Taxonomy largely represents with what is known as a stakeholder-centric perspective, which is originally emerged from efforts aimed to extend corporate reporting through the financial statements and action reports to the undertaking's stakeholders, such as investors and creditors.[79] Stakeholders are generally defined as groups and individuals who are affected in one way or another by decision-making of their investees. From a stakeholder-centric perspective, a financial undertaking or non-financial undertaking must consider its shareholders in its strategic decisions and actions. According to Robert Freeman, an undertaking that is aware of its stakeholders and their interests is generally in a better position than an undertaking that does not have this ability.[80]

At present day, the stakeholder perspective is expressed through corporate social responsibility (CSR). For example, if an undertaking is held liable for environmental damage caused by its negligence, this liability can directly affect the undertaking's value and the value of investments

achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law'): Article 2(1): "In order to reach the climate-neutrality objective set out in Article 2(1), the binding Union 2030 climate target shall be a domestic reduction of net greenhouse gas emissions (emissions after deduction of removals) by at least 55 % compared to 1990 levels by 2030"; Article 4(1): "In order to reach the climate-neutrality objective set out in Article 2(1), the binding Union 2030 climate target shall be a domestic reduction of net greenhouse gas emissions (emissions after deduction of removals) by at least 55 % compared to 1990 levels by 2030"; European Commission, Delivering the European Green Deal.

[78] EU 2020/852, para 2. See also: European Council, EU Response to the 2030 Agenda for Sustainable Development – a sustainable European future.

[79] Mähönen 2022, pp. 126–128.

[80] Freeman 2010, pp. 52–54.

made in the undertaking. The undertaking may be held directly, or its management may be held indirectly accountable to its investors. The stakeholder-centered perspective, therefore, encourages undertaking's management to consider CSR issues in the interests of its investors.[81]

The EU Taxonomy is somewhat special in terms of this kind of CSR, as the EU Taxonomy forces certain financial market participants (such as banks and asset managers) to define the sustainability of their operations and the sustainability of their financial products, so that the entity (public or private) investing in them can assess the sustainability of their investment. What makes this figure special is that the investors with the highest amount of capital are often the same entities who are obliged to assess their degree of sustainability their investors.[82] In this respect, the EU Taxonomy has the characteristics of a circuit game.

The EU Taxonomy applies also to non-financial undertakings under the Article 19(a) and 29(a) of the CSRD, which provides non-financial undertaking's stakeholders and potential new stakeholders the possibility to assess the sustainability of a certain undertaking. However, since the undertakings under the CSRD have small amount of capital compared to the financial market participants and the public sector, the objective of the EU Taxonomy seems to be to channel the large amount of capital managed by financial market participants directly or indirectly through various financial products to these low-capital non-financial undertakings that are obliged to disclose their sustainability under EU Taxonomy.[83]

A CSR-based approach can be seen as tantamount to the incentive-based approach, which differs from the traditional command-and-control regulatory mechanism by leaving the choice to private actors regarding whether and to what extent they will change their actions, as is done in the EU Taxonomy. Incentive-based mechanisms may include various approaches, such as environmental taxation, user fees, deposit-return schemes, economic subsidies, tradable permits (such as emissions trading systems), and ways to improve market functioning, for example, through liability rules and information programs.[84] The EU Taxonomy can be considered to

[81] Mähönen 2022, p. 128.

[82] De La Cruz – Medina – Tang 2019, pp. 5–10: Institutional investors managed 41% of the global capital, the public sector managed 14%, private companies and holding companies managed 11%, and the strategic individuals and families managed 7%.

[83] Ibid.

[84] Kelsey – Kousky – Sims 2008, pp. 9465.

belong to the latter category, because it serves as an information-raising measure aimed at improving the functioning of the EU's internal market.

It has been recognized that incentive-based measures can offer a more direct and potentially fairer means of achieving environmental outcomes compared to other approaches,[85] and at first glance, it seems that the EU Taxonomy is also based on this kind of approach, providing more transparent information to the investors operating in the EU's financial markets. The EU Taxonomy states that unified criteria "would incentivise investee companies to make their business models more environmentally sustainable" without punitive measures for unsustainable activities, and it acknowledges that "the Commission should take into account and provide incentives for the ongoing and necessary transition towards a climate-neutral economy in accordance with Article 10(2) of this Regulation", which covers activities for which there is not technically and economically feasible low-carbon alternatives, the so-called *transitional activities*.[86]

However, the EU Taxonomy also includes Article 22, which addresses penalties for non-compliance with the EU Taxonomy. Under Article 22 of the EU Taxonomy, a Member State must determine an appropriate penalty for an entity who fails to comply with the disclosure obligations under Articles 5 to 7 of the EU Taxonomy. Thus, the EU Taxonomy is not a purely incentive-based regulatory mechanism but also incorporates traditional elements of command-and-control. The EU Taxonomy does not therefore force the undertakings under its scope to operate more sustainably, but obliges them to disclose their level of sustainability, so that external parties can assess the sustainability of the undertaking in question and decide whether to invest their capital in it. It is noteworthy that the Articles 5 to 7 of the EU Taxonomy apply to financial undertakings and not to non-financial undertakings, for which penalties are imposed under Article 51 of the EU Directive 2013/34[87] (hereinafter 'the Accounting Directive').

It can be argued that without mandatory disclosure requirement, the EU Taxonomy would not incentivize financial undertakings to disclose the sustainability of their operations. However, it

[85] Ibid, pp. 9469.

[86] EU 2020/852, paras 13, 41. See also: COM(2018) 353 final, p. 4.

[87] Directive (EU) 2013/34 of the European Parliament and of the Council of 26 June 2013 on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings, amending Directive 2006/43/EC of the European Parliament and of the Council and repealing Council Directives 78/660/EEC and 83/349/EEC.

should be noted that the EU Taxonomy leaves the determination of the appropriate measures and penalties to the discretion of the Member States, as is the case for compliance monitoring under Article 21 of the EU Taxonomy, which may lead to differences between Member States in the level of monitoring and the severity of the sanctions.

2.2.3 Conclusion

From examination above, it can be noted that the 2015 Paris Agreement and the UN 2030 Agenda are the guiding instruments for EU's environmental policies, which must be considered when developing the EU's legislations, such as the EU Taxonomy. Therefore, the sustainability assessment of an investment under the EU Taxonomy can be expected to include actions related to reducing greenhouse emissions as well ESG factors.

It can be noted that the EU Taxonomy represents stakeholder-centered approach, with the objective to channel capital towards sustainable investments. Additionally, the EU Taxonomy contains incentive-based and traditional command-and-control features. The EU approach to sustainable finance is therefore partly incentivizing, but mandatory in the sense that undertakings covered by the EU Taxonomy or Accounting Directive must disclose its sustainability under the threat of sanction. The purpose of this mandatory requirement is arguably to encourage financial undertakings to assess their sustainability to attract more capital and to deliver better results for their investors.

In response to research question one (1) – "What is the legal basis and objectives of the EU Taxonomy, and how they have affected the final version of the EU Taxonomy?" – the EU's objectives in terms of sustainability and the functioning of EU's internal markets have shaped the EU Taxonomy to include elements of incentive and command-and-control. EU Taxonomy's incentives are largely based on institutional investors' willingness to invest in a sustainable way, and EU Member States have been left with a lot of discretion regarding EU Taxonomy's sanctions. The European Commission's approach also seems to rely heavily on the power of financial market participants (privately and publicly managed) with large amounts of capital, which can exert pressure on their investee through their voting power or exit option.

3 The scope of EU Taxonomy

According to Article 1(2) of the EU Taxonomy, the Regulation applies: a) to the EU and its Member States in applying conditions for financial products and corporate bonds offered to the market as environmentally sustainable investments by financial market participants or issuers b) to financial market participants when they offer financial products to the market, and c) to undertakings, which have an obligation to publish a non-financial statement or a consolidated non-financial statement under Article 19a or Article 29a of the Accounting Directive, lastly amended by EU Directive 2022/2464[88], known as CSRD.

Article 1(2) of the EU Taxonomy can be seen as containing six important concepts: 1) environmentally sustainable investment; 2) financial product; 3) corporate bond; 4) financial market participant; 5) issuer; and 6) undertaking with the obligation to publish non-financial statement or consolidated non-financial statement. The concept of environmentally sustainable investment and sustainable economic activities under it can be viewed as substantive core of the EU Taxonomy and will be discussed later in this thesis in chapters four (4) and five (5).

3.1 Financial products

A *financial product* within the meaning of point (a) of the Article 1(2) of the EU Taxonomy refers to a financial product as defined in Article 2(12) of EU Regulation 2019/2088[89], known as SFDR. According to Article 2(12) of the SFDR the *financial product* means: 1) portfolios managed in accordance with Article 2(6); 2) alternative investment funds; 3) insurance-based investment products; 4) pension products; 5) pension schemes; 6) undertakings for collective investment in transferable securities; or 7) pan-European personal pension products.

According to Article 2(6) of the SDFR, *portfolio management is* defined in Article 4(1), point (8) of EU Directive 2014/65[90], according to which portfolio management means portfolio

[88] Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting

[89] Regulation (EU) 2019/2088 of the European Parliament and of the Council of 27 November 2019 on sustainability-related disclosures in the financial services sector.

[90] Directive (EU) 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU. (MiFid II).

managing with one or more financial instruments in accordance with mandates given by clients of the portfolio (client-by-client basis).

According to Article 2(13) of the SFDR, an *alternative investment fund* (AIF) means a collective investment undertaking referred to in Article 4(1) of EU Directive 2011/61[91], which collects capital from a number of investors with the aim of investing it for the benefit of its investors, and which does not require UCITS authorization under Article 5 of EU Directive 2009/65/EC (UCITS Directive)[92].

According to Article 2(15) of SFDR, an *undertaking for collective investment in transferable securities* (UCITS) means an authorized undertaking as defined in Article 5 of the UCITS Directive, which set outs the requirements for UCITS, including the necessity for UCITS to obtain authorization from the competent authority of their home Member State, which covers UCITS's instruments of incorporation, the selection of a depositary, and the appointment of a specific designated management company (if necessary). Moreover, Article 5(3) of the UCITS Directive sets out the conditions for cross-border cases where the management company is located in a Member State other than the UCITS. Further requirements for UCITS investment companies are also set out in chapter V of the UCITS Directive.

According to Article 2(3) of the SFDR, an *insurance-based investment product* (IBIP) is an insurance-based investment product defined in Article 4(2) of EU Regulation 1286/2014[93], which states that IBIP stands for an insurance product which offers a maturity or surrender value directly or indirectly exposed to market fluctuations.

According to Article 2 (8) of the SFDR, a *pension product* is defined in Article 2(2), point (e) of EU Regulation 1286/2014, where the primary purpose of pension products is set to provide the investor with income in retirement and certain other benefits as defined in national laws.

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[91] Directive (EU) 2011/61/EU of the European Parliament and of the Council of 8 June 2011 on Alternative Investment Fund Managers and amending Directives 2003/41/EC and 2009/65/EC and Regulations (EC) No 1060/2009 and (EU) No 1095/2010.

[92] Directive (EU) 2009/65/EC of the European Parliament and of the Council of 13 July 2009 on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities (UCITS).

[93] Regulation (EU) 1286/2014 of the European Parliament and of the Council of 26 November 2014 on key information documents for packaged retail and insurance-based investment products (PRIIPs).

According to Article 2(14) of the SFDR, a *pension scheme* is defined in Article 6, point (2) of EU Directive 2016/2314[94], in which a pension scheme is described as an agreement, trust deed, or set of rules that specify the terms and conditions governing the provision of pension benefits.

According to Article 2(9) of the SFDR, a *pan-European Personal Pension Product* (PEPP) is defined in Article 2(2), of EU Regulation 2019/1238[95], according to which PEPP means a personal pension product for long-term savings with a limited possibility of early redemptions, which has to be registered in accordance with EU Regulation 2019/1238.

3.2 Corporate bonds

Neither the EU Taxonomy nor its original proposal contains a definition of a *corporate bond*, which is mentioned in the same sentence with financial products in the point (a) of the Article 1(2) of the EU Taxonomy. The reason for corporate bonds opacity in EU Taxonomy is probably that alongside the EU Taxonomy, the European Commission has developed the European Green Bond Standard, which is also based on the European Green Deal.[96] The EU Taxonomy states that when financial market participants or issuers offer corporate bonds marketed as environmentally sustainable, the corporate bonds should comply with the technical screening criteria for sustainable economic activities under the EU Taxonomy.[97]

The Article 1 of the proposal of the European Green Bond Standard states that the Regulation sets equal requirements for "issuers of bonds that wish to use the designation 'European green bond' or 'EuGB' for their environmentally sustainable bonds made available to investors in the Union". According to Article 2(1) of the proposal of the European Green Bond Standard, issuer refers to "any legal entity that issues bonds", and under Article 3 of the proposal, a bond can use the 'EuGB' designation if the bonds meet the EU Taxonomy requirements of Article 6 and Article 7 of the European Green Bond Standard.[98]

[94] Directive (EU) 2016/2341 of the European Parliament and of the Council of 14 December 2016 on the activities and supervision of institutions for occupational retirement provision (IORPs).

[95] Regulation (EU) 2019/1238 of the European Parliament and of the Council of 20 June 2019 on a pan-European Personal Pension Product (PEPP).

[96] COM(2021) 391 final, p. 1.

[97] EU 2020/852, paras 11, 14.

[98] COM(2021) 391 final, pp. 1, 23–26.

The European Green Bond Standard does not directly clarify what is meant by a corporate bond. However, by examining the EU Taxonomy and the European Green Bond Standard side-by-side, it can be concluded that, since Article 1 of the European Green Bond Standard states that the standard applies broadly to all bonds marketed as environmentally sustainable, corporate bonds will also fall within its scope.

As the European Green Bond Standard is outside the scope of this thesis, it will not be examined in depth here. However, it is worth noting that the EU Taxonomy also applies to the sustainability assessment of bonds, but via a detour. The cumulative effect of the EU Taxonomy and the European Green Bond Standard appears to be that equity and debt financing both fall under the same assessment criteria under the EU Taxonomy.

3.3 Financial undertakings

3.3.1 Financial market participants

The *financial market participants* mentioned in points (a-b) of Article 1(2) of the EU Taxonomy are defined in points (a-j) of Article 2(1) of the SFDR. Article 2(1) of the SFDR includes: 1) insurance undertakings providing IBIPs; 2) investment firms providing portfolio management; 3) institutions for occupational retirement provision; 4) pension product manufacturers; 5) AIF managers; 6) PEPP providers; 7) venture capital fund managers; 8) social entrepreneurship fund managers; 9) UCITS management companies; and 10) credit institutions providing portfolio management.

According to Article 2(1) of the SFDR, an insurance undertaking refers to an entity authorized in accordance with Article 18(1) of the EU Directive 2009/138/EC (Solvency II Directive)[99], which contains several conditions for the authorization of an insurance undertaking, such as the requirement that the insurance undertaking's business primarily involves insurance-related activities, and that it must possess sufficient assets to engage in and maintain its insurance operations. Reinsurance undertakings are required to limit their business to reinsurance activities but may also engage in activities in accordance with Article 2(8), point (b), of EU Directive 2002/87/EC[100], which concerns insurance holding undertakings, and refers to EU

[99] Directive (EU) 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II).

[100] Directive (EU) 2002/87/EC of the European Parliament and of the Council of 16 December 2002 on the supplementary supervision of credit institutions, insurance undertakings and investment firms in a financial

Directive 98/78/EC[101], which has been repealed by the Solvency II Directive. Article 212(1), point (f) of the EU Directive Solvency II Directive defines an *insurance holding undertaking* as a parent company whose main business is to acquire and hold shares in subsidiaries, primarily insurance or reinsurance companies, and which is not a mixed financial holding company within the meaning of Article 2(15) of EU Directive 2002/87/EC[102].

According to Article 2(5) of the SFDR, an *investment firm* is any legal person within the meaning of Article 4(1), point (1) of EU Directive 2014/65/EU (MiFid II Directive) whose normal business activities include providing investment services to third parties. Member States may include firms that are not legal persons in the definition of an invest firm, provided that their legal status ensures an equivalent level of protection of the interests of third parties as that afforded by legal persons and that their activities are subject to the same level of monitoring. In certain cases, a natural person who provides investment services may also be considered an investment firm under Article 4(1) of the MiFID II Directive.

According to Article 2(7) of the SFDR, an *institution for occupational retirement provision* (IORP) refers to an IORP that has been authorized or registered in accordance with Article 9 of EU Directive 2016/2341 (IORP Directive). Outside the scope of the IORP Directive are institutions to which Member States have decided to apply Article 5 of the IORP Directive, concerning small IORPs and statutory schemes to which Member States may decide not to apply all or part of the provisions of the IORP Directive. The condition for non-application is, e.g., that the IORP has fewer than 100 members. However, Member States should leave the possibility for the small IORPs to comply with the provisions of the IORP Directive on a voluntary basis.

Interpretative assistance for the definition of a *pension product manufacturer* can be found in Article 16(1) of the SFDR, according to which Member States have the discretion to decide whether to apply the SFDR to manufacturers of pension products of national social security

conglomerate and amending Council Directives 73/239/EEC, 79/267/EEC, 92/49/EEC, 92/96/EEC, 93/6/EEC and 93/22/EEC, and Directives 98/78/EC and 2000/12/EC of the European Parliament and of the Council.

[101] Directive (EU) 98/78/EC of the European Parliament and of the Council of 27 October 1998 on the supplementary supervision of insurance undertakings in an insurance group.

[102] Directive (EU) 2002/87/EC of the European Parliament and of the Council of 16 December 2002 on the supplementary supervision of credit institutions, insurance undertakings and investment firms in a financial conglomerate and amending Council Directives 73/239/EEC, 79/267/EEC, 92/49/EEC, 92/96/EEC, 93/6/EEC and 93/22/EEC, and Directives 98/78/EC and 2000/12/EC of the European Parliament and of the Council.

schemes under EU Regulation 883/2004/EC[103] and EU Regulation 987/2009[104]. Consequently, the pension products provided by pension product manufacturers under national social security schemes are not automatically covered by the SFDR.

According to Article 2(4) of the SFDR, an *alternative investment fund manager (*AIFM) is defined in Article 4(1), point (b) of the EU Directive 2011/61/EU, which states simply that an AIFM is a legal person that manages one or more AIFs (see chapter 3.1 of thesis).

EU Regulation 2019/1238, which contains the definition of PEPP product (see chapter 3.1 of this thesis), contains also the definition of a *PEPP provider*, which must be a financial entity authorized under Article 6(1) of EU Regulation 2019/1238, such as a credit institution (Directive 2013/36/EU[105]), an insurance service provider (Solvency II Directive), an institution for occupational retirement provision (IORP Directive), an investment company providing portfolio management (MiFid II Directive), an UCITS (UCITS Directive), an AIF manager (Directive 2011/61/EU).

According to Article 2(1), point (g) of the SFDR, a *venture capital fund manager* stands for a manager registered in accordance with Article 14 of EU Regulation 345/2013[106], according to which a venture capital fund wishing to use the 'EuVECA' designation to market its fund must notify and submit to the competent authority of its home Member State the names of the venture capital fund managers, information on how they intend to comply with the provisions of chapter 2 of the EU Regulation 345/2013 (Articles 4-13) and a list of all Member States where the venture capital fund will be marketed.

According to Article 2(1), point (h), a *social entrepreneurship fund manager* means manager registered in accordance with Article 15 of EU Regulation 346/2013[107], according to which, if

[103] Regulation (EC) 883/2004 of the European Parliament and of the Council of 29 April 2004 on the coordination of social security systems.

[104] Regulation (EC) 987/2009 of the European Parliament and of the Council of 16 September 2009 laying down the procedure for implementing Regulation (EC) No 883/2004 on the coordination of social security systems.

[105] Directive (EU) 2013/36 of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC.

[106] Regulation (EU) 345/2013 of the European Parliament and of the Council of 17 April 2013 on European venture capital funds.

[107] Regulation (EU) 346/2013 of the European Parliament and of the Council of 17 April 2013 on European social entrepreneurship funds.

a fund wishes to use the 'EuSEF' designation in its marketing, it must notify and submit the competent authority of its home Member State the names of the persons who effectively manage the fund, the names of the funds to be marketed, the shares, units and investment strategies to be marketed and a list of the Member States in which the fund is to be marketed and information on how the social entrepreneur fund intends to comply with the requirements of chapter 2 of Regulation 346/2013 (Articles 4-14).

According to Article 2(10), points (a-b) of the SFDR, an *UCITS management company* means a management company or an investment company (which has not designated a management company) as defined in UCITS Directive. According to Article 2(1), point (b) of the UCITS Directive, a management company "means a company, the regular business of which is the management of UCITS in the form of common funds or of investment companies (collective portfolio management of UCITS)".

The definition of a *credit institution* cannot be found in SFDR. Interpretative help in this respect can be sought for example from EU Regulation 575/2013[108], which Article 4(1) defines a credit institution as an undertaking that receives deposits or other repayable funds and grants credit for its own account for the public.[109]

3.3.2 Issuers

The point (a) of the Article 1(2) of EU Taxonomy also refers to *issuer*, which is a somewhat simpler concept. According to Article 2(4) of the EU Taxonomy, issuer is defined in Article 2(h) of Regulation (EU) 2017/1129[110], where issuer means "a legal entity which issues or proposes to issue securities".

EU Regulation 2017/1129 defines *securities* as *transferable securities*, as referred to in Article 4(1), point (44) of the MiFID Directive, according to which transferable securities stand for

[108] Regulation (EU) 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012. See also: Directive (EU) 2006/48/EY, Article 4(1).

[109] See also: Directive 2006/48/EC of the European Parliament and of the Council of 14 June 2006 relating to the taking up and pursuit of the business of credit institutions, Article 4(1): "'credit institution' means an undertaking the business of which is to receive deposits or other repayable funds from the public and to grant credits for its own account".

[110] Regulation (EU) 2017/1129 of the European Parliament and of the Council of 14 June 2017 on the prospectus to be published when securities are offered to the public or admitted to trading on a regulated market, and repealing Directive 2003/71/EC.

various classes of securities that are tradable in the capital markets, such as: 1) shares in undertakings or other securities equivalent to shares; 2) bonds or other forms of securitized debt (e.g., certificates of deposit); 3) any other securities granting the right to acquire or sell the aforementioned types of securities; or 4) securities requiring a cash payment determined by reference to transferable securities, currencies, interest or income, commodities, or other indexes or metrics.

3.4 Non-financial undertakings

The point (c) of the Article 1(2) of the EU Taxonomy refers to Article 19a and Article 29a of the Accounting Directive), amended by EU Directive 2014/95[111], known as the Non-financial Reporting Directive (NFDR) and lastly by the CSRD. Articles 19a and 29a of the Accounting Directive concerns the sustainability reporting and consolidated sustainability reporting, which are examined in their own chapters (3.4.1 and 3.4.2.) While the EU Taxonomy uses the terms 'non-financial statement' and 'consolidated non-financial statement', in this chapter (3.4.), the terms 'management report' and 'consolidated management report' are used in the same manner as in the Accounting Directive. Also, in chapter five (5) of this thesis the term 'annual report' is used in this respect, as it is established in the business sector.

3.4.1 Sustainability reporting

According to Article 19a of the Accounting Directive *large undertakings*, s*mall undertakings* and *medium-sized undertakings* (excluding *micro-undertakings*), which are *public-interest entities* within the meaning of Article 2(1) of the Accounting Directive must include in their management report information on the sustainability impacts and information necessary to understand how sustainability issues affect the development, performance and position of the undertaking.

Article 3 of the Accounting Directive divides undertakings into micro-undertakings, small undertakings, medium-sized undertakings, and large undertakings based on three criteria: 1) balance sheet total; 2) net turnover; and 3) average number of employees during financial year (FY). The classification of undertakings under the Article 3 of the Directive is as follows:

Table 1: Categories of the undertakings of the Accounting Directive

[111] Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups.

Balance sheet total and net turnover are presented in euros (€) and the numbers in the number of employees refer to the number of persons (10 meaning 10 persons)

Category	Balance sheet total	Net turnover	Average number of employees (FY)
Micro-undertaking	350 000	700 000	10
Small undertaking	4 000 000	8 000 000	50
Medium-sized undertaking	20 000 000	40 000 000	250
(Large undertaking, including large groups)	20 000 000	40 000 000	250

If at the balance sheet date, two out of the three (2/3) criteria (1. balance sheet total; 2. net turnover; and 3. average number of employees in the FY), are exceeded, the undertaking is determined to belong in the corresponding category presented on the left of the table. If the 2/3 thresholds have not been exceeded, the undertaking is considered to belong to the "smaller" category. Large undertakings (including large groups) in table are marked in brackets, as they do not have thresholds to be exceeded, but undertakings exceeding 2/3 of these thresholds are considered large undertakings (or large groups as presented in next chapter 3.4.2). It is worth noting that Member States have been left the option of raising the threshold for a small undertaking to 6 million euros for the balance sheet and 12 million euros for turnover under Article 3(2) of the Accounting Directive.

The small undertakings, medium-sized undertakings and large undertakings are required under Article 19a of the Accounting Directive to include sustainability information in their management report if the thresholds are exceeded, and if they are so-called *public-interest entities,* as defined in Article 2(1) of the Accounting Directive. Public interest entities are defined in Article 2(1) of the Accounting Directive as: 1) undertakings, whose transferable securities are traded on a regulated market of a Member State in accordance with Article 4(2), point 14 of Directive 2004/39/EC[112] 2) credit institutions in accordance with Article 4(1) of Directive 2006/48/EC, which are not central banks of Member States, postal office giro

[112] Directive (EU) 2004/39/EC of the European Parliament and of the Council of 21 April 2004 on markets in financial instruments amending Council Directives 85/611/EEC and 93/6/EEC and Directive 2000/12/EC of the European Parliament and of the Council and repealing Council Directive 93/22/EEC, Article 4(2), point (14): "'Regulated market' means a multilateral system operated and/or managed by a market operator, which brings together or facilitates the bringing together of multiple third-party buying and selling interests in financial instruments – in the system and in accordance with its non-discretionary rules – in a way that results in a contract, in respect of the financial instruments admitted to trading under its rules and/or systems, and which is authorised and functions regularly and in accordance with the provisions of Title III".

institutions, or other operators of Member States listed in Article 2 of the Directive 2006/48/EC; 3) insurance undertakings within the meaning of Article 2(1) of Directive 91/674/EC[113]; or 4) undertakings designated by Member States as being of public-interest entities (by nature of their business, size or the number of their employees).

If the thresholds of Article 3 of the Accounting Directive are met and the undertaking is considered to be a public-interest entity under Article 2(1) of the Accounting Directive, the undertaking must include sustainability information in its management report in accordance with Article 19a, including, i.e., a corporate strategy consistent with the 1.5 °C objective of the Paris Climate Agreement, a description of due diligence processes for sustainability issues and information on sustainability-related management incentives, and so on.

Article 8 of the EU Taxonomy further requires these undertakings to include in their management reports information on how their economic activities are environmentally sustainable under Article 3 and Article 9 of the EU Taxonomy (examined in more detail in chapter four (4) and five (5) of this thesis). The undertakings are required to disclose under EU Taxonomy: 1) the proportion of their turnover derived from products and services determined to be sustainable; 2) the proportion of their CapEx determined to be environmentally sustainable; and 3) the proportion of their OpEx determined to be sustainable.

3.4.2 Consolidated sustainability reporting

According to Article 19a(9) of the Accounting Directive, a subsidiary of a group may firstly be exempted from the sustainability reporting obligation under Article 19a of the Accounting Directive, if the sustainability information of the subsidiary is included in the management report of a parent undertaking of a large group in accordance with Article 29a of the Accounting Directive. The parent undertaking must specify which subsidiaries are included in the consolidated management report, and consequently, are exempt from their sustainability reporting obligations. Secondly, a subsidiary may be exempted from the sustainability reporting obligation under Article 19a if the parent undertaking of the subsidiary is established in a third country, and the parent undertaking of the large group reports its sustainability in accordance with the reporting standards of the EU Taxonomy referred to in Article 29b of the Accounting

[113] Directive (EC) 91/674/EEC of 19 December 1991 on the annual accounts and consolidated accounts of insurance undertakings. Article 2(1) of the Directive refers to: a) Article 1 and Article 4(a-b, e) of the EU Directive 73/239/EEC; b) Article 1, Article 2(2-3) and Article 3 of the EU Directive 79/267/EEC; and includes reinsurance undertakings.

Directive. Thirdly, a subsidiary may be exempted from the obligation to report its sustainability if the parent undertaking of the subsidiary reports its sustainability in the manner specified in Article 23(4) of Directive 2004/109/EC[114], if it is deemed acceptable by the competent authority of the Member State in question.

Article 29a of the Accounting Directive requires parent undertakings of large groups, as defined in Article 3(7) of the Accounting Directive, to include in their consolidated management report information on the sustainability impacts of the group and how sustainability affects the development, performance, and position of the group, in the same manner as for individual undertakings described in the previous chapter (3.4.1), including the degree of turnover, CapEx, and OpEx determined to be sustainable under EU Taxonomy.

Article 3(7) of the Accounting Directive defines parent undertakings based on the balance sheet total, net turnover, and average number of employees in a fiscal year. If a group, comprising a parent undertaking and one or more subsidiaries, meets two out of the following three (2/3) thresholds: 1) balance sheet total: 20 million euros; 2) net turnover: 40 million euros; 3) average number of employees during the financial year: 250, the parent undertaking is required to provide a consolidated management report containing the sustainability information under Article 29a of the Accounting Directive. Large groups are not subject to the same public-interest entity requirement under Article 29a as individual undertakings under Article 19a of the Accounting Directive as described in the previous chapter 3.4.1.

3.5 Conclusion

As can be noted, the concepts of EU Taxonomy, such as the financial product or financial market participant opens the door to the depths of EU's financial regulation. These concepts raise questions about what constitutes, for example, an AIF and AIF manager, an IBIP and an insurance undertaking providing IBIPs, or a pension product manufacturer proving pension products. The EU Taxonomy applies, for example, to highly regulated UCITS funds, which operate on the principle of risk-spreading[115], and to non-regulated AIFs, which may be, for

[114] Directive (EC) 2004/109 of the European Parliament and of the Council of 15 December 2004 on the harmonisation of transparency requirements in relation to information about issuers whose securities are admitted to trading on a regulated market and amending Directive 2001/34/EC.

[115] EU 2009/65, Article 1(2).

example, hedge funds, venture capital funds or real estate funds.[116] It is worth noting that determining the status of a specific financial undertaking, non-financial undertaking, financial product, or corporate bond should always be assessed individually. Interpretative help to address these questions is available in Accounting Directive and SFDR, which contain numerous references to other EU legislative instruments that clarify these concepts.

In response to the research question number two (2) of this thesis – "What is the scope of the EU Taxonomy?" – this chapter three (3) clarifies the entities and the products that fall within the scope of the EU Taxonomy. In general terms, it can be concluded that the EU Taxonomy applies to various "money managers" who are responsible for the savings of another entity on a voluntary or compulsory basis as defined by Edward Rock[117], and who may offer different kinds of financial products to investors. The EU Taxonomy is also applicable to undertakings larger than micro-undertakings, which are considered public-interest entities, such as those that have transferable securities listed on a regulated market in some Member State. Noteworthy, the introduction of CSDR and its updated scope, the number of undertakings required to assess their sustainability grew from 11.700 to around 50.000[118].

It is also worthwhile to highlight what falls outside the scope of the EU Taxonomy. The SFDR excludes statutory state social security schemes from the scope of the EU Taxonomy, while leaving Member States the option of applying the EU Taxonomy to these entities. According to Article 2(1), point (b), of the Accounting Directive, central banks, postal office giro institutions, and other entities listed in Article 2 of Directive 2006/48/EC fall outside the scope of the EU Taxonomy. Member States, however, have discretion under Article 2(1), point (d), of the Accounting Directive to decide which entities can be considered as public-interest entities, and therefore the EU Taxonomy may also apply to some of them.

Based on the findings in this chapter three (3), the first step for a financial market participant or an undertaking larger than a micro-undertaking is to determine the EU Taxonomy's applicability to both itself, and the financial products it offers to the markets. It can be argued

[116] Nasdaq, Alternative Investment Funds – AIF.

[117] Rock 2015, pp. 364–365: "The third stage [current], characteristic of the late twentieth century, was the age of the portfolio manager in which the selection of the financial claims (stock, bonds, etc.) was professionalized, while leaving the benecial ownership to the capital supplier. This age of financial intermediaries is the age of the institutional investors, with great stock pickers like Peter Lynch as representative heroes."

[118] European Commission, a user guide to navigate the EU Taxonomy for sustainable activities, p. 7.

that, for undertakings and large groups, the assessment is more straightforward, as the obligations of such entities can be measured directly in terms of cash and the number of employees during a financial year. If these conditions are not met, undertakings are excluded from the scope of EU Taxonomy obligations. However, there may be differences between Member States regarding the thresholds set for small undertakings, as Member States have discretion in this respect.

For undertakings, which are not part of large group, the question of whether it is a public-interest entity opens more questions as to what is considered to fall within the scope of the EU Taxonomy under Article 2(1) referred to in Accounting Directive 19a. For example, Article 4(2) point (14) of the EU Directive 2004/39/EC provide that undertaking's transferable securities must be traded on a *regulated marketplace*, and Article 47 of the EU Directive 2004/39/EC requires each Member State to form a list of regulated markets of the Member State. Some Member States, such as Ireland, and Luxembourg have only one operating entity and one regulated market, while for example, Germany has ten operating entities and ten regulated markets[119]. Thus, for example, listing on a small growth marketplace, which is not considered as regulated marketplace does not oblige an undertaking to report about its sustainability under EU Taxonomy.

[119] Official Journal of the European Union C 209/13, Annotated presentation of regulated markets and national provisions implementing relevant requirements of MiFID (Directive 2004/39/EC of the European Parliament and of the Council) (2011/C 209/13).

4 Sustainable economic activities

As stated in chapter three (3), the concept of sustainable investment can be considered to form the core of the EU Taxonomy. This chapter four (4) focuses on the definition of sustainable investment according to the EU Taxonomy and chapter five (5) on the interpretation of sustainable investment in practice. This chapter four (4) provides clarifications on the types of economic activities can be considered sustainable under the EU taxonomy and form the basis of sustainability reporting. This examination applies to those entities clarified in the SFDR and Accounting Directive and referenced EU legislation therein, which are required to assess the sustainability of their own operations and products offered to the EU's financial market in accordance with EU Taxonomy.

4.1 Environmentally sustainable economic activity

An *environmentally sustainable investment*, according to Article 2 of the EU Taxonomy, refers to an investment in economic activity or activities that can be considered as environmentally sustainable. Article 3 of EU Taxonomy states that to be considered environmentally sustainable an economic activity must: 1) substantially contribute to one or more of the environmental objectives set out in Article 9; 2) do no significant harm (DNSH) under Article 17 to the environmental objectives of Article 9; 3) comply with the minimum safeguards of Article 18; and 4) comply with the technical screening criteria established in Articles 10-15. These four subsections (1-4) contain more content than a first glance might suggest and are discussed in more detail in the following subsections 4.1.1-4.1.5.

4.1.1 Principle of substantial contribution

Article 9 of the EU Taxonomy contains a list of environmental objectives to which an economic activity can substantially contribute. If the economic activity substantially contributes to one or more of the following environmental objectives (a-f), the investment can be considered as environmentally sustainable. Article 2 of the EU Taxonomy provides some clarifications to the broad terms used in Article 9, which is why the content of the Article 9 and 2 is presented side-by-side below. On the left side of the table, the environmental objective according to Article 9 is presented, and on the right side of the table, the clarification brought by Article 2 of the EU Taxonomy to the content of that environmental objective is presented.

Table 2: Article 9 and Article 2 of EU Taxonomy

Article 9	Environmental objectives	Article 2	Definitions
(a)	Climate change mitigation	2(5)	*Climate change mitigation* refers to the process in which the increase in the global average temperature is kept well below 2 °C with the aim to limit global warming to 1.5 °C in relation to pre-industrial times (Paris Agreement provision).
(b)	Climate change adaption	2(6)	*Climate change adaption* refers to the process of preparing for current and expected climate change.
(c)	Sustainable use and protection of water and marine resources	N/A	N/A
(d)	Transition to a circular economy	2(9)	*Circular economy* refers to the economic system of where the values of products, materials and resources are taken care of for as long as possible.
(e)	Pollution prevention and control	2(12)	*Pollution* means direct or indirect human effects on air, water, or soil. For the marine environment, pollution is defined in Article 3(8) of EU Directive 2008/56[120], and for the water environment in Article 2 of EU Directive 2000/60[121].
(f)	Protection and restoration of biodiversity and ecosystems	2(15)	*Biodiversity* means the variability of living organisms (including terrestrial, marine and other aquatic ecosystems and the ecological complex they form). Biodiversity

[120] Directive (EC) 2008/56 of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive), Article 3(8): "'pollution' means the direct or indirect introduction into the marine environment, as a result of human activity, of substances or energy, including human-induced marine underwater noise, which results or is likely to result in deleterious effects such as harm to living resources and marine ecosystems, including loss of biodiversity, hazards to human health, the hindering of marine activities, including fishing, tourism and recreation and other legitimate uses of the sea, impairment of the quality for use of sea water and reduction of amenities or, in general, impairment of the sustainable use of marine goods and services."

[121] Directive (EC) 2000/60 of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy, Article 2: "'Pollution' means the direct or indirect introduction, as a result of human activity, of substances or heat into the air, water or land which may be harmful to human health or the quality of aquatic ecosystems or terrestrial ecosystems directly depending on aquatic ecosystems, which result in damage to material property, or which impair or interfere with amenities and other legitimate uses of the environment".

			includes diversity within species, between species and between ecosystems.
		2(13)	Ecosystem means a dynamic unit formed by plants, animals, and microorganisms, along with their non-living environment.

4.1.2 Principle of do no significant harm (DNHS)

If the economic activity causes significant harm under Article 17 of EU Taxonomy to the objectives set out in Article 9 of EU Taxonomy, presented in the previous chapter (4.1.1.) the economic activity cannot be considered sustainable under EU Taxonomy. As well as Article 9, Article 17 of the EU Taxonomy includes various broad terms that are clarified in Article 2 of the EU Taxonomy. Therefore, these articles are presented side-by-side in the same manner as in the previous chapter:

Table 3: Article 17 and Article 2 of EU Taxonomy

Article 17	Significant harm to environmental objectives	Article 2	Definitions
(a)	Economic activity is considered to cause significant harm to the *climate change mitigation* if the activity results in significant greenhouse gas emissions.	2(7)	*Greenhouse gases* are defined in Annex I to EU Regulation 515/2013[122], according to which greenhouse gases includes carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), sulphur hexafluoride (SF6), nitrogen trifluoride (NF3), and various hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs).
(b)	Economic activity is considered to cause significant harm to the *climate change adaption* if the activity increases the adverse effects of climate change on the activity or on people, nature or assets	N/A	N/A

[122] Regulation (EU) No 525/2013 of the European Parliament and of the Council of 21 May 2013 on a mechanism for monitoring and reporting greenhouse gas emissions and for reporting other information at national and Union level relevant to climate change and repealing Decision No 280/2004/EC is no longer in force. Repealed by: Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council.

(c)	Economic activity is considered to cause significant harm to the *sustainable use and protection of water and marine resources*, where the activity has adverse effects to a) the good status or good ecological potential of bodies of water (surface water or groundwater), or b) the good environmental status of marine waters	2(22)	*Good status* of surface and ground waters refers to the "good ecological status" as defined in Article 2(22) and Article 2(25) of EU Directive 2000/60. According to Article 2(22) and Article 2(25) the good ecological status of surface and ground waters is defined in Annex V of the Directive 2000/60, where the status is assessed separately for rivers, lakes, transitional waters, coastal waters, and artificial and heavily modified surface water bodies. The assessment of good status considers factors such as biological elements, phytoplankton composition, depth variation, temperature, and salinity. In addition, surface waters must meet the "good surface water chemical status" as defined in Article 2(24) of Directive 2000/60, which refers to the environmental objectives set out in Article 4(1)(a) of the Directive. To achieve a "good surface water chemical status", the concentrations of pollutants in the surface water must not exceed the limits specified in Annex IX and Article 16(7) of Directive 2000/60. For groundwaters, the "good groundwater chemical status" and "good quantitative status" are defined in separate tables in Annex V of Directive 2000/60.
		2(23)	*Good ecological potential* refers to Article 2(23) of the Directive 2000/60. According to the Article 2(23) concerns the status of a heavily modified or artificial body of water classified in accordance with the provisions of Annex V to the Directive.
(d)	Economic activity is considered to cause significant harm to the *circular economy*, if a) the economic activity causes significant inefficiencies in the direct or indirect use of materials or natural resources (e.g. non-renewable energy sources, raw materials, water), for example in terms of product durability, repairability, upgradability, reusability or recyclability; b) the economic activity significantly increases the generation, incineration or disposal of waste (excluding the incineration of non-recyclable hazardous waste); or c) the long-term disposal of waste may	N/A	N/A

	cause significant and lasting damage to the environment		
(e)	Economic activity is considered to cause significant harm to the *pollution prevention and control*, where the activity leads to a significant increase of pollutants into air, water or soil	2(10)	*Pollutant* means a substance, heat, vibration, noise, light or other impurity that can cause harm to people's health, the environment or property or otherwise endanger or disturb the state of the environment or its usage possibilities.
		2(11)	*Soil* means the surface layer of the earth's crust between the bedrock and the surface, which consists of mineral particles, organic matter, water, air and living organisms.
(f)	Economic activity is considered to cause significant harm to *the protection and restoration of biodiversity and ecosystems*, where the activity concerned significantly hampers a) the *good condition* and resilience of ecosystems; or 2) the conservation status of habitats and species (including habitats and species of EU interest). According to Article 17(2), the assessment of significant harm considers the whole life cycle (production, use and end of use) of the product or service produced by the economic activity.	2(16)	*Good condition* means that the ecosystem is in a physical, chemical, and biological condition that allows the ecosystem to self-reproduce or self-restoration. In addition, an ecosystem in good status has no deterioration in species composition, ecosystem structure or ecological functions.

4.1.3 Minimum safeguards

As can be seen, the principles of substantial contribution and DNSH discussed above apply only to the impacts of a specific economic activity on the environment. In addition, when it is determined that a specific economic activity substantially contributes to a specific environmental objective set out in Article 9 of the EU Taxonomy without causing significant harm to any of these environmental objectives, the economic activity must also meet the *minimum safeguards* of Article 18 of the EU Taxonomy, which are related to the other areas of sustainability.

According to Article 18 of the EU Taxonomy, economic activities must be aligned with 1) the OECD Guidelines for Multinational Enterprises; 2) UN Guiding Principles on Business and Human Rights; 3) the principles and rights set out in the eight fundamental conventions

identified International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work; and 5) the International Bill of Human Rights to be considered sustainable under EU Taxonomy.[123]

The first part of the minimum safeguards, the OECD Guidelines for Multinational Enterprises on Responsible Business Conduct, contains soft law guidelines on how undertakings operations can be improved to better consider sustainability and its adverse impacts on people, planet, and society. The OECD Guidelines includes chapter on general principles, general policies, disclosure rules, respect for human rights, industrial relations, environment, anti-corruption and anti-bribery, consumer affairs, science, technology and innovation, competition, and taxation. The OECD Guidelines recommend integrating a risk-based due diligence process into a undertaking's risk management systems, considering both undertaking's internal and external impacts, such as those on the environment and human rights.[124]

The second part of the minimum safeguards refers to the UN Guiding Principles on Business and Human Rights, which is the first globally agreed standard that includes human rights obligations for both states and businesses, as well as remedies for individuals.[125] According to the UN Guiding Principles, undertakings must comply with applicable laws and respect human rights. Undertakings should take into account their obligations relative to their size and strive to mitigate adverse impacts on human rights and be prepared to compensate for such impacts if they occur. For example, undertakings should have a policy commitment on human rights that addresses the undertaking's relations with its employees and external parties. Furthermore, in order to identify and prevent their adverse human rights impacts, undertakings should conduct human rights due diligence, during which the undertaking assesses its impacts on human rights, lists the findings and discloses how the undertaking will respond to these findings.[126]

ILO Declaration on Fundamental Principles and Rights at Work and its Follow-up is the third (and the fourth part, see footnote 133) part of the minimum safeguards. ILO's Declaration

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[123] EU 2020/852, para 35; OECD 2023, Guidelines for Multinational Enterprises on Responsible Business Conduct; UN 2011, Guiding principles on Business and Human Rights: "The principles concerning fundamental rights in the eight ILO core conventions as set out in the Declaration on Fundamental Principles and Rights at Work"; ILO 2022, Declaration on Fundamental Principles and Rights at Work and Its Follow-up.

[124] OECD 2023, pp. 3–4.

[125] European Parliament Think Thank, Study: Implementation of the UN Guiding Principles on Business and Human Rights, p. 8.

[126] UN 2011, pp. 1, 13–19.

addresses the equity and eradication of poverty with an objective to draw resources to employment, working conditions and vocational training. In addition, ILO's Declaration aims to ensure freedom of association and the right to collective bargaining, an elimination on forced or compulsory labor and child labor, the elimination of discrimination at work and occupation, and a safe and healthy working environment.[127]

The fifth part of the minimum safeguards comprises of the International Bill of Human Rights, which includes: 1) the Universal Declaration of Human Rights; 2) the International Covenant on Economic, Social and Cultural Rights; 3) the International Covenant on Civil and Political Rights; 4) Optional Protocol to the International Covenant on Civil and Political Rights; and 5) Second Optional Protocol to the International Covenant on Civil and Political Rights, aiming at the abolition of the death penalty.[128] The International Bill of Human Rights includes many different rights and freedoms, such as the right to life, freedom from discrimination, the right to work, the right to gender equality, and so on.[129] These rights and freedoms are largely recognized in the Charter of Fundamental Rights of the European Union[130], but the Article 18 of the EU Taxonomy refers to the International Bill of Human Rights in this respect.

4.1.4 Technical screening criteria

According to Article 3(d) of the EU Taxonomy, economic activity must comply with the technical screening criteria set out in Article 10(3), Article 11(3), Article 12(2), Article 13(2), Article 14(2), or Article 15(2) of the EU Taxonomy to be considered a sustainable investment. When examining Articles 10-15 of the EU Taxonomy, it can be noted that each of the environmental objective of the Article 9 of EU Taxonomy has its own set of technical screening criteria. For example, Article 10(3) of the EU Taxonomy, which concerns the climate change mitigation, states that:

"The Commission shall adopt a delegated act in accordance with Article 23 to:

[127] ILO 2022, pp. 8–9.

[128] UN 1996, p. 1.

[129] United Nations, Human Rights Office of the High Commissioner, International Bill of Human Rights.

[130] EU 2012/C 326/02, Charter of Fundamental Rights of the European Union.

(a) supplement paragraphs 1 and 2 of this Article by establishing technical screening criteria for determining the conditions under which a specific economic activity qualifies as contributing substantially to climate change mitigation; and

(b) supplement Article 17 by establishing, for each relevant environmental objective, technical screening criteria for determining whether an economic activity in respect of which technical screening criteria have been established pursuant to point (a) of this paragraph causes significant harm to one or more of those objectives."

Each Article (10-15) of the EU Taxonomy specifies in the above presented manner that the European Commission will establish, on the basis of the power delegated to it under Article 23 of EU Taxonomy, technical screening criteria for assessing a specific economic activity's substantial contribution and DNSH in relation to a particular environmental objective.

In addition, Article 19 of the EU Taxonomy contains requirements for the content of the technical screening criteria. Article 19 of the EU Taxonomy set out the requirements for the technical screening criteria, according to which the technical screening criteria should, i.e., identify the most significant contributions to achieving a certain environmental objective, and define the minimum threshold to prevent significant harm to the EU Taxonomy's environmental objectives. According to Article 19 of EU Taxonomy, the technical screening criteria should primarily be quantitative and threshold-based, and secondarily qualitative based.

It is worth noting that the European Commission is assisted in the drafting of technical assessment criteria by the Platform under Article 20 of the EU Taxonomy and by the HLEG under Article 24 of the EU Taxonomy. The Platform's tasks include assessing the impact of the technical assessment criteria and their potential costs and benefits under Articles 20(2)(b) and 20(2)(g) and the improving of the usability of the technical assessment criteria to avoid undue administrative burdens for entities in scope of the EU Taxonomy. The purpose of the HLEG is more informative; to exchange information and views between Member States on, for example, the technical screening criteria and its updates and reforms.

4.1.5 Transitional activities and enabling activities

In addition to sustainable economic activities as defined in Article 3 of the EU Taxonomy, as discussed in previous chapters (4.1.1-4.2.4), the EU Taxonomy recognizes two kind of economic activities that can be considered environmentally sustainable even if the requirements of Article 3 are not met. It can be noted, that neither one of these activities, transitional nor

enabling activities, were recognized in the original legislative proposal for the EU taxonomy.[131] According to EU Technical Expert Group on Sustainable Finance (TEG), they were included in the EU Taxonomy following the political agreement reached in December 2019[132], which placed greater emphasis on transitional and enabling activities.[133]

The *transitional activities* are embedded in Article 10(2) of EU Taxonomy, which concerns substantial contribution to climate change mitigation. According to Article 10(2), an economic activity can be considered environmentally sustainable under the EU Taxonomy if there is no technically and economically feasible low-carbon alternative, provided that the activity supports the transition to the climate-neutral economy. The threshold in this context is a 1.5 °C increase in global temperatures compared to pre-industrial times, and particularly in terms of reducing greenhouse gas emissions from fossil fuels. Additionally, transitional activities must: 1) align with the greenhouse gas levels corresponding to the best performance in a specific sector; 2) not hamper the development and adoption of low-carbon alternatives; and 3) avoid the lock-in of carbon-intensive assets, considering the economic lifespan of those assets.

As can be seen, transitional activities are linked in one way or another to reducing greenhouse gas emissions and lowering global temperatures. For example, if an economic activity is associated with the protection of a water body without a connection to climate change mitigation, the measure could not be considered as transitional activity. Thus, in this respect, the EU Taxonomy would seem to favor climate change mitigation among the other environmental objectives of the EU Taxonomy. However, this is not the case in practice, as the EU Taxonomy also recognizes so-called *enabling activities*.

An economic activity can be considered environmentally sustainable even if the requirements of Article 3 of the EU Taxonomy are not met. Under Article 16 of the EU Taxonomy, an economic activity that enables other activities to make a substantial contribution to one or more of the environmental objectives identified in Article 9 of the EU Taxonomy can be considered sustainable under EU Taxonomy. According to Article 16 of the EU Taxonomy, this kind of enabling activities: 1) must not result in a lock-in of assets that could undermine long-term

[131] COM(2018) 353 final.

[132] TEG 2020a, pp. 9–10. See also: European Council, Sustainable finance: EU reaches political agreement on a unified EU classification system.

[133] EUCO 14970/19 ADD 1, pp. 10, 23, 38.

environmental objectives; and 2) must have a significant positive environmental impact, taking into account the economic activity's lifespan considerations.

The difference between transitional and enabling activities seems to be that in the assessment of a specific transitional activity, the focus is on the activity itself, particularly the lack of an "economically feasible low-carbon alternative", while for an enabling activity, the assessment's focus seems to be on improving the performance of other economic activities apart from original economic activity. What these activities have in common is that, firstly, neither of them can be considered sustainable, and secondly, both activities emphasize that the activity in question must not lead to the stagnation of sustainable development and to the lock-in of resources in unsustainable activities.

4.2 Conclusion

As can be seen from the examination of this chapter four (4), environmentally sustainable economic activities are built on few basic principles that form a large and opaque complex. Firstly, for an economic activity to be considered environmentally sustainable, it must make a substantial contribution to one or more of the environmental objectives defined in Article 9 of the EU Taxonomy. Secondly, the economic activity must not cause significant harm to these environmental objectives. Thirdly, for an economic activity to be considered environmentally sustainable, the minimum safeguards must be implemented into the operations of a specific undertaking, including internationally accepted human rights frameworks and guidelines for multinational companies. Fourthly, the economic activity's EU Taxonomy-alignment is ensured by compliance with the technical screening criteria established by the European Commission, set for each environmental objective of the EU Taxonomy.

When answering the research question three (3) of this thesis – "How are the sustainable economic activities defined under the EU Taxonomy, and what obligations they impose to the entities under EU Taxonomy's scope?" – it can be argued that sustainable economic activities in the EU Taxonomy are defined at a very broad level. The EU Taxonomy on its own, is not a very helpful tool for undertakings within its the scope to assess the compliance of their economic activities with it. Certainly, some conclusions could be drawn from the EU Taxonomy's provisions, for example, as to what kind of activities can be considered sustainable, allowing undertakings to identify these from their business operations. Also, if an undertaking had not previously taken into account the minimum safeguards of Article 18 of the EU Taxonomy in its business operations, the EU Taxonomy could have marked the time when

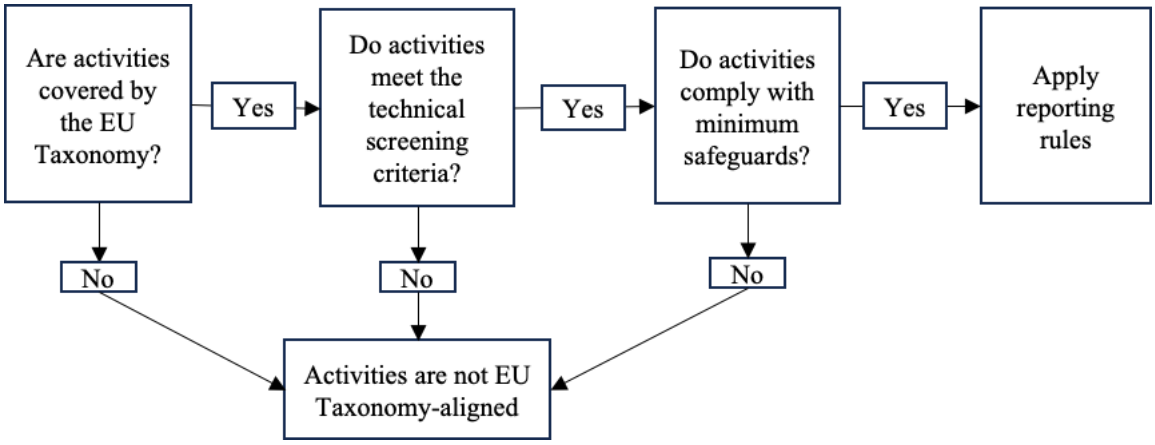
the undertaking was encouraged to start implement them into its business operations. Nevertheless, upon analyzing the content of the EU Taxonomy, when it entered into force, it appears that it primarily served as a mandate for further work on sustainable finance by the European Commission. It can be argued that the EU Taxonomy is be more oriented towards providing guidance to the European Commission, the Platform, and the HLEG as they create technical screening criteria for assessing sustainable investments, rather than serving as interpretative tool for sustainability assessment to entities within the EU Taxonomy's scope.

5 Complying with the EU Taxonomy

As concluded in the previous chapter four (4), the EU Taxonomy does not significantly assist financial undertakings, or the increasing number of non-financial undertakings obligated to assess the alignment of their economic activities with the EU Taxonomy. While EU Taxonomy, might offer some indication of the economic activities that can be considered as sustainable, actual interpretative guidance must be sought from other sources provided by the EU.

The EU Taxonomy user guide offers explanatory guidance for both financial and non-financial undertakings in interpreting the obligations set by the EU Taxonomy. The EU Taxonomy user guide breaks down the assessment of sustainable investment into four parts: 1) identify eligible activities; 2) assess EU Taxonomy alignment of the activities; 3) check compliance with minimum safeguards; 4) apply relevant reporting rules.[134] In this chapter five (5) of this thesis, the examination of sustainable investment is executed in the same order, starting with identifying eligible activities.

Figure 2: EU Taxonomy assessment (step-by-step)[135]



5.1 Identify eligible activities

The first part of the EU Taxonomy sustainable investment assessment is to *identify eligible activities*, which is considered in the EU Taxonomy's user guide to be applicable to all

[134] European Commission, a user guide to navigate the EU Taxonomy for sustainable activities, pp. 19, 21, 29, 31.

[135] Ibid., p. 17.

undertakings, regardless of whether they fall within the scope of the EU Taxonomy. Undertakings are encouraged to identify whether their activities are covered by the EU Taxonomy and thus considered eligible. The Delegated Acts, such as the Climate Delegated Act[136], the Complementary Climate Delegated Act[137] and the Environment and Climate Delegated Act[138] provide assistance in this respect. For instance, the Climate Delegated Act alone recognizes over 80 economic actives that are eligible across 13 different business sectors in connection with climate change mitigation and adaption,[139] and the TEG report detailing them is a total of 593 pages long. As it is not possible to comprehensively assess all of these sectors and activities, this thesis will henceforth concentrate on examining economic activities specifically from one sector and its undertakings. In this thesis, the forestry sector has been selected as a basis for this examination due to its close connection to climate change mitigation.[140]

In 2020, forests in Europe accounted for approximately 25 percent of the world's forests, with about 72 percent under public sector ownership in 2015, and the remaining 28 percent in private ownership due to the increased granting of forest management rights to the private undertakings and institutions.[141] The area of the EU comprises 43.5 percent forests and other wooded land, and in 2018, only 49 percent of the EU's forests were in good condition, despite that the conditions were slowly improving. In 2021 the EU's new forestry strategy aimed for sustainable reforestation and afforestation, with a roadmap to plant at least 3 billion new trees in the EU by

[136] Commission Delegated Regulation (EU) 2021/2139 of 4 June 2021 supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council by establishing the technical screening criteria for determining the conditions under which an economic activity qualifies as contributing substantially to climate change mitigation or climate change adaptation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives.

[137] Commission Delegated Regulation (EU) 2022/1214 of 9 March 2022 amending Delegated Regulation (EU) 2021/2139 as regards economic activities in certain energy sectors and Delegated Regulation (EU) 2021/2178 as regards specific public disclosures for those economic activities.

[138] Commission Delegated Regulation (EU) .../... of 27.6.2023 supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council by establishing the technical screening criteria for determining the conditions under which an economic activity qualifies as contributing substantially to the sustainable use and protection of water and marine resources, to the transition to a circular economy, to pollution prevention and control, or to the protection and restoration of biodiversity and ecosystems and for determining whether that economic activity causes no significant harm to any of the other environmental objectives and amending Delegated Regulation (EU) 2021/2178 as regards specific public disclosures for those economic activities {SWD(2023) 239 final}.

[139] European Commission, a user guide to navigate the EU Taxonomy for sustainable activities, p. 19.

[140] TEG 2020b, p. 78: "[Forests] absorb roughly 2 billion tons of carbon dioxide each year".

[141] FAO 2020a, pp. 14, 84–85.

2030. In addition, the EU's new forestry strategy stated, i.e., that technical screening criteria for climate change mitigation and adaption (Climate Delegated Act) will be developed, to better reflect with emerging forestry activities.[142]

As can be noted, a large part of Europe is covered by forests and a growing proportion of the forest area is in private ownership of undertakings of the forestry sector. First, according to EU Taxonomy user guide, a private forestry undertaking (hereinafter 'the Forestry Undertaking') should identify its eligible economic activities using, for example Climate Delegated Act[143] or the EU Taxonomy Compass.[144] According to EU Taxonomy Compass, economic activities within the forestry sector that potentially contribute to the environmental objectives of the EU Taxonomy can be identified using the *Statistical Classification of Economic Activities* (NACE) in which economic activities associated with forestry sector are limited to those defined in NACE II 2.10-2.40.[145]

NACE 2.10 covers *silviculture and other forestry activities* within natural, semi-natural and planted forests, which include, e.g., growing of timber; planting, and thinning of forests, and operation of forest tree nurseries. NACE 2.20 includes *logging* activities, such as production of roundwood for the forest-based manufacturing industry, and collection and production of forestry harvesting residues (e.g., logging and collecting residues for energy purposes). NACE 2.30 covers *gathering of wild growing non-wood products*, including wild growing materials (mushrooms, truffles, berries, nuts, etc.), and NACE 2.40 includes *support services to forestry*

[142] COM(2021) 572 final, pp. 1–3. See also: EEA 2020, pp. 132-135: "Close to one third of the European forest assessments showed bad conservation status (31 %), Over half of the assessments showed poor conservation status (54 %), Approximately 14 % of the assessments showed good conservation status, on average all other Annex I habitats were assessed as 38 % bad, 41 % poor and 15 % good".

[143] Commission Delegated Regulation (EU) 2021/2139 of June 2021 supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council by establishing the technical screening criteria for determining the conditions under which an economic activity qualifies as contributing substantially to climate change mitigation or climate change adaptation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives.

[144] European Commission, a user guide to navigate the EU Taxonomy for sustainable activities, pp. 19–20.

[145] European Commission, EU Taxonomy Navigator. EU Taxonomy Compass: Afforestation, Conservation forestry, Forest Management, Rehabilitation and restoration of forests, including reforestation and natural forest regeneration after an extreme event. See also: Regulation (EC) No 1893/2006 of the European Parliament and of the Council of 20 December 2006 establishing the statistical classification of economic activities NACE Revision 2 and amending Council Regulation (EEC) No 3037/90 as well as certain EC Regulations on specific statistical domains, Annex I.

on a fee or contract basis, such as forestry service activities, forest management consulting services, forest pest control, logging services, etc.[146]

NACE 2.10 excludes certain economic activities, such as the growing of Christmas trees, the production of non-forestry forest chips, and wood fire logs, as well as economic activities related to the care and cultivation of recreational trees. Excluded from NACE 2.20 is also the production of non-forestry wood chips, and particles and the production of charcoal by distillation. NACE 2.30 excludes the growing of mushrooms, truffles, berries, nuts and the gathering of firewood, and NACE 2.40 excludes the drainage of forest land and clearing of building sites.[147]

The economic activities listed above (NACE II 2.10-2.40), are those that can be considered acceptable in the forestry sector in the assessment of sustainable investment according to the EU Taxonomy, known as EU Taxonomy-eligible activities. If an economic activity is excluded from NACE, such as growing Christmas trees, it cannot be considered as a sustainable activity under EU Taxonomy-alignment assessment and is therefore considered as non-eligible economic activity. Once the Forestry Undertaking has identified its EU Taxonomy-eligible activities that could potentially contribute to the EU Taxonomy's environmental objectives within the forestry sector[148], the Forestry Undertaking should screen those activities against the technical screening criteria set out in EU Taxonomy's Delegated Acts.[149]

5.2 Assess EU Taxonomy-alignment of the activities

The second part of the assessment, *assess EU Taxonomy-alignment of the activities*, means that the EU Taxonomy-eligible activities must make a substantial contribution to the environmental objectives set out in Article 9 of the EU Taxonomy without significantly harming these environmental objectives. This chapter (5.2) first examines the technical screening criteria

[146] Eurostat, Classifications: Statistical classification of economic activities (NACE), NACE II, Forestry and logging 2.1–2.4.

[147] Ibid.

[148] European Commission, EU Taxonomy Navigator. Activities included on 13 November 2023: 1) afforestation activity; 2) conservation forestry activity; 3) forest management activity; and 4) rehabilitation and restoration of forest, including reforestation and natural forest regeneration after an extreme event activity)

[149] European Commission, a user guide to navigate the EU Taxonomy for sustainable activities, pp. 20–22. In relation to forestry sector, see also: TEG 2020b, pp. 52–101.

created for assessing substantial contribution, followed by an assessment of the technical screening criteria created for the do no significant harm (DNSH) principle.[150]

The Climate Delegated Act has defined economic activities that can be considered as making a substantial contribution to the climate change mitigation or adaption. In the forestry sector, these activities include: 1) afforestation activity; 2) conservation forestry activity; 3) forest management activity; and 4) rehabilitation and restoration of forests, including reforestation and natural forest regeneration after an extreme event activity. The purpose of this examination is to focus on the most common economic activities contributing to climate change mitigation or adaption in the forestry sector, which requires a practical examination of the forestry sector's undertakings.

In this thesis, the most common environmental objectives and economic activities in the forestry sector were identified by examining the annual reports of forestry undertakings covered by the EU Taxonomy. In this context, the 2022 annual reports of the EU-based forestry undertakings in the iShares Global Timber & Forestry UCITS ETF as of 16 November 2023 were selected for closer observation. These undertakings were Svenska Cellulosa AB, Smurfit Kappa Group Plc, Stora Enso Oyj, UPM Kymmene Oyj, Holmen AB, Billerud AB, The Navigator Company S.A., Ence Energía y Celulosa S.A., and Altri SGPS S.A.[151]

The examination of sustainable economic activities of these undertakings is listed in Annex I of this thesis, revealing that among these EU-based forestry undertakings, the *forest management* was the most common sustainable economic activity. The forest management of each of the examined undertaking was disclosed as EU Taxonomy-aligned with the climate change mitigation objective, as indicated in the 2022 annual reports of these undertakings.[152]

[150] European Commission, a user guide to navigate the EU Taxonomy for sustainable activities, p. 21–23.

[151] iShares by Blackrock, iShares Global Timber & Forestry ETF.

[152] Svenska Cellulosa Ab, Annual and Sustainability Report, pp. 170-172; Smurfit Kappa Group Plc, SKG Annual Report 2022, pp. 60–61; Stora Enso Oyj, Annual Report 2022, pp. 132–133; UPM Kymmene Oyj, Actions for the future: annual report 2022, pp. 142–148; Holmen Ab, Annual report 2022: we let the forest grow and give: we let the forest grow and give, pp. 104–107; Billerud Ab, Annual and sustainability report 2022, pp. 143–146; The Navigator Company S.A., Valuing who we are: 2022 annual report, pp. 91–100; Ence Energía y Celulosa S.A., Sustainability Report, pp. 18–22, 167–171; and Altri SGPS S.A., Our value is made out of fiber: annual report 2022, pp. 8, 171–182.

In relation to the EU Taxonomy's climate change adaptation objective, only Ence Energía y Celulosa S.A disclosed its activities to be aligned with it.[153]

The examination also revealed that apart from forest management, only UPM Kymmene's turnover included income from *afforestation* related activities[154], and only Stora Enso's OpEx included expenses of *conservation of forestry*[155]. By observing the 2022 annual reports (see Annex I of this thesis), it can be concluded that forest sector undertakings have the second highest number of common sustainable economic activities in the energy sector, with *cogeneration of heat/cold and power from bioenergy* activity being the most common (7/9 of the forestry undertakings) and *electricity generation from bioenergy* activity being the second most common (5/9 of the forestry undertakings). In other sectors covered by the EU Taxonomy, there were only isolated or scattered overlaps between two forestry undertakings.

Thus, for the sake of clarity and consistency, this chapter (5) will henceforth examine the *forest management* activity, which in practice the most common economic activity by which forest undertakings substantially contribute to the EU taxonomy's environmental objectives. The forest management activity serves in this thesis as an illustrative example, with the objective to present what is required for a particular economic activity to be considered EU Taxonomy-aligned. The examination of the forest management is not meant to be an all-encompassing guide to the interpretation of the EU Taxonomy, since the technical screening criteria established for economic activities under EU Taxonomy and its Delegated Acts may differ significantly between sectors, and even within a certain sector covered by EU Taxonomy. Hence, the findings from the examination of the forest management cannot be directly compared with findings from the other sectors and their sustainable activities.

[153] Ence Energía y Celulosa S.A., Sustainability Report, p. 169: "[A]n activity can be aligned with both objectives (climate change mitigation and adaption) if it meets the technical selection criterion for both or it can be aligned with only one of them (climate change mitigation and adaption) if it only meets the criteria for one, but not the other. In the case of Ence, both circumstances are presented".

[154] UPM Kymmene Oyj, Actions for the future: annual report 2022, pp. 147–148: "Taxonomy-eligible CapEx includes purchased and leased land for afforestation, purchased forest land, capitalized forest regeneration cost during the growth cycle, […] and other capitalized development costs of Taxonomy-eligible activities towards a future beyond fossils".

[155] Stora Enso Oyj, Annual Report 2022, p. 135.

5.2.1 Technical screening criteria for substantial contribution

The following chapters 5.2.1.1-5.2.2.4 examines how forest management of the Forestry Undertaking can be considered sustainable based on the technical screening criteria of the EU Taxonomy and its Delegated Acts. In this context, the Climate Delegated Act and forest management's substantial contribution to climate change mitigation will be examined.

First, it is in place to clarify what is meant by the forest management. Annex I of the Climate Delegated Act states that *forest management activity* can be defined in the national legislation of a Member State. In the absence of such a definition, forest management activity may correspond to any economic activity resulting from a system applicable to the forest and affecting its ecological, economic, or social functions, requiring that no land use change occurs, and that forest management operates on land meeting the definition of forest established in national legislation or the definition of the Food and Agriculture Organization of the United Nations (FAO)[156].

5.2.1.1 Forest management plan or equivalent instrument

According to the Annex I of the Climate Delegated Act (1.3.1.), forest management of the Forestry Undertaking that contributes to climate change mitigation must have a detailed *forest management plan or equivalent instrument*, under national laws or in the absence of such, under equivalent instrument defined by FAO[157], which is established for a minimum period of at least ten (10) years and is continuously updated. For the sake of clarity, only the term 'forest management Plan' will be used later in this thesis.

The Annex I of the Climate Delegated Act (1.3.1.) specifies that the forest management plan must consider the forest management objectives, the strategy and actions chosen to achieve objectives throughout the life cycle of the forest, and the main constraints for achieving these objectives, including an analysis of the impacts of logging on the sustainability and diversity of forest and soil resources. The forest management plan must consider the forest habitat, tree species, their extent and distribution, roads, waterways, and risks (such as, forest fire, pests, and diseases). In addition, the forest management plan must specify the measures to be taken to

[156] FAO 2020b, p. 4: "Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds *in situ*. It does not include land that is predominantly under agricultural or urban land use."

[157] FAO 2020b, p. 15: "Forest area within protected areas that has a long-term (ten years or more) documented management plan, aiming at defined management goals, and which is periodically revised".

maintain the good condition of forest ecosystems and the societal aspects (such as, landscape conservation), which can be ensured in consultation with stakeholders under the terms and conditions laid down in national legislation.

The Annex I of the Climate Delegated Act (1.3.1.) states that the sustainability of a forest management system is ensured by complying with the most ambitious of the following approaches: 1) the national definition of sustainable forest management; 2) the Forest Europe definition of sustainable forest management,[158] and Pan-European Guidelines for Sustainable Forest Management[159]; or 3) the forest sustainability criteria set out in Article 29(6) and operational guidelines set out in Article 29(8) of EU Directive 2018/2001[160], according to which biofuels, bioliquids or biomass should not be made from land with high carbon stocks, such as wetlands, or areas of more than one hectare with trees higher than five meters and more than 30 percent canopy cover, or 10-30 percent canopy cover, unless specific conditions are presented.

Moreover, According to the Annex I of the Climate Delegated Act (1.3.1.), forest management must comply with due diligence obligations set out in EU Regulation 995/2010,[161] and not cause degradation of land with high carbon stock in accordance with Article 29(4), points (a-b) of EU Directive 2018/2001,[162] and ensure that the forest management plan provides means for

[158] Forest Europe, Resolution H1: General Guidelines for the Sustainable management of Forests in Europe, p. 1: "'sustainable management' means the stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystem".

[159] Forest Europe, Resolution L2: Pan-European Criteria, Indicators and Operational Level Guidelines for Sustainable Forest Management, Annex II, pp. 1–10. Annex II includes following criterions: 1. Maintenance and appropriate enhancement of forest resources and their contribution to global carbon cycles; 2. Maintenance of forest ecosystem health and vitality; 3. Maintenance and encouragement of productive functions of forests (wood and non-wood); 4. Maintenance, conservation and appropriate enhancement of biological diversity in forest ecosystems; 5. Maintenance and appropriate enhancement of protective functions in forest management (notably soil and water); 6. Maintenance of other socio-economic functions and conditions.

[160] Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources.

[161] Regulation (EU) No 995/2010 of the European Parliament and of the Council of 20 October 2010 laying down the obligations of operators who place timber and timber products on the market, paras 15–17, 20, Articles 4, 6, 8, 10.

[162] Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources.

monitoring, so that the accuracy of the information in the forest management plan can be verified by external auditors.

5.2.1.2 Climate benefit analysis

According to the Annex I of the Climate Delegated Act (1.3.2.), if the forest management of the Forestry Undertaking takes place in areas that qualify as a *forest sourcing area level*[163], it must be ensured that the forest management enhances forest carbon stocks and carbon sinks over the 30-yearlong span in accordance with Article 29(7), point (b) of EU Directive 2018/2001. A climate benefit analysis, under the Annex I of the Climate Delegated Act must ensure that the net balance of greenhouse gas emissions and removals from the forest management at 30 years after the start of the production are lower than the 30-year baseline of greenhouse gas emissions and removals[164], taking into account activities that would have taken place on the area in question in the absence of the forest management activity.

The climate benefits analysis under Annex I of the Climate Delegated Act (1.3.2.) must comply with Article 29(7), point b of the EU Directive 2018/2001, which requires forest management systems to be in place at the forest sourcing are level, ensuring that forest carbon stocks and sinks are maintained or enhanced in the long term. If the area, where the forest management is taking place, does not meet the requirements at forest sourcing are level in terms of forest carbon stocks and carbon sinks in the long term, the climate benefit analysis must demonstrate that 1) the net balance of greenhouse gases and removals after 30 years since the start of the forest management activity are lower than the 30-year baseline, taking into account activities that would have taken place on the area in question in the absence of the forest management. Additionally, the projected long-term (100 years) and the duration of an entire forest cycle net greenhouse gas net balance of the forest management must be lower than the projected average 30-year greenhouse gas baseline.

According to the Annex I of the Climate Delegated Act (1.3.2.), for forests of less than thirteen (13) hectares, conducting the climate benefit analysis is not required. For forests larger than

[163] Directive (EU) 2018/2001, Article 2(30): "'sourcing area' means the geographically defined area from which the forest biomass feedstock is sourced, from which reliable and independent information is available and where conditions are sufficiently homogeneous to evaluate the risk of the sustainability and legality characteristics of the forest biomass".

[164] Net balance of GHG emissions after 30 years < GHG emissions baseline during the 30 years after start of the activity.

that, the calculations of climate benefit analysis must be consistent with the requirements of the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories[165] and be based on accurate, cautious, and comparable data covering all carbon stocks affected by the forest management (biomass above and below ground). Moreover, the calculations of the climate benefit analysis must include either the forest management practices of the forest management plan, or the most recent business-as-usual practices in place before the start of the forest management activity, or the practices to secure and enhance the carbon stocks and sinks of the area in accordance with Article 29(7), point b of the EU Directive 2018/2001. These calculations should be proportionate to the size of the forest, and take into account emissions and removals (pests, forest fires, etc.) that may cause forest underperformance, which does not (necessarily) lead to non-compliance with the EU Taxonomy, if the climate benefit analysis is consistent with the 2019 updates to the IPCC 2006 Guidelines for the calculation of national greenhouse gas inventories for emissions and removals from natural disturbances.

5.2.1.3 Guarantee of permanence

The Annex I of the Climate Delegated Act (1.3.3.) states that under national legislation, the status of the forest area must be guaranteed either by: 1) classifying the area as permanent forest estate under FAO's definition[166]; 2) classifying the area as a protected area; or 3) ensuring that the area is covered by a legal or contractual guarantee that it will remain as a forest.

In addition, the Annex I of the Climate Delegated Act (1.3.3.) obliges the Forestry Undertaking in accordance with national legislation to ensure that future updates of the forest management plan will continue to deliver climate benefits, even after the funded forest management operation has ended. In addition, the Forestry Undertaking must commit to compensating for the potential loss of climate benefits with the corresponding climate benefits resulting from forest management or other forest activities as defined in the Climate Delegated Act.

5.2.1.4 Audit

According to the Annex I of Climate Delegated Act (1.3.4.), after two (2) years from the start of the forest management and every ten (10) years, the national competent authority, or an

[165] IPCC 2019, Chapter 4: Forest Land (corrected as of July 2023) and Chapter 12: Harvested Wood Products (corrected as of November 2010).

[166] FAO 2020b, p. 21. "Area of permanent forest estate: Forest area that is designated to be retained as forest and may not be converted to other land use".

independent third-party certifier (at the request of the national authority or the Forestry Undertaking) must verify whether the forest management meets the criteria of substantial contribution to climate change mitigation and DNSH criteria (examined below in chapter 5.2.2.).

The Annex I of the Climate Delegated Act (1.3.4.) states that the independent third-party certifier conducting the audit must have no conflict of interest with the Forestry Undertaking or its financier and should not be involved in the operation or development of the forest management. For efficiency and cost-saving reasons, the audit may be carried out in connection with any other forest certification, climate certification, or relevant audit of the Forestry Undertaking. If the forest management activity, conducted by the Forestry Undertaking is considered to make a substantial contribution to climate change mitigation, without causing significant harm to other environmental objectives of EU Taxonomy, it is considered as EU Taxonomy-aligned activity.

In practice, Smurfit Kappa Group Plc and Holmen Ab have announced that they have certified their forest management with FSC or PEFC certification, which sets the basis for their sustainable forest management.[167] Stora Enso has also clarified that its forests are totally FSC or PEFC certified, which lays "the foundation for sustainable forest management". Stora Enso's reported turnover for forest management, therefore, includes sales of externally sold roundwood and logging residues, CapEx includes investments supporting forest management activities, (e.g., forest land acquisitions and investments in infrastructure), and OpEx includes forest management costs and related research and development costs.[168]

Forest Management Certificate (FSC) or Programme for the Endorsement of Forest Certification (PEFC) appears to be one of the elements of the sustainability assessment of the forest management in practice. FSC certification serves as a means for a forest manager or owner to recognize careful and sustainable forest management. FSC certification is voluntary and includes an audit of forest management to ensure compliance with internationally accepted principles of responsible forest management.[169] PEFC, on the other hand, is an international

[167] Smurfit Kappa Group Plc, SKG Annual Report 2022 p. 61; Holmen Ab, Annual report 2022: we let the forest grow and give: we let the forest grow and give, p. 111.

[168] Stora Enso Oyj, Annual Report 2022, p. 132.

[169] EEA, Global FSC and PEFC certificates: type and distribution by countries in Europe.

non-profit and independent organization dedicated to promoting sustainable forest management for small forest owners.[170]

5.2.1.5 Group assessment

According to the Annex I of the Climate Delegated Act (1.3.5.), the compliance with the substantial contribution and DNSH criteria can be verified 1) at forest sourcing area level, as described in the subchapter 5.2.1.2 of this thesis concerning climate benefit analysis; or 2) at group holdings level, provided that the forest holdings in question have a permanent relationship with each other and are involved in forest management and that the group of forest holdings remains the same for all subsequent audits.

Group assessment allows for a uniform assessment of forest holdings, provided that the forest holdings maintain a permanent relationship and remain the same in subsequent audits. This allows forest holdings to be grouped together for EU Taxonomy-alignment assessment, irrespective of whether the holdings are under common ownership or not.

5.2.2 Technical screening criteria for do no significant harm (DNSH)

Once the Forestry Undertaking has assessed that its forest management makes substantial contribution in terms of Annex I of the Climate Delegated Act, the Forestry Undertaking must ensure that the forest management does no significant harm to other environmental objectives under the EU Taxonomy. If forest management causes significant harm to any of the other environmental objectives defined in the EU Taxonomy, the forest management cannot be considered sustainable, and is therefore not EU Taxonomy-aligned.[171]

The EU Taxonomy user guide suggests a three-step DNSH assessment: 1) identify DNSH criteria for forest management that makes a substantial contribution to (for example) climate change mitigation; 2) collect the data and information necessary to assess the relevant DNSH criteria; and 3) execute a verification process to ensure that the DNSH criteria is met, so that the formal assessment procedures have been carried out early in the assessment process of the forest management and that relevant permits, certificates and approvals have been granted by the competent authorities (or the independent third-party certifiers).

[170] EEA, Programme for the Endorsement of Forest Certification.

[171] European Commission, a user guide to navigate the EU Taxonomy for sustainable activities, p. 22.

The DNSH assessment in Annex 1 of the Climate Delegated Regulation is presented in table, which is divided into sections according to the environmental objectives set out in Article 9, points (a-f) of the EU Taxonomy. For the sake of clarity, the environmental objectives and the related DNSH assessment for forest management is discussed separately in subchapters below.

5.2.2.1 Climate change adaption

According to the Annex I of the Climate Delegated Act, forest management activity, which does not cause significant harm to climate change adaptation must comply with a climate risk and vulnerability assessment set out in Appendix A of the Annex I of the Climate Delegated Act , according to which the climate risk and vulnerability assessment includes: 1) identifying the physical climate risks (temperature-related, wind-related, water-related, solid mass-related) that may affect the forest management; and 2) if the forest management is determined to be at risk from one or more physical risks (such as, heatwaves or wildfires), the climate risk and vulnerability assessment must be conducted.

The Appendix A of the Annex I of the Climate Delegated Act notes that the risk and vulnerability assessment for forest management, which lasts less than ten (10) years can use climate projections at the smallest appropriate scale. The risk and vulnerability for forest management lasting over ten (10) years, must use the highest available resolution and projections across existing ranges of future scenarios, defined by IPCC[172]. The projections should align with the expected lifetime of the forest management activity, including scenarios covering ten (10) to thirty (30) years for major investments. Best practices and available guidance should consider the latest scientific knowledge on vulnerability and risk analysis, including projections and methodologies periodically reported by IPCC, peer-reviewed scientific publications, and limited or open-source models, such as the Copernicus Services[173] provided by the European Union.

Moreover, according to Appendix A of the Annex I of the Climate Delegated Act, if the Forestry Undertaking implements a physical and non-physical adaptation plan for up to five (5) years to mitigate climate risks relevant to its forest management, the adaptation plan must align with local, sectoral, regional, or national adaptation strategies and plans. The adaptation plan of the

[172] IPCC 2022, p. 137; Commission Delegated Regulation (EU) 2021/2139, p. 140. See footnote 1: "Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5".

[173] EU, Programme of the EU: Copernicus Services.

Forestry Undertaking should not adversely affect the ability of other people, nature, property, or cultural heritage to tolerate physical climate risks. Furthermore, the adaptation plan should prioritize nature-based solutions[174] and those relying on blue or green infrastructure[175].

5.2.2.2 Sustainable use and protection of water and marine resources

According to the Appendix B of the Annex I of the Climate Delegated Act, the Forestry Undertaking must ensure that the risks associated with preserving water quality and avoiding water stress are identified and addressed to achieve the objectives of *good water status* and *good ecological potential* of water, as defined in Article 2, point (22) and (23) of the EU Taxonomy, and the EU Directive 2000/60/EC (examined in more detail in chapter 4.1.2).

For forest management taking place in third countries, the Appendix B of the Annex I of the Climate Delegated Act notes that the Forestry Undertaking must ensure that its activities are subject to national legislation or international standards, which provide good water status and good ecological potential through equivalent procedures and provisions as EU's legislative instruments. In practice, this can be ensured by a management plan for water use and protection, developed by the Forestry Undertaking in cooperation with the relevant stakeholders, which ensures that: 1) the impacts of the forest management on the good water status and ecological potential of water are assessed; 2) degradation of good status and ecological potential is avoided and, if possible, prevented; and in the cases where it is not possible, 3) justification is provided for the lack of better practices that are not disproportionately costly or technically impossible to implement, as well as measures to mitigate adverse impacts on good water status and ecological potential.

The Appendix B of Annex I of the Climate Delegated Act further notes that if the environmental impact assessment for the forest management complies with EU Directive 2011/92/EU[176], and

[174] European Commission, Research and innovation: nature-based solutions: "Solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions".

[175] COM/2013/249 final, pp. 2–3: "Green Infrastructure is based on the principle that protecting and enhancing nature and natural processes, and the many benefits human society gets from nature, are consciously integrated into spatial planning and territorial development."

[176] Directive (EU) 2011/92 of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment (codification), Article 1(2), point (g): "'Environmental impact assessment' means a process consisting of: (i) the preparation of an environmental impact assessment report by the developer, as referred to in Article 5(1) and (2); (ii) the carrying out of consultations as referred to in Article 6 and, where relevant, Article 7; (iii) the examination by the

it includes a water impact assessment under EU Directive 2000/60/EC, no additional water impact assessment is required from the Forestry Undertaking, provided that the previous assessments demonstrate consideration of identified risks for the good water status and good ecological potential of water from the forest management.

5.2.2.3 Transition to circular economy

The Annex I of the Climate Delegated Act briefly states that any sivlicultural change resulting from forest management in the forest management area must not result "in a significant reduction of sustainable supply of primary forest biomass suitable for the manufacturing of wood-based products with long-term circularity potential", which can be proved by presented in connection with the climate benefit analysis, examined in chapter 5.2.1.2.

In this context, the climate benefit analysis must ensure that forest carbon stocks and carbon sinks are not lower as a result of the forest management than they were before the start of the forest management. Additionally, the Forestry Undertaking must ensure that forest management does not lead to a significant reduction in the sustainable supply of biomass suitable for the production of wood-based products in the long term.

5.2.2.4 Pollution prevention

Firstly, according to Annex I of the Climate Delegated Act, the use of pesticides in the forest management must be reduced, and alternative approaches and techniques should be favored by the Forestry Undertaking, (e.g., by using non-chemical methods) in accordance with EU Directive 2009/128/EC[177]. However, the Forestry Undertaking may use the pesticides when it is necessary to control the outbreaks of pests and diseases.

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competent authority of the information presented in the environmental impact assessment report and any supplementary information provided, where necessary, by the developer in accordance with Article 5(3), and any relevant information received through the consultations under Articles 6 and 7; (iv) the reasoned conclusion by the competent authority on the significant effects of the project on the environment, taking into account the results of the examination referred to in point (iii) and, where appropriate, its own supplementary examination; and (v) the integration of the competent authority's reasoned conclusion into any of the decisions referred to in Article 8a."

[177] Directive (EC) 2009/128 of the European Parliament and of the Council of 21 October 2009 establishing a framework for Community action to achieve the sustainable use of pesticides, Article 1(8): "'non-chemical methods' means alternative methods to chemical pesticides for plant protection and pest management, based on agronomic techniques such as those referred to in point 1 of Annex III, or physical, mechanical or biological pest control methods."; Annex III, point 1: "The prevention and/or suppression of harmful organisms should be achieved or supported among other options especially by: crop rotation, use of adequate cultivation techniques (e.g. stale seedbed technique, sowing dates and densities, under-sowing, conservation tillage, pruning and direct sowing), use, where appropriate, of resistant/tolerant cultivars and standard/certified seed and planting material, use of balanced fertilisation, liming and irrigation/drainage practices, preventing the spreading of

Secondly, the Annex I of the Climate Delegated Act requires that the use of fertilizers in forest management is minimized and the use manure is prohibited. Additionally, the Forestry Undertaking must comply with EU Regulation 2019/1009[178], or national rules on fertilizers or soil improvers for agricultural use.

Thirdly, the Annex I of the Climate Delegated Act notes that water and soil pollution must be prevented, and in case of pollution, clean-up measures must be taken. Additionally, the Climate Delegated Act obliges the Forestry Undertaking to conduct well-documented and verifiable measures to avoid using *active ingredients* listed in the following instruments: 1) Part A of the Annex I of the EU Regulation 2019/1021[179]; 2) Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade[180]; 3) Minamata Convention on Mercury[181]; 4) Montreal Protocol on Substances that Deplete the Ozone Layer[182]; 5) WHO Recommended Classification of Pesticides by Hazard (category Ia: "very hazardous" or category Ib: "extremely hazardous")[183]; and 6) national legislations on active ingredients.

5.2.2.5 Protection and restoration of biodiversity and ecosystems

According to the Annex I of the Climate Delegated Act, in forest areas designated for conservation by the national competent authority, forest management must comply with the conservation objectives of the respective area, ensuring that forest areas sensitive to biodiversity

harmful organisms by hygiene measures (e.g. by regular cleansing of machinery and equipment), protection and enhancement of important beneficial organisms, e.g. by adequate plant protection measures or the utilisation of ecological infrastructures inside and outside production sites."

[178] Regulation (EU) 2019/1009 of the European Parliament and of the Council of 5 June 2019 laying down rules on the making available on the market of EU fertilising products and amending Regulations (EC) No 1069/2009 and (EC) No 1107/2009 and repealing Regulation (EC) No 2003/2003

[179] Regulation (EU) 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants. Part A of Annex 1 contains more than 20 chemical substances.

[180] Regulation (EC) 304/2003 of the European Parliament and of the Council of 28 January 2003 concerning the export and import of dangerous chemicals, Annex A: 'Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade', Annex II to Annex A: 'Chemicals subject to the prior informed consent procedure'.

[181] Council Desicion (EU) 2017/938 of 23 September 2013 on the signing, on behalf of the European Union, of the Minamata Convention on Mercury.

[182] EC L 297, pp. 21–28.

[183] WHO, The WHO Recommended Classification of Pesticides by Hazard and guidelines to classification, 2019 edition.

loss, possessing high conservation value, or are in the process of restoration should not be modified by the forest management activity.

Moreover, according to Climate Delegated Act, the forest management plan, as discussed previously in chapter 5.2.1.1, must include detailed information concerning the conservation and potential enhancement of biodiversity, in accordance with national legislations, including for example, the preservation of habitats and species without releasing non-native species into the forest, unless the Forestry Undertaking proofs that the release will result in favorable and appropriate ecosystem conditions and will not cause harm to native species. In addition, the forest management plan must ensure that forest management will not result in adverse physical, chemical, and biological effects on the soil. Overall, forest management must ensure that biodiversity is maintained (e.g., species, soil and stand structure, age structure, etc.) without reducing biodiversity.

5.2.3 Enabling and transitional activities

If the Forestry Undertaking falls under the scope of the Article 19a or Article 29a of the Accounting Directive and is therefore required to disclose information under the EU Taxonomy, the forestry undertaking is also advised to assess its operations, products and services that may enable others to make substantial contributions to environmental objectives of the EU Taxonomy. According to the EU Taxonomy user guide, the disclosure of such information may enhance the reputation and access to capital of the Forestry Undertaking[184].

In this context, the Forestry Undertaking should refer to Annex II of the Climate Delegated Act, where is individually specified in the 'description of activity' sections for each economic activity whether a particular activity can be considered as an enabling activity or transitional activity. For example, the 'description of forest management' in Annex II of the Climate Delegated Act does include enabling activities, but for example the activity number (7.3) 'description of installation, maintenance, and repair of energy efficiency', which is carried out by Svenska Cellulosa, could be considered an enabling activity if the conditions laid down in Article 10(1) of the EU Taxonomy are met. The same applies to activity number (7.2), 'description of renovation of existing buildings', and activity number (6.2),

[184] European Commission, a user guide to navigate the EU Taxonomy for sustainable activities, p. 24.

'description of freight rail transport', which are both conducted by Svenska Cellulosa[185], and the latter (6.2) by Billerud Ab[186] as well. These activities could also be considered transitional activities if they meet the conditions set out in Article 10(2) of the EU Taxonomy, but for both undertakings, these activities were considered EU Taxonomy-aligned activities, not enabling activities or transitional activities.

The EU Taxonomy user guide states that activities such as forest management, which are not listed as enabling activities in the description of activity sections in Annex II of the Climate Delegated Act, can be considered as EU Taxonomy-eligible activities (adapted-enabling activities) if they meet the substantial contribution criteria. These activities can be considered enabling activities if they meet the DNSH assessment criteria, allowing the Forestry Undertaking to include the activity in the disclosure of its turnover, CapEx, and OpEx for EU Taxonomy-alignment.[187]

5.3 Check compliance with minimum safeguards

Once the EU Taxonomy-eligible activities of the Forestry Undertaking have been identified and screened against the substantial contribution criteria and the DNSH criteria, the Forestry Undertaking should ensure that its activities align with the minimum safeguards set out in Article 18 of the EU Taxonomy. If the activities do not align with the minimum safeguards, the activity cannot be considered EU Taxonomy-aligned.[188]

According to the Article 18 of the EU Taxonomy, the Forestry Undertaking must ensure that its activities are aligned with: 1) the OECD Guidelines for Multinational Enterprises[189]; 2) the UN Guiding Principles on Business and Human Rights[190]; 3) the Declaration on Fundamental Principles and Rights at Work of the ILO[191]; 4) the eight fundamental conventions of ILO[192];

[185] Svenska Cellulosa Ab, Annual and Sustainability Report, p. 171.

[186] Billerud Ab, Annual and sustainability report 2022, pp. 144–146.

[187] European Commission, a user guide to navigate the EU Taxonomy for sustainable activities, pp. 24–25.

[188] Ibid., p. 29.

[189] OECD 2023, Guidelines for Multinational Enterprises on Responsible Business Conduct.

[190] UN 2011, Guiding principles on Business and Human Rights.

[191] ILO 2022, Declaration on Fundamental Principles and Rights at Work and Its Follow-up.

[192] European Commission, a user guide to navigate the EU Taxonomy for sustainable activities, p. 29: "As an example, the eight fundamental conventions identified in the ILO's declaration are: the right not to be subjected to forced labour; the freedom of association, workers' right to organise; the right to collective bargaining; equal

and 5) International Bill of Human Rights[193]. These instruments have been discussed in chapter 4.1.3 of this thesis, and neither the EU Taxonomy user guide nor the Climate Delegated Act add any further conditions for their application.

The EU Taxonomy does not set specific screening criteria for assessing the minimum safeguards, which means that in practice, the Forestry Undertaking must be able to demonstrate in an appropriate manner that minimum safeguards have been considered and implemented into the Forestry Undertaking's operations. Hence, minimum safeguards are more broadly applicable to the assessment of the Forestry Undertaking's entire operations without direct connection to a specific economic activity, such as forest management. In practice, the forestry undertakings examined under this thesis have unequivocally reported that their operations respect human rights and that there is no evidence of corruption, bribery, or other distortions of competition[194] or that documents such as their code of conduct provide further information on compliance regarding the minimum safeguards.[195]

5.4 Apply relevant reporting rules (non-financial undertaking)

When the Forestry Undertaking has identified all its activities (including the forest management) that are EU Taxonomy-aligned, the Forestry Undertaking must disclose this information according to the Disclosures Delegated Act[196]. The Disclosures Delegated Act clarifies how the Forestry Undertaking's EU Taxonomy-alignment is calculated and disclosed in an appropriate manner.

Under Article 10 of the Disclosures Delegated Act, from 1 January 2022 onwards, the non-financial undertakings under Article 19a and Article 29a of the Accounting Directive have had

remuneration for men and women workers for work of equal value; non-discrimination in opportunity and treatment with respect to employment and occupation; and the right not to be subjected to child labour ".

[193] UN 1996.

[194] Smurfit Kappa Group Plc, SKG Annual Report 2022, p. 60; Stora Enso Oyj, Annual Report 2022, p. 133; UPM Kymmene Oyj, Actions for the future: annual report 2022, p. 142; Holmen Ab, Annual report 2022: we let the forest grow and give: we let the forest grow and give, p. 104; The Navigator Company S.A., Valuing who we are: 2022 annual report, pp. 130–131; Altri SGPS S.A., Our value is made out of fiber: annual report 2022, pp. 8, 178–179.

[195] Billerud Ab, Annual and sustainability report 2022, p. 143.

[196] Commission Delegated Regulation (EU) 2021/2178 of 6 July 2021 supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council by specifying the content and presentation of information to be disclosed by undertakings subject to Articles 19a or 29a of Directive 2013/34/EU concerning environmentally sustainable economic activities, and specifying the methodology to comply with that disclosure obligation.

to disclose their EU Taxonomy-eligible economic activities. From 1 January 2023 onwards, non-financial undertakings under Accounting Directive must have disclosed their economic activities that are EU Taxonomy-aligned and those which are not, as the forestry undertakings selected for analysis in chapters (5.1-5.3) has done. However, large undertakings, which were included in the scope of the EU Taxonomy only after the changes introduced by the CSRD, are obliged to report in 2026 about their EU Taxonomy-aligned activities. For SMEs the same applies from 2027 onwards[197].

In the Disclosures Delegated Act, the disclosure obligation of the information under EU Taxonomy is divided into three (3) parts for non-financial undertakings. According to Annex II of the Disclosures Delegated Act the Forestry Undertaking must disclose: 1) the proportion of its turnover that is EU Taxonomy-aligned; 2) the proportion of the its CapEx that is related to assets or processes related to the EU Taxonomy-aligned economic activities; and 3) the proportion of OpEx that relates to EU Taxonomy-aligned activities. The information must be disclosed in the manner specified in the Disclosures Delegated Act, where turnover, CaPex and OpEx are assessed separately for each environmental objective in accordance with templates set out in Annex II of the Disclosures Delegated Act.

The disclosure rules for non-financial undertakings can be illustrated by an example. For example, in its 2022 annual report, Stora Enso disclosed its degree of sustainable economic activities for turnover to be 0.9 percent for forest management (including sale of roundwood and forest residuals), 5.1 percent for manufacturing of energy efficiency buildings (wood-based solutions for the construction industry) and 0.5 percent for cogeneration off heat/cool and power from bioenergy (sale of energy from wood residuals to external operators), which represents 6.5 percent of Stora Enso's total turnover. Stora Enso's CapEx for forest management (investments that support the forest management activities) was 1.6 percent of total CapEx; 0.3 percent for manufacture of batteries, 3.0 percent for manufacture of energy efficiency equipment for buildings, 0.3 percent for district heating/cooling distribution and 0.8 percent for cogeneration of heat/cool and power from bioenergy, which represent 6 percent of Stora Enso's total CapEx. Stora Enso's OpEx for forest management (sivliculture costs and research and development costs) was 3.2 percent in relation to total OpEx; 0.1 for conservation of forestry, 1.6 percent for manufacture batteries, 3.0 percent for manufacture of energy efficiency

[197] European Commission, a user guide to navigate the EU Taxonomy for sustainable activities, p. 34. See also: Directive (EU) 2022/2464, para 21, Article 5(2).

equipment for buildings, and 2.4 percent for cogeneration of heat/cool and power from bioenergy, which represent 10.3 percent of Stora Enso's total OpEx.[198]

Furthermore, the EU Taxonomy user guide states that the Forestry Undertaking must also disclose their EU Taxonomy-eligible activities that are not EU Taxonomy-aligned and explain how they can comply with the EU Taxonomy in the future.[199] In the year of 2022, for Stora Enso such an activity was the cogeneration of heat/cool and power from bioenergy, which was partly EU Taxonomy-aligned and partly not, due to the fact that some of the boilers used by Stora Enso did not meet the DNSH criteria for pollution prevention and control.[200]

5.5 Apply relevant reporting rules (financial undertakings)

So far, only one economic activity's EU Taxonomy-alignment assessment, and disclosure rules concerning non-financial undertaking has been examined in this thesis. As the disclosure obligations for financial undertakings are equally relevant in the broad application of the EU Taxonomy, they are examined separately in this chapter 5.5.

Financial undertakings that make investments, i.e., to forestry undertakings, are subject to the disclosure obligation under the Disclosures Delegated Act, which specify how a financial undertaking must calculate and disclose information of its EU Taxonomy-alignment at the *entity-level*. In addition, financial undertakings that provide financial products on the EU's internal market are subject to a separate disclosure obligation at the *product-level*, as is set out in a Sustainable Finance Disclosures Delegated Regulation[201] (hereinafter the 'SFDR Delegated Regulation'), which obliges financial undertakings to calculate and disclose the EU taxonomy-alignment of their financial products.

Article 10 of the Disclosures Delegated Act obligates the financial undertakings to disclose their entity-level EU Taxonomy-alignment from January 2024 onwards (a year later than

[198] Stora Enso Oyj, Annual Report 2022, pp. 133–135.

[199] European Commission, a user guide to navigate the EU Taxonomy for sustainable activities, p. 33.

[200] Stora Enso Oyj, Annual Report 2022, pp. 132–133.

[201] Corrigendum to Commission Delegated Regulation (EU) 2022/1288 of 6 April 2022 supplementing Regulation (EU) 2019/2088 of the European Parliament and of the Council with regard to regulatory technical standards specifying the details of the content and presentation of the information in relation to the principle of 'do no significant harm', specifying the content, methodologies and presentation of information in relation to sustainability indicators and adverse sustainability impacts, and the content and presentation of the information in relation to the promotion of environmental or social characteristics and sustainable investment objectives in pre-contractual documents, on websites and in periodic reports.

non-financial undertakings). From January 2022 to December 2023, financial undertakings have only been required to disclose the proportion of their EU Taxonomy-eligible and non-eligible economic activities, and the proportion of their total assets that fall within the scope of Article 7 of the Disclosures Delegated Act. Regarding the product-level disclosure, the SFDR Delegated Regulation is applicable from January 2023 onwards[202], which means that from 2023 onwards, the EU Taxonomy-alignment of financial products should have been assessed based on information disclosed by non-financial undertakings under Disclosures Delegated Act.

As can be observed, the disclosure rules under the EU Taxonomy operate in connection to each other and in a gradual manner. First, the non-financial undertakings are obliged to disclose their EU Taxonomy-alignment under Disclosures Delegated Act, after which the financial undertakings are obliged to assess their EU Taxonomy-alignment under Disclosures Delegated Act and for their financial products in accordance with SFDR Delegated Regulation. Since financial undertakings have not yet been obliged to assess the EU Taxonomy-alignment of their operations, the examination of financial undertakings EU Taxonomy-alignment in this thesis is mostly theoretical. On the other hand, since from 2022 onwards, financial undertakings have been obliged to assess the degree of their EU Taxonomy-eligible and non-eligible activities, this can be illustrated by an actual example. This applies also to financial products, for which the disclosure obligations under SFDR Delegated Regulation should have been complied with from 2022 onwards.

5.5.1 Entity-level disclosure

As noted, in the EU Taxonomy, the disclosure obligation for financial undertakings is divided into two parts. The first of these is the *entity-level disclosure* obligation under Article 8 of the EU Taxonomy, which applies to all financial undertakings within the scope of the EU Taxonomy (see chapter 3.3 of this thesis). According to Article 8 of the EU Taxonomy, the disclosure rules of entity-level information are set out in Disclosures Delegated Act, which contains different disclosure provision for different types of financial undertakings, such as asset managers (Article 3), credit institutions (Article 4), investment firms (Article 5), and for insurance and reinsurance undertakings (Article 6). Common disclosure provision for all financial undertakings is Article 7 of Disclosures Delegated Act. In this thesis we will

[202] Commission Delegated Regulation (EU) 2022/1288, Article 68.

henceforth focus on the disclosure obligations set for asset managers (hereinafter 'the Asset Manager').

The disclosure obligation for the Asset Manager is set out in Article 3 of Disclosures Delegated Act, which states that:

> "1. Asset managers shall disclose the information referred to in Article 8(1) of Regulation (EU) 2020/852 as specified in Annexes III and XI to this Regulation.
>
> 2. The information referred to in paragraph 1 shall be presented in tabular form by using the template set out in Annex IV to this Regulation."

According to Annex III of the Disclosures Delegated Act, entity-level disclosure provides information on the degree of the Asset Manager's EU Taxonomy-aligned economic activities based on the *weighted average* calculated from its investments. The Asset Manager is only obliged to calculate the sustainability of its turnover and CapEx (and not OpEx), but in this context, it must consider wide range of investments and exposures that is has made. Article 7 of the Disclosures Delegated Act defines what is included and what is excluded from the calculation of Asset Manager's key performance indicators (KPIs) for turnover and CapEx. Excluded from the calculation of the KPIs are exposures to sovereigns, central banks and supranational issuers, various derivatives, exposures to undertakings that are not required to disclose a management report or a consolidated management report under Article 19a or 29a of the Accounting Directive. Article 7(4) of the Disclosures Delegated Act states that the Asset Manager must take into account, in the calculation of the KPIs for investee undertakings, environmentally sustainable bonds and debt securities to the full value of EU Taxonomy-aligned economic activities that these bonds or securities finance, and to avoid double counting, the Asset Manager must discount the KPIs calculated by its investees.

Annex III of the Disclosures Delegated Act defines the content for the calculation of the KPIs of turnover and CapEx for the Asset Managers. First, the Asset Manager must calculate the average of the investments (numerators) in EU Taxonomy-aligned activities conducted by its investees. These investees might include non-financial undertakings (such as forestry undertakings), financial undertakings, credit institutions, investment firms, insurance, and reinsurance undertakings, which have determined their EU Taxonomy-aligned for turnover and CapEx in accordance with Disclosures Delegated Act. In the calculation of the numerator, the Asset Manager can net the share of investments in EU Taxonomy-aligned

economic activities by applying the net short position calculation method set out in Article 3(4) and (5) of EU Regulation 236/2012[203]. After calculating the numerator for turnover and CapEx, the Asset Manager should divide the determined average of investments in EU Taxonomy-aligned activities by the total value of all assets (denominator) managed by the Asset Manager. This result represents the Asset Manager's KPIs for turnover and CapEx, also known as the *Green Asset Ratio,* which must be disclosed by the Asset Manager in accordance with Annex III of the Disclosures Delegated Act.

Once the Asset Manager has determined its KPIs, and what is excluded from them, according to Article 8(1) of the EU Taxonomy and Annex III of the Disclosure Delegated Act, the Asset Manager (or the group that it is part of) must disclose: 1) KPIs related to each environmental objective and EU Taxonomy-aligned economic activities; 2) KPIs related to transitional and enabling activities; 3) a breakdown of the nominator and denominator for each investment; 4) KPIs related to EU Taxonomy-eligible economic activities; 5) the degree of non-eligible economic activities; and 6) the degree of the asset manager's assets in exposures to states, central banks, and supranational issuers that are outside the scope of the KPIs.

Moreover, in accordance with Article 7(6) of the Climate Disclosure Delegated Act, the Asset Manager must provide a breakdown of: 1) exposures and investments related to non-financial undertakings; 2) exposures and investments related to financial undertakings; 3) exposures and investments related to non-financial undertakings or financial undertakings which do not fall within the scope of Article 19a or 29a of the Accounting Directive (information must be disclosed separately for undertakings that are established in the EU, and in a third country); 4) exposures and investments related to derivatives; and 5) other exposures and investments.

Lastly, Annex XI, referred to in Article 3 of the Disclosures Delegated Act, concerns qualitative disclosure and rules that are common to all financial undertakings. The purpose of the qualitative disclosures is to increase understanding of the KPIs provided by financial undertakings. These qualitative disclosures should include the scope of assets and economic

[203] Regulation (EU) No 236/2012 of the European Parliament and of the Council of 14 March 2012 on short selling and certain aspects of credit default swaps. Article 3(4) and (5) refer to the potential long and short position of a financial market participant (such as an asset manager) in a given equity or debt instrument, which can be deducted from each other to determine the financial market participant's "net short position" in the given instrument.

activities covered by the KPIs, information on where the information was obtained, and any limitations on the information. In addition, qualitative disclosures should provide, i.e., information on the nature, objectives, and expected development of financial undertaking's economic activities.

As stated earlier, financial undertakings have not yet been obliged to assess the alignment of their economic activities with the EU Taxonomy, which makes its practical examination difficult. At the time of writing this thesis financial undertakings have only been obliged to assess their EU Taxonomy-eligible activities and the information required by Article 7 of the Disclosures Delegated Act, which can be presented with an illustrative example of an actual asset manager. This kind of an asset manager is UBS Europe SE, which is established in the EU, and is subject to EU Taxonomy's entity-level disclosure obligation. UBS Europe SE is an asset management subsidiary of UBS Group AG[204], which is a public company based in Switzerland with dual listings on Swiss Stock Exchange (SIX) and the New York Stock Exchange (NYSE).[205] UBS has disclosed its EU Taxonomy-eligible economic activities at the level of UBS Group AG's intermediate undertaking, UBS AG, incorporated in Switzerland, and on a consolidated basis at the level of UBS Europe SE, incorporated in Germany, but with branches across Europe.[206]

UBS Europe SE has disclosed its EU Taxonomy-eligible activities on the basis of calculation performed on the International Financial Reporting Standards (IFRS) and publicly available information of its investees that are in the scope of Article 19a and 29a of the Accounting Directive. On this basis, UBS Europe SE has disclosed that 15.0 percent of its consolidated assets are subject to EU Taxonomy-eligible assessment (USD 4.8 billion out of USD 32.9 billion total covered assets) which include, i.e., loans and receivables from banks, investments in subsidiaries and associates, receivables from securities financing transactions and other financial assets. Overall, around one 1.0 percent (USD 369 million) of total covered assets were in EU Taxonomy-eligible activities. These assets included the assets mentioned above and residential mortgages to private persons. Assets outside the EU

[204] UBS, Annual Report 2022, p. 14.

[205] UBS, Legal information: information on UBS.

[206] UBS, Sustainability Report 2022, pp. 158–159, 176. See also: UBS Group AG and UBS AG, Annual Report 2022, pp. 14, 51, 142: UBS Europe SE has branches in: "Denmark, France, Italy, Luxembourg, the Netherlands, Poland, Spain, Sweden and Switzerland".

Taxonomy-eligibility assessment constituted roughly 85 percent (about USD 28.1 billion) of total covered assets. Around USD 7.2 billion of these assets were in entities not subject to the obligation to publish management report under the Accounting Directive, USD 18.7 billion were in various derivative instruments, USD 1.2 billion were in 'inter-bank loans' and USD 0.8 billion were in non-financial assets. Outside the scope of the Article 8 of the EU Taxonomy's disclosure obligation were USD 2.2 billion, which were in trading assets and USD 16 billion, which were in exposures to sovereigns, central banks, and supranational organizations. UBS has concluded that a significant proportion of total covered assets is from investees that are not in the scope of Article 19a or Article 29a of the Accounting Directive because they are not domiciled in the EU or because of the nature of their business.[207]

5.5.2 Product-level disclosure

Product-level disclosure is conducted in accordance with Articles 5, Article 6 and Article 7 of the EU Taxonomy, which sets outs certain standard clauses to be used in connection with financial products, and that financial undertakings are required to disclose sustainability information of their financial products that fall within the scope of Articles 8 and 9 of the SFDR.

Article 5 of the EU Taxonomy concerns *pre-contractual disclosure* and *periodic disclosure* regarding financial products defined in Article 9 of the SFDR, whose specific objective must be a *sustainable investment* (hereinafter 'the Dark Green Financial Product'[208]). If the Dark Green Financial Product invests in an economic activity that contributes to an environmental objective within the meaning of Article 2(1), point (17) of the SFDR, the following information must should disclosed under Article 5 of the EU Taxonomy: 1) environmental objectives of Article 9 of the EU Taxonomy to which the Dark Green Financial Product contributes to; and 2) the degree of investments in environmentally sustainable economic activities and in transitional and enabling activities.

Article 6 of the EU Taxonomy concerns the pre-contractual and periodic information regarding "financial products that promote environmental or social characteristics", referring to financial product under Article 8 of the SFDR, (hereinafter the 'Light Green Financial Product'). The

[207] UBS, Sustainability Report 2022, pp. 158–159.

[208] Brühl 2022, p. 257: "The SFDR distinguishes between 'light green' financial products (Article 8 SFDR, 'Article 8 products') that just promote environmental or social characteristics and dark green" financial products (Article 9 SFDR, "Article 9 products") that pursue specific sustainable investment objectives."

Light Green Financial Product is subject to the same disclosure obligations and conditions under Article 5 of the EU Taxonomy, as the Dark Green Financial Product under Article 5 of EU Taxonomy.[209] The key difference between these two financial products is that, i.e., the Light Green Financial Product under Article 8 of the SFDR does not have to have an explicit purpose of sustainable investment, such as the Dark Green Financial Product under Article 9 of the SFDR, but it must in some manner promote environmental or social characteristics.

In accordance with Article 5 and Article 6 of the EU Taxonomy, the pre-contractual and periodic disclosure regarding these financial products under Article 8 and Article 9 of the SFDR must be disclosed in accordance with Article 6(3) and Article 11(2) of the SFDR. Thus, in the case of, for example Dark and Light Green UCITS, the pre-contractual information must be disclosed in accordance with Article 6(3), point(g) of the SFDR in a *prospectus* as defined in Article 69 of the UCITS Directive, and according to Article 11(2), point (g), the periodic information must be disclosed in *annual report* as defined in Article 69 of the UCITS Directive. For the prospectus and annual report disclosure, Articles 8 and 9 of the SFDR have mandated the European Supervisory Authority (ESA) to develop draft regulatory technical standards to specify the details of the content and presentation of the sustainability information of these financial products. This regulation was introduced in July of 2022, known as the SFDR Delegated Regulation.

Article 15(1) of the SFDR Delegated Regulation concerns the Light Green Financial Product under Article 5, as well as the Dark Green Financial Product under Article 6 of the EU Taxonomy and Article 19(1), point (a) of the SFDR Delegated Regulation. Article 15(1) of the SFDR Delegated Regulation states that a graphical demonstration of the degree of EU Taxonomy-aligned investments, excluding exposures to sovereigns, must be provided in the prospectuses of these financial products in the form of a pie chart. The degree of EU Taxonomy-aligned investments should be assessed on the basis of the KPIs provided by non-financial undertakings and financial undertakings, by dividing the sum of the market value of all environmentally sustainable investments in these financial products by the sum of the market value of all investments in these financial products, in accordance with Article 17(1) to Article 17(4) of the SFDR Delegated Regulation.

[209] EU 2020/852, Article 6(1): "Where a financial product as referred to in Article 8(1) of Regulation (EU) 2019/2088 promotes environmental characteristics, Article 5 of this Regulation shall apply *mutatis mutandis*."

According to Article 18(1) of the SFDR Delegated Regulation for the prospectus of Dark Green Financial Products, a template has been set in Annex III of the SFDR Delegated Regulation, and for annual report, according to Article 58 of SFDR Delegated Regulation, the corresponding template is set out in Annex V. For prospectus disclosure of Light Green Financial Products, according to Article 15(1) of the SFDR Delegated Regulation, the template is set out in Annex II, and for annual report, according to Article 50 of SFDR Delegated Regulation, the corresponding template is set out in Annex IV.

The templates in the Annex II and Annex III of the SFDR Delegated Regulation concerns prospectuses of the Light Green Financial Product and the Dark Green Financial Product. Firstly, in the template must be defined whether the investment has a sustainable investment objective, which distinguish Light Green and Dark Green Financial Products from each other. Another distinguishing factor is that for Light Green Financial Products, a standard statement in accordance with Article 6 of the EU Taxonomy must be added to prospectuses and annual reports, stating that: "The 'do no significant harm' principle applies only to those investments underlying the financial product that take into account the EU criteria for environmentally sustainable economic activities. The investments underlying the remaining portion of this financial product do not take into account the EU criteria for environmentally sustainable economic activities".

For the Dark Green Financial Product, EU Taxonomy-related information in the prospectus, include: 1) a breakdown of the environmental objectives under Article 9 of the EU Taxonomy to which the financial product invests: 2) an indication of how sustainable investments do not cause significant harm to environmental or social objectives; 3) an explanation of how sustainable investments are consistent with the minimum safeguards under Article 18 of the EU Taxonomy; 4) an explanation of the asset allocation including information on assets that are: a. sustainable or non-sustainable; b. environmentally or socially sustainable; c. EU Taxonomy-aligned or in other ways sustainable; 5) a pie chart of the EU Taxonomy-aligned investments, including a percentage of investments that are not EU Taxonomy-aligned; and 6) an explanation of the share of investments in transitional and enabling activities.

Annex II of the SFDR Delegated Regulation contains disclosure rules for the prospectus of the Light Green Financial Product that are, in a broad sense, similar to those that are developed for Dark Green Financial Products. The explanation of assets allocation differs from Dark Green Financial Products, as for Light Green ones the information should be provided on assets that

are: a. aligned with environmental and social characteristics or that are aligned with other non-sustainable characteristics; b. for environmental and social characteristics it must be explained whether the assets are sustainable or non-sustainable; and c. for sustainable environmental and social characteristics it must be disclosed whether the asset are EU Taxonomy-aligned or otherwise environmentally or socially sustainable.

As there is no appropriate methodology for assessing the compliance of exposures to sovereigns under the EU Taxonomy, according to Annex II and Annex III of the SFDR Delegated Regulation, two pie charts must be presented for Light and Dark Green Financial Products; one where the exposures to sovereigns are taken into account and one where the exposures are not taken into account. Moreover, according to Annex IV and Annex V of the SFDR Delegated Regulation, similar information for the Light Green Financial Product and the Dark Green Financial Product must also be provided in annual reports, for which the disclosure obligations of the EU Taxonomy do not differ significantly from the prospectus. The main difference between annual reports and prospectuses is arguably that annual reports must contain information on how the EU Taxonomy-aligned percentages have performed in relation to previous reports of the financial product in question.

As the SFDR Delegated Regulation rules for prospectuses and annual reports for Light and Dark Green Financial Products have applied from 2023 onwards, actual examples can be provided on how these disclosure obligations have been complied with. This kind of financial product could be, for example, the iShares Global Timber & Forestry UCITS ETF, which forestry undertakings was examined throughout the chapter five (5) of this thesis. However, because iShares Global Timber & Forestry UCITS ETF has disclosed it EU Taxonomy-alignment to be 0.0 percent and is not committed to investing more than 0.0 percent of its assets in EU Taxonomy-aligned investments, nor in gas or nuclear energy, nor in transition or enabling activities, iShares Global Timber & Forestry UCITS ETF is not examined further in this thesis.[210]

[210] iShares by Blackrock, iShares Global Timber & Forestry UCITS ETF. Sustainability-related disclosure: "The Fund does not currently commit to investing more than 0% of its assets in sustainable investments with an environmental objective aligned with the EU Taxonomy. The Fund does not currently commit to invest in fossil gas and/or nuclear energy related activities that comply with the EU Taxonomy. This Fund does not currently commit to investing more than 0% of its assets in investments in transitional and enabling activities within the meaning of the Taxonomy Regulation". See also: iShares by Blackrock, Annual report and audited financial statements: iShares II plc, p. 848.

It is noteworthy that the iShares Global Forestry & Timber UCITS ETF's reserved approach to EU Taxonomy-alignment disclosure is part of a larger trend, according to a study by Rumi Mahmood et al., which found that only a few funds under Article 8 and Article 9 of the SFDR disclosed their EU Taxonomy-alignment under templates of SFDR Delegated Regulation. Out of the 13.419 European funds (99.3 percent of funds being distributed to European-based investors) analyzed by Mahmood et al, approximately half (6.603) were SFDR Article 8 or Article 9 funds, and among this half, only 126 funds reported their EU Taxonomy-alignment revenue, with 114 of these funds indicating a turnover EU Taxonomy alignment of 0.0 percent. Consequently, only 12 funds (of the 13.419) assessed their EU Taxonomy-alignment. One of the reasons for the non-disclosure of the EU Taxonomy-alignment was identified by Mahmood et al. to be that at the fund undertaking level it is not possible to assess the sustainability of the financial product, because the majority of the investees did not report their EU Taxonomy-alignment, and that year 2023 was the first year, when non-financial were obliges to assess their EU Taxonomy-alignment.[211]

An example of a financial product for which EU Taxonomy-alignment has been calculated is the Invesco Global Clean Energy UCITS ETF, managed by Invesco Markets Plc, which is an umbrella investment company that calculated the EU Taxonomy-alignment of its financial product in its 2022 annual report. The Invesco Global Clean Energy UCITS ETF is a Light Green UCITS, with its assets entirely invested in investments with environmental and social characteristics, which do not qualify as sustainable under the EU Taxonomy. According to Invesco Markets Plc, UCITS's compliance with minimum safeguards is ensured by the index methodology, which allows for the exclusion of specific securities determined inconsistent with the OECD Guidelines for Multinational Enterprises and the UN Guiding Principles on Business and Human Rights. Invesco Markets Plc has disclosed a bar chart illustrating the Invesco Global Clean Energy UCITS ETF's EU Taxonomy-alignment, with a 31.9 percent EU Taxonomy-aligned turnover both with and without exposures to sovereigns. In addition, enabling activities accounted for 18.8 percent of the Invesco Global Clean Energy UCITS ETF's investments.[212]

[211] Mahmood – Subramanian – Guo 2023, pp. 7, 14.

[212] Invesco Markets II Plc, Annual Report and Audited Financial Statements for the financial year ended 31 December 2022, pp. 1, 780–786.

In a prospectus dated 31 March, the EU Taxonomy-alignment was disclosed to be 0.0. percent.[213]

5.5.3 Conclusion

This chapter five (5) begun with an assessment of the EU Taxonomy-alignment of forest management activity, conducted by the Forestry Undertaking, and ended in examination of disclosure rules set out for financial undertakings. In response to the research question three (3) – "How are the sustainable economic activities defined under the EU Taxonomy, and what obligations they impose to the entities under EU Taxonomy's scope?" – it was found in this chapter five (5) that the EU Taxonomy's technical screening criteria in Climate Delegated Act is divided into four parts for the assessment substantial contribution (forest management plan, climate benefit analysis, guarantee of performance, audit, (and group assessment)) and six parts for the DNSH assessment (according to each of the environmental objectives of the EU Taxonomy). In addition, the economic activity must comply with minimum safeguards assessment of Article 18 of EU Taxonomy, for which there is no specific technical assessment criteria, but which an entity covered by the EU Taxonomy must be able to demonstrate compliance with. Lastly, once an economic activity has been determined to be EU Taxonomy-aligned, it must be disclosed in accordance with the Disclosures Delegated Act.

In addition, for the disclosure obligation of non-financial undertakings, it was observed that there are two types of information disclosure obligations. The first of these is the entity-level disclosure, which is defined separately for financial undertakings that fall within the scope of the EU Taxonomy. Financial undertaking's entity-level disclosure obligation is set in the Disclosures Delegated Act and its Annexes in accordance with Article 8 of the EU Taxonomy. The second of these is the product-level disclosure, under Articles 5 to 7 of the EU Taxonomy, which was found to differ slightly in the prospectuses and annual reports disclosed under SFDR Delegated Regulation, but the differences were not large and mainly concerned the presentation of the information.

In response to the research question three (3), it was found financial undertakings are subject to a broad entity-level disclosure obligation, which obliges financial undertakings to distinguish between EU Taxonomy-aligned investments, EU Taxonomy-eligible

[213] Invesco Markets II Plc, Invesco Global Clean Energy UCITS ETF: Supplement to the Prospectus, p. 25.

investments, and non-eligible investments. Additionally, disclosures regarding exposures to sovereigns, the extent of investments in non-financial undertakings falling within and outside the scope of the EU Taxonomy should be disclosed. At the product level, the degree of the EU Taxonomy-alignment of a certain financial product should be disclosed both in the prospectus and in the financial undertaking's annual report.

For financial undertakings, as regards the calculation of EU taxonomy-eligible assets, most of the assets that were excluded from the calculation were due to investments in entities outside the scope of the EU taxonomy or established outside the EU. For financial products, it can be noted that the EU Taxonomy-alignment disclosure for the year 2023 was scarcely complied with. The reason for this can be seen in the limited implementation of the EU Taxonomy's disclosure obligations and a general lack of information on the sustainability of investees in financial products (which is also linked to the limited implementation of EU Taxonomy). Drawing far-reaching conclusions on the impact and extent of the absence of EU Taxonomy-alignment assessments for financial products is premature. However, if the trend of inadequate EU Taxonomy-alignment assessment of financial products continues, it may pose a significant obstacle to achieving the EU Taxonomy's objectives regarding the re-allocation of capital to sustainable destinations.

6 The effectiveness of the EU Taxonomy

6.1 Ecological effectiveness

In the chapter 1.2 of this thesis it was noted that the assessment of the economic effectiveness includes: 1) reliability, 2) prudence, and 3) dynamic and continuous incentives. This chapter focuses on examining the EU Taxonomy from these perspectives.

The *ecological reliability* of the EU Taxonomy culminates in its ability to achieve the objectives set for it by the EU. Objectives related to ecology can be seen as connected to the EU's environmental policy commitments, whose ultimate objective is to achieve a climate-neutral Union by 2050, and by 2030 to achieve at least a 55 percent reduction in greenhouse gases. In relation to 2030 objective, this thesis has found that the disclosure obligations of the EU Taxonomy are gradual, with some of the obligations for non-financial undertakings taking effect only in 2026 and 2027, which complicates the disclosure of financial products EU Taxonomy-alignment, as observed in chapter 5.5.2. of this thesis. It can be argued that regarding the European Green Deal's 2030 environmental objectives, such as a 55 percent reduction in greenhouse gases[214], there is a rush with the EU Taxonomy, as some undertakings start disclosing their EU Taxonomy-aligned economic activities only from 2026 or even 2027 onwards. Until then, the sustainability information of these non-financial undertakings and of the undertakings who have invested in them will be incomplete. Hence, according to the findings of this thesis, the EU Taxonomy has only a marginal effect in relation to the most ambitious and urgent environmental objectives of the EU, but in relation to the more far-reaching 2050 targets, the EU Taxonomy's impact can be expected to be higher.

In relation to another objective of the EU Taxonomy of channeling capital to sustainable destinations, Caterina Lucarelli et al. have found that the EU Taxonomy brings together 30 years of scientific literature on environmental protection, which can be expected to have a positive environmental and emission-reducing impact. The findings of this thesis support the findings of Lucarelli et al. in the sense that the EU Taxonomy-alignment assessment and disclosure of even a single economic activity in accordance with the EU Taxonomy can be considered relatively extensive. However, Lucarelli et al. identified the need for further research

[214] European Commission, The European Green Deal. See also: European Commission, Delivering the European Green Deal: "All 27 EU Member States committed to turning the EU into the first climate neutral continent by 2050. To get there, they pledged to reduce emissions by at least 55% by 2030, compared to 1990 levels".

to ensure the economic functioning of the EU Taxonomy, which includes the analysis of non-financial undertakings' strategic choices and the effects of financial undertakings disclosure obligations.[215] This is discussed in more detail later in the next chapter 6.2.

In relation to ecological reliability, the sustainability disclosure under the Accounting Directive was found to be linked to the assets, turnover, and number of employees of the non-financial undertaking (see chapter 3.4 of this thesis), which has been criticized by Franziska Schütze and Jan Stede. Since the EU Taxonomy's disclosure obligations are connected to the aforementioned, it does not reflect the pollution intensity of the undertaking, when there is a possibility that polluting undertakings are excluded from the scope of the EU Taxonomy for reasons unrelated to sustainability. The findings of this thesis align with Schütze and Stede's findings, indicating that the EU Taxonomy distinguishes between covered entities in a manner linked to the size of the undertaking in terms of wealth or the number of employees. To address this issue, Schütze and Stede have proposed an additional metric based on the emission intensity of the undertaking to be included in the Accounting Directive as a prerequisite for the application of the EU Taxonomy.[216]

It is noteworthy that the findings of Schütze and Stede are from the time before the entry into force of the CSRD amendments, which they themselves note in their text by stating that a larger number of non-financial undertakings coming into the scope of the EU Taxonomy may provide better application of EU Taxonomy's obligations.[217] However, while the amendments to the CSRD will bring the Accounting Directive's disclosure obligations to a broader range of undertakings, the public interest entity requirement (discussed in chapter 3.5 of this thesis) still exists, which may unnecessarily exclude, for example, undertakings listed on non-regulated marketplaces from the scope of the EU Taxonomy. Therefore, even though more undertakings are covered by the EU Taxonomy, there may still be several emissions-intensive undertakings that fall outside the scope of the EU Taxonomy (even though a large fraction of emission are covered with the EU Taxonomy[218]) for reasons that have nothing to do with the sustainability of the undertaking.

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[215] Lucarelli et al. 2020, pp. 16–17.

[216] Schütze – Stede 2021, p. 143.

[217] Ibid.

[218] European Commission, Questions and Answers: Taxonomy Climate Delegated Act and Amendments to Delegated Acts on fiduciary duties, investment and insurance advice: "[C]riteria cover the economic activities of

In practice, the EU Taxonomy's *ecological prudence* means that it can mitigate significant or irreversible ecological consequences even in situations where there is no scientific certainty about its impacts. According to Article 19(5) of the EU Taxonomy, the technical screening criteria for substantial contribution and DNSH (examined in chapter five (5) of this thesis), are regularly reviewed and updated in light of scientific and technological developments. In the Climate Delegated Act, the regular review is set, for example, for transitional manufacturing activities, at least every three (3) years. The Environmental and Climate Delegated Act[219] generally states that the regular review period for transitional activities is every three (3) years. Additionally, in this context, the technical screening criteria for the substantial contribution of forest management activities (examined in chapter 4.1.1. of this thesis) include the *guarantee of permanence*, which also reflects the ecological prudence of the EU Taxonomy at the level of specific economic activity. In the case of forest management, the forestry undertaking must commit to compensating for any loss of climate benefits that may result from such management. Therefore, based on the findings of this thesis, the ecological prudence of the EU Taxonomy appears to be adequately addressed within the EU Taxonomy at the level of the technical screening criteria and at the level of individual economic activity.

The EU Taxonomy's *dynamic and continuous ecological incentives* require that EU Taxonomy encourages technological innovation and conservation beyond formal targets, while adapting to changing technology, prices, and environmental conditions, which is connected to the ecological prudence and its attention to scientific developments discusses above. In addition, it has been found that the EU Taxonomy takes into account transitional and enabling activities (examined in chapter 4.1.5. and chapter 5.2.3 of this thesis), whereby it is noted that certain economic activities that are not yet environmentally sustainable can still be taken into account in sustainability disclosure if specific conditions are met. Hence, at first glance, it seems that the EU Taxonomy considers dynamic and continuous ecological incentives. However, Schütze and Stede have found that in some sectors, such as the construction and real estate activities

roughly 40% of EU-domiciled listed companies, in sectors which are responsible for almost 80% of direct greenhouse gas emissions in Europe".

[219] Commission Delegated Regulation (EU) 2023/2485 of 27 June 2023 amending Delegated Regulation (EU) 2021/2139 establishing additional technical screening criteria for determining the conditions under which certain economic activities qualify as contributing substantially to climate change mitigation or climate change adaptation and for determining whether those activities cause no significant harm to any of the other environmental objectives.

sector (chapter 7 of Annex II of the Climate Delegated Act), the thresholds (or the lack of them) create obstacles to the effective functioning of the EU Taxonomy. This is because the thresholds are based on the best available technology, even though capital-intensive breakthrough technologies are needed. According to Schütze and Stede, the EU Taxonomy does not encourage such innovation because once an undertaking has reached a specific threshold set for a certain economic activity, such as activity number 7.2, renovation of existing buildings, conducted by Svenska Cellulosa, the undertakings have no incentive to improve a building's energy efficiency further once the threshold for energy efficiency has been met. This issue may be corrected if the technical screening criteria are reviewed frequently enough, [220] but presently, it may create a barrier to the EU Taxonomy's ecological efficiency. In addition, the lack of enabling or transition activities, as observed in the forestry sector, can affect the EU Taxonomy's effectiveness in this respect.

6.2 Economic effectiveness

This thesis has found that the EU Taxonomy has been implemented under Article 114 of the TFEU (chapter 2.1.2.), where the focus of EU Taxonomy's objectives is on the harmonization of the internal market. Thus, the EU Taxonomy is mainly built on assumptions set by economic objectives, which include channeling capital flows to sustainable economic activities to ensure conditions for sustainable growth, by preventing harmful greenwashing. The economic efficiency of the EU Taxonomy achieving these objectives can be assessed through the following perspectives: 1) productive efficiency; 2) allocative efficiency; 3) low information and administrative costs; 4) communicative simplicity; and 5) transparency of decision-making associated with the instrument.

The first part of the economic efficiency of the EU Taxonomy can be seen as an assessment of two concepts, which are identified in economics. The first of these is *productive efficiency*, which refers to a comparison of values of output and input; the fewer resources that go into producing something, the more productive it is. The second of these is *allocative efficiency*, which refers to the optimal combination of inputs and outputs, which means that the resources should be used in the most beneficial manner.[221] In the context of the EU Taxonomy, productive efficiency can be ascertained by ensuring that the implementation of a standard-based

[220] Schütze – Stede 2021, pp. 140–144.

[221] Fried – Lovell – Schmidt 2008, pp. 3-4, 9-10.

disclosure instrument is a cost-effective way to channel capital into sustainable economic activities, and secondly, in terms of allocative efficiency, by ensuring that another regulatory instrument would not have led to better results.

This thesis has not examined the direct costs of the EU Taxonomy's obligations. Therefore, this thesis can only provide observations of the costs of the EU Taxonomy at a general level, which have been found to be high. Stefan Kooths considers the publication obligations under the EU Taxonomy to be unreasonably high, given that Climate Delegated alone contains 349 pages and the clarifying TEG's technical annex 593 pages.[222] In this thesis, a single economic activity (forest management) EU Taxonomy-alignment examination took over 15 pages, not including the disclosure rules provided by the EU Taxonomy. When an undertaking is obliged to assess EU Taxonomy-alignment of all its economic activities, it can be considered as enormous task.

According to a survey by PwC Germany, the cost of implementing an EU Taxonomy has been estimated by 26 percent of respondents to be between 100.000 euros and 500.000 euros, and by 16 percent of the respondents the costs were more than 500.000 euros, which reflected in some degree to the size of the undertaking in question. According to PwC Germany, the costs are expected to increase as the reporting obligations of the EU Taxonomy expand.[223] With compliance with the EU Taxonomy already requiring a great amount of resources, the question arises, as whether some other type of regulatory instrument would have been more appropriate to channel capital into sustainable economic activities?

This is the view of Kooths, who argues that policy interventions, such as the EU Taxonomy, should address and mitigate negative externalities of the EU's internal markets, rather than inventing an alternative value system for various economic activities, which would have been unnecessary if the negative externalities had been addressed. According to Kooths, the EU should focus its regulatory instruments on measures that support productivity growth rather than a solution that reduce it. Kooths argues that the EU Taxonomy consumes highly skilled labor that would be in high demand elsewhere in the economy and creates a huge additional bureaucratic burden with no expected benefit to the economy. Thus, because the overall concept

[222] Kooths 2022, p. 244.

[223] PwC Germany, EU Taxonomy 2022: The transformation of non-financial reporting: "For Part A, we surveyed a total of 170 companies from Germany, Austria, Switzerland and the Netherlands between April and June 2022. [...] For Part B, a total of nine major banks from eight European countries were available to us for intensive discussions."

of the EU Taxonomy is fundamentally flawed, Kooths argues that it is best to abandon it altogether.[224] Kooths claims can be seen as a kind of debate opener, but they contain a valid point in relation to the economic efficiency of the EU Taxonomy; would it have been more economically efficient to implement a different system, and in general, does the EU Taxonomy direct capital to sustainable destinations, which according to Lucarelli et al. required further consideration?

Environmental standardization and certification procedures have been growing since the 1970s, and at the time of the publication of the EU Taxonomy, there were several different standards (as noted in chapter 2.3.1 of this thesis) in use in the EU for the disclosure of environmental matters. Dale Andrew has noted that the in sustainable trade (e.g., coffee and palm oil) has grown in large numbers as a result of voluntary standards, but once a certain point is reached, the trade is vulnerable to market saturation, because according to a study conducted by the OECD in 2015, sustainability is important but not a decisive factor in the customer's decision-making. Hence, once the demand for sustainable products is met, the remaining products are sold uncertified and at a cheaper price. In a market-based system, producers then start to cut the costs of investing in sustainable production, and those who can produce the most sustainable products at cheapest costs will succeed in the market. According to Andrew, these are usually large producers who have absorbed the costs of sustainable production, and the unintended result of this kind of mechanism is that standard do not deliver benefits where they are most needed.[225] Hence, standards and thresholds would appear to benefit the large undertakings covered by the EU Taxonomy, whose operations are already sustainable, as opposed to those undertakings that are striving for sustainability.

When the costs of standardization, certification, and repeated audits are expensive for the stakeholders who bear the costs, it is important that the costs have a real impact on the environment (the instrument is ecologically effective). Based on Andrew's findings, it is difficult to assess the impact of standards because valid and continuous data are not available at the field level.[226] Undertakings have mainly been in favor of standardization, but for the large-scale measures required by climate change, standards have been required to focus more

[224] Kooths 2022, pp. 245–248.

[225] Andrew 2017, pp. 222–227. See also: Vringer et al. 2015, p. 3.

[226] Ibid.

on action at the field level.[227] Based on the findings of this thesis, EU Taxonomy-aligned forest management starts at the field level, is extensive, and ends with numerical disclosures in undertakings (non-financial and financial) annual reports. The assessment of EU Taxonomy-aligned economic activity at the field level is ensured by independent third-party audits, which have generally been criticized. The audits have been found to be exposed to tick-box mentality, unfair pricing, superficial checks, and even corruption, without a real focus on the protection of natural resources[228]. As noted in this thesis, the EU Taxonomy-alignment assessment of the forest management relies on certification and audits, which generally appears to be a risky approach to the environmental protection.

In relation to productive and allocative efficiency, when it is uncertain whether the EU Taxonomy will direct capital to sustainable destinations, an EU Taxonomy-like standards-based approach appears to be questionable in relation to the objectives of the EU Taxonomy. The approach seems to favor undertakings whose operations are already sustainable rather than those striving for sustainability. However, as the EU Taxonomy is a comprehensive standard that brings together several different sustainability reporting schemes,[229] which has been identified as one of the problems of sustainability reporting[230] and thus prevents greenwashing, it may have impacts that are difficult to assess and predict beforehand. In addition, it can be used as a useful tool to finance various projects, which, according to Kooths, is already a well-established part of funding in the EU[231]. For these reasons, it is difficult to provide an all-encompassing assessment of EU Taxonomy's economic effectiveness in terms of productive and allocative efficiency.

In this respect, it is worth noting that as early as 2019, the EU Taxonomy was considered capable of achieving its objectives concerning capital movements. The study was conducted by Lucia Alessi et al. and examined the EU Taxonomy at a macro level before the entry into force

[227] Mallet et al. 2016, p. 6.

[228] Andrew 2017, pp. 222–229. See also, for forestry sector: Auld – Gulbrandsen – McDermot 2008, pp. 197–199, 204: "Although audited operations have been required to change practices to participate in schemes [FSC and PEFC], patterns of adoption continue to raise questions about effectiveness. [...] [E]xtant research is skeptical that certification can play a significant role in reducing pressure for deforestation or assisting forest conservation goals at the landscape level".

[229] Dumrose et al. 2022, pp. 1–2.

[230] Andrew 2017, pp. 225–226.

[231] Kooths 2022, p. 244.

of the EU Taxonomy and its Delegated Acts.[232] Due to the premature nature of the study, the relevance of its findings can be questioned, given recent developments and extensive framework developed for the interpretation of the EU Taxonomy. This view is supported by the findings of Dirk Zetzsche and Linn Anker-Sørensen, who argue that it is too early to make exact predictions about the EU Taxonomy. According to Zetzsche and Anker-Sørensen, in the best-case scenario, it will take years to create, test, and model the data generated by the EU Taxonomy, to apply it to finance, and to incorporate it into investment and lending strategies.[233] The findings of this thesis are in line with the arguments of Zetzsche and Anker-Sørensen, given that disclosure on financial products has not yet been properly implemented into practice in the EU's financial market, and financial market participants are not yet obliged to disclose their EU Taxonomy-alignment, as well as many non-financial undertakings.

It can be argued that if the EU Taxonomy works effectively, it has the potential to achieve its objectives in relation to capital movements, as presented by Alessi et al.. This view is supported by the findings of Alessio Pacces, according to whom institutional investors, such as actively managed funds and index funds, will likely have different approaches toward their portfolio companies, but both ultimately aim to exert more influence on their portfolio companies through voice rather than exit.[234] In addition, as noted by Adriana De La Cruz et al., when governments hold substantial power in the financial market through entities under their control[235], they can directly influence sustainability through state-owned undertakings or indirectly through sovereign wealth funds or pension funds, making government policies key drivers of sustainability.[236] Thus, if financial market participants (both privately and publicly

[232] Alessi et al. 2019, pp. 5–6, 41: "The estimated impact on financial markets of filling the investment gap varies across sectors and scenarios. In general, however, the increased financial investments towards relevant sectors appear to be within reach, at least under the least stringent scenarios (EUCO27 and EUCO30), compared to the current size of the corporate bond market and outstanding loans to NFCs [non-financial corporation]".

[233] Zetzsche – Anker-Sørensen 2021, pp. 81–82.

[234] Pacces 2021, p. 18.

[235] De La Cruz – Medina – Tang 2019, p. 5, 20: "[At 2019] 14% of global stock market capitalisation is held by the public sector. Either through direct government ownership or through sovereign wealth funds, public pension funds and state-owned enterprises. In almost 10% of the world's largest listed companies, does the public sector hold more than 50% of the shares. With public sector ownership at this level, it will be important to consider how political priorities directly and indirectly influence corporate decisions as well as their economic effects on ultimate beneficiaries such as tax-payers and pensioners. [...] pension fund assets have reached significant size, accounting for 50.7% of the GDP in the OECD area as a whole in 2017 and in some countries their assets exceed GDP."

[236] Mähönen 2022, pp. 177–178.

managed) begin to consider sustainability factors in their investment decisions, they can send a strong signal to undertakings to pursue for more sustainable business models, in which case the EU Taxonomy can be considered as an economically effective instrument. However, there is grounds for skepticism in this respect, as noted above.

Regarding other aspects of economic efficiency within the EU Taxonomy (low information and administrative costs, communicative simplicity, and transparency of decision-making associated with the instrument), it is noteworthy that while extensive resources are necessary in the private sector, based on the findings of this thesis, the public sector's resource needs will not be significantly affected after the EU Taxonomy entered into force. According to findings of this thesis, after the entry of force of the EU Taxonomy public sector actors are involved only in: 1) updating the technical screening criteria; 2) administering and providing certification for the sustainability of specific economic activities (depending on the Member State and the economic activity in question), and 3) monitoring disclosure of EU Taxonomy-related information.

The costs incurred by the EU Taxonomy to the public sector have not been estimated in this thesis. However, considering the extensive nature of the EU Taxonomy's technical screening criteria (discussed in chapter 5 of this thesis), the creation of these criteria can be regarded as a project that has demanded significant resources. Once the technical screening criteria are in place, they only require regular updating, which costs can be assumed to be significantly lower. In instances where the public sector administers the certification of certain economic activities, it was found in this thesis that administrative responsibility might also be delegated to independent third-party certifiers (as presented in chapter 5.2.1.4 of this thesis), which can be viewed as part of EU's new governance model, and which have the potentiality to reduces administrative costs,[237] depending on Member State policies. Consequently, monitoring the disclosure obligations of the EU Taxonomy can be considered as the most resource-intensive task for the public sector. Undertakings are mandated to provide this information annually through a complex environmental disclosure framework, which is built upon numbers and figures. However, in the monitoring of the disclosure obligations, it can be expected that the public sector receives support from investors and the public, who follow these undertakings

[237] Romppanen 2015, pp. 83–85, 100: "[T]he shadow of hierarchy refers to an aspect of new governance that requires the prior involvement of a legislative authority but allows private actors de facto to put sustainability requirements into practice".

driven by their own interest. In this respect, the public and private sector actors are eased by the fact that it is not difficult to check these numbers and figures, which are disclosed in a clear and transparent manner. Hence, the administrative burden on the public sector can be assumed to decrease due to the private sector involvement.

6.3 Equity

In the case of the EU Taxonomy, *equity* requires that no group of people, including future generations, is unfairly disadvantaged by the instrument and that the costs of the EU Taxonomy are equally distributed. The costs of the EU Taxonomy, which have been found to be high as presented in the previous chapter 6.2, can be argued to be largely distributed at the beginning of the EU Taxonomy-alignment assessment process, when a specific non-financial undertaking or financial undertaking implements EU Taxonomy-alignment assessment in its processes. However, the gradual entry into force of EU Taxonomy's disclosure obligations will reduce its one-time costs. Once the EU Taxonomy-alignment assessment process is implemented and the undertakings begins to disclose information under EU Taxonomy, there is always a certain cost associated with the disclosure, which is the cost of assessing the financial figures against the degree of sustainable activities under the EU Taxonomy, as discussed in chapters 5.4 and 5.5 of this thesis. The findings of this thesis, therefore, support the view that the costs or negative consequences of the EU Taxonomy are not unevenly distributed between generations, because compliance with the EU Taxonomy's disclosure obligations is intended to be performed annually, and once the processes under the EU Taxonomy have been established by an undertaking, the costs are lower.

According to the findings of this thesis, the EU Taxonomy has the potential to contribute to the sustainability of the non-financial undertakings and financial undertakings operating within EU's internal markets, and more generally, the EU Taxonomy can benefit the EU's internal market, when undertakings and the investors become more aware of the sustainability of various economic activities. However, because the EU Taxonomy does not impose a direct cost on environmentally harmful economic activities, this may affect perceptions of the EU Taxonomy. If the EU Taxonomy is found not to have an impact on its financial and environmental protection objectives, the public may question why so many resources have been devoted to this instrument and its complementary instruments.

Another point that can affect the views of the EU Taxonomy on equity is how EU Taxonomy's enforcement is implemented in practice. This thesis found that Member States have

considerable discretion in enforcing the disclosure obligations of the EU Taxonomy[238], which could impact the views on equity of the EU Taxonomy. If non-compliance results in higher sanctions in one Member State than in another, it can cast a negative light on the EU Taxonomy, especially considering that disclosure obligations are common in every Member State. However, this would need further research as it was not in the scope of this thesis.

6.4 Political acceptability

The political acceptance of the EU Taxonomy requires, firstly, that it motivates the public to ensure its objectives can be achieved and is perceived as legitimately set. Secondly, it should be consistent with other EU policy objectives, and thirdly, it should be perceived as a permanent feature of the EU financial markets. This requires broad political support for the instrument, regardless of changes in political power relations.

As the EU has been found to take a generally technocratic approach to environmental policy issues, it has been recognized that the broad public support of citizens is important in order to maintain the legitimacy of the EU Taxonomy so that its objectives do not turn against themselves.[239] Based on the findings of this thesis, the obligations under the EU Taxonomy apply to undertakings rather than directly to individuals, some of which have explicitly welcomed the obligations of the EU Taxonomy,[240] and as noted in section 6.2, the undertakings have generally been in favor of standardization. Thus, it appears that the business sector has accepted these obligations as part of the future of business reporting, at least to some degree. According to the TEG, the administrative burden for small and medium-sized enterprises was the main concern regarding the EU Taxonomy, but across sectors, a framework such as the EU Taxonomy was considered an appropriate approach[241].

Lastly, the political acceptability of the EU Taxonomy in relation to the legitimacy of regulation may also be affected by whether the objectives set under the EU Taxonomy can be achieved. In this context, in this chapter six (6), the ability of the EU Taxonomy to achieve its regulatory objectives has been discussed in terms of ecological and economic efficiency, which, when

[238] See also: Pelikánová – Rubáček 2022, pp. 191–192.

[239] Fetting 2020, pp. 8–9.

[240] See for example: Stora Enso, Annual report 2022, p. 52, 81; BlackRock, Regulatory Developments in Europe: 2021 Overview, p. 11.

[241] TEG 2020a, p. 23.

examined, have shown that the EU Taxonomy has inherent problems that hinders it capability to achieve its objectives. Consequently, comments such as those of Kooths may increase if, after the full application of the EU Taxonomy, it is found that the EU Taxonomy is not directing capital to sustainable economic activities as desired. However, at the time of writing this thesis, no major dissatisfaction was found with the content or objectives of the EU Taxonomy, and most of the criticism of the EU Taxonomy consisted of suggestions for regulatory improvements. This supports the argument that building a transparent basis for the sustainability of EU financial markets on the EU Taxonomy is accepted as part of the corporate reporting of financial and non-financial undertakings established in the EU.

6.5 Conclusion

The *ecological effectiveness* of the EU Taxonomy can be considered, in several respects, ineffective in achieving the EU Taxonomy's objectives. Firstly, this is because the obligations of the EU Taxonomy entered into force too late in relation to the more ambitious environmental objectives of the EU. Secondly, polluting undertakings may be excluded from the scope of the EU Taxonomy due to legislative decisions with no connection to the pollution intensity of the undertaking. Thirdly, although the EU Taxonomy includes enabling and transitional activities, it does not currently encourage the continuous pursuit of sustainability of economic activities (in certain sectors) because once certain thresholds are met, undertakings no longer have incentives to perform more sustainably without changes in the technical screening criteria. With the modifications of the technical screening criteria, changes can be introduced in this respect, but in relation to the scope of the EU Taxonomy, changes should be made to the CSDR, by setting a metric related to pollution intensity. Despite these certain inefficiencies, the EU Taxonomy brings together years of work in the field of environmental protection, which can be expected to have a positive ecological impact as an informative instrument. The EU Taxonomy has provided a comprehensive basis for an analytical discussion on the environmental impacts of conducting economic activities in the EU's internal market, which may lead to consequences that are difficult to foresee.

The assessment of the *economic efficiency* of the EU Taxonomy in terms of productive and allocative efficiency turned out to be a challenging perspective to assess. In this context, diverging arguments emerged from the scientific literature in which the costs to the private sector of complying with the EU Taxonomy were found to be high, including both the actual costs and the shadow costs of how much highly skilled labor is required to comply with the

obligations of the EU Taxonomy. In addition, it was found that the standards mainly benefit large undertakings, and after a certain point, it is difficult for standards to provide continuous incentives to pursue more sustainable operations or to create more sustainable products. To remain incentivizing, the EU Taxonomy requires continuous updates of the technical screening criteria until the ultimate level of sustainability is reached, which is possible, but resource intensive. Whether an instrument focusing directly on the negative externalities of the undertaking would have achieved better results in practice was not found in this thesis and would require further examination. Overall, at the time of writing this thesis, given the uncertainties surrounding the EU Taxonomy, such an extensive standardization measure would appear to be a questionable and potentially ineffective approach in relation to the economic objectives of the EU Taxonomy. However, confirming this in practice requires further research and more information from undertakings covered by the EU Taxonomy, which may only become available by the end of the 2020s. Thus, as Zetzsche and Anker-Sørensen argue, the EU should refrain from further regulation of the EU's financial markets in this respect and wait for the EU Taxonomy's more comprehensive implementation in practice[242].

The assessment of the *equity* of the EU Taxonomy found that the costs of the EU Taxonomy are equally distributed between generations. The EU Taxonomy is intended to be an instrument with relatively similar costs from one year to the next, except in the first years of implementation. Concerning EU Taxonomy's ecological effectiveness, it was found that the EU Taxonomy does not assign an actual market price on pollution but allows pollution to take place, albeit in a more transparent way, which may have a negative impact on perceptions of the equity of the EU Taxonomy. Additionally, if the sanctions for non-compliance with the EU Taxonomy's obligations vary widely between Member States, it may also have negative implications for the equity of the EU Taxonomy. However, this aspect would also need further examination.

The assessment of the *political acceptability* of the EU Taxonomy was found to be largely connected to the views of the business sector and financial markets on the EU Taxonomy, where at the time of writing no major dissatisfaction was found. The EU Taxonomy is part of the EU Green Deal, which has broad political support, at least for the time being. Therefore, at present, the EU Taxonomy can be considered effective in terms of political acceptability.

[242] Zetzsche – Anker-Sørensen 2021, pp. 81–82.

To summarize the effectiveness of the EU Taxonomy, and to answer the fourth (4) research question of this thesis – "What is the effectiveness of EU Taxonomy, and can it be improved" – considering the point made in chapter 1.2 of this thesis that meeting all aspects of effectiveness simultaneously can be challenging in practice, it can be noted that regarding the ecological and economic objectives of the EU Taxonomy, the chosen instrument may appear inefficient in some areas of effectiveness. However, considering the ecological prudence, costs to the public sector, equity, and political acceptability, the EU Taxonomy can be considered as effective. Based on the findings of this chapter six (6), the EU Taxonomy has the potential to achieve its objectives, but this will require continuous incentive creation by the European Commission and updating of the technical screening criteria. However, if the standards-based approach is found to be economically and ultimately ecologically inefficient in an era of full application of the EU Taxonomy, it could be replaced or accompanied with other legislative solutions that focus directly on the negative externalities of the economic activities conducted by the non-financial and financial undertakings. This could be conducted by, for example, creating an actual market price for unsustainable operations, which would by itself re-allocate capital to more sustainable activities. In the development of this instrument, the information generated by the disclosure obligations of the EU Taxonomy could be used as the basis for this instrument. Thus, the EU Taxonomy can be seen as a step in the right direction in the EU's internal market, even if it does not in itself contain the power to mobilize capital to sustainable destinations.

7 Conclusions

In response to research question one (1) – "What is the legal basis and objectives of the EU Taxonomy, and how have they affected the final version of the EU Taxonomy?" – this thesis found that the EU Taxonomy is enacted on the basis of Article 114 of the TFEU, according to which the objectives of the EU Taxonomy are primarily related to harmonizing the internal market and secondarily to the environmental preservation. Under Article 114 of the TFEU, the EU Taxonomy has been developed to represent a stakeholder-centric approach to provide incentivizes for EU-based undertakings to strive towards more sustainable operations. However, the EU Taxonomy was also found to include traditional command-and-control mechanisms by imposing sanctions on undertakings covered by the EU Taxonomy and the CSRD.

In response to research question two (2) – "What is the scope of the EU Taxonomy?" – the scope of the EU Taxonomy was found to include both financial undertakings and non-financial undertakings, as well as various financial products. The application of the EU Taxonomy to non-financial undertakings was found to be determined based on the public interest entity requirement, current assets, turnover, and the number of employees. The inclusion of financial undertakings within the scope of the EU Taxonomy was found to be separately defined for each financial market participant based on the provisions of the SFDR and legislative instruments referred there to in. Central banks, social security systems, and postal office giros were found to be excluded from the scope of the EU Taxonomy. However, discretion was found to be left to the Member States in this respect, as well as in defining what can be considered a public interest entity.

In response to research question three (3) – "How are the sustainable economic activities defined under the EU Taxonomy, and what obligations do they impose on the entities under the EU Taxonomy's scope?" – this thesis examined forestry undertakings, forest management activity, and disclosure obligations set out for forestry undertakings and financial undertakings. In this examination, it was found that the EU Taxonomy-alignment assessment and its disclosure obligations are extensive. The assessment of the substantial contribution of forest management activity was found to be divided into four parts, and six parts for the DNSH assessment. Additionally, the operations of forestry undertakings were found to be obliged to demonstrate compliance with Article 18 of the EU Taxonomy, for which there are no technical screening criteria, but compliance is necessary to be considered an economically sustainable

activity. It was found that forest undertakings had reported on their EU Taxonomy-alignment, but for financial market participants, the information was disclosed to a limited extent. The reason for the scarcity of the latter disclosure was found to be the lack of information about the sustainability of undertakings belonging to financial products, which is related to the gradual application of EU Taxonomy's disclosure obligations.

In response to research question four (4) – "What is the effectiveness of the EU Taxonomy, and can it be improved?" – the EU Taxonomy was found to be effective in terms of ecological prudence, cost to the public sector, equity, and political acceptability. However, in terms of ecological, economic effectiveness and some aspect related to equity, it was found that because the EU Taxonomy approaches the negative externalities of the EU's financial and non-financial undertakings through the disclosure obligations rather than directly targeting the negative externalities of these undertakings with regulation, there are some inefficiencies in EU Taxonomy's functioning. The approach was found to result in the exclusion of some specific undertakings that may be emissions-intensive from the scope of the EU Taxonomy. Additionally, efforts towards sustainability were found to require continuous updates of the technical screening criteria of the EU Taxonomy, and such standardization was found to include an inherent problem; undertakings whose operations are already EU Taxonomy-aligned may find it easier and less resource-intensive to obtain financing compared to undertakings that would need financing to operate in a more sustainable manner. This issue is also highlighted at the level of a specific economic activity, because if a certain threshold of sustainability is set, the EU Taxonomy does not incentivize to pursue further sustainability once this specific threshold has been met, which is why this kind of standards-based approach is not economically and ecologically efficient in all respects unless continuously updated.

As a significant amount of resources has already been spent on building the EU Taxonomy, and undertakings have accepted it and begun implementing it into their operations, the lege feranda recommendations presented in this thesis focus on the improving the EU Taxonomy rather than proposing an alternative regulatory instrument. According to the findings of this thesis, the EU Taxonomy can be improved through continuous incentive design until the ultimate level of sustainability is achieved. However, this improvement will require resources and an active updating of the EU Taxonomy's technical screening criteria. One recommendation to improve the EU Taxonomy is to define EU Taxonomy's scope for non-financial undertakings based on emission intensity rather than relying on public interest entity requirement, current assets, turnover, and number of employees, as these factors do not directly correlate with sustainability.

Moreover, updates to the technical screening criteria within the EU Taxonomy should ensure that the thresholds remain sufficiently ambitious to incentivize undertakings to pursue sustainability in their economic activities. Regarding disclosure obligation, in general, the recommendation of this thesis is to refrain from making significant changes to the EU Taxonomy for the time being, as adequate information on the practical implementation of the EU Taxonomy is not yet available and is only anticipated in the late 2020s. Once this information becomes accessible, a more detailed examination of the EU Taxonomy's economic efficiency would be appropriate. If under this examination it is found that the EU Taxonomy is inefficient, new legislative instruments can be proposed with the assistance of the information produced by EU Taxonomy.

Overall, it can be concluded that since the EU Taxonomy brings together decades of scientific environmental literature and various standards, it has the potential to have significant environmental impacts as it provides the EU's internal market with a possibility to discuss sustainability in a common language. While the EU Taxonomy is anticipated to become an established part of corporate disclosure, it can be argued that the EU Taxonomy is not, as it currently stands, a very effective instrument in terms of directing capital towards sustainable economic activities or preserving the environment. However, based on the information generated by the EU Taxonomy, various economic and environmental schemes can be built on the EU Taxonomy, which could have the potential to channel capital to sustainable destinations in a more effective manner. Therefore, the EU's environmental policy objectives could be achievable with the assistance of information provided by the EU Taxonomy, although the EU Taxonomy would be found to function inefficiently in terms of channeling capital in the era of its full implementation.

Annexes

Annex I: iShares Global Timber & Foresty EU-based undertaking's sustainable economic activities (including turnover, CapEx and OpEx) under EU Taxonomy[243]

Sector	Economic activity	1	2	3	4	5	6	7	8	9
Forestry (1)	Afforesation (1.1)				X					
	Forest management (1.3)	X	X	X	X	X	X	X	X	X
	Conservation forestry (1.4)			X						
Manufacturing (3)	Manufacture of batteries (3.4)			X						
	Manufacture of energy efficiency equipment for buildings (3.5)			X						
	Manufacture of other low carbon technologies (3.6)				X					
Energy (4)	Electricity generation using solar photovoltaic technology (4.1.)								X	X

[243] The table numbers (1-9) refer to the following underrtakings; 1. Svenska Cellulosa Ab, 2. Smurfit Kappa Group Plc, 3. Stora Enso Oyj, 4. UPM Kymmene Oyj, 5. Holmen Ab, 6. Billerud Ab, 7. The Navigator Company S.A., 8. Ence Energía y Celulosa S.A., and 9. Altri SGPS S.A.

	Electricity generation from wind power (4.2.)	X				X				
	Electricity generation from hydropower (4.5)				X	X				
	Electricity generation from bioenergy (4.8)			X		X		X	X	X
	Manufacture of biogas and biofuels for use in transport and of bioliquids (4.13.)	X			X					
	District heating/cooling distribution (4.15)	X		X						
	Cogeneration of heat/cold and electricity from gaseous and liquid fuels (4.19)								X	
	Cogeneration of heat/cool and power from bioenergy (4.20.)	X		X	X		X	X	X	X
	Production of heating/cooling using waste heat (4.25.)						X			
Water supply, sewerage, waste management and remediation sector (5)	Construction, extension and operation of water collection, treatment and supply systems (5.1)									X

	Construction, extension and operation of waste water collection and treatment (5.3.)									X
	Collection and transport of non-hazardous waste in source segregated fractions (5.5)		X							
Transportation (6)	Freight rail transport (6.2)	X					X			
Construction and real estate activities (7)	Renovation of existing buildings (7.2.)	X								
	Installation, maintenance and repair of energy efficiency equipment (7.3)	X								
	Installation, maintenance and repair of charging stations for electric vehicles in buildings (and parking spaces attached to buildings) (7.4.)	X								
Professional, scientific and technical activities (9)	Close to market research, development and innovation (9.1)				X					