



IMPACT OF THE EU TAXONOMY REGULATION ON ENERGY SUPPLIERS

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Examiner: Postdoctoral Researcher, Anne Quarshie

ABSTRACT

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The aim of this Bachelor's thesis is to identify the impacts of the new EU Taxonomy on companies operating in the energy industry by analyzing the requirements set by financial markets and institutions. The research includes a theoretical review on the development of sustainable finance and the content of the EU Taxonomy. The EU Taxonomy is investigated as part of the European Union's bigger picture plans to direct capital to more sustainable business actions. The data for the research is gathered from semi-structured theme interviews held with experts on sustainable finance. The material collected from the interviews aims to deepen the understanding of the impacts of the EU Taxonomy on energy suppliers. Results of this study indicate that EU Taxonomy is a step towards achieving European Union's sustainability targets. Based on this research, financial markets and institutions especially expect energy suppliers to screen their current business activities, create credible sustainability targets and transition roadmaps, educate themselves on the new Taxonomy regulation and transparently communicate about sustainability. However, the substantial effects of the EU Taxonomy can be identified only after the market has tested its functionality and applicability.

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Tämän kandidaatintutkielman tavoitteena on kartoittaa uuden EU-taksonomian vaikutuksia energiasektorin toimijoihin analysoimalla rahoitusmarkkinoiden ja -laitosten asettamia vaatimuksia. Tutkielma sisältää teoriakatsauksen kestävästä rahoituksen kehityksestä sekä EU-taksonomian sisältöön. EU-taksonomiaa tarkastellaan osana Euroopan Unionin isomman kuvan tavoitteita ohjata pääoma kestävämpiin liiketoimintoihin. Tutkimuksen aineisto kerättiin kestävästä rahoituksen asiantuntijoiden kanssa käydyillä puolistrukturoiduilla teemahaastattelulla. Haastattelusta saatavaa aineistolla pyritään syventämään ymmärrystä EU-taksonomian vaikutuksista energiantuottajiin. Tutkimus osoittaa EU-taksonomian olevan askel oikeaa suuntaan Euroopan Unionin vastuullisuustavoitteiden saavuttamiseksi. Tämän tutkimuksen tulosten perusteella rahoitusmarkkinat ja -instituutit odottavan energiantuottajilta erityisesti omien liiketoimintojensa kartoitusta, uskottavien vastuullisuustavoitteiden ja transiitiosuunnitelmien luontia, tietämyksen kerryttämistä uudesta EU-taksonomia lainsäädännöstä sekä läpinäkyvää viestintää vastuullisuudesta. Varsinaiset EU-taksonomian vaikutukset voidaan kuitenkin tarkemmin todeta vasta kun markkinat ovat testanneet sen toimivuuden ja soveltuvuuden.

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1. Introduction

1.1. Setting the scene

Regardless of the climate change mitigation objectives acknowledged in the 2015 Paris Agreement, the global greenhouse emissions have continued rising until 2019, when they flatlined (EU Technical Expert Group on Sustainable Finance 2020). In addition, for European Commission president Ursula von der Leyen, climate change is a top priority. European Union aims to achieve climate neutrality by 2050. (Clayes et al. 2019) One of the most recent steps the EU has taken towards this goal is the development of the EU Taxonomy that entered into force in 2020. The current COVID-19 crisis has caused some delays for the sustainability transition plans worldwide. The pandemic has negatively impacted the investors and businesses and less capital is available for the transition projects. (Busch et al. 2021)

Sustainable finance has not been properly regulated. The EU Taxonomy is one of the most significant steps towards more transparent and standardized sustainable finance. (Kurittu 2021) The Taxonomy regulation is part of the plan to support sustainable finance and facilitate a more sustainable economic transition. At the same time, the Taxonomy aims at supporting the objectives of the Paris Agreement. The primary aim of the Taxonomy is to define the green activities in polluting industries clearly. (EU Technical Expert Group on Sustainable Finance 2020) One of the latest steps in the development of the Taxonomy was taken in 2021 as the EU published the climate change mitigation activities covered by the Taxonomy (European Commission 2021a). Experts have already made recommendations regarding potential tools for assessing a company's Taxonomy alignment. These tools include assessing turnover, revenue, or capital expenditures and, if relevant, operational expenditures. (EU Technical Expert Group on Sustainable Finance 2020) Taxonomy creates opportunities for companies as disclosing sustainability data can be profitable. Kleimeier & Viehs (2018) argue that voluntary disclosure of carbon emission levels has previously resulted in a lower cost of debt.

Lucarelli, Mazzoli, Rancan & Severini (2020) find that a considerable number of publications have already investigated themes related to Taxonomy. More specifically, the research showed that during the period January 1990 – March 2020, over 160 000 scientific publications have studied the topics around EU Taxonomy. Although, the publications may also include other issues than the new EU Taxonomy regulation as publications from the 1990s and the 2000s are taken into account. Many studies have reviewed Taxonomy and its alignment with the goals to support the transition towards climate neutrality. (see. for example Schutze & Stede 2020) In addition, Wallhed (2021) studied how the Taxonomy relates to sustainable investment and the impact on sustainability on financial markets. Busch et al. (2021) investigated the Taxonomy as part of the European Commission's Sustainable Finance Action Plan. Scholer & Barbera (2020) investigated the EU Taxonomy from the perspective of the insurance and reinsurance sector. There are still numerous gaps in research regarding transition sectors and the EU Taxonomy.

Chang et al. (2017) emphasize the role of the energy sector and renewable energy as a significant part of the world's sustainability. Still heating, which corresponds to almost half of the total energy consumption in the EU, relies heavily on fossil fuels. (Eurostat 2021) EU has set decarbonizing objectives in the Renewable Energy Directive (RED II), but reaching these targets will require a major shift from fossil fuels to renewable energy alternatives in the energy mix (European Commission 2019). Decisions related to sustainable energy activities covered by the EU Taxonomy constantly evolve. Academic literature lacks more detailed research on many aspects of the practical impacts of the EU Taxonomy. This thesis aims to dig deeper into how energy sector operations and activities will be affected by the Taxonomy. In addition, this thesis also aims at investigating how favorable financing conditions can be achieved for energy suppliers after the new EU Taxonomy regulation enters into force, as this topic has not been fully covered by previous research.

Lucarelli et al. (2020) state that considering the evidence for the past, a higher-level of publications related to EU Taxonomy is connected to a lower level of CO₂ emissions. Hence, the findings made by Lucarelli et al. (2020) indicate that academic research regarding the EU Taxonomy also has a societal impact from an environmental point of view. Indirectly, this refers that scientific research around sustainability and EU Taxonomy can positively impact the development of sustainable innovations and, therefore, reduce CO₂ emissions.

This research also gives guidance to companies operating in high-polluting sectors on the effects of the Taxonomy and possible ways to react to changes after the Taxonomy enters into force.

1.2. Research problem, research questions and objectives

Based on the Paris Agreement's energy transition objectives, significant structural changes in the energy industry are needed (United Nations 2018). Panori et al. (2022) argue that social acceptance has considerable importance in the required energy transition processes. In addition, Bintz et al. (2016) point out that investment mobilization and market formation are crucial factors in the energy transition's success. The EU Taxonomy will have a global impact on the work of the investors and issuers and therefore be strongly connected to the energy industry and its transition plans. This thesis investigates how the new EU Taxonomy will impact the energy sector in its' transition.

The research questions for the thesis are:

Q1: How the EU Taxonomy impacts the energy suppliers?

Q2: How do the requirements set by financial markets for energy suppliers change due to the new Taxonomy regulation?

Q3: How do the changes in financial market requirements affect energy suppliers' sustainability activities?

The first question is the main research question. The other two research questions are meant to support the primary research question. By addressing these research questions, this study seeks to improve scientific understanding of the impacts of the EU Taxonomy on the energy industry by analyzing changes happening in the requirements set by financial markets. In addition, this thesis aims to support energy suppliers in preparing for the implementation of the EU Taxonomy. Another objective is to form an overall picture of the EU Taxonomy as part of the bigger picture political frameworks on sustainable finance. As this thesis focuses

on energy suppliers, financial market participants have been chosen for a more detailed stakeholder pressure analysis. Financial institutions offer financial products to the markets and are therefore seen as relevant stakeholders for energy suppliers. The data for the empirical stakeholder pressure analysis is gathered by interviewing three specialists in sustainable finance.

The thesis includes an analysis of relevant European Commissions publications regarding Taxonomy and the new legislative framework. Through the review of the EU Taxonomy Regulation, the functionality of the classification system can be evaluated. Due to the novelty of the Taxonomy, there is only a limited amount of academic literature available and other sources will be referred to form a clear overall picture of Taxonomy regulation and its impact on the studied industry. To support the academic literature findings, the timeline of the Taxonomy implementation as part of the European Commission's Action plan is presented and briefly analyzed.

This research focuses on requirements set by financial institutions and their impact on energy suppliers. Stakeholders from the financial sector to the more detailed analysis have been chosen based on relevance and impact on the energy industry. To limit the scope of the research, political aspects are not accounted for when analyzing the complexity of the EU Taxonomy. For example, the political discussion regarding nuclear power and its suitability for Taxonomy alignment will be overlooked. In addition, research does not take a stance on how companies should behave in a possible situation involving dissenting views of different stakeholders.

The results of this research showed that as the EU Taxonomy enters into force energy suppliers need to deeply evaluate their business activities' sustainability and sustainability goals as part of their strategy. Based on the interviews, the financial markets and institutions expect energy suppliers to screen their current business activities, create credible sustainability targets and transition roadmaps, educate themselves on the new Taxonomy regulation and transparently communicate about sustainability. Based on the study, Taxonomy will not be the only tool in financial institutions' toolbox to evaluate the

sustainability of business activities. The concrete impacts of the Taxonomy can be observed as the markets have tested its' functionality.

1.3. Definitions of key concepts

Sustainable Finance: As stated in a study conducted by Wallhed (2021), the neoclassical economic model and traditional investment analysis are based on a world with limited resource abundance and do not consider environmental impacts. On the contrary, according to European Commission (2018 p. 2), sustainable finance is determined as “the process of taking due account of environmental and social consideration in investment decision-making, leading to increased investments in longer-term and sustainable activities.”

Stakeholder pressure: As Baranova et al. (2017) write, one of the critical factors to success in sustainability transition is the ability to work with relevant stakeholders to align sustainable objectives among them. In addition, according to Bose et al. (2019), the founders in financial markets believe that the inclusion of social, environmental and governance considerations into financial decisions can be beneficial to both investors and society. This perspective is based on the idea that society and financial markets are interconnected.

Financial sector and sustainable development: As Bose et al. (2019) emphasize, the role of the financial sector and financial markets in the capitalist global economy is often referred to as the primary source of signals used to direct investment flows. This is because the size of the economic capital controlled by the financial sector. In addition, the impact of private financial decisions on the health of the ecosystem is significantly greater than the impact of aid agencies and philanthropic organizations.

1.4. Structure

The first two chapters are devoted to explaining the concepts of sustainable finance and the content of the Taxonomy regulation. The third and fourth chapters will introduce the used research method and the findings from the research. In chapter five, the author will discuss the findings from the interviews. Finally, the sixth chapter concludes the thesis and

summarizes the findings. In addition, implications for future research and limitations to the study are presented in the final chapter.

2. Sustainable finance and EU Taxonomy

The theoretical framework of this thesis focuses on reviewing the development of sustainable finance and the content of the Taxonomy regulation. The literature review forms the foundation for deeper empirical evaluation of the financial markets' and institutions' expectations of energy suppliers' sustainability. The link between the reviewed themes is presented in a simplified version in Figure 1.

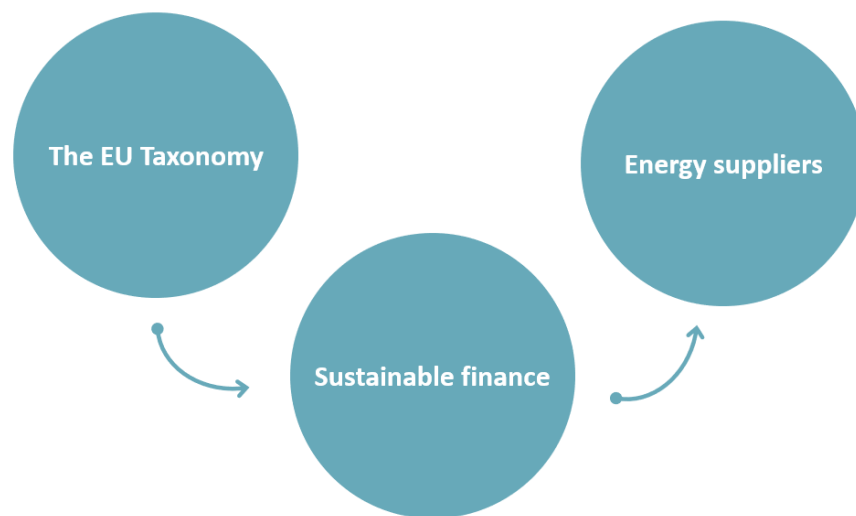


Figure 1. Theoretical framework

This chapter also aims to build the bigger picture understanding of the Taxonomy as part of the political framework (see. Figure 2). As presented in Figure 2, the EU Taxonomy is strongly connected to other political initiatives and achieving the EU's climate targets. Clarifications of the new terminology related to the taxonomy are included in this part of the study to make the themes more familiar. The environmental objectives included in the EU Taxonomy are observed. Tools for evaluating whether some activity should be included or

excluded in the Taxonomy, such as The Technical Screening and Do No Significant Harm assessment, are being presented. In addition, the current state of sustainable finance and sustainability requirements set by the financial market are being analyzed.

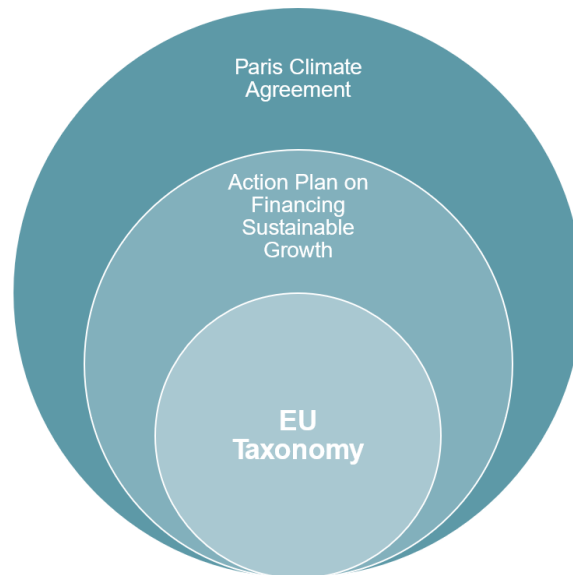


Figure 2. EU Taxonomy as part of the political framework (European Commission 2018, p. 1 – 4.)

2.1. Sustainability on the financial market

Megatrends related to climate change have become one of the main themes in the financial markets. Investors are more and more committed to the principles of responsible investment. In addition, megatrends such as climate change and sustainability attract investors to deeper analyze these phenomena to create a competitive edge and opportunities on the market. (Sievänen, 2021) Based on Deutsche Bank’s estimation the share of sustainably invested assets of all assets managed globally by professional investors will increase from 25 % in 2018 to over 50 % in 2020 and even 95 % in 2035. Risk management is one significant reason for investing sustainably. (Silvola et al. 2018) Sievänen (2021) states that the costs of climate change and other related megatrends would expose the investors, corporates and governments are much higher than the alternative costs from taking action to mitigate possible climate risks.

Sustainability evaluation with clear classification of sustainable business activities includes controversial aspects as according to Silvola et al. (2018), sustainability is rarely black and white. A case in point is that there are as many as three hundred definitions of sustainability in academic literature (Chang et al. 2017). The sustainability evaluations made by the financial institutions may differ significantly due to the different definitions of sustainability.

In many cases, companies can have positive and negative impacts on sustainable development at the same time depending on the political environment and the definition of sustainability applied. Financial institutions and investors must take into consideration that companies' sustainable choices also depend on the industry and competitive environment in question. Choices have been made when sustainable business actions were determined, and politics are strongly involved in the decision-making. To sum up, there are many factors that go into determining a company's sustainable business actions. Some of these include the political atmosphere, environmental impacts and competitive advantage. (Silvola et al. 2018)

2.1. EU Sustainable Finance Action plan

According to Ackerman (2009), economic growth has many ways been based on high-carbon business and especially on fossil fuel combustion and deforestation. Dasgupta (2021) states that global financial markets have specific importance in solving the environmental crisis. To reorient the capital flows to more sustainable business actions EU Action Plan for Financing Sustainable Growth has been developed (European Commission 2018).

In 2016, the Commission established the High-level Expert Group on sustainable finance, also called HLEG. This decision started a domino effect that eventually was a kick-start to various political decisions in the EU that were in many ways the foundation of the Taxonomy work. The objective of this group was to submit a report on the challenges and opportunities presented by sustainable finance. The report also recommended a comprehensive program of reform to the EU's financial policy framework. (High-level Expert Group 2017) The interim report was published in July 2017 followed by the final report published in January 2018. The need for clarification of the definition of "green" was clearly stated in the final report.

Followed by the HLEG final report, the European Commission has adopted a plan to promote sustainable growth in Europe's financial environment. (European Commission 2018) The Action plan on Financing Sustainable Growth identifies ten clear steps to embed sustainability in the financial system. According to the European Commission (2018 p. 2) publication Action Plan: Financing Sustainable Growth, The Action plan most profoundly aims to:

- '1. reorient capital flows towards sustainable investment in order to achieve sustainable and inclusive growth;
2. manage financial risks stemming from climate change, resource depletion, environmental degradation and social issues; and
3. foster transparency and long-termism in financial and economic activity.'

One of the Action plan cornerstones was the need for a unified classification system for sustainable activities. The Taxonomy presented as ' at this stage the most important and urgent action' in the Action plan (European Commission, p. 4).

2.1.1. EU Taxonomy

For investors wanting to promote sustainable development, available data have been too limited and unstandardized (Schramade 2017). In addition, when it comes to reporting sustainability, the reports published by companies have lacked a unified form. This has made comparing the sustainability actions of different companies challenging for financial markets and institutions. (Amel-Zadeh & Serafeim 2018) In a simplified version, the EU Taxonomy helps the financial market evaluate the sustainability of different business actions and companies plan the transition to a sustainable economy. The Taxonomy is a tool that can help identify the environmental impacts of various economic activities and businesses through disclosure obligations and the development of the screening criteria. (EU Technical Expert Group on Sustainable Finance 2020)

In alignment with a study conducted by Schütze & Stede (2020), Taxonomy is the first standardized and profound system that classifies sustainable economic activities. However, as Silvola et al. (2018) state, Taxonomy concentrates on defining green business activities but does not take a stand on the issue of what is a sustainable company. The Taxonomy identifies three kinds of sectors that are following; green business activities, enabling activities and transition activities. Therefore, theoretically the intention of the Taxonomy is also to finance sectors that require significant efforts to become climate neutral. (Schütze et al. 2020) Business activity can be considered to be green and taxonomy-aligned if it directly contributes to one of the environmental objectives or enables the operation of other green business activities. Enabling activities mean business activities that provide significant contribution by improving the performance of the other sectors that make a direct significant contribution to one of the environmental objectives. (European Commission 2020b)



Figure 3. Qualifications for taxonomy-aligned business activity (EU Technical Expert Group on Sustainable Finance 2020, p. 2.)

To business activity be classified as taxonomy-aligned, the activity must pass three-step criteria screening (see Figure 3). The Taxonomy sets performance thresholds for economic activities referred to as technical screening. To pass this set of criteria economic activity must make a substantive contribution to one of the following environmental objectives;

climate change mitigation, climate change adaptation, sustainable and protection of water and marine resources, transition to a circular economy, pollution prevention and control or protection and restoration of biodiversity and ecosystems. These objectives can be observed in Figure 4. In addition, to qualify in the Taxonomy economic activity should not do any significant harm to other five objectives and should meet minimum safeguards set by OECD Guidelines on Multinational Enterprises and the UN Guiding Principles on Business and Human Rights. (EU Technical Expert Group on Sustainable Finance 2020)

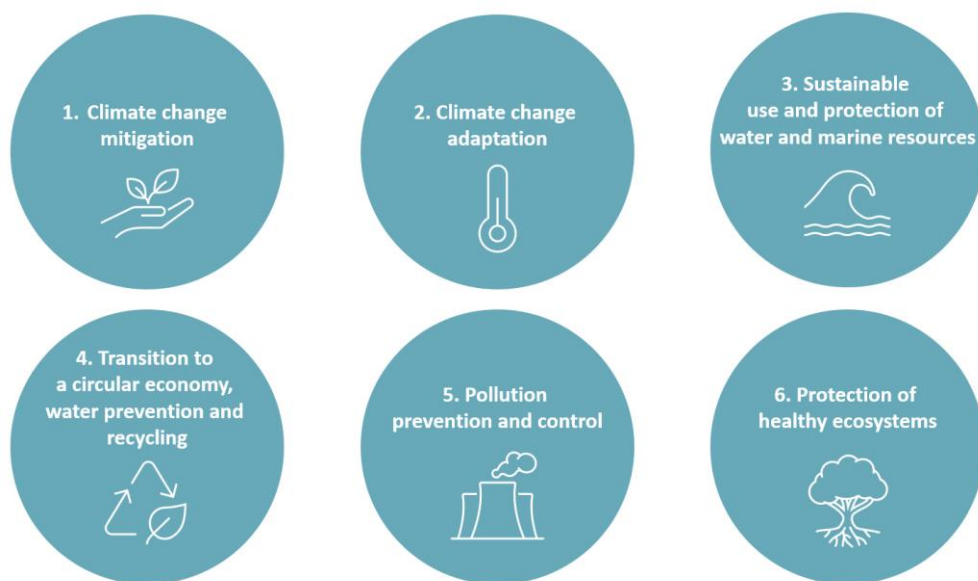


Figure 4. The six environmental objectives in the EU Taxonomy (EU Technical Expert Group on Sustainable Finance 2020, p. 2.)

The Taxonomy identifies three different categories of Taxonomy users. The categories include financial market participants offering financial products in the EU, large companies that fall under the Non-Financial Reporting Directive and the EU and its Member states that set public measures, standards or labels for green financial products or green bonds. (EU Technical Expert Group on Sustainable Finance 2020) The taxonomy will start affecting financial products in 2022. Reporting requirements will also enter into force at the same time. The requirements for reporting regarding taxonomy will be two-phased. First, companies and financial institutions are required to report taxonomy-eligibility. Eligible business activity is a business activity included in the list of business activities covered by

the taxonomy. The second step for financial institutions and companies is to start reporting taxonomy-alignment. However, the implementation timeline includes some timing mismatches as the financial products are required to report their taxonomy-alignment already in 2022, but the companies are required to report the alignment as late as 2023. This will cause some problems in data availability for financial products taxonomy-alignment reporting. (Schoemaker 2021a)

At the moment, the detailed criteria have been published only for the two first environmental objectives; climate change mitigation and climate change adaptation. The criteria for the remaining four environmental objectives, including sustainable use and protection of water and marine resources, transition to a circular economy, water prevention and recycling, pollution prevention and control and protection of healthy ecosystems, are expected to be approved during the two first quarters of 2022 and enter into force in 2023. In addition, social taxonomy report is planned to be published during the year 2021. (Schoemaker 2021b) The overall implementation timeline can be observed in Figure 5.

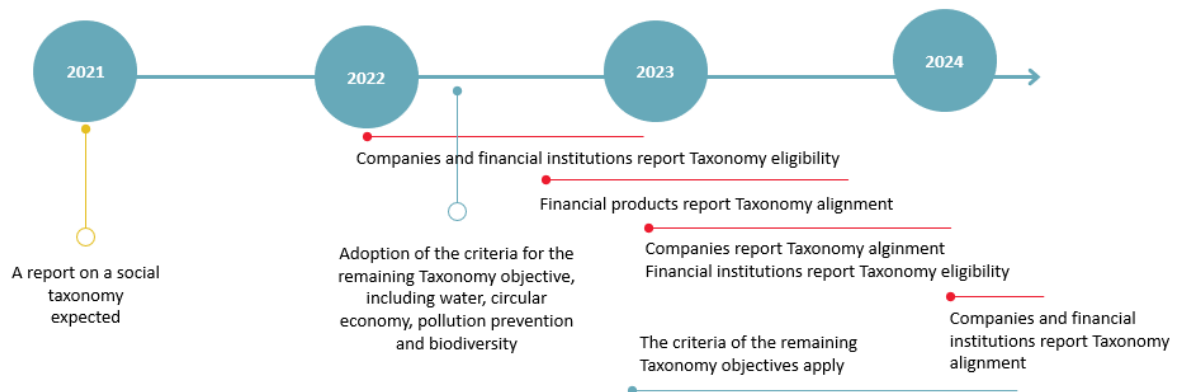


Figure 5. Timeline of the EU Taxonomy implementation (Schoemaker 2021a; Schoemaker 2021b)

According to the European Commission (2021b), the EU Taxonomy is the basis for EU or national labeling systems for green corporate bonds or other financial products falling under

the scope of the Sustainable Finance Disclosure Regulation. According to Busch et al. (2021), the Taxonomy will also form the foundation and framework for standards for sustainable financial products. This ensures that the same framework is used for all future green finance tools, such as the EU Ecolabel and EU standards for future green bonds.

One part of the legislation to follow is the development of the “brown taxonomy” criteria. According to the EU Technical Expert Group on Sustainable Finance (2020), the concept of the brown criterion would allow the Taxonomy to create three performance levels: substantial contribution, significant harm, and a middle category that is neither substantial nor significant harm. The economic activities that create significant harm to the objectives would be classified as “brown” in the developed Taxonomy.

2.1.2. Substantial contribution to environmental objectives of the EU Taxonomy

Canfora et al. (2021) suggest that a substantial contribution to the environment can be made in three main ways. These possible ways are improvement of the current state of the environment, reduction of the current pressure on the environment and enablement of either of the two previous options. According to the EU Technical Expert Group on Sustainable Finance (2020), climate change mitigation objectives included in the Taxonomy thresholds should be in line with the EU’s climate change mitigation goals, including net-zero emissions by 2050 and a 55% reduction by 2030 objectives. Gortsos (2021) finds that business activity meets the criterion of substantial contribution to climate change mitigation if it is aligned with the goal of the Paris Agreement of keeping the global temperature rising under 1.5 degrees Celsius. In addition, to be considered a substantial contributing factor to climate change mitigation, economic activity must demonstrate consistency with medium- and long-term goals (EU Technical Expert Group on Sustainable Finance 2020).

2.1.3. Technical criteria for energy activities

The role of renewable energy and its forms are widely discussed topics in the academic literature. For example, Chang et al. (2017) studied that the use of renewable energy is a crucial part of the sustainable transition. However, Cowan et al. (2010) found that

strategically speaking, the use of renewable energy is not that crucial in organizations. The Taxonomy aims at supporting companies and industries in their transition towards more sustainable business. It provides incentives to gradually increase their share of green economic activities to attract more investors. This will probably encourage companies to measure the current environmental performance and make necessary transition plans that will lead their economic activities to meet the Taxonomy criteria. By also covering capital expenditure linked to the transition plans that have a crucial role, especially in industries like the energy industry, the EU Taxonomy can help attract investors looking for opportunities to finance the transition. (European Commission 2021b)

According to Schütze et al. (2020), in transition sectors like the energy sector, a majority of the impact of the taxonomy depends on the stringency of technical performance thresholds regarding activities that are not classified as “green” by the Taxonomy. The transition to a low-carbon economy will involve phasing out some economic activities, such as fossil fuel-based energy generation. While these activities may have some short-term advantages, they cannot be considered a contributing factor to climate change mitigation. In addition, energy generation from fossil fuels should only be considered to make a substantial contribution to climate change mitigation where it meets the technical screening criteria. The EU Technical Expert Group on Sustainable Finance recommended the technical screening criteria to be set at $< 100 \text{ g CO}_2\text{e/ kWh}$ reducing in five-year increments to $0 \text{ g CO}_2\text{e/kWh}$ by 2050. The Technical Annex also states criteria for other energy activities. The Taxonomy alignment criteria for renewable energy alternatives for fossil-based energy is based on the requirement that the renewable energy option should be clearly better for the environment than the fossil-based option. (EU Technical Expert Group on Sustainable Finance, 2019)

2.1.4. Applications of the taxonomy-alignment

The taxonomy-alignment can be used in two kinds of evaluations: the firm level and the project level (Schutze & Stede 2020). The project level deals with new investments, for example construction of a new production plant. The firm can also be evaluated at the company level based on its taxonomy-aligned revenue, turnover or expenses. (Schutze et al. 2020)

Companies that are either large financial or large non-financial companies and fall under the scope of the Non-Financial Reporting Directive will have to disclose the share of the activities carried out that meet the criteria of the Taxonomy. In addition, financial market participants, such as asset managers, will have to disclose the share of activities funded by their financial products that meet the same criteria. (European Commission 2021b) Currently, non-financial reporting applies to large public-interest companies with more than 500 employees (European Commission 2021c). Both green revenue and green expenditure will be disclosed by those companies to provide the market with information on companies whose current activities meet the Taxonomy criteria and companies that are taking steps to get there. (European Commission 2021b)

In order to communicate the taxonomy-alignment, companies will have to go through a five-step screening process. The first step is to identify business activities that would possibly be eligible for the taxonomy. The second step includes testing the substantial contribution of every eligible business activity. Thirdly, the company needs to evaluate if the business activities meet the Do No Significant Harm criteria. The fourth part of the process is about verification that activities meet the minimum social safeguards. Finally, the company can calculate the percentage of revenue or expenditures aligned with the Taxonomy. (Scholer & Barbera 2020)

2.2. European Green Deal Investment Plan

The concept of sustainable finance, which is strongly related to the transition to a low-carbon and sustainable economy, has gained more and more prominence in policy discussion since Paris Agreement in 2015. In addition, the provisions in the Paris Agreement made it clear that the transition to a more sustainable economy would require massive amounts of investments. Policymakers have now acknowledged this for some time. (Tripple 2020) To reach the ambitious 2030 energy and climate objectives, the European Commission has proposed in the European Green Deal Investment Plan that an additional €260 billion in annual investments is required. Additional €100-150 billion in annual investments are needed to reach even some of the EU's environmental policy objectives. (European Commission 2020c) However, as Clayes et al. (2019) state, regardless of the exact number

for the green investment gap, it's important to note that these estimates tend to underestimate the amount of investment that will be needed to meet the low-carbon transition.

2.4. EU Taxonomy's impact on the requirements set by financial markets

As the taxonomy has not been tested yet on the market, the impacts on the different sectors can only be speculated. The basic principle is that companies that have been able to align their business activities with the taxonomy have the opportunity to get financing at a lower cost. This does not mean that other companies will not get financing in the future. It is clear that investors are interested in sustainability, but it is unclear will the investors require taxonomy-alignment from companies. (Siintola 2022)

The aim of the taxonomy is not to be the only indicator of companies' sustainability. Average taxonomy-alignment among listed companies is evaluated to be under 10 %, somewhere around 5 %, as the taxonomy enters into force. Consequently, total taxonomy-alignment will be uncommon among companies in the near future. As more than 90 % of the listed companies will not be taxonomy-aligned, other indicators of sustainability will still be used when financial market players evaluate companies. (Eloranta 2021)

3. Methodology

In this chapter research method and data analyzing approaches are introduced. In addition, the interviewees that represent the financial institutions' and investors' perspectives are introduced based on the working history connected to the researched themes. In addition, the companies that currently employ the interviewees are briefly introduced.

3.1 Research method

A qualitative approach is suitable for this research as qualitative research can include complex themes and relationships within society (Leavy 2014). Qualitative researches are conducted according to the idea that text is used as empirical material instead of numbers

(Flick 2007). In addition, the qualitative approach is supported by the fact that this research is one of the first contributions to analyze the Taxonomy from the perspective of the energy industry. According to Leavy (2014), qualitative research can build a deeper understanding of underresearched or completely new themes.

The empirical part of this research uses gathered data from interviews as the primary data. In a later analysis regarding the primary research question, the European Commission's publications on the Taxonomy also have significant importance. In order to answer the secondary research questions information from the interviews has a specifically important role to support the information available in the academic literature. The interviews were conducted as semi-structured theme interviews. As the interviewees form quite a coherent group of experts in this matter, a semi-structured theme interview is seen as a suitable way of conducting the interviews (Metsämuuronen 2001).

This research uses content analysis to analyze the gathered data from the interviews. Content analysis helps to gain a deeper understanding of what the respondents had to say in the semi-structured theme interviews. The content analysis aims at describing the gathered data logically and classifying different themes in the gathered content. The content analysis consists of six different steps. Firstly, identifying the analyzed unit. Secondly, the set of categories is chosen. The third part includes coding of the material. Next, tabulation of the material. The fifth part is an illustration of the material. Finally, drawing of the conclusions from the previous steps. (Adams 2017) Overall, the content analysis process simplifies the data, codes the relevant expressions from the gathered data and formulates theoretical concepts. (Tuomi et al. 2018)

3.2 Data

The content gathered from the interviews are transcribed and the content analysis is based on those transcriptions. The interviews were conducted in Finnish. After the coding of the gathered data, transcriptions were translated into English. In the coding part of the process, relevant statements from the interviews were highlighted to make the data easier to analyze. The relevant statements from the interviews are introduced in the findings part of this thesis.

The aim of the interviews was to get more information of the Taxonomy's concrete impacts on the operation of the financial markets and institutions. In addition, the goal for the three interviews was to gain information on how the financial markets' and institutions' sustainability requirements on the energy sector will be affected by the EU Taxonomy. Interviewing sustainable finance specialists working in financial institutions and law firms was seen as a suitable way to obtain the wanted information. The interviewees were selected based on recommendations from a company operating in the energy industry and the author's own experience. Next, the interviewees are more comprehensively introduced based on their working background and current employer.

Interviewee 1 has made a long career in strategic sustainability management. Interviewee 1 is currently working in Company A, a significant financial institution on a national level, on various tasks regarding sustainability and EU legislation.

Interviewee 2 has worked in various positions regarding sustainable finance and the legislative framework around it. Interviewee 2 works in Company B, one of the most substantial law firms in Finland.

Interviewee 3 has made a career in investment banking and has specialized in sustainability-related financial instruments. Interviewee 3 works in Company C which is a substantial player in the investment banking field in the Nordics.

Due to the current COVID-19 pandemic, all of the interviews were conducted in Microsoft Teams. The first part of the interviews consisted of wider questions related to the researched theme and its impact on organizations interviews are working at. Next, interview questions shifted more towards themes regarding also the researched energy industry. The final part of the included discussion about themes that interviewees felt that based on their expertise they could elaborate more. Interviews were conducted in November.

3.3. Limitations of the study

The main limitation of this study is that the EU Taxonomy is still many ways a moving target. A lot of the technical aspects of the Taxonomy are still under development. There is a lot of implementation work to be done and therefore many details may change within the legislation.

Another limitation of this study is that all of the stakeholders analyzed in this thesis are somehow connected to the financial sector. The perspective from other stakeholders could improve the quality of the conclusions but then again make the scope even wider. In addition, the main focus of this study is the changes happening in the Nordics. The wider European level evaluation would make the study more comprehensive.

4. Findings

In this chapter, the findings from the research are presented. The primary data for this section is gathered from the semi-structured theme interviews.

4.1. Taxonomy as part of the political framework on sustainable finance

‘‘I believe that the EU is a rather unique forum in the world because there is ambition, resources and time to develop things like taxonomy. EU can set an example to the world with this taxonomy.’’ (Interviewee 2)

When asked about the role of the EU Taxonomy as part of the political framework on sustainable finance, all interviewees mentioned that the Taxonomy is a great step forward to promote sustainable growth in the EU. Interviewee 1 explained that the reason why the Taxonomy is needed is that previously there have been a lot of dissenting views on the words ‘‘green’’ and ‘‘sustainable business activity’’ in the markets. Interviewee 3 adds that there have been financial products on the market that have been advertised as sustainable and ‘‘green’’, but actually this has not been the case. Interviewee 1 points out that the purpose of sustainable finance should also include the financing of transformation plans towards more sustainable businesses. It would have a negative impact on sustainable development if

companies with credible transformation plans would not get financed anymore because of the various thresholds set for financing. Companies can't make those transformation plans happen without financing. In addition, interviewee 1 emphasizes the meaning of the industry when analysing the sustainability of a certain company.

“The Taxonomy creates a kind of framework for companies to operate in, but then there you have to take into account these nuances in different sectors.” (Interviewee 1)

Interviewee 2 thinks that legislation is overall a crucial part of changing the world and baselines are needed in the market because as long as there are no clear criteria and benchmarks there is room for baseless claims in the markets. Taxonomy has therefore besides other legislative initiatives on sustainable finance, a crucial role to allocate the financing towards more sustainable business. Interviewee 1 identified still a conflict between the available data, needed information for creating analysis and scenarios regarding companies' sustainability. In addition, the reporting requirements of the financial institutions will create an urgency for high-quality data on sustainability. Moreover, all the interviewees pointed out that the first version of the taxonomy is a starting point and can be developed to match the requirements of the companies and markets.

“One part that is still missing lot from all of financial institutions is data on how we obtain reliable information such as the background for the financial decisions, analysis and scenarios.” (Interviewee 1)

4.2. Requirements set by financial markets for companies operating in polluting industries

“The questions financial institutions mainly ask are; What is the strategy? What is the roadmap? What are the company's goals? How is the whole company committed to the goals?” (Interviewee 3)

When asked about the changes regarding requirements for companies operating in the polluting industries, all interviewees pointed out that environmental, social and governance

aspects have been already taken into account and analyzed by financial institutions previously. Interviewee 1 specified that financial institutions have made ESG analyses regarding loans, their financing in general and project that are financed. Interviewee 1 doesn't think that the Taxonomy entering into force means that certain polluting companies or actions will not be financed at all. The financing rather runs out for companies that do not have the desire or ability to change. On the other hand, companies' competitive position might change if the cost of capital becomes much higher for companies operating in the "brown" area. Especially banks need to also think about their solvency changes due to financing of activities that are not taxonomy-aligned, even though the bank would know that financing of the company would lead to changes towards more sustainable business in the company. Interviewee 3 thinks that financial institutions are certainly interested in hearing a general description of the level of sustainability for the business activities. In addition, it is important for the companies to have clear target levels and verified plans for sustainability actions.

“It is important to remember in the sustainability debate that company's valuation can not be made on the basis of goals like, we are carbon-neutral in fifty years. Companies should be able to do 10, 5, 3 and one-year goals so that the roadmap is comprehensive. ”

(Interviewee 2)

Sustainability evaluations are not new tasks in the operation of financial institutions. According to interviewee 1, for example loans with sustainability criteria and green loans already exist and demand for those financial products is increasing all the time. Interviewee 3 mentioned that financial institutions are interested in hearing about the plans and roadmaps regarding sustainability transformation in business. Interviewee 3 underlines that financial institutions want to hear concrete goals and target years for those goals, not only general statements about the company's sustainability. Interviewee 1 adds that the loans and the sustainability criteria included are always negotiated with each company separately and financial institutions take strongly into account the industry the company is operating in. Interviewee 1 states that green financial instruments becoming more like shelf products would include some upsides but also downsides. Interviewee 3 adds that even though the current taxonomy legislation sets certain limits for sustainability-related loans, the financiers can use even stricter limits for providing financing. Interviewee 2 emphasizes the importance

of the companies' ability to speak the same language with the financial markets and institutions to manage to describe the business from the current legislative framework or at least know the new criteria and regulations. Interviewee 3 adds that financial institutions hope that companies have clearly identified what part of their business is taxonomy-aligned and which activities are not. Interviewee 3 specifically mentioned fossil energy companies. When it comes to companies that operate in the fossil-based energy industry, roadmaps may be needed regarding the transition from fossil-based business activities to renewable energy business activities.

‘‘After all, we don’t have that kind of shelf products to offer for companies when it comes to green financial instruments.’’ (Interviewee 1)

Interviewee 1 also mentioned, as the trend set by green bonds suggests, there might be cases that if financial institution finances a whole company it’s not classified as ‘‘green’’ investment but if they finance one specific project in that same company then the investment could be seen as ‘‘green’’. Interviewee 2 mentioned that if companies are not yet able to align their business activities with the Taxonomy, they should have an explanation for that either if it is about the relevance of the taxonomy on the industry or resources.

‘‘It is not financial institutions’ role to stop financing certain polluting activities right away. Our role is rather supporting the change towards more sustainable business, but we also need help from the companies.’’ (Interviewee 1)

4.3. Impact of the changing requirements on energy suppliers’ actions

When asked about the impact of the changing requirement on energy suppliers’ actions, interviewee 3 explained that because of the reporting requirements set for financial institutions, even if a company is not listed company with a reporting obligation on taxonomy-alignment, the taxonomy will have an impact on their sustainability actions. Financial institutions will be required to report the taxonomy-alignment of the financed projects and companies and therefore information regarding taxonomy-alignment is a significant aspect for all companies that will seek financing. Interviewee 2 points out that

companies can find opportunities from this new Taxonomy regulation for their reporting. Companies can for example in addition to the financial reporting present numeric data on their environmental performance. The Taxonomy is one possible tool to create this kind of data.

“Companies need to have a better and better understanding of their business activities and their future and roadmap ahead towards more sustainable business.” (Interviewee 1)

Interviewee 1 emphasizes the importance of future roadmaps of companies towards more sustainable business. Interviewee 2 adds that roadmaps should be made carefully and realistically. Interviewee 2 also underlines the meaning of monitoring the realization of the roadmap and forming a narrative around the roadmap and answering the question of what changes lead to what outcome. Interviewee 3 points out the importance of the commitment of the whole company to the strategy on how the transition towards more sustainable business happens.

Interviewee 1 suggests that the companies should educate themselves on the upcoming legislation quite carefully when they apply for financing so that they are properly prepared. Interviewee 2 said that companies that are still mainly operating in the “brown” area, meaning that most of the business actions are not aligned with the Taxonomy, should try to find ways to apply the taxonomy to the sustainability actions the way that is suitable for the firm. Interviewee 2 mentions an example that companies can make an evaluation of the taxonomy-aligned activities in their business and try to make sure these actions are eligible for the taxonomy. Interviewee 2 also points out that due to the tightening legislation, companies operating in the energy industry should try to acquire comprehensive knowledge on sustainability and its linkage to business.

“Companies should identify the interests of different financial institutions.” (Interviewee 1)

Interviewee 1 describes that the financial institutions operating in the same area have mostly signed the same initiatives but the priorities may vary between the financial institutions.

Some may even stop financing some activities to achieve their own goals and some have different priorities. Those differences will begin to form within the financial sector. These forming differences within the financial sector should be followed by companies seeking financing in the future to be able to identify the most fitted financial institutions to apply for financing.

‘‘I believe that in the long run the best players in the market will go beyond the taxonomy and acknowledge the taxonomy but they will do even more than taxonomy requires from them. This will then give a competitive advantage in the market.’’ (Interviewee 2)

Interviewee 2 emphasizes the meaning of detailed sustainability information and knowledge. Interviewee 2 sees that the problem in the sustainability discussion has been that the statements and questions are extremely hard to deeply evaluate. Therefore companies can gain a competitive advantage by being able to present detailed and measured data of sustainability from a long period of time. Interviewee 2 underlines the significance of transparency and honesty of the companies’ communication with the stakeholders regarding the taxonomy alignment and sustainability. It is important that companies present the current state of the business activities transparently to make the roadmaps seem credible as well.

5. Discussion of findings

This chapter discusses the findings from the literature review and the data gathered from the interviews. The key findings from the literature and the empirical part of this research are presented in Table 1. These findings are the further and more comprehensively analyzed.

Table 1. Key findings of the research

The key findings from the literature	The key findings from the interviews
Sustainability is rarely black and white (Silvola et al. 2018)	The Taxonomy creates a framework for companies to operate in but the differences between industries have to be taken into account (Interviewee 1).
Megatrends related to climate change have become one of the main themes in the financial markets. (Sievänen 2021)	Financial markets expect companies to be able to present in addition to the general sustainability descriptions clear sustainability targets and plans for achieving them (Interviewee 3).
Even though investors are interested in sustainability, it remains unclear if investors will require taxonomy-alignment from companies. (Siintola, 2022)	Transparent and honest communication with the investors and other stakeholders is vital when it comes to themes like sustainability and taxonomy-alignment. Clear description of the current state of the business activities and roadmaps are important. (Interviewee 2)
Companies are able to evaluate the sustainability of the business activities with a 5-step screening process. (Scholer & Barbera 2020)	Financial institutions hope that companies have identified the taxonomy-aligned business activities. (Interviewee 3)
Average taxonomy-alignment among listed companies is evaluated to be under 10 %, somewhere around 5 %, as the taxonomy enters into force. (Eloranta 2021)	The companies operating in the “brown” area of the Taxonomy should try to educate themselves on the new regulation and find suitable ways to apply the Taxonomy to the sustainability actions. (Interviewee 2)

5.1. Impact of the EU Taxonomy on the energy suppliers

Screening of the current business activities

The regulatory requirement of the Taxonomy is about disclosure. Corporates falling under the EU reporting obligations will have to disclose the percentage of their taxonomy-aligned revenue. However, according to interviewee 3, financial institutions may expect all companies to have basic knowledge of the taxonomy-alignment. The data gathered from the interviews showed that knowledge of the taxonomy-alignment of the business activities and measured data on sustainability will also create opportunities on the financial markets.

As literary review pointed out the significance of sustainability themes on the financial markets is growing all the time. Interviewee 2 argued that financial markets expect more concrete and numeric sustainability data from companies. In addition, financial institutions and investors value measured data. Measured taxonomy-alignment is one possible way of producing sustainability data. Scholer & Barbera (2020) introduced a 5-step screening process on how companies can evaluate the taxonomy alignment of the business. The screening process includes finding out the taxonomy-eligibility of the business actions and making sure other requirements for taxonomy-alignment are being met. According to Siintola (2022), it remains unclear if investors will require taxonomy-alignment from companies in the future. This will be clarified as the markets test the functionality of the Taxonomy.

Interviewee 2 explained that in no time the leading companies will go even beyond the taxonomy in their sustainability work. On the other hand, companies that are not yet familiar with the taxonomy-alignment of their business activities can gain valuable information through taxonomy screening. Screening of the current business activities can offer opportunities to develop the business to be more sustainable and even flip some of the “brown” business activities to “green”.

Targets and roadmaps

Climate change has been one of the megatrends on the financial markets (Sievänen 2021). According to the literature review, now the financial institutions will need more quantified data regarding the sustainability of the financed companies and projects. As the Taxonomy enters into force, financial institutions have the pressure to start reporting their portfolios' taxonomy eligibility and later alignment. Consequently, according to interviewee 3, financial institutions are even more interested in companies' roadmaps towards taxonomy-aligned business. Interviewee 2 specified that financial markets expect comprehensive roadmaps that include 10, 5 and one-year sustainability goals. Interviewee 3 emphasized the role of credible plans to achieve the created sustainability targets.

The literary review showed that taxonomy-alignment can be measured in multiple ways. Taxonomy-alignment of turnover can give a good picture of the current state of the company. However, the direction of the company can be better evaluated by taxonomy alignment of capital expenditures. According to the data gathered from the interviews, the direction of the company is the aspect that financial institutions and markets are particularly interested in. Taxonomy-aligned capital expenditures are a strong signal to stakeholders that the company is committed to the development of Taxonomy-aligned business activities. Interviewee 3 explained that this kind of strategic level commitment of the whole company on the roadmaps is vital for the credibility of the sustainability targets.

Knowledge of the Taxonomy and sustainability

According to Eloranta (2021), the evaluated average taxonomy-alignment of listed companies will be under 10 %. However, as stated by interviewee 2, companies that have not been able to align their business activities with the Taxonomy should educate themselves on the new legislation and look for suitable applications for the regulative framework in their actions. Knowledge of the content of the Taxonomy is also the foundation of transparent and successful communication with stakeholders like financial institutions. Data gathered from the interviews showed that companies should be able to describe their business from the taxonomy framework.

Taxonomy and sustainability communication

The literature review indicated that EU Taxonomy will widely impact financial institutions' operation and is a significant step towards more sustainable business. The data collected from the interviews suggested that Taxonomy will provide a kind of framework to steer businesses and financial institutions towards more sustainable actions. However, financial institutions have a crucial role to evaluate the sustainability of businesses. Interviewees emphasized the meaning of honest and transparent communication with the stakeholders like investors and financial institutions. Honest and transparent communication about the current state of the business and sustainability activities can lend credibility to the company's transition plans.

As Silvola et al. (2018) point out, sustainability is rarely black and white. Based on the data gathered from the interviews this should be kept in mind when the taxonomy enters into force. Honest communication about the company's willingness and ability to change is identified to be in a significant role. Interviewee 1 explained that it is not financial institutions' intention to stop financing some activities immediately, but credible and transparent roadmaps towards more sustainable business are needed.

6. Conclusions

This thesis investigated the impact of the EU Taxonomy on energy suppliers. The findings made in this thesis can help companies in the energy industry to identify the future expectations set by the financial institutions and markets after the Taxonomy enters into force. The EU Taxonomy is part of the bigger picture action plan on sustainable finance. The results indicate that the Taxonomy regulation is a step towards achieving the EU's goal of being a global leader in sustainability. Taxonomy offers a tool and framework for companies, investors and financial institutions to identify sustainable business activities. Although, due to its novelty many aspects of the Taxonomy implementation are still unclear. A case in point is how will financial institutions react to energy companies that have not been able to align their whole business to the Taxonomy. The questions like this can't be profoundly

answered until the market has tested the Taxonomy's functionality. Therefore, the results of this Bachelor's thesis are many ways more speculative than observative.

The study consisted of 3 research questions that examine the impact of the EU Taxonomy on the energy suppliers. The main research question of this thesis is (Q1): "*How the EU Taxonomy impacts the energy suppliers?*". The short answer to the main research question is that EU Taxonomy will require energy suppliers to deeply evaluate the sustainability of the business activities and sustainability goals as part of the strategy. The financial institution will soon have to start reporting its taxonomy eligibility and later alignment information. Therefore, in addition to the companies that fall under the NFRD (Non-Financial Reporting Directive), all companies that are financed by the financial institutions are affected by the EU Taxonomy. The financial institutions will start evaluating their portfolios and financial products in the light of the taxonomy-alignment. Therefore, there is a risk of a higher cost of capital for companies that do not have the ability to examine the new legislation and create plans on how to align their business with the Taxonomy. The companies are expected to have the desire to create roadmaps towards more sustainable business and deeply analyze the environmental impacts of their actions. There are of course differences between the interests of financial institutions and energy suppliers should find suitable financial institutions when seeking financing.

The first sub-question was (Q2): "*How do the requirements set by financial markets for energy suppliers change due to the new Taxonomy regulation?*". There is no one and only answer to this question, because of the different interests of the financial institutions. Although, it is certain that more and more dedication to sustainability actions is expected from the companies operating in the energy industry. According to data gathered from the interviews, the sustainability criteria and requirements for green financial products are negotiated with every company separately. However, data from the interviews suggest that financial institutions are interested in energy suppliers' ability to transform the business away from fossil energy. Concrete roadmaps and sustainability targets have a crucial role in sustainability discussions with financial institutions. In addition, financial institutions may expect companies to be able to describe the business from the Taxonomy framework. Therefore, knowledge of the current business activities and Taxonomy regulation is vital for energy suppliers. Schutze & Stede (2020) argued that "brown taxonomy" would be very

valuable for sustainable investment funds evaluating companies' unsustainability. The development of the "brown taxonomy" can have a significant impact on the energy suppliers if certain energy activities will be classified as unsustainable.

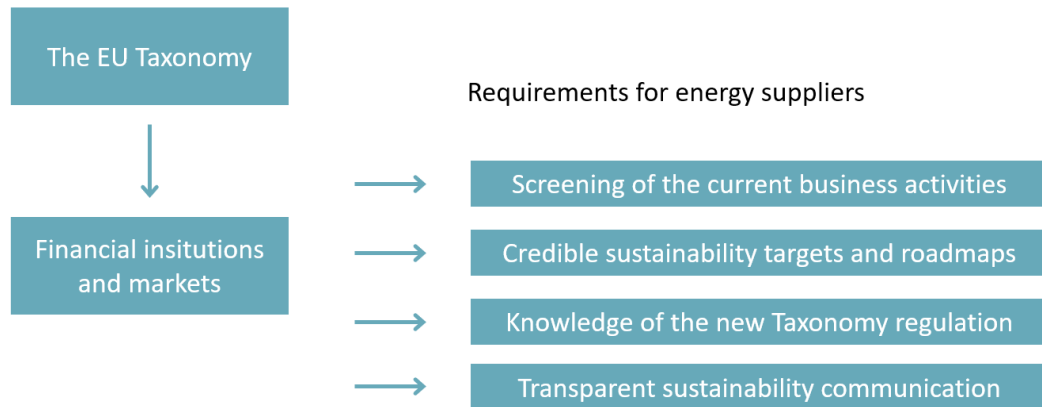


Figure 6. Requirements set by financial institutions and markets for energy suppliers based on the data gathered from the interviews

The other supporting question was (Q3): *“How do the changes in financial market requirements affect energy suppliers’ sustainability activities?”*. Sustainability evaluation is not a new thing for financial institutions or investors. Environmental, social and governance factors have been taken into consideration in the financial markets for quite some time. However, sustainability actions need to be even more connected to the core business actions of the companies. Roadmaps regarding sustainable business transition are important to be carefully and realistically created. Companies can have the opportunity to gain a competitive advantage in the financial markets if they are able to present measured data related to sustainability and taxonomy-alignment of their business actions. More deeply analyzed and monitored information about the sustainability plans are also in a crucial role in sustainability discussions with financial institutions. Companies can already at this point make their own evaluation of their business in the light of the Taxonomy. When it comes to the companies’ taxonomy-alignment evaluation, pioneer companies can gain a competitive edge in the financial markets.

Finally, the scope of the EU Taxonomy is still very much evolving. The requirements and the criteria are in the process to find the final form. In addition, a lot of implementation work remains to be done during the next months and years. Therefore, future research could investigate the development of the Taxonomy and how the impacts on energy suppliers might change. Even though the requirements are still a moving target, the level of disclosure will be higher for sure. This will result in greater transparency in financial markets. Before the EU Taxonomy regulation, players in the financial market could greenwash their products and portfolios by calling them climate-conscious. This isn't possible after this new legislation enters into force.

6.1. Further research

To get a more comprehensive understanding of the impacts of the EU Taxonomy, the research data could in future research include interviews also from other industries. From the energy industry perspective, this thesis only examines the impacts of the Taxonomy on the high-polluting sectors. This creates a need for future research regarding less polluting industries. In addition, the thesis concentrates only on the financial institutions and markets when analyzing the stakeholder pressure. For this reason, further studies could wider the scope also to other relevant stakeholders when analyzing the stakeholder pressure. Making a new analysis or evaluation of the impacts of the EU Taxonomy after it has been tested by the markets would be beneficial as this kind of research could be more observative than speculative.

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