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EU Taxonomy Make or Break: The Case of VERBUND's Green & Sustainability-Linked Bond

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Affidavit

I, **YASMINE CÉLINE EL KURDI, BA**, hereby declare

1. that I am the sole author of the present Master's Thesis, "EU TAXONOMY MAKE OR BREAK: THE CASE OF VERBUND'S GREEN & SUSTAINABILITY-LINKED BOND", 61 pages, bound, and that I have not used any source or tool other than those referenced or any other illicit aid or tool, and
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ABSTRACT

We are slowly arriving towards destructive tipping points, hence why today we all have a responsibility towards protecting our earth for us and the future generations. International efforts have taken place towards encouraging countries to limit their carbon emissions and thus limit global warming. The OECD estimates that, globally, EUR 6.35 trillion a year will be required to meet Paris Agreement goals by 2030. As a result, gathering financial resources from the public sector will not be enough to meet the objectives set. In order to witness substantial change, other players must contribute as well to gather private and institutional capital. Consequently, several sustainability assessments told worldwide have been developed in order to define which investments can actually be considered "green". The EU is a classification system that selects economic activities and sectors based on their impact on environmental objectives. It establishes clear requirements for each economic activity called a technical screening criterion based on science-based criteria. It also requires that the economic activities respect minimum social safeguards. VERBUND, Austria's largest utility company aims to be a market leader in finance will allocate "VERBUND bonds", to eligible green projects aligned with the EU Taxonomy. Through researching and studying the EU policy reports and the report by the EU Taxonomy Technical Expert Group as well as doing a case study with VERBUND and discussing with EU Taxonomy expert, this thesis examines the state of art of the EU taxonomy and its impact on project developers and finds that the EU taxonomy is pivotal tool to long term transformation to a more sustainable by redirecting financial flows to green projects by becoming a green recognized green approval stamp and defining what constitutes a sustainable project. Moreover, it created an environment of trust and transparency for investors and the market. However, it does face obstacles especially when it comes to the way it is being communicated and the rigorous mandatory process needed to describe an economic activity as being aligned. Additionally, the fact that it is still a work of progress makes it difficult to compare to other international assessment tools such as the IFC Performance Standards that have been dominating for years.

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ABBREVIATIONS

EU	European Union
GHGs	Greenhouse Gases
CSR	Corporate Social Responsibility
EPE	Environmental Performance Evaluation
IFC	International Financial Corporation
MoU	Memorandum of Understanding
SDFR	Sustainable Disclosure Regulation
NFRD	Non-Financial Reporting Directive
EDFI	European Development Finance Institutions
IFC PS	IFC Performance Standards
TEG	Finance Technical Expert Group
DNSH	Do No Significant Harm
GBP	Green Bond Principle
GBC	Green Bond Committee

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1. INTRODUCTION

The climate change and environmental trends we are heading towards are alarming. The World Economic Forum found in its 15th Global Risks Report published in January 2020 that the highest long-term risks by likelihood which pose the biggest global threats are related to the environment and climate change (WEF,2020). We are slowly arriving towards destructive tipping points, hence why today we all have a responsibility towards protecting our earth for us and the future generations. International efforts have taken place such as the Paris Agreement in 2015 towards encouraging countries to limit their carbon emissions and thus limit global warming. However, the OECD estimates that, globally, EUR 6.35 trillion a year will be required to meet Paris Agreement goals by 2030 (OECD,2017). It is no surprise that finance plays a crucial role in enabling countries and industries transition into a lower carbon economy. Gathering financial resources from the public sector will therefore not be enough to meet the objectives set. In order to witness substantial change, other players must contribute as well to gather private and institutional capital while using all necessary assets including bank credits, bonds, and secured assets and redirect financial flows towards investments that are environmentally and socially sustainable (TEG,2020). Consequently, several sustainability assessments told worldwide have been developed in order to define which investments can actually be considered "green" and make the decision-making process for investors that want to contribute to environmental objectives easier. For instance, according to the World bank, the central bank of Bangladesh started lending to agricultural business and small companies that promote environmental objectives back in 2010. After issuance several guidelines for green banking, fast forward to 2017, a list of eligible products and initiatives for green businesses was developed (WBG,2020). Also, in 2018, the Mongolian government launched a National Sustainable Finance Roadmap to 2030 which advocates sustainability among all financial sectors. Moreover, the Overall Pan for the structural Reform for Ecological Civilization which tackles China's environmental challenges was approved by the State Council of China in 2015. Subsequently, it offered recommendations to making the financial sector "greener". As a result, in 2015, the People's Bank of China was required to develop and release a listing of all the eligible green projects that could support that reform. Today, it is employed by National Association of Financial Markets Institutional Investors, financial and corporations in China, as well as at the Shanghai and Shenzhen stock exchanges (WBG,2020).

To achieve EU's environmental objectives, the most involved sectors should transition their activities to a more sustainable footing meaning seeking emission reduction pathways throughout their entire economic life with the help of transition-related investments (TEG,2020).

As part of the Sustainable Europe Investment Plan and the European Commission's next multi-annual financial framework (EC,2021-27), the InvestEU Programme will aim to leverage EUR 279 billion of public and private climate financing. The EU's Action Plan on Financing Sustainable Growth in 2018 called for the creation of a classification system for sustainable activities or "Taxonomy". On the 18th of June 2020, the European Parliament and of the Council published the Regulation (EU) 2020/852 which establishes a framework with guidelines and recommendations to facilitate sustainable investment and thus the overarching framework for the Taxonomy in order to have a "balanced economic growth and a high level of protection and the improvement of the quality of the environment" (Office Journal EU, 2020). The Taxonomy is a uniform tool to help plan and report the transition to an economy that is consistent with the EU's environmental objectives but most importantly a tool that will allow the EU to reach carbon neutrality by 2050 and the targets set in the Paris Agreement by creating a common assessment with clear definitions and requirements. The Taxonomy disclosure obligations encourage the reporting of progress towards meeting the screening criteria as well as reporting on their achievement. The European Commission is considering how the Taxonomy can be applied in the climate and environmental tracking and sustainability proofing guidelines of the InvestEU Programme. The Commission will also reflect on how the Taxonomy might be used to guide the policy objectives of other parts of the public sector. The need for a sustainable Taxonomy pre-date the Green Deal but it is an important enabler of the Green Deal's comprehensive sustainable economy reforms. The key environmental objectives are consistent between the Taxonomy framework and the economic sectors targeted for policy reform under the Green Deal (TEG,2020). The Taxonomy Regulation lays out six EU environmental objectives: climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control, and the protection and restoration of biodiversity and ecosystems. It also sets four conditions that an economic activity has to meet to be recognized as Taxonomy aligned: making a substantial contribution to at least one environmental objective, doing no significant harm to any other environmental objective complying with minimum social safeguards and complying with the technical

screening criteria. (EC, 2021) The performance thresholds will help companies, project promoters and issuers access green financing to improve their environmental performance, as well as helping to identify which activities are already environmentally friendly. In doing so, it will help to grow low-carbon sectors and decarbonize high-carbon ones. The EU Taxonomy is one of the most significant developments in sustainable finance and will have wide ranging implications both positive and challenging for financial institutions, companies, investors and issuers working in the EU, and beyond. (TEG,2020).

VERBUND is Austria's largest utility company, it comprises the generation, transportation, trading and sale of electrical energy and other energy sources as well as the provision of energy services. The company's mission is to utilize their renewable energy plants to provide clean electricity today and in the future. In its 2021 Green Financing Framework report, VERBUND stated that it aims to be a market leader in finance and contribute to the first environmental objective of the taxonomy: climate change mitigation (VERBUND, 2021). It wishes to finance green projects to develop the green finance market with new innovative products. Therefore, VERBUND will allocate "VERBUND bonds", to eligible green projects where the investment has taken place within a maximum of 3 years prior to the date of any issuance and that contribute to climate change mitigation measures as outlined in the EU Taxonomy (VERBUND, 2021).

This thesis aims at examining the state of art of the EU taxonomy and its impact on project developers and its usage in practical terms, leading to the tentative research questions:

"Can the EU taxonomy speed-up the European energy transition or does it rather constitute an additional burden for project developers?"

"What are the differences and similarities between the EU taxonomy and the IFC performance standards? Which one is more efficient in practice?"

"How is the EU taxonomy applied with the issuance of the VERBUND Bonds and what are its implications?

2.1 EU TAXONOMY

The EU taxonomy is a green classification system that is translated within the climate of the EU and is embedded within its environmental objectives that are depicted through the economic activities needed for investment purposes. The EU taxonomy is recognized as the green economic activities that would be making some substantial contributions to the climate of the EU and its associated environmental objectives. Apart from working on meeting all environmental objectives, they also ensure that they maintain the social safeguards and create activities that would not harm it in any way possible. The EU taxonomy is a transparency object that would be introducing the mandatory disclosure obligations on some the companies and the investors, which requires them to disclose their share of the Taxonomy-related activities. Consequently, the taxonomy-related activities would be aligning the companies and the organizations together in terms of investment and in terms of working in favor of the environment (Hussein, 2020). Therefore, companies that rely on the EU Taxonomy plan their climate and environmental transitions in ways that would be increasing the finance for the transition needed. Additionally, they would be working on providing credible green products.

The EU Taxonomy is not considered a mandatory process on the list of economic activities for investors. It is neither a set of mandatory requirements that are viable through the environmental performance of companies nor their financial products. The investors in this case are free to choose their investments and their products as well. However, with time, the EU taxonomy is enabling change to take place and encouraging a strong transition towards sustainability (EU Technical Expert Group on Sustainable Finance, 2020). Additionally, the economic activities that are not recognized by the EU Taxonomy are not considered sustainable products because they are not aligned with the climate and the environmental objectives of the EU.

The foundation of the EU Taxonomy started in March 2018 and an action plan was established with financial sustainability in mind. The growth is based on a defined set of objectives that are oriented toward capital flows and sustainable investment that would be assisting in achieving the sustainable and inclusive growth needed for the development of communities. Apart from that, the establishment of the unified classification is part of

the Taxonomy Regulation that would be agreed upon at the political level. This created the legal basis for the Taxonomy. The green taxonomy works in favor of the European Union and supports the EU Sustainable Action Plan that is supported by the ambitions of the EU through reaching the targets of the UN climate action by reducing greenhouse gas emissions and reaching zero carbon emission by 2050. This has always been the action plan designated by the direction of the technical expert group on sustainable finance.

Importance of EU Taxonomy

It is important to mention that the need for the EU Taxonomy act started because companies need viable tools that would be assisting in the transition process toward climate neutrality and a sustainable economy. The EU Taxonomy would be assisting in the translation process of the climate and the environmental objectives in an equally clear way. It would be creating a common language for all of the green economic activities to take place through. Additionally, the Taxonomy would be working on establishing a frame of reference for both the investors and the companies. They would be working towards supporting the companies in ways to better plan their green economic activities and their product creation, along with accelerating their market growth through limiting the market fragmentation, protesting against all forms of greenwashing, and accelerating the financial changes within these projects to push for more sustainable results. They would be working in reliance on the European Green Deal. The EU Taxonomy is part of a wide financial deal that would be delivering on the financial part of the transition.

Apart from that, the EU Taxonomy would be working on the directives of the sustainable finance framework. Through it, it would be disclosing the coherent elements that would be forming the green economic activities needed for contributing to the EU environmental goals and the Corporate Sustainability Reporting Directive (Dam, 2021). The performance of the company falls under the scope of the CSRD that is disclosed through the environmental information of the company along with the information of the taxonomy of the aligned economic activities.

Regulations and Acts

The EU Taxonomy Regulation Act is an established platform that consists of an Official Journal for the European Union that entered into force as of July 2020. It was established based on creating an EU Taxonomy that is set out according to four main conditions where the economic activities are related to meeting the qualification of the environmentally sustainable practices.

The Taxonomy Regulation is established through six main environmental objectives. These objectives are climate change mitigation, climate change adaptation, sustainable use and preservation of water and marine resources, transition into the circular economy, pollution prevention, and control, and protection and restoration of biodiversity and ecosystems.. There is also an actual list of environmentally sustainable activities that are defined through technical screening criteria for each of the environmental objectives (European Commission, 2021). The first delegated act published on December 2021 and applicable till January 2022 is based on sustainable activities for climate change, climate adaptation, and mitigation objectives. This is directed towards financing the needed transition towards building the Commission on the Platform of Sustainable Finance since March 2021. There is also a Complimentary Climate Delegated Act published in February 2022 for the remaining environmental objectives which approves nuclear and gas energy activities in the EU Taxonomy list of economic activities. It is supposed to come into effect in January 2023 (European Comission,n.d).

Additionally, the EU Taxonomy works on meeting the designed objectives by classifying four main conditions accordingly. They are founded on making a substantial contribution towards at least one environmental objective, ensuring that no harm is brought to any other environmental objective, complete compliance with the minimum social safeguards, and compliance with the technical screening process. The screening process would be developed through the delegated acts. Each of the economic activities that are considered would be making their substantive contributions toward the environmental objectives in question and towards ensuring that no harm is made when other environmental objectives are considered (European Union, 2021). The screening process adds to the environmental objectives because they would be focusing on analyzing each

of the economic activities that would be providing a more positive environmental impact on substantially reducing all negative impacts on the environment and would be reducing all the greenhouse levels and gas emissions.

The screening process is produced through the coherence and the compliance between the EU objectives that would be guaranteeing progress made towards reaching the objectives along with the climate and environmental goals based on the available technologies. In the end, the contributions of the UN are produced through climate change mitigation that is implemented through different solutions like low impact on environment and probability to replace the higher impact activities like renewable energy, reduction in the impact of other activities like wastewater treatment, and make the necessary changes needed for environmental contributions along with the restoration of the wetlands.

This is why there are two kinds of activities that the EU Taxonomy abides by transitional activities and enabling activities. The transitional activities are those that focus on low-carbon alternatives which respond to the best performance within the sector and within the industry. Therefore, the conditions for outperforming would be through the establishment and deployment of low-carbon alternatives that would not be leading to the lock-in effects or stranded costs, which are related to investments into carbon-intensive assets and considerations. On the other hand, the enabling activities focus on recognizing the needed contributions that would be assisting in reaching all of the environmental objectives (European Commission, 2021). These activities are enabled through the substantial amount of contribution that is presented through the environmental objective. This would be ensured through the manufacturing of renewable energy technologies, installation of different energy efficiency equipment that would be needed in buildings, researching on the materials that would be making the strong flood defenses, and use of cover crops that would be reducing all of the risks of flooding within the area as well.

Advantages of EU Taxonomy and Potential Call for Change

The EU Taxonomy has all kinds of advantages because it guarantees that the aligned activities contribute to at least one of the six of the environmental objectives that are defined through the proposed regulation. Additionally, that it does not do any harm to the

other five environmental objectives that are part of the proposal. Finally, that they comply with the minimum safeguards. The Taxonomy is a great benefit to the list of economic activities that are of relative value and that would be impacting the environment directly or indirectly. The Taxonomy provides for a more flexible adaptation to the different investment styles and strategies. The Taxonomy is based on the latest and most advanced scientific and industrial evidence experience (EU Taxonomy Info, 2021).

Part of the advantages of the Taxonomy is its use by the investors through expressing investment preferences, selection of holdings, design of green financial products, a measure of environmental performance and security products, and engagement with the investors.

EU Taxonomy is a regulation that is applied to the sustainability of economic activities that would be considering different obligations of different economic actors. The companies would be falling under the directive 2014/95/EU known as the Non-Financial Reporting Directive according to the European Commission which would be covering around 11 700 large companies in the EU (European Commission). Second, the financial participant includes pension providers and the distribution of financial products. Finally, the EU and its member states would be working on setting the rights measures, standards, and labels for green financial products and bonds.

The benefits and advantages of the EU Taxonomy are founded on the ability of both the asset owner and asset manager to determine the exact amounts of the green share found within the portfolio. These are easily compared between the contribution of the investment process and the low-carbon and resilient transition. Consequently, another example of this is founded within the electricity and the cement production sectors that are defined through the extent of green share. The benefit of aligning companies with the EU Taxonomy is that it would be easier for the companies to demonstrate contribution to the low-carbon and resilient transition. It would assist companies to plan and raise the necessary funds for developing green investments. It would also assist them in avoiding the involuntary greenwashing techniques. As for the investors, the benefits are founded on the ability to provide a more robust classification system for investment, along with having a better understanding of the risks that are associated with the opportunities concerning investment portfolio (Sweatman & Hessenius, 2021). The investors would

also benefit from the ability to avoid reputation risks that are related to the activities that undermine the environmental objectives. At the same time, they would be expressing their expectations for the investment decisions. Finally, in terms of benefits for the society, the EU Taxonomy would be another translation of the Paris Agreement and its commitments to Sustainable Development Goals that would be identifying the activities that are considered green. It would be providing a common language for society to relate to in terms of economic actors. Finally, it would be ensuring that all the financial flows would be directed towards the sustainable activities that are presented through the eligibility of the taxonomy.

Challenges and Limitations

The challenge of the EU Taxonomy is that it requires a thorough assessment at the investment level of the company. This would mean that the company is dependent on the level and the quality of the assessment and the availability of the data that is needed for public operation markets. Second, the Technical Screening Criteria would be strict and not always applicable to every economic activity that the company might be undertaking. This is why the Taxonomy has to be aligned with required expert guidance on taking timely action (Bathelt, Fox and Taylor,2022). Finally, the regulations would be in development in ways that would ensure that the assets and the new guidance are released at the same time. the Technical Screening Process is admitted through the non-finalized objectives.

Apart from that, there are other limitations to the Taxonomy whereby it would be creating all the different entry barriers that would be influencing the environmental impact of the investing strategies. It would be spurning the evidence that is based on the approaches in different European countries like France, which would slow down the transition of the sector and would hinder the global efforts for tackling climate change (Bathelt, Fox and Taylor, 2022).

Other challenges include the inability to facilitate the implementation of the EU Taxonomy, which is presented through the quality reporting system, the lack of access to data, and the issues that would be arising from the creation of new processes that would be adapting to the Taxonomy (Dupre, 2020). The availability of the granular data would

be upgrading the reporting and the development processes as a way of providing inclusion for companies.

Current Status and Future Outlook of the EU Taxonomy

It is interesting to note that the future of the EU Taxonomy has been founded within the alignment of the environmental criteria, such as pollution prevention and control, sustainable use of water, circular economy, and biodiversity. The timeline for the EU Taxonomy includes that in July 2022, there would be a publication report detailing the achievements of the EU Taxonomy as seen in table 1 below. Second, in 2023, there would be an application of texts that are related to the environmental objectives, such as pollution prevention and control, sustainable use and protection of water and marine resources, transition to a circular economy, and protection and restoration of biodiversity and ecosystems. The Taxonomy alignment report would be detailing the obligations of the large companies. Finally, in January 2024, the Taxonomy would be aligned through the report that obliges the financial institutions to implement alignment with the European taxonomy, which obliges more than 50,000 companies to work together (Hairabedian, 2022). Therefore, the Taxonomy would be reviewed every three years to ensure that the objectives are being met and that they are responding to the technological and scientific evolutions as part of the new activities. The EU Taxonomy is also considered one of the most significant advances in the field of sustainable finance and it is undoubtedly part of the international reference for companies.

Table 1. EU Taxonomy Outlook
Source: 2022, European Commission

January 2022	• Non-Financial entities report Taxonomy eligible for the Fiscal Year ending 2022* • Financial entities report Taxonomy eligible for the Fiscal Year ending 2022*
January 2023	• Non-Financial entities report eligibility and alignment for the Fiscal Year ending 2023 • Financial entities report Taxonomy eligibility
January 2024	• Non-Financial entities report eligibility and alignment for the Fiscal Year ending 2024 • Financial entities report Taxonomy eligibility and alignment
January 2025	• Financial entities may include estimates on Taxonomy alignment for DNSH assessments of non-NFRD investments subject to the 2024 review period
January 2026	• Credit institutions include Taxonomy alignment of their trading book and fees and commissions for non-banking activities

Finally, implementing the EU Taxonomy is an exercise that would be calling on the combination of different components of the degree of complexity. It would be setting the EU Taxonomy in ways that would be providing guidance and corporate disclosure within the context of the deadline of the Related Financial Disclosure Regulation known as SFDR as of March 21. Therefore, policymakers would be continuing the spectrum towards developing more practical guidance and support for the EU Taxonomy users, which includes the corporates, the service providers, and the investors. The Taxonomy eligibility is also offered through the clear codes that would be matching the companies' green products and performance. The Taxonomy would be calling for more exclusion in ways that would be building on the unsustainable taxonomy. It would be changing all previous taxonomies into sustainable and having more aligned objectives with the EU Taxonomy. Additionally, companies and investors together would be delivering against the Taxonomy requirements as if they are equipped with the appropriate framework that would be guiding their data usage to the right level. Finally, the practitioners would be

engaging with the professionals in the field to review the approaches in the context of the tables. Thus, recommendations would be issued throughout.

The future of the EU Taxonomy is established through the call for feedback on the technical reports, the continued development of the adaptation process, the continued development of the implementation and the user guidance, and finally, through the preparation of the future recommendations. The EU Taxonomy would be conducted through the platform for Sustainable Finance. This platform would be easing the use towards implementation, create socially-focused products, eliminate all negative activities and pollutants, and neutralize the taxonomy through environmental neutral activities.

Company Assessment

How does the Taxonomy work in practical terms and how can an investor know if the project or company is aligned with the EU Taxonomy? There are a few steps to follow as seen in figure 1 below.

The first step would be to breakdown the activities of the company and evaluate which ones could be eligible depending if the sector or activity is listed in the Taxonomy. In the example seen in figure 1, the company has three revenue streams. The first one is coal powered energy (C1) which encompasses 25% of its total turnover. The second one which also amounts to 25% of its total turnover is hydro powered energy (C2) and finally wind powered energy generation (C3) amounting to 50% of total turnover.

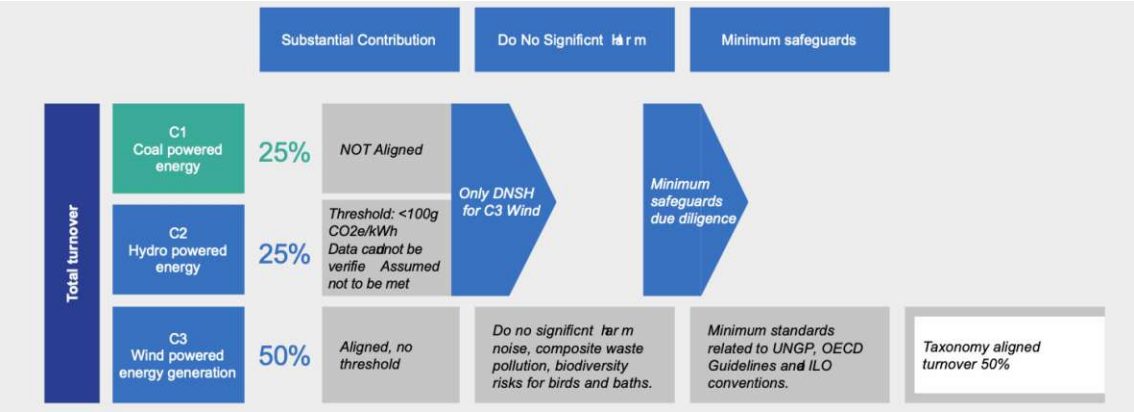

Figure 1. Process for applying the Taxonomy
Source: 2021, TEG

In general, coal powered energy is excluded from the taxonomy meaning it is a non-taxonomy eligible activity. For each taxonomy aligned activity, we need to verify whether the company or issuer meets the relevant screening criteria, including technical screening criteria, do-no-significant-harm criteria as well as social minimum standards.Only companies that are bound by the NFRD have to comply to the mentioned criteria when reporting on the percentage of turnover and capex compliant with the Taxonomy, otherwise for all other companies it is completely voluntary. For energy from hydrogen the threshold of < 100g CO_2e/kWh needs to be met. The company has not yet produced this information and therefore substantial contribution cannot be assumed because the data is not available. Energy from wind power is eligible for substantial contribution without threshold for the first environmental objective which is climate change mitigation. The next step would be to verify that the DNSH criteria are being met by the issuer. In this case, it would need to be checked for activity C3, energy generation from wind. In the case that the company does not provide that information, the investor has to conduct Due Diligence, including screening against controversies. While keeping in mind three factors mentioned in the TEG Report. The first one is that it can be difficult to come up with a complete and 100% reliable assessment if the amount of information is limited and not fully credible. Also, the size and nature of the financial institution will also affect the nature and extent of due diligence. Finally, the nature of the financial product could as well play a role in influencing due diligence. The TEG states that “Investors using the Taxonomy would most likely use a due diligence-type process for reviewing the performance of underlying investees and would rely on the legal disclosures of eligibility from those investees” (TEG,2021, p.44). The following step would require the investor

to conduct Due Diligence for minimum safeguards which includes also screening against controversies stipulated in the Taxonomy Regulation Article 13 if that information isn't already reported. The minimum safeguards refer to the OECD guidelines, ILO convention and in the UNGP. Finally, the last step would be to calculate the percentage of activities that were able to pass all the previously mentioned steps and prepare disclosures at the investment product level (TEG,2021).

2.2 DEVELOPMENT OF INTERNATIONAL SUSTAINABLE ASSESSMENT STANDARDS

CSR and sustainable development

Today, we witness a switch of corporate mentality: incorporating environmental and social dimensions along with the economical one is now crucial to sustain business. With most GHGs deriving from companies using fossil fuels such as in the energy and transportation sectors according to the World Resources Institute, they have the upmost responsibility towards reducing the environmental and social hazards they are causing. Over the years, different management concepts have been developed with the most important being "corporate social responsibility" (CSR) (Kleine & von Hauff, 2009). The European Commission has defined it as *"a fundamental concept whereby companies* integrate *social and environmental concerns into their business operations and in their interactions with their stakeholders on a voluntary basis*" (European Commission, 2002, p5).

This forced companies to think about their image and how they are being portrayed publicly. As corporations started focusing on improving their relations with diverse stakeholders, they began recognizing the importance of soft factors aiming at strengthening those relations. As a result, they started promoting their social and ecological objectives and not just their corporate ones. The idea that business goals alone are enough to assess a company's performance, risks and future prospects was gradually retiring. The concept of business ethics continued to grow and to play a key role. In fact, "CSR Europe" a proposal by the European Commission in 1996 on the basis of the "European Declaration of Business against Social Exclusion" was a significant institutional outcome that resulted from this development. (Kleine & Von Hauff, 2009)

Additionally, the concept of sustainable development grew in importance. (Kleine & Von Hauff, 2009). In 1987, the term was introduced by the United Nations. It was defined in the Brundland Report by the World Commission on Environment and Development (WCED) as "*development which meets the needs of the present without compromising the ability of future generations to meet their own needs*" (WCED, 1987, p 8). In fact, the idea that growth and development should not be without limits was being debated earlier in the 70's. The book "Limits to Growth", published in 1972 gathers the non technical findings of an international team of researchers at MIT that started discussing the concept of continual worldwide growth and its implications since 1970. They mentioned that agricultural production, nonrenewable resource depletion, industrial output, and pollution generation are five main factors that limit growth (The Club of Rome, 2021). A major breakthrough took place five years after that report when the concept of sustainable development was globally recognized and accepted in 1992 at the United Nations Conference for Environment and Development (UNCED) also known as the Rio Conference. The conference emphasized the importance of an integrated approach to success by combining economic and ecological goals through the efficient use of natural resources. Also, how the concept of eco-efficiency creates a win-win situation by providing positive effects on the customers, stakeholders, profits and the environment. It was described in a set of actions found in "Agenda 21"; a document produced as a result of the conference. As a result, this integrative approach of linking economic, social but also ecological dimensions became mainly used in corporations seeking to follow the global vision of sustainable development. The economic dimension would focus on financial, tangible and intangible capital whereas the social aspect pivots around security, culture and social inclusion and finally the ecological part refers to mainly natural resources and the protection of the ecosystems (Kleine & von Hauff, 2009). However, it is not an easy approach to apply since the three dimensions may have divergent objectives, therefore, a strict methodology and follow up system are needed. Consequently, the concepts of weak and strong sustainability were introduced by economists Robert Solow and John Hartwick. Weak sustainability states that natural capital can be substituted by man-made capital and that in order to maintain sustainability, the sum of both natural and man-made capital should not decline whereas strong sustainability states that natural capital cannot be substituted and that both natural and man-made capital should not decline over time (Hediger,2004). Today, the EU Taxonomy mainly focuses on the economical but most importantly the environmental aspects of

sustainability, leaving out the social dimension. Until, the instrument is able to combine the three dimensions, it cannot be fully described as being a sustainable instrument.

Measurement

It is rather difficult to measure sustainable performance as it includes several aspects that can be measured differently. Therefore, specific indicators are needed to track progress and performance in order to make sure that the corporations' activities are aligned with sustainability.

According to the Corporate Sustainability Conference held in 2002, there are several characteristics make measuring sustainability rather complicated. For instance, it might be the case that some indicators are not based on hard data but rather on judgment. For example, offering equal opportunities within the task force. It is also difficult to take into account issues that are outside the direct control of the organization. In figure 2 below, we can observe a few sustainability indicators by order of complexity of collection. Clearly, the ones more external to the organization are considered more complex (Keeble et al., 2003)

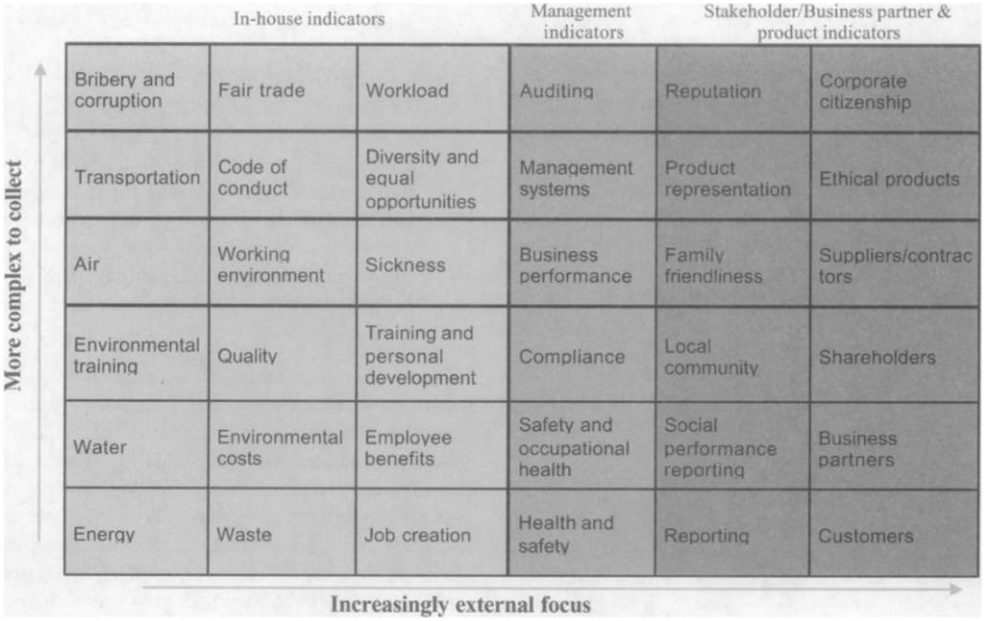

Figure 2. The complexity of sustainable indicators
Source: Journal of Business Ethics 44: 149-158,2003
2002 Arthur D. Little Limited

Furthermore, usually large companies have more complicated structure with different divisions and business activities therefore sometimes the sustainability performance of smaller projects can be overshadowed by general performance indicators. Moreover, it is challenging to get everyone to agree on the proper sustainability indicators relevant for a specific project or for the whole company while taking into account the culture of the corporation especially when diverse stakeholders are involved. Also, an effective accountability system would need to be created (Keeble et al., 2003). The consulting firm Arthur D Little presented a case study in which it helped a multinational energy company develop a practical tool that helped consider economic, social and environmental factors when working on a project, in other words a tool that helps check if the project can be considered sustainable. They were able to come up with a set of 69 indicators that helped answer 4 key questions related to the economic, social and environmental impact a certain project had found in figure 3 below (Keeble et al., 2003).

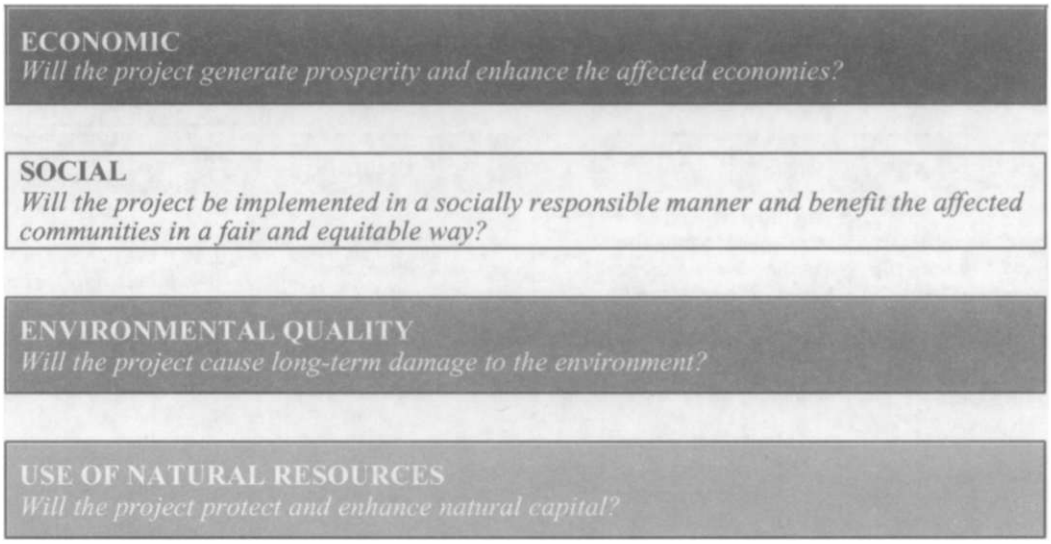

Figure 3. The four key sustainable development questions.
Source: 2002 Arthur D. Little Limited

The indicators fit into criteria's and sub criteria's that are under each one of the four pillars. All aspect of the project can be scored from weak alignment with a score of 1 to strong alignment to a score of 5 and need to be accompanied by a short sentence justifying that score as seen in figure 4 below.

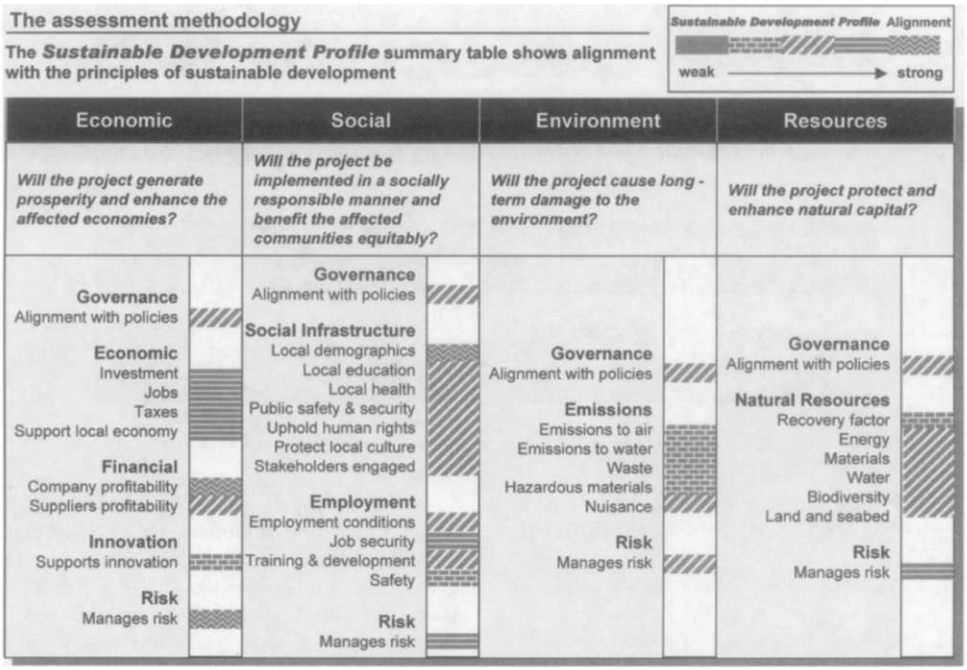

Figure 4. Summary table of output from assessment.
Source: 2002 Arthur D. Little Limited

It is important to keep in mind that projects have different phases starting from exploration, design to operations but also that each business activity can be performed by an external organization. Thus, environmental, social and economic impacts can be direct or indirect and therefore harder to consider and track.

Developing such an individual assessment tool might not be possible for each company since gathering all these indicators could be time and resource draining, it makes sense to have an internationally recognized system that helps companies assess whether their business activities are in fact sustainable. It might not be personalized and completely fitting to the company but it could rather serve as a reference point. It can be considered as a stamp of approval that could be accepted across different industries and organizations.

International assessment tools

Over the years, several international sustainable assessment standards have been developed by international organization that have on a voluntary basis served as a compass for corporations.

For instance, in 1992 the World Business Council for Sustainable Development (WBCSD) published "Changing Course" where it introduced the term eco-efficiency (EE). The document combines the expertise of over 50 leaders of corporations in which they offer practical guidelines and ways of making profits while using less resources while creating less damage to the environment. They developed eco efficiency metrics that could be used as a reference to companies looking to turn their activities more sustainable (MIT Press, n.d).

Another assessment are the standards by the Global Reporting Initiative created in 1997. It is a modular system that includes three types of standards: universal, sector and topic standards. Each standard contains disclosures that comprises requirements and recommendations. The disclosures contain a structured way for a company to report its impacts. The requirements include all the information needed to comply with that GRI standard. The organization has to report that information otherwise it is not abiding by the standard. On the other hand, the recommendations are not obligatory (*GRI Standards*, n.d.) The structure of the standards can be seen below in figure 5.

The International Organization for Standardization (ISO) has published the third edition of the ISO 14031 in 2021; the first one was in 1999 and the second in 2013. It is a set of guidelines for the design and usage of the environmental performance evaluation (EPE) that companies conduct. The purpose of it is to allow organizations to not only measure and evaluate but also to communicate their sustainable indicators while depending on trustworthy information and data. However, it is quite general and does not include environmental performance levels or specific methods for evaluating the different possibilities of impacts across sectors (ISO,2021).

Another significant assessment the United Nations Global Compact have developed 10 universal principles in the year 2000 to guide companies into becoming more sustainable globally. It is one of the largest voluntary corporate responsibility initiatives with 8000 signatories in more than 135 countries. The principles are divided into four main categories: human rights, labor, anti-corruption and the environment. Some examples of the ones related to the environment are that "*businesses should undertake initiatives to promote greater environmental responsibility and encourage the development and diffusion of environmentally friendly technologies".* (UN Global Compact Strategy,2021, p.36)

Figure 5. GRI Standards: Universal, Sector and Topic Standards.
Source: Global Reporting Initiative

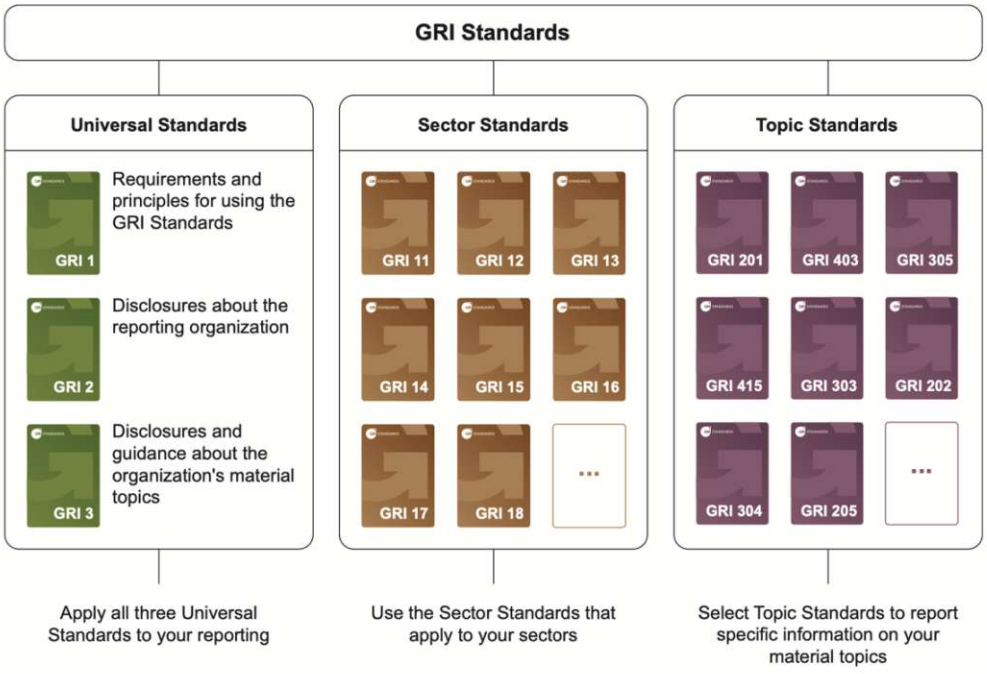

Figure 6. Guidelines for Sustainable Business Development.
Source: 2015 ICC Business Charter for Sustainable Development

Lastly, the 2015 ICC Business Charter for Sustainable Development builds upon previous versions created in 1991 and then updated in 2000. It is also inspired by the "ICC Green Economy Roadmap". The 2015 version aims to take on a more holistic approach of the three main dimensions while considering todays realities. The three main objectives of the charter are to raise awareness, frame the concept of sustainable development and emphasize how business can contribute to sustainable development. In order to so, the document lays out 8 main principles, each containing sub guidelines seen figure 6 above (ICC, 2015).

The IFC performance standards

In the previous section, we have seen several general international sustainability assessment tools however many government and large corporations want to encourage financial flows towards investments that are environmentally friendly. Therefore, in this section, we will be focusing on the sustainability performance standards by the International Financial Corporation (IFC). They were introduced in 2006 and further updated in 2012 and have been serving ever since as an international benchmark for private investments in emerging markets that allows them to identify and manage environmental and social risk along the IFC's Environmental, Health and Safety (EHS) Guidelines that guide businesses on how to meet the performance standards (IFC, 2012). They are designed to help clients avoid and mitigate environmental and social non sustainable impacts without neglecting their stakeholders. The IFC performance standards ensure the credibility of an investment and if not met then the loan cannot be granted until there is a correction within a suitable timeframe. Several institutions apply these standards including the Multilateral Investment Agency (MIGA), the World Bank and more than 30 export credit agencies. Moreover, some countries incorporate them either partially or fully into their national environmental and social legislation (IFC, 2012). In 2003, the Equator Principles (EPA) were created based on the IFC's Performance Standards. Their purpose is to guide financial institutions on managing environmental and social risks. Over 100 financial institutions from 38 countries have adopted these principles. The IFC technical resources have been fundamental to the development and knowledge of the Equator Principles. In fact, in 2020, the EPA and the IFC signed a Memorandum of Understanding (MoU) in order to define and emphasize their collaboration. The Equator Principal Association includes 10 major standards such

as categorization, independent review, reporting and transparency as seen in the figure 7 below for projects that meet specific criteria (EPA,2020).

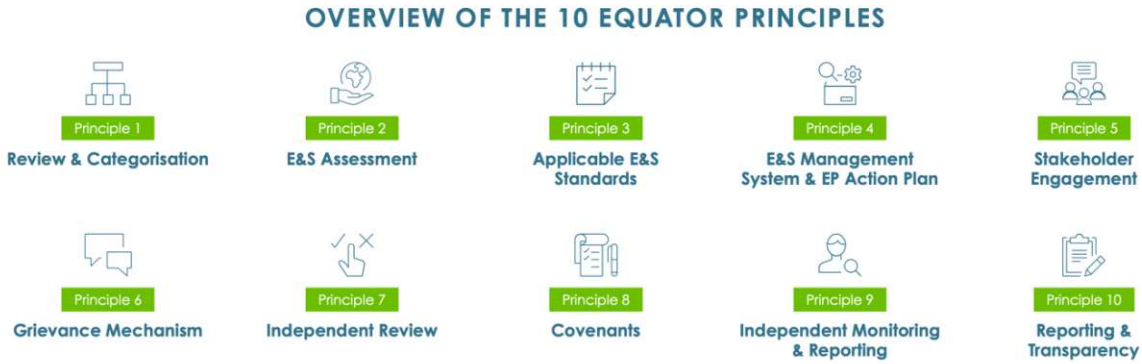

Figure 7. The Equator Principles.
Source: 2022, EPA

As for the IFC, it came up with 8 main Performance Standards explained in their 2012 IFC Performance Standard Report (IFC, 2012) as seen in figure 8 below each one serves a particular purpose and has its own objectives to fulfill.

Figure 8. The IFC Performance Standards.
Source: 2017, IFC

The first Performance Standard "Risk Management" highlights the importance of managing environmental and social performance throughout the lifecycle of a project and

mitigating risks. The installation of an effective Environmental and Social Management System (ESMS) is essential and involves in parallel the efforts of management to create a space that allows client, staff and local communities to interact and other involved stakeholders. One of the main objectives of this performance standard is to anticipate and mitigate impacts on the environment and affected communities and to ensure that there is appropriate communication with them and that they are responded to.

The second Performance standard "Labor" protects the rights of the workers. It values a positive worker-management and believes that it is crucial for a company sustainability and economic growth. Otherwise, it would put the business at risk since employment creation and worker productivity would be lower. The requirements set are based on those mentioned in the International Labour Organization and in the United Nations. Sone of its objectives include fair treatment, nondiscrimination among workers but also to promote safe and healthy working conditions. Also, to avoid forced labor while complying with national employment and labor laws.

The third one "Resource Efficiency" is about reducing pollution and GHG emissions whilst using resources efficiently especially energy and water. This standard focuses on improving mitigation technologies and methodologies since mitigation practices are becoming more accessible globally. Additionally, it helps private companies in using and implementing these new technologies. Some of its goals include minimizing potential risks on human health by avoiding pollution from project activities.

The next performance standard "Community" focuses on making sure that the client is held responsible in keeping the impacts project activities on the community as minimal as possible. Communities are already exposed to climate change and additional risks arising from project related-activities will not be tolerated especially among vulnerable groups. The goal here is to protect staff and property in accordance with the appropriate human rights principles and the affected communities.

The fifth performance standard "Land Resettlement" recognizes that some projects related to land acquisition or the ones that require placing restrictions on the land can lead to physical displacement because some people would lose their shelter or be forced to relocate. It could also lead or economic displacement as in the loss of assets. If not

minimized or well managed, it could lead to serious consequences to the affected communities on the long term. The main objective would be to avoid forced evictions and suggest alternative project designs.

The next standard "Biodiversity" reminds clients on the importance of conserving biodiversity, ecosystems and our planets living natural resources. It is part of sustainability because if our ecosystems services are no longer available then it would impact us. The requirements of this performance standard are based on the Convention on Biological Diversity. The objective here is to advise clients on methods to mitigate the impact of their business activities on biodiversity and to maintain the benefits from ecosystem services.

The standard performance seven "Indigenous People" recognizes that distinct social groups are more vulnerable than other communities and that slight changes caused by business projects such as transformation of their land or usage of their resources could heavily impact them on the long term. Moreover, their economic and legal status make it harder for them to be heard and to fight back. Some of the goals are to respect their culture and practices and create opportunities for them to participate and benefit from the projects.

The last standard performance "Cultural Heritage" highlights the importance of preserving cultural heritage for future generations. The requirements match the ones noted in the Convention Concerning the Protection of the World Cultural and Natural Heritage. It ensures that the benefits from the usage of cultural heritage are shared equitably and that clients protect cultural heritage while accomplishing their activities.

The EU taxonomy and the IFC performance standards are two different types of sustainability assessment tools. Even though they have similar objectives, each one has a different structure and different requirements. As there is more demand for an assessment tool, it would be interesting to compare them both and discover which one is more beneficial in practical terms.

2.3 COMPARISON BETWEEN THE EU TAXONOMY AND THE IFC PERFORMANCE STANDARDS

In this section, we will be exploring the similarities and differences of the EU taxonomy and the IFC performance standards and conclude which one is more efficient to use in practical terms. In order to do so, we will be going over five main dimensions inspired by the study "Comparison of two sustainability frameworks: The EU Taxonomy and the Recast Renewable Energy Directive" prepared by Jinke van Dam Consultancy in February 2021. The mentioned dimensions are: (1) the General Framework, (2) Compliance, (3) Geographic scope, (4) Economic activities impacted and (5) the Sustainability Criteria. Afterwards, we will be studying an example and sharing the key findings.

The **general framework** of both instruments was introduced in previous sections. The EU Taxonomy is a classification system that differentiates between sustainable economic activities and others to help support EU environmental objectives and policies. As previously mentioned, according to the taxonomy, an economic activity can be labeled sustainable if it meets the following criteria: it has to contribute to at least one of the six environmental objectives while not harming any of the other ones. It also has to comply with minimum safeguards concerning human and labor rights and comply with the technical screening criteria established through delegated acts by the Commission. The idea behind it is to create uniformity in the criteria to increase transparency and help avoid greenwashing (EC,2020).

On the other hand, as we have also discussed, the IFC performance standards created by the IFC provide an international benchmark for sustainability indicators. It allows emerging markets to mitigate environmental and social risks by making sure not to give out loans to clients or projects that do not abide by the 8 performance standards. Their Environmental, Health and Safety (EHS) Guidelines help clients achieve these standards.

Both assessment tools aim to redirect financial flows into sustainable activities, however the first distinction would be that the EU Taxonomy has been created under a government authority whereas the IFC performance standards are part of an international institution. Thus, the EU taxonomy is subjected to more stringent regulation and would be more

difficult to change if needed since the process is more complicated. Furthermore, the IFC performance standards have been a recognized assessment tool and used by a number of institutions since 2012. The EU taxonomy is extremely new to businesses since it was first shared in 2020 and is still ongoing changes and work. As a result, globally there tend to be more trust towards the IFC performance standards as an assessment tool. For instance, some international institutions still demand proof of alignment with the IFC performance standards even after being presented proof of alignment with the EU Taxonomy.

When it comes to **compliance**, according to the European Commission Report, the EU taxonomy applies to three main categories: all financial institutions or market participants that are subject to the Sustainable Disclosure Regulation (SDFR) that offer financial products, all measured adopted by EU Member States for all issuers of financial products or corporate bonds labelled as environmentally sustainable and finally to large companies that are required to present a non-financial statement following the articles 19a or 29a of Directive 2013/34/EU under the Non-Financial Reporting Directive (NFRD) (TEG, 2020).

As for the IFC Performance Standards, they are required as part of the IFC's environmental and social due diligence process for their commercial clients and investees (IFC, Nd). Furthermore, any project categorized by the European Development Finance Institutions (EDFI) as (A-B) projects thus as high and medium risk projects as described in figure 9 below. The requirements for other low risk projects (C) are reviewed by local legislation (Finn Fund, Nd).

Categorisations for direct investments:

	High risk (A)	Medium High Risk (B+)	Medium Low Risk (B)	Low risk (C)
Category Definition	Projects with significant potential adverse social or environmental impacts that are diverse, irreversible or unprecedented. These impacts cannot be mitigated or remedied or only at significant costs	Projects with generally limited potential adverse social or environmental impacts that are site-specific and readily addressed through mitigation measures, but having some specific features which can have potential significantly more adverse social or environmental impacts.	Projects with limited potential adverse social or environmental impacts that are site-specific and readily addressed through wellknown mitigation measures.	Projects with minimal or no adverse social or environmental Impacts.

Categorisations for financial institutions (FI):

	FI-A	FI-B	F-C
Category Definition	Financial institutions with business activities or projects with significant potential adverse social or environmental impacts or risks.	Financial institutions with business activities or projects with limited potential adverse social or environmental impacts or risks.	Financial institutions with business activities or projects with minimal or no adverse social or environmental impacts or risks.

Figure 9. Categorisations for Environmental and Social Responsibility. Source: Finn Fund

The two instruments have a common subject that is financial institutions with business activities or projects that offer financial products. However, one of the differences is that under the EU taxonomy, these institutions are legally required to present that information. With the IFC PS, you are only subjected to the standards if you are their client or looking to get funding.

When it comes to the **geographic scope**, the obligations under Article 8 are mandatory to any institution subject to the NFRD no matter where their activities are located. Also, the taxonomy applies to any participant offering financial products in the EU even if the manufacturer is based abroad (EC,2020). With the IFC PS, there is no geographic condition since it's an international institution. The subjects under the EU Taxonomy are therefore mainly European Member States whereas, the ones using the IFC PS are mostly emerging markets or developing countries. As a result, the institutions using IFC PS are

more diverse in economic, social and environmental backgrounds. Of course, not all EU Member States have similar backgrounds, however the level of differentiation would be considered less significant.

The **economic activities** that are included in the Taxonomy are divided into three major categories according to the Technical Expert Group: low or zero carbon activities, in other terms, activities that are already low carbon. For instance, a low carbon energy production or energy efficient manufacturing processes. The next category are transition activities; activities that contribute to a net zero emissions economy in 2050 like the renovation of a building. Finally, there are the enabling activities that enable other activities to reduce their emissions, they make the other two categories possible as long as "it does not lead to a lock-in in assets that undermine long-term environmental goals, considering the economic lifetime of those assets and has a substantial positive environmental impact on the basis of life-cycle considerations" (TEG,2020, p.15). A couple of examples are a manufacture of low carbon products or of equipment and machinery. The economic activities vary from different sectors structured around the EU NACE industry classification system. The activities coming from sectors responsible for 93.5% of direct greenhouse gas emissions in the EU were prioritized and their technical screening were fully developed (TEG,2020). However, the other activities have not yet been included or their technical screening not ready yet. The taxonomy still encourages disclosure of the non-covered activities.

As for the IFC PS, any economic activity that might have an impact or risk on the environment or on a social dimension can be assessed by the IFC PS. Noticeably, the EU Taxonomy is more detailed and selective as to which economic activities it covers compared to the IFC PS where it is kept more general.

When it comes to the **sustainability indicators**, as mentioned previously, the EU Taxonomy contains 6 environmental objectives: climate change mitigation, climate change adaptation, protection of water and marine resources, transition to a circular economy, pollution prevention and control and finally protection and restoration of biodiversity and ecosystems. On the other hand, the IFC PS include 8 standards explained in the previous section: PS (1) risk management, PS(2)labor, PS(3)resource efficiency,

PS(4) community, PS(5)land resettlement, PS(6)biodiversity, PS(7)indigenous people and PS(8)cultural heritage.

Clearly, the IFC PS covers more standards and especially social ones. Some objectives are directly found in both assessment tools: the climate mitigation and the PS (1) since both their objectives is to identify and try to avoid environmental impacts. The last objective in the Taxonomy matches PS (6) as they both seek to protect biodiversity and ecosystems. Other objectives are found indirectly. For example, the objective of transitioning to a circular economy and PS (3) because the stages of circular economy (reform, reduce, reuse and recycle) all contribute to managing our resources more efficiently.

Moreover, the third mandatory step in the EU Taxonomy is to make sure that the economic activity abides by the minimum safeguards and guidelines related to the OECD guidelines, the UNGP and the ILO convention. These guidelines protect workers and force companies to abide by minimum labor rights which matches with PS(2) entailing protecting the labor force. The EU taxonomy is lacking the social dimensions mentioned in the IFC PS such as cultural heritage and consideration of indigenous people but it is important to mention that it is still a work a progress and that the addition of social dimensions could potentially be added.

Let's study the example of Credit Suisse, an investment bank looking to solve global challenges related to sustainability. In order to encourage clients and create more transparency for investors, they decided to use the EU taxonomy as a guiding framework (PRI,2020). The bank chose to select a sample of underlying companies from different and gather their information related to implementation of the taxonomy. One of the activities of one of these companies (5) is construction and is responsible for insulation products. Credit Suisse used an external provider to check if the data matched the relevant mitigation criteria and thresholds made available by the TEG taxonomy tool (figure 10). Then the same approach was adopted for the DNSH and social safeguards assessments. Factors related to UN Global Compact, the UN Guiding Principles for Business and Human Rights and the ILO's broader set of labour standards were also considered as seen in figure 11 below. (PRI,2020).

List of companies	Eligibility			
	Eligible sectors	BICS name	BICS code	% revenue
Company 1	Energy	Fuel cells & industrial batteries	13111115	100.0%
Company 2	Manufacture plastic & chemicals	Food additives	1710121812	78.0%
Company 3	Energy	Geothermal equipment	1311111210	100.0%
Company 4	Manufacture low carbon tech	Elec measuring instruments	16111310	100.0%
Company 5	Construction	Insulation products	17111214	83.9%

Figure 10. Eligibility Assessment.
Source: 2020, Principles for Responsible Investment.

List of companies	ESG rating	UNGC compliance	UN business and HR compliance	ILO standards compliance	Controversy flag
Company 1	A	Pass	Pass	Pass	Green
Company 2	AAA	Pass	Pass	Pass	Green
Company 3	AAA	Pass	Pass	Pass	Green
Company 4	A	Pass	Pass	Pass	Yellow
Company 5	A	Pass	Pass	Pass	Green

Figure 11. DNSH and Social Safeguard Assessment.
Source: 2020, Principles for Responsible Investment.

The activity of the company in question passed all the required conditions set by the Taxonomy and therefore is eligible to be labelled as sustainable. However, Credit Suisse faced a couple of challenges during this process. The most challenging part was data collection as in the lack of it. The eligibility provider could only give an approximated percentage of taxonomy-eligible activities. Despite reviewing annual and sustainability reports, company disclosures were at times insufficient and therefore directly communicating with the company was necessary, especially in the case of developing or smaller companies. Moreover, gathering all this data was extremely time consuming. Another issue was that the metric and threshold information was too specific and detailed and even sometimes difficult to understand. To an extent where some activities could not be taken into account in the Taxonomy because it did not exactly match the eligibility requirements even though according to Credit Suisse it would have made sense to include

it. An example of a complicated requirement was "(…) low thermal conductivity (lambda lower or equal to 0.045 W/mK), external cladding with U-value lower than 0.5 W/m2K and roofing systems with U-value lower than 0.3 W/m2K" (PRI,2020) where it was challenging to find examples that match this criterion. Lastly, there is a need for experts that are able to understand and assess the technical screening and the DNSH criteria parts of the taxonomy. In the case of Credit Suisse, two data providers were needed to check the eligibility requirements, which of course, costs money as well (PRI,2020).

Comparably, the Sri Lanka's Sustainable Banking Initiative described a construction of a hydropower project where the IFC PS were implemented throughout the lifecycle of the project. The developer was looking for a loan of LKR 100 million for the construction of a plant of 1.5MW. The plant would be located on a waterfall that is known to be a touristic destination and associated with legends (Sri Lanka's Bank Association, Nd). To be able to seek that loan, the project developer would have to prove that the project actually follows the 8 performance standards. In order to so he would need to follow the IFC Good Practice Note: Environmental, Health, and Safety Approaches for Hydropower Projects that helps project developers abide by the performance standards. The Construction OHS section of that report, elaborates on different requirements related to hydropower construction phases such as tunneling, geotechnical safety, ventilation and illumination. It also states that "The most significant occupational health and safety hazards in hydropower projects often occur during the construction phase." (IFC,2018, p.22). In a report by Acorn International, LLC showcases how the IFC Performance Standards can be integrated throughout the project lifecycle (Snodgrass,2013) as seen in figure 12 below.

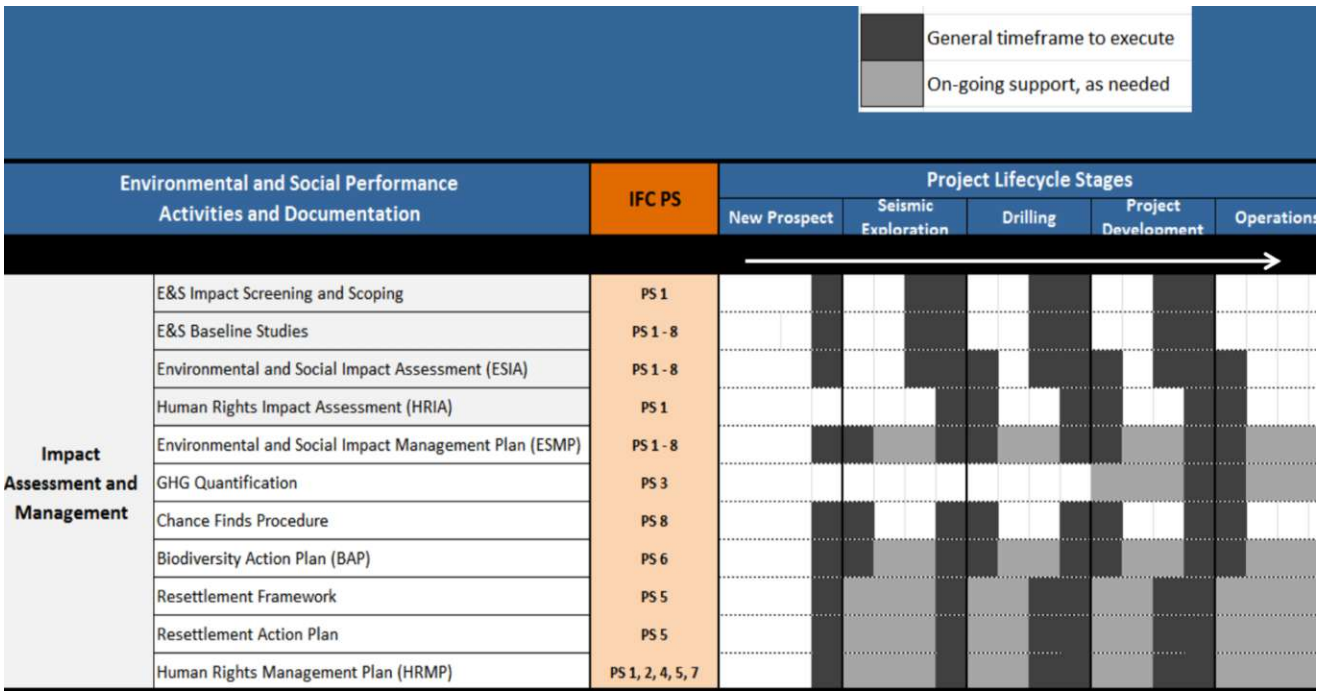

Figure 12. Integrating E&S Performance:Project Lifecycle
Source: 2013, Acorn International.

In that example, the different requirements and documents required for each performance standards are described on the left part of the table. On the right side, the different stages of the project are described with the general timeframe to execute each PS requirement for each activity. The IFC PS are generally described as clear with each having its own related documents and requirements. The table below is a summary of the findings found in that section.

Table 2. Comparison between EU Taxonomy and IFC Performance Standards

Comparison Dimensions	EU Taxonomy	IFC Performance Standards
General Framework	-Need to commit to one of the environmental objectives while not harming the other ones - Need to abide by the minimum safeguards	-Need to abide by the IFC's Environmental, Health and Safety (EHS) Guidelines
Compliance	-Market participants subject to the SDFR -Issuers of environmentally sustainable financial products -Large companies required to present a non-financial statement	- Commercial clients and investees - High and medium risk projects
Geographic Scope	- Any participant offering financial products in the EU	- Mostly emerging markets or developing countries
Economic Activities	- Low or zero carbon activities - Transition activities - Enabling activities - EU NACE industry classification system	
Sustainability Indicators	-6 environmental objectives	-8 performance standards
Case Studies Conclusions	-Data collection is challenging, time and money consuming -Need of experts - Difficult to match the taxonomy requirements	- More general - Easily integrated into project lifecycle

2.4 GREEN BONDS

The European Capital Market Institute has confirmed that the green bond market evolved significantly over the last years. In fact, "In 2020, around €236 billion of green bonds were issued globally (+57% compared to 2018), with Germany, France and the Netherlands accounting for a third of them" (ECMI,2021,p.1). Additionally, according to the European Parliament, forecasts show that in 2023, it could reach US$1 trillion of yearly global issuance (EP,2022).

The difference between regular financial bonds and green bonds is that the latter is an instrument to enables the financing whether partly or fully of green projects that abide by guideline mentioned in the Green Bond Principle (GBP). The Green Bond Principles established in 2014 and hosted by the International Capital Market Association are a collection of voluntary frameworks including the Social Bond Principles (SBP), the Sustainability Bond Guidelines (SBG) and the Sustainability-Linked Bond Principles. Their purpose is to promote the importance of pushing financial investments towards sustainability. They present guidelines and best practices to issuing bonds that serve sustainable purposes while protecting the transparency and integrity of the financial market (ICMA,2021). The four main pillars of the GBP are the usage of proceeds, the process for project evaluation and selection, management of the proceeds and reporting. Furthermore, in order to increase transparency, a green bond framework and external reviews are highly encouraged.

According to the ICMA, as of June 2021, there are four main types of green bonds. The first one is the Standard Green Use of Proceeds Bond where the lender has the right to collect the borrower's collateral and extra compensation if he does not follow through with his obligations aligned with the Green Bond Principle. The second one is the Green Revenue Bond is a non-recourse to the issuer debt obligation as in if the issuer defaults, the lender can only collect the collateral previously decided upon even if it amounts to less of the defaulted amount and where the proceeds go to the green project also aligned with GBP. The third type is the Green Project Bond which could be a bond for a single or for several projects in which the investor is directly exposed to the risks of the project aligned with the GBP. It could be with or without recourse to the issuer depending on the agreement. Finally, the last one is Green Securitized Bonds where the bond is

collateralised by one or multiple green projects aligned with GBP and where the source of repayment is the cash flow of the assets (ICMA,2021). Even though the green bond market has been growing, it still only represents 3 to 3.5% of overall bond issuance (EP,2022).

In order to accelerate its evolution which would help achieve the targets of the Paris Agreement, a few policies and frameworks in the European Union have been initiated to help grow the financial green bond market. On the 13th of November 2020, the Parliament expressed the need for an EU Green Bond Principal framework during its resolution on the Sustainable Europe Investment Plan and that a significant share of the EU bonds that are meant be issued in the context of the Recovery plan for Europe should be based on the EU GBS. As a result, on the 6th of July 2021, the EU Commission came up with the legislative proposal of establishing an EU Green Bond Standard (GBS) which aims to regulate the entire European green bond market by providing a common framework and clearly define certain terms such as what could be considered "green" (ECMI,2021). The proposal was based on the introduction of the EU Taxonomy, the Action Plan on Sustainable Finance and the New Strategy on Sustainable Finance.

After the development of regulations, the "European Green Bond Standard" (EuGB) was introduced to present a common bond with uniform requirements. It also made the external reviewing process easier with a commonly defined registration and supervisory systems. Also, it could be used by corporate issuers, sovereign issuers, EU and non-EU issuers and financial institutions. However, the bond has to be aligned with the EU Taxonomy as in all the proceeds of the bond need to be used to finance economic activities that are taxonomy aligned before the maturity of the bond. The world's first green bond named Climate Awareness Bond was issued by the European Investment Bank in 2007. Today, it is leading in the application of the EU Taxonomy and the EU Green Bond Standards and according to the European Parliament, the EU is "a global leader in green bonds, with 48 % of global issuances in 2020 being denominated in euros, and 51 % of the global volume of green bonds being issued in the EU" (EP,2022, p.2). As a matter of fact, according to Bloomberg, the European Commission issued in 2021 what was considered the largest green bond issuance to date (Ward,2021). In order to finance its €800 billion coronavirus recovery fund, it issued issued €12 billion worth of green bonds on financial markets (Ammann, 2021).

Of course, the growth of the financial green bond market in the European Union presents many advantages but also limitations and faces a few obstacles that will likely grow and high-impact risks.

The European Parliament has identified three mains challenges that could present obstacles to developing the green bond market in the EU. The first one is that it is difficult to get everyone involved to agree on a common definition and framework for green bonds. The second challenge is that the verification procedures for green bonds are time and resource consuming but also quite complex. Finally, there might be more supply than demand in the market as in there aren't enough projects that can be defined as green the way the EU Taxonomy demands it. The commission has added that from the investors side, it is difficult to identify high-quality green bonds also they could be costly. On the issuers side, market fragmentation makes it more costly to issue a green bond. Also, that there is still uncertainty and confusion due to green washing (EP,2022). Furthermore, there also exists obstacles in the external review market when it comes to heterogeneity, lack of transparency and conflicts of interests. These complications could have disrupting consequences such as market disruption due to greenwashing, the amount of high-quality green bonds being issued will be reduced or that not enough investment will be available for sustainable projects (EP,2022).

In addition, even if the EU is seen as a global leader in green bonds, it still faces obstacles in the international arena. According to Fitch Ratings-London, it has difficulty expanding globally because it is too EU centric focused. Also, the reporting verifications procedures are too rigid. Consequently, it discourages companies that are transitioning and lowers international green investment attraction (Fitch Ratings,2021).

2.5 VERBUND CASE STUDY

VERBUND is Austria's largest utility company, it comprises the generation, transportation, trading and sale of electrical energy and other energy sources as well as the provision of energy services. The company's mission is to utilize their renewable energy plants to provide clean electricity today and in the future. Some of their strategic pillars for their 2030 strategy include efficient hydropower generation, new renewables generation, sustainable expansion and safe grid operation, security of supply and lastly customer-centric solutions. Since one of its pillars is sustainable expansion, VERBUND has been actively supporting the United Nations SDGs. For instance, SDG 7 "Affordable and Clean Energy" is directly related to its mission and business activities. Furthermore, they support SDG 13 "Climate Action" by offering their customers electricity generated by hydropower and wind power which contributes to lowering greenhouse gas emissions. It also supports SDG 15 "Life on Land" by protecting ecosystems, plants and animals by building their power plants in regions that aren't of ecological importance (VERBUND, 2021). Moreover, as stated in the report "VERBUND is a signatory of the UN Global Compact and supports the Ten Principles of the United Nations Global Compact on human rights, labour, environment and anti-corruption" and that contribute to climate change mitigation measures as outlined in the EU Taxonomy (VERBUND, 2021, p.6).

VERBUND is not new to sustainability assessment tools, in fact, it has implemented ISO 14001 at all power plants and grid facilities. It was also one of the first companies in Austria to publish an environmental report. Since 2012, it has been publishing the "VERBUND Sustainability Report" every year until 2015 and other reports such as the "Climate Report", the "Sustainability Policy" and the "Responsible Energy Brochure" all related to sustainability and environmental impact. Since then, it publishes its "VERBUND Annual Report" that includes its sustainability measures and their alignment with the GRI guidelines (VERBUND, 2021).

To accomplish their 2030 strategy, VERBUND has decided to use their experience in green finance in order to commit to sustainability. In 2014, VERBUND AG was actually the first corporation to issue a green bond in the German, Austrian and Swiss region. It enabled the financing of wind power plants in Austria and Germany. Four years later, the company issued a green "Schuldschein" (promissory note) that financed the construction

of a high voltage grid project in Austria that was indispensable to integrate new renewables into the Austrian grid system. That same year, it also issued an ESG-linked syndicated loan (VERBUND, 2021). In its 2021 Green Financing Framework Report, VERBUND stated that it aims to be a market leader in finance and contribute to the first environmental objective of the taxonomy: climate change mitigation (VERBUND, 2021). It wishes to finance green projects to develop the green finance market with new innovative products. Therefore, VERBUND will allocate "VERBUND bonds", to eligible green projects where the investment has taken place within a maximum of 3 years prior to the date of any issuance and that contribute to climate change mitigation measures as outlined in the EU Taxonomy (VERBUND, 2021).

Some necessary steps and changes had to be made concerning the future issuance of sustainable financing instruments including the green bonds and/or the sustainability linked bonds at VERBUND.

In order to select projects that are appropriate and evaluate their activities according to the EU Taxonomy, VERBUND had to set up a committee within its organization to take on this responsibility. It is different from their "Corporate Responsibility Committee" which is responsible on ensuring that the employees at VERBUND are respecting sustainability principles. The "Green Bond Committee" (GBC) however, have to meet at least twice a year to ensure that the exact money equal to a green bond are given to eligible green projects. Some of their responsibilities include making sure that these projects actually do align with the taxonomy and other relevant criteria. Also, the committee is responsible for deciding or approving on the necessary action in the case that the project no longer meets the eligibility criteria. For instance, the project developers could start using different technologies that do not meet the requirements or in the case of divestment or liquidation. In this case, they would have to replace it with another project. Other responsibilities include reviewing and approving any relevant updates and impact reports. The representatives of the GBC come from 6 different functions: Finance, Investor Relations, Corporate Responsibility, VERBUND Hydro Power GmbH, Austrian Power Grid AG and VERBUND Green Power GmbH. However, the management of the proceeds will be solely under the Finance group who will monitor the register of eligible green projects created by VERBUND and the allocations made. They also need to ensure

that the proceedings will be invested on a temporary basis and in accordance with the internal treasury policies therefore in cash or cash equivalents (VERBUND, 2021).

When it comes to reporting, VERBUND will publish on their website both an "Allocation Report" which will include bond identifier, projects names and descriptions, share of financing by VERBUND etc. and an "Impact Report" after one year of issuance of the bond and every year after that until the full amount has been allocated.

The "Impact Report" will showcase selected environmental impacts of the chosen projects using qualitative and quantitative metrics depending on the available data. A do-no-significant-harm requirement list aligned with the one in the EU taxonomy has been developed for each project category in order to ensure that the environmental and social risks of the projects being financed by VERBUND are being reduced or avoided. Some examples of the metrics chosen are renewable energy capacity added (MW) thus tCO2e avoided due to renewable electricity generation or additional transformer capacity (MVA) for transmission of electricity. Furthermore, the criteria that have been developed will be checked by an external reviewer who will ensure that they are with the EU Taxonomy Minimum Social Safeguards. The external review has already been done by ISS ESG who provided a second party opinion (VERBUND, 2021).

In its 2021 Impact Report, VERBUND presented three projects that would be financed from the proceeds of their green and sustainability linked bond aligned with the EU Taxonomy. The figure 13 below demonstrates the allocation of funds from the issue of the Green & Sustainability- linked Bond as of 31 December 2021.

Green & Sustainability-linked Bond 2021–2041**
ISIN: XS2320746394, volume: €500.0m, term: 20 years, coupon rate: 0.9% p.a.

Project name & type of project	SDGs	Planned total project costs (€m)	Possible amount allocated from green bond*** (€m)	Share of possible amount allocated of total project costs (%)	Planned amount allocated from green bond*** (€m)	Amount allocated from green bond in the reporting period*** (€m)	Accumulated amount allocated from green bond to date (€m)	Share of planned amount allocated to date (%)
Jettenbach-Töging (D) Hydro Increase in energy efficiency (rehabilitation)	7&13	254.1	254.1	100.0	254.1	75.4	199.0	78.3
Weinviertel line (A) Grid New construction	7&13	164.0	148.5	90.5	148.5	41.4	120.5	81.1
Reschen Pass (A) Grid New construction	7&13	90.1	89.2	99.0	89.2	17.1	25.9	29.0
		508.2	**491.8**		**491.8**	**133.9**	**345.4**	**69.1**

* based on the VERBUND Green Bond Framework 2014
* based on the VERBUND Green Bond Framework 2021
*** eligible period: +/– 3 years before date of issue
**** posted amounts

Figure 13. VERBUND's green & Sustainability-linked Bonds
Source: 2021, VERBUND Impact Report

The first project is the rehabilitation of the Jettenbach- Töging hydropower plant in Bavaria. The plant was constructed right after the 1st World War and came on stream in 1924. It was considered the first large scale run of river power plant and at the time the largest power plant site in Central Europe (VERBUND IMPACT, 2021). Electricity was being generated from the volume of water remaining in the old Inn River because of the environmental requirements that were imposed. Additionally, both the power house and the weir were classified as monuments with historical significance by Bavarian authorities. The green and sustainability bonds by VERBUND allowed for the allocation of more than 78% of the total project costs as seen in figure 12 above. This allowed for the modernization and expansion of the power plant. The construction work started in 2018 and as the result, the capacity of the power plant increased by 32.4 MW which amount to an increase of 38% from the original capacity. Also, there has been an increase in generation of 139 GWh which amounts to an increase of 25% from the original generation. The commissioning is planned for 2022 (VERBUND IMPACT, 2021). Some of the ecological measures that needed to be implemented include gravel banks and new water bodies as new spawn and fish habitats, additional fish bypasses to supplement the existing fish ladder and finally structural and hydro morphological improvements. This includes the development of meadows in order to enhance biodiversity. Today, the commissioning of the new units is under work and in August to September 2022, the full operation will be held. The VERBUND bond has allowed for the enhancement of this power plant and thus for an improvement in the objective of climate mitigation.

VERBUND has chosen this project because it aligns with the EU Taxonomy. Firstly, the construction or operation of electricity generation facilities that produce electricity from hydropower is considered as an "Absolute" activity as defined by the Taxonomy (Art. 10 (1)) since it contributes substantially to climate change mitigation, the first environmental objective of the taxonomy. The generation of electricity by hydropower produces very small amounts of greenhouse gases as opposed to the generation of electricity by coal. According to the IPCC, the median GHG emission for gas is 490 gCO2-eq/kWh whereas the median GHG emission intensity that hydropower has is 24 gCO2-eq/kWh (Bruckner et al.,2014). In fact, according to the U.S. Geological Survey, "today hydroelectricity prevents the emission of GHG corresponding to the burning of 4.4 million barrels of petroleum per day worldwide" (USGS,2018, p.1). Therefore, the modernization of the

power plant passes the first requirement of the taxonomy by contributing to the first objective.

Next, the project should not cause any harm to any of the other environmental objectives. The figure 14 below from the External Opinion 2021 Report showcases the verification from ISS ESG that generation of electricity from hydropower due to this project passes the DNSH criteria draft as described by the taxonomy for all of the other EU Taxonomy objectives since the final Climate Delegated Act was not yet available .

2. CLIMATE CHANGE ADAPATION – *DO NO SIGNIFICANT HARM CRITERIA*		
Reducing material physical climate risks	A comprehensive risk assessment in respect of design discharge was carried out during the design phase and relevant measures are applied to reduce identified risks	✓
Supporting system adaptation	The Green Projects do not increase the risks of adverse climate impact on other stakeholders and align with local adaptation efforts	✓
Monitoring adaptation results	Adaptation results can be monitored and measured against defined indicators and are reviewed by the issuer	✓
3. WATER – *DO NO SIGNIFICANT HARM CRITERIA*		
Sustainable use and protection of water and marine resources	Technically feasible and ecologically relevant mitigation measures have been implemented or are scheduled to be installed. The effectiveness of those measures is monitored in the context of the authorisation or permit and all projects follow the German water law and water frame directive	✓
4. CIRCULAR ECONOMY – *DO NO SIGNIFICANT HARM CRITERIA*		
Not applicable		-
5. POLLUTION – *DO NO SIGNIFICANT HARM CRITERIA*		
Not applicable		-
6. ECOSYSTEMS – *DO NO SIGNIFICANT HARM CRITERIA*		
Protection and restoration of biodiversity and ecosystems	An Environmental Impact Assessment (EIA) has been completed in accordance with the German implemented EU Directives and complies with EU regulations	✓

Figure 14. Electricity generation from hydropower criteria assessed by ISS ESG

Source: 2021, ISS ESG Second Party Opinion Report

Finally, the technical screening criteria for electricity generation from hydropower can be found in figures 15 below. It is an excerpt of Annex I, Chapter 4.5 to the Climate Delegated Act (C/2021/2800 final). In the second opinion report, ISS ESG have confirmed that the project meets the technical screening criteria described in figure 14 and that the financed hydro power plant is a run-off river plant with emissions far below 100gCO2e/kWh (ISS ESG,2021).

4.5. Electricity generation from hydropower

Description of the activity

Construction or operation of electricity generation facilities *[see page 41 of this document]* that produce electricity from hydropower.

The economic activities in this category could be associated with several NACE codes, in particular D35.11 and F42.22 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

Technical Screening Criteria

Substantial contribution to climate change mitigation
The activity complies with either of the following criteria: (a) the electricity generation facility *[see page 41 of this document]* is a run-of-river plant *[see page 42 of this document]* and does not have an artificial reservoir *[see page 43 of this document]*; (b) the power density *[see page 48 of this document]* of the electricity generation facility *[see page 41 of this document]* is above 5 W/m^2; (c) the life-cycle GHG emissions from the generation of electricity from hydropower, are lower than 100gCO_2e/kWh. The life-cycle GHG emissions are calculated using Recommendation 2013/179/EU or, alternatively, using ISO 14067:2018[8], ISO 14064-1:2018[9] or the G-res tool[10]. Quantified life-cycle GHG emissions are verified by an independent third party.

Figure 15. Technical Screening Criteria for electricity generation from hydropower

Source: 2021, Climate Delegated Act

Finally, the project should abide by the minimum safeguards therefore ISS ESG has assessed the alignment of the due diligence in place with the EU Taxonomy Minimum Social Safeguards and has approved that VERBUND complies with the OECD Guidelines on Multinational Enterprises, with the UN Guiding Principles on Business and the Human Rights ILO Core Labour Conventions (ISS ESG,2021).

The figure 16 below summarizes the processes and requirement for generation of electricity by hydropower in order for it to be aligned with the EU Taxonomy. This confirms that the project assessed is indeed aligned with the EU taxonomy on a best effort basis and that VERBUND bond can be considered green and sustainability linked since it was able to finance a project that aligns with the EU Taxonomy criteria.

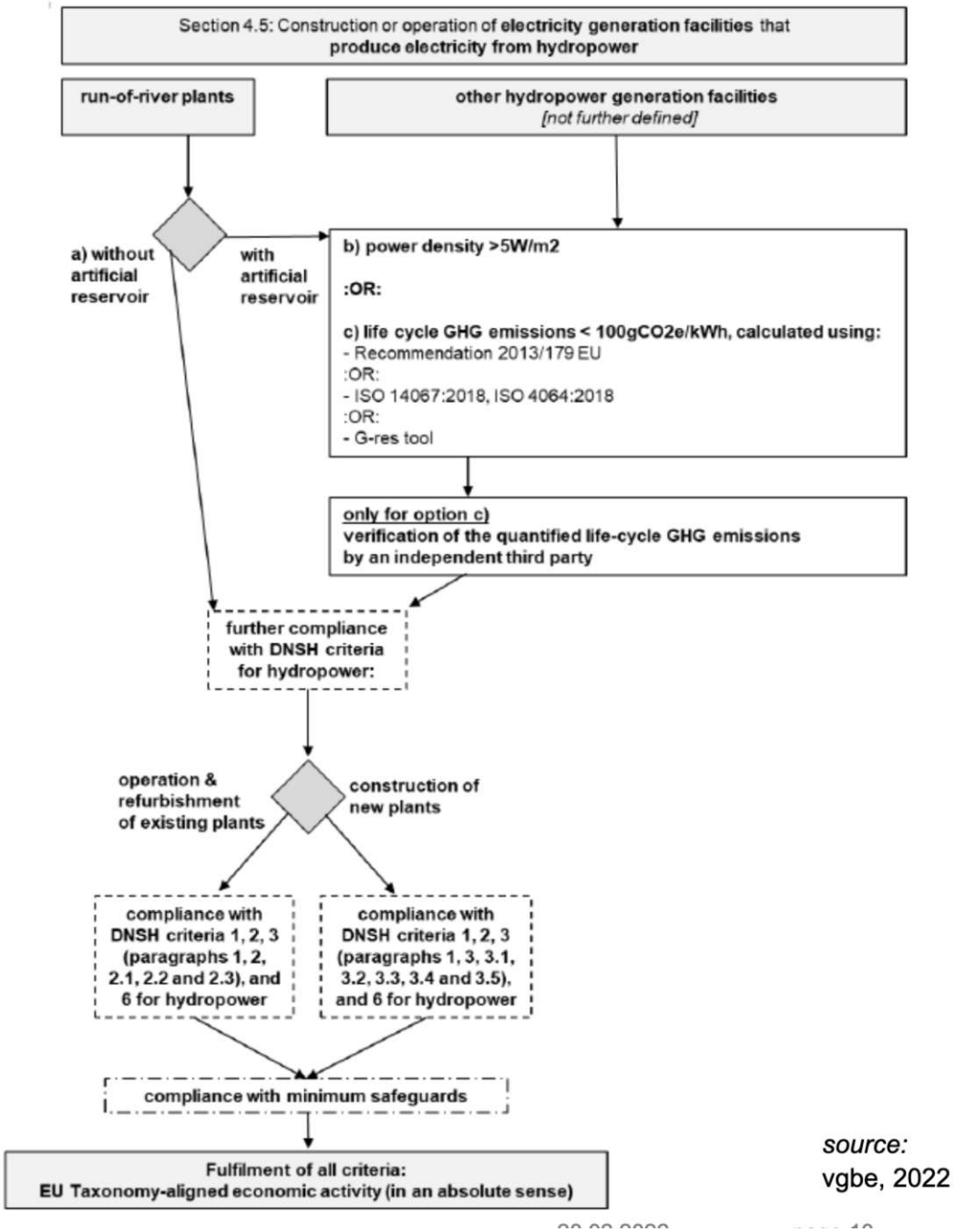

Figure 16. Fulfillment of all EU Taxonomy criteria for generation of electricity by hydropower

Source: 2022, VGBE

As for the activities within VERBUND itself, the first necessary step would be to check which activities could even be considered for the taxonomy. The next step would be to figure out which ones are taxonomy eligible as stated in the Climate Delegated and finally which activities are aligned with the Taxonomy as in the ones that comply with the criteria. VERBUND has identified their "Absolute" activities as described by the Taxonomy (Art. 10 (1)) thus the activities that contribute substantially to climate change mitigation and they include generation of electricity by hydropower, PV and wind. The enabling activities detected in accordance with Article 16 of the taxonomy are electricity transmission grid and electricity storage (battery & PSP) - amongst other activities that still have to be assessed; those are the ones that directly enable other activities to make a substantial contribution to the climate mitigation. As for transitional activities, none have been identified at VERBUND. As for the rest of the activities such as gas grid, hydrogen and e-mobility, they are currently missing screening criteria in the taxonomy and can start being evaluated at the end of 2022. If the eligible activities undergo the three main criteria meaning, they contribute to one of the environmental objectives, do not harm any of the other ones and abide by the minimum safeguards then they can be considered aligned with the taxonomy.

Discussion

As previously discussed, the EU Taxonomy does create a green approval stamp that allows project developers to brand their projects as environmentally sustainable and enhance trust between investors and the market. However, the practical process to get that stamp ad we have seen in the case of VERBUND is not straightforward as one must pass through several rigorous steps. In order to have a better understanding of the reality of the process and challenges faced, I have contact Mr. Martin Schönberg responsible for ssustainability projects, climate and environmental protection and stakeholder management at VERBUND as well as being an expert regarding the EU Taxonomy. He was kind enough to answer my questions and reveal several insider insights.

Firstly, it is clear that VERBUND took all the necessary measures and made all the relevant changes to adapt to the new regulations and to the Taxonomy however, it's been made clear that VERBUND does not agree with all of its regulation updates such as the categorization of nuclear and gas investments as sustainable solutions even under certain conditions. Nuclear energy will not be an option for VERBUND and for many other

sustainable energy companies due to the risks that come with using it such as the high level of resources that would need to be consumed, the risk of radiation and the low level of profitability. As for gas power, it would be seen as a bridging technology. Consequently, VERBUND will continue to adhere to the self-imposed sustainability goals for its VERBUND Green Finance products and recommends placing gas and nuclear power in a separate category.

Next, Mr. Schönberg went on to describe the Taxonomy as being dynamic. It is evident that it is still a work in progress as some technical screening criteria for some activities haven't been developed yet or fully complete yet such as for bio energy. Some activities serving environmental objectives other than climate change mitigation and adaptation are also to be added in the coming year. Also, the social dimension of the taxonomy is still lacking. Furthermore, the thresholds for all economic activities will become stricter progressively to make environmental progress. This entails that the criteria and requirements will be changing as well. The application of the taxonomy requires massive internal adaptation and changes, as we have seen it involves regular reporting cycles, handing in of KPIs and monitoring. In VERBUND's case, it was even necessary to create a whole new committee (GBC) since it is required to document the fulfilment of all criteria for each economic activity and even to prove it on the plant level. The preparation of many reporting publications was also essential such as the "Impact Report", "Green Financing Framework Report" or the "Annual Verification Report". Additionally, they had to collaborate and find a trustworthy external review party, in their case ISS ESG. Also, there is a need for industrial sector experts to check that the threshold requirements at the plants are being met. Companies such as VERBUND would have to adapt their already settled reporting system to the Taxonomy or would have to change it entirely. This is extremely costly and time consuming and for some companies the reward and benefits from it is therefore not worth the hassle and burden especially if the Taxonomy is as dynamic as it is because then they would have to make additional changes every couple of years.

It was also mentioned that the wording and some technical terms used in the taxonomy are new, tricky and not previously found in the EU legislation or in other international sustainable standards. This makes it tricky to abide exactly to every requirement and takes even more time to guarantee that every criterion is being met. That might be the reason

behind stock exchanges like the one in New York still prefer to receive the proof of alignment with the IFC Performance Standards even if some projects have documentation that proves alignment with the EU Taxonomy. Finally, like with most topics related to politics, there might be some lobbying happening behind closed doors which makes the application of the Taxonomy all the more complex.

3. CONCLUSION

In conclusion, in order to meet the targets mentioned in the Paris Agreement and reach carbon neutrality by 2050, there is as need to redirect public and private financial flows towards environmentally and socially friendly projects. In order to maintain trust and transparency between the investors and the market, there is a need for a common definition as to what qualifies a project to be called sustainable or "green". The EU Taxonomy was published in the Official Journal of the European Union and came into force on the 12th of July 2020 (EC,n.d). It is a classification system that selects economic activities and sectors based on their impact on six main environmental objectives: climate change mitigation, adaptation, protection of marine resources, transition to a circular economy, pollution prevention and protection of biodiversity. It establishes clear requirements for each economic activity transitional or enabling called a technical screening criterion based on science-based criteria. It also requires that the economic activities respect minimum social safeguards.

The idea of sustainability in private companies and projects is not new, it started out when stakeholder engagement was valued and the concept of CSR being introduced until companies' objectives were not only economical but also social and environmental. In 1987, the United Nations introduced the concept of sustainable development reinforcing the importance of the environmental and social dimensions. Several methods to actually measure sustainability indicators were developed in order to create a common understanding of what is considered sustainable. In parallel, different international sustainable assessment tools were being created and applied like the World Business Council for Sustainable Development, the GRI Standards or the ISO 14031. More recently, the IFC Performance Standards have been widely used especially among developing countries and markets. They entail 8 environmental and social objectives: risk

management, labor, resource efficiency, community, land resettlement, biodiversity, indigenous people and cultural heritage.

Both sustainability assessment tools, the EU Taxonomy and the IFC Performance Standards encourage financing of sustainable projects by validating them. They have some similar concepts and differences mainly there's a difference in procedure and the IFC Performance Standards contain more of a social dimension. Since the EU Taxonomy is still a work in progress as opposed to the IFC PS that have been in the market for years and that the requirements are significantly more rigorous, the IFC PS would be considered more efficient in practice. Furthermore, the IFC PS are more international whereas the EU Taxonomy is naturally more EU focused.

The green bond market is growing significantly, in fact it is almost doubling in growth every couple of years and the EU is seen as a global leader in green bonds therefore it is heavily part of its sustainable finance strategy to reaching the Paris Agreement targets set. VERBUND, Austria's largest utility company aims to be a market leader in finance and contribute to the first environmental objective of the taxonomy: climate change mitigation. Therefore, VERBUND will allocate "VERBUND bonds", to eligible green projects that contribute to climate change mitigation measures as outlined in the EU Taxonomy. In this paper, we have explored how the taxonomy would be applied within the financing via "VERBUND bonds" of the reinforcement of hydropower plant. There are definitely notable advantages to the taxonomy as it allows for a common green approval stamp which harmonizes the financial green market and creates an environmental of clear understanding and transparency as to what is sustainable which eliminates green washing. As a result, more trust is built and thus more investment towards sustainable projects and businesses. However, it faces many challenges and limitations as well. The EU Taxonomy is still a work in progress and therefore it is still constantly changing which makes it difficult to use a solid comparison tool at the moment especially considering that some activities and sectors are not included at the moment.

Furthermore, it entails massive implications and changes to investors and companies that are money and time consuming. Some companies might not be willing to go through all that extensive procedure work which includes constant monitoring and reporting especially since the Taxonomy's requirements will be constantly changing. Other

international tools are more solid accepted so far such as the IFC PS since they are more internationally recognized and easier to use. Furthermore, it is worthy to mention that the Taxonomy is a governmental tool and thus to some extent political which automatically creates a division due to difference of opinions as we have witnessed in the case of nuclear and gas energy.

This thesis research would be considerate as timely as the topic is extremely relevant at the moment and the EU Taxonomy is still undergoing changes. When I approached company managers asking them about their opinion regarding the Taxonomy, the most common word to describe it was "complicated". Hopefully, this research with the examples gathered brings some clarity as to how the general process goes with each of the steps explained. However, as I do not have a background in finance, the research does not go too in depth in how to practically issue green bonds or how to manage them properly while aligning with the taxonomy. Furthermore, it is difficult to hold a judgment on a work that is still relatively in progress. For instance, when comparing it to the IFC PS and stating that it offers more objectives with social dimensions since the it is predicted that the EU Taxonomy might develop and add the social aspect later on. Also, there aren't many resources and case studies of the practical usage of the EU Taxonomy since it is relatively new.

As a result, I believe that the EU Taxonomy is an extremely important step forward in the right direction and a pivotal tool in creating long term transformation but I also think that it might need adjustments especially in the way it is being communicated to make it more efficient in practical terms and more accepting to transitioning activities since some corporations might find that although thy are able to demonstrate sustainable indicators and showcase an impact on one of the environmental objectives, their activity might not be eligible under the Taxonomy due to the very strict or sometimes unclear requirements. Forcing drastic change even, if necessary, might create resentment and thus the opposite behavioral change we would like to see therefore I believe that today the EU taxonomy constitutes more of a burden for project developers seeking to take part in the energy transition.

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