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Green corporate bonds in Greece: Implementation of the legal framework for the issuance of green bonds, through the establishment of criteria according to European standards (EU Green Bond Framework & EU Taxonomy Regulation)

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I hereby declare that the work submitted is mine and that where I have made use of another's work, I have attributed the source(s) according to the Regulations set in the Student's Handbook.

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## **ABSTRACT**

This dissertation was written as part of the MSc in Energy Law, Business, Regulation & Policy at the International Hellenic University. The present dissertation deals with the research topic of green bonds and legal framework of issuance according to European standards. A key focus lies on EU Taxonomy Regulation and the new EU Green Bond Framework. This dissertation uses a literature research approach.

The great climate change observed in recent years has troubled all social and political actors. In recent years the political debate has shifted to the field of environment and renewable energy. In this context, most countries have taken coordinated action to address the problem through transnational agreements and policies (Council on Foreign Relations, 2021).

In this environment, the growth of green bonds began gradually, and their demand is growing exponentially every year, as investors internationally concerned about climate change and prefer to invest in activities and products that contribute to tackling climate change and in the transition to a carbon-neutral economy. However, green bond issuance in the EU currently accounts for only 2.6% of total EU bond issuance. The further development of this market requires the extensive use of an internationally accepted standard in order to have a common language for evaluating and taxonomy activities into green and non-green. The European Union started with the creation of a mechanism - a regulation for the taxonomy of green activities and investments. The creation of this common language was necessary not only to develop the market for green financial products but also to focus available funding on projects and activities with a positive mark in the climate and the environment. The target for zero carbon emissions by 2050 will give the necessary impetus for lending on more favorable terms for green investments. The regulation targets two main areas:

Reducing the fragmentation of the use of National or local standards and practices that increase investor skepticism and, secondarily, reducing the phenomenon greenwashing while projects presented as green without covering basic environmental standards. The publication of the classification regulation is an essential tool for the development of the green bond market, which with the development of an acceptable

standard can evolve as one of the most efficient and innovative financing tools that will strengthen policies and efforts to address environmental degradation.

Keywords: Climate Change, Green deal, EU Taxonomy, EU Green Bond.

Eleftherios Barmatsalos

28/02/2022

## **PREFACE**

I feel deeply obliged to express my appreciation to all who contributed to the completion of this dissertation. I feel so thankful to all my families, friends, as well as my supervisor. They all gave me courage and inspiration. I also want to thank my fellow students who support me and helped me especially because they believed that I could finish this difficult study. Finally, i would like to pay gratitude to my supervisor Prof. Christos Grose who believe in my potential and lead my on the right way by giving me instructions and advices.



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## Introduction

The first major step in the fight against climate change worldwide was the establishment of the United Nations Framework Convention on Climate Change (UNFCCC) in 1992 in Rio de Janeiro. The next step in international climate change agreements was the Kyoto Protocol - adopted in 1997 and entered into force in 2005. On 12 December 2015, we have the Paris Agreement aimed at strengthening the global response to the threat of climate change. The European Union has been at the forefront of this struggle from the outset with many actions and legislative initiatives. The European Union Green Agreement is the first comprehensive 10-year € 1 trillion investment plan to reduce greenhouse gas emissions.

Today the European Green Deal is the basic strategy plan for the transition of the economy to a different development model, a model of sustainable economic development. The main objective of the Green Deal is E.U. become the first climate neutral continent by 2050 (European Commission, 2019). This ambitious strategic plan requires huge funding more than 1 trillion euros. The main financing pillars are the EU budget, the EU Emissions Trading System and the Invest EU Program. In this context to achieve all these ambitious targets every member state should drive investments in sustainable projects and business activities. In order to have a common definition and a common classification scale for environmentally sustainable economic activities, the European Union has adopted the Taxonomy Regulation - Sustainable finance taxonomy - Regulation (EU) 2020/852 (European Commission, 2021).

The adoption of the term "environmentally sustainable investment" in the context of the priorities and objectives of the Green Deal has led to the need to develop the green bond standard (GreenBondStandard) to create the appropriate and stricter criteria for developing the green bond market. The need to establish a central accreditation system is necessary in order to have the possibility for verification before and after the issuance but also for monitoring the effects (Sievänen, 2019).

The Finance Ministry in Greece is looking into issuing its first green bond in the first half of 2022, during which the ECB's emergency bond buying program (PEPP) and creating a framework for issuing green bonds. The green bond market is evolving rapidly even though in Greece green bond issues are few and quite recent.

## **1. International Developments in Green Economy**

In recent years, there has been widespread concern about the environmental impact of development as well as the consequences of climate change. This reflection has led to European and global initiatives at the political level with the signing of treaties and other transnational agreements.

### ***1.1. Institutional and International Actions in Green Economy***

The main focus of these decisions is to take measures to mitigate the effects on the environment and to combat climate change. After the Vienna Convention (1985) and the Montreal Protocol (1987), which provided for several non-binding administrative and legal measures, we have the Kyoto Protocol (United Nations Framework Convention on Climate Change, 1997) which is the starting point for decisions with specific measurable objectives. More specifically, a goal of reducing carbon dioxide (considered one of the most harmful and to blame for global warming) by at least 5% compared to the corresponding levels of 90. The Kyoto Protocol entered into force in 2005 and was preceded by its incorporation into Greek law by law 3017/2002. Currently, there are 192 Parties to the Kyoto Protocol.

In Doha, Qatar, on 8 December 2012, the Doha Amendment to the Kyoto Protocol was adopted for a second commitment period, starting in 2013 and lasting until 2020. The Kyoto Protocol places great emphasis on the actions required by developed economies as it identifies greater responsibility for high levels of GHG emissions in the atmosphere. In Doha (2012) was adopted for a second commitment period, starting in 2013 and lasting until 2020 (the Doha Amendment to the Kyoto Protocol). The amendment entered into force on 31 December 2020. Among other countries, Greece agrees to fulfill its commitments under Article 3 of the Protocol for the second commitment period. The European Union, in the context of promoting sustainable development, proceeded in 2018 to develop a European action plan by developing in key areas a new strategy that is much more environmentally friendly with a supervisory body in PRI (Principles for Responsible Investment, 2018). In this context,

the aim is to direct capital to sustainable long-term investments in a framework of transparent procedures. The action plan includes a roadmap with methodologies and funding opportunities for the green transition to a climate-neutral planet. The action plan includes a roadmap with methodologies and funding opportunities for the green transition to a climate-neutral planet. The plan includes legislative proposals in 4 key areas:

- a. Taxonomy
- b. Disclosure and duties
- c. Benchmarks
- d. Sustainability Preferences (consultation)

The next goal was to organize and legislate these commitments in a regulatory framework for the Member States, a European Climate Law (European Commission, 2020).

## ***1.2. Green Deal***

Through the fair transition mechanism, the European Union will invest more than 100 billion euros in the period from 2021 to 2027 in countries affected by the fair transition. European Union policies planned from 2020 onwards will be legislated under the roadmap drawn up by the Green Agreement (Siddi, 2020). The success of the green agreement will be judged, among other things, by the ability to finance the transition to renewable energy sources and the reduction of the carbon economy at a time when an environment of uncertainty is being created after the economic crisis. In the long run, the institutions of the European Union should be able to legislate and impose measures for the implementation of the Green Agreement. The difficulty of achieving the goals of zero greenhouse gas emissions has been increased by the dominance in the international political scene of Donald Trump and Jair Bolsonaro (Fraune and Knodt, 2018). The difficulty of achieving the goals of zero greenhouse gas emissions has been increased by the dominance in the international political scene of Donald Trump and Jair Bolsonaro (refusers of climate change). From another

perspective, this situation has given the European Union an advantage in taking initiatives and strengthening its profile in the fight against the climate change.

A very important question that arises from all the above is the cost of the green transition and more specifically the achievement of the goals of the green agreement. A very important question that arises from all the above is the cost of the green transition and more specifically the achievement of the goals of the green agreement. Achieving the energy and climate targets of 2030 requires investments ranging from 175 billion euros to 290 billion euros without this being able to be accurately calculated. The European Commission's latest estimates put the financial investment gap at € 260 billion a year. Most of it concerns investments in the housing sector while the contribution of the change of consumer behavior is extremely important but quite painful. In order to maintain the existing standard of living in the long run, significant investments are required today. The European Sustainable Development Investment Plan envisages only € 100 billion a year (Claeys, Tagliapietra and Zachmann, 2019), creating uncertainty about the possibility of financing and achieving ambitious goals. The main tool for financing investments that will make a decisive contribution to achieving the objectives remains the European budget with an increase in expenditure contributing to the climate targets for 2030 and 2050 from 20% to 25% in the multiannual financial framework for the period 2021-2027. The contribution of the Structural Funds is particularly important in some countries and plays a significant role despite the fact that the amounts are relatively small in relation to funding needs. It is very important to achieve the objectives beyond the commitment of the necessary resources to develop a more rational methodology for categorizing expenditure (European Court of Auditors, 2016) so that each action is characterized by its carbon content in order to increase the efficiency of the European Union budget. The European financial framework can play an important role in achieving investment by Member States by using a special green investment exemption clause that can have a significant long-term effect on achieving the objectives. The adjustment of fiscal rules in the context of achieving the objectives of the Green Agreement is necessary but also compatible with the long-term sustainability of public finances. The current clause already allows deviation from the medium-term objective of the structural balance for

investment financing with positive, direct and verifiable long-term effects on growth and on the sustainability of public finances.

The only Member State that refused to commit to zero emissions in 2050 was Poland. Achieving the goals requires different effort intensities depending on the dependence of each economy on coal and fossil fuels. To address this transition cost, it was proposed to set up a fair transition mechanism as well as a fair transition fund to finance similar actions. In this context, the Green Agreement provides strategic and operational frameworks (carbon border adjustment mechanism, the Sustainable Europe Investment Plan, an EU industrial strategy, a circular economy action plan, a new EU Biodiversity Strategy to 2030, farm to fork sustainable agriculture strategy) with objectives and a framework of rules that should be implemented in specific timetables (Szulecki, 2020).

### ***1.3. European Climate Law***

The European Union's organized effort to achieve the goals of a climate-neutral economy in 2050 under the Paris Agreement was instituted with the adoption of Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021, establishing a framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ("European climate legislation"). This regulation set as binding the temperature target of the Paris Agreement as well as the neutrality of the European Economy by 2050. It also sets a binding EU target for a clean domestic reduction of greenhouse gas emissions by 2030. The adoption of all the necessary meters in national and European level in order to achieve the above objectives of climate neutrality in an environment of justice and development between Member States. It is important that specific intermediate goals are set as milestones in order to be able to evaluate and control the incentives given in this direction. The European Commission, in addition to the systematic monitoring of the indicators at European level, but also of each Member State individually, will have the opportunity, based on the evaluations, to make recommendations to the Member States. Member States are then required to document their actions in relation to its recommendations

or reasoning if it does not take the Commission's recommendations into account (European Parliament and Council, 2021). The main function of European Climate Law is the transformation of political actions into a binding legal obligation. The enactment of the Green Agreement and the activation of the "NextGenerationEU" recovery plan, which together with the long-term EU budget totals more than € 1.8 trillion, will give a significant impetus to the sustainable transformation of the Union's economies (Treude, 2022). According to the UNEP 2019 Emission Gap Report (UNEP 2019), global emissions should be reduced by 7.6% between 2020 and 2030. Serious chances of limiting the rise of global temperatures to 1.5°C.

In Greece, the new climate law is still under consultation and the bill essentially comes to a large extent to integrate the European climate law. Greece is a country that is particularly vulnerable to climate change with the consequences being evident in recent years. However, the Climate Law does not seem to be bold enough. Several countries have already adopted legally binding National Climate Laws with much stricter targets than their European counterparts:

- ❖ Germany (2045)
- ❖ Sweden (2045)
- ❖ Denmark (2050)
- ❖ United Kingdom (2050)
- ❖ Ireland (2050)
- ❖ France (2050)
- ❖ Luxembourg (2050)
- ❖ Hungary (2050)
- ❖ Spain (2050)
- ❖ Finland (2035)

The climate law has also received significant criticism from the Green Party, which calls for the climate law to be more environmentally friendly with a smaller dependence on gas and a greater emphasis on energy storage technologies (Prasinoi, 2022).



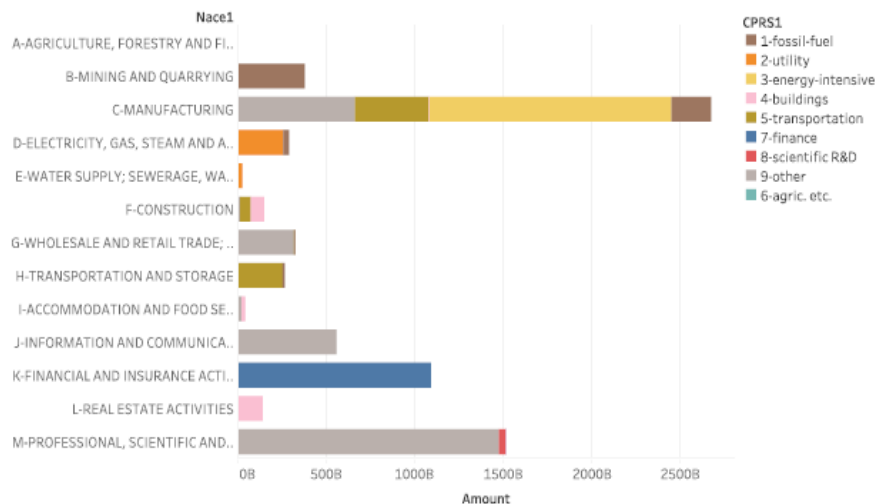
Despite these important legislative and policy interventions, it should be noted that in 2021 there was the largest (since the beginning of the economic crisis in 2010) annual increase in greenhouse gas emissions in the energy sector (by more than 6%), as a result of the relaxation pandemic restrictive measures and inadequate fossil fuel recovery policies (Greenpeace, 2021).

### ***1.3. Fair Transition Mechanism (FDM)***

The main axis of all the above political decisions and the development of the institutional framework is the financing of the green transition. That is why the Fair Transition Mechanism (FDM) has been created, which essentially functions as a key tool for financing the transition to a climate-neutral economy in a fair way for European economies. There are economies with significant carbon dependence that will be hit hardest by the green transition. That is where the mechanism of fair transition comes in to mitigate these effects. The main axis of all the above political decisions and the development of the institutional framework is the financing of the green transition. That is why the Fair Transition Mechanism (FDM) has been created, which essentially functions as a key tool for financing the transition to a climate-neutral economy in a fair way for European economies. Additional support is provided both by the investment plan INVEST EU and by public loans with the support of the European Investment Bank (European Commission, 2020). There are economies with significant carbon dependence that will be hit hardest by the green transition. That is where the mechanism of fair transition comes in to strengthen the specific economies with greater intensity. The fund has 55 billion euros to finance the green transition during the period 2021-2027. The targeting of the mechanism is in three axes: regions, employees, and industry. In addition to the very important funding, the initiative includes technical and consulting support. Also, a database with the institutional - regulatory framework and best practices from all over Europe. The enormous challenge of a socially just transition is concerning almost all European States and especially the 41 lignite regions of the European Union. In Greece we have three

regions with carbon dependent economy: Kozani, Florina and Arcadia. The financial aid (294 million €) is too small for this big challenge (The Green Tank, 2020). Greece plan is planning to withdraw 4.4 GW of lignite power by 2023 and full detoxification from lignite by 2028 at the latest. According Claeys and Tagliapietra (2020) the biggest funding for Green deal will be by the private sector (60% of the total funding). On the one hand, financing the transition to a neutral climate economy requires significant economic sacrifices from both the Member States and the European Union. On the other hand, Europe that is not energy secure is expected to focus all its efforts on switching to renewable energy projects which, given the storage problem, do not seem to be a safe route. Many Member States do not consider decarbonisation process, a priority during pandemic and many problems seem to exist in the implementation of ambitious policies and decisions (Tagliapietra, 2020).

In the graph below we can see a brief picture of the classification of economic activities in relation to the cost of transition (disorderly) in a low carbon economy.



Graph 1. Breakdown of market capitalization by NACE (1 digit) and CPRS (level 1)  
Source: Taxonomy Technical Report

## **2. Green Bonds**

A green bond is as a normal bond, a debt security. The only difference is that green bond is issued to raise capital specifically to support climate related or environmental projects (Freeburn and Ramsay, 2020). We can present the green bonds as a type of bond evolution.

### **2.1. Bonds**

Bonds are a common type of securities. Bonds are investment tradable products that are traded in the financial market. All bonds have an economic value because bonds are a title of debt and a right to distributed profits. Issuer of a bond usually are countries, companies or banks which has the obligation to pay the nominal value of the bond to its holder, at the end of the contract. The contract is a legal document that states the obligations of the issuer. Also coupon is very common in bonds, the issuer is obliged to pay the interest as well the nominal value. We can say that bonds are a type of loans with a noticeable difference in the way they are repaid. While bonds are repaid at maturity and interest is paid in all the duration, bank loans have interest-bearing installments. Initially these debt securities had a specific, short-term duration with a fixed interest rate for it and were considered low risk and return. The last years are considered long-term debt securities with high credit risk and variable interest rates.

Compared to equities, bonds can be traded both on market and over-the-counter (OTC). In fact, there is no bond market. While some bonds have some same characteristics with preferred stock, bondholders are considered creditors, so they have priority from shareholders in a possible event of company liquidation or bankruptcy. On the other hand, bond holders do not have the right to take part on company's management as shareholders. Unlike shareholders, bondholders have the option of declaring the company bankrupt if their contractual obligations are not met. Governments usually issue bonds to meet their borrowing needs. Businesses, on the other hand, often choose to issue bonds to meet their financing needs with the participation of more than one lender. The most common government bonds are two-

year, five-year or ten-year. Bonds have often been used as a tool to control money supply with the US Federal Reserve making frequent use of this tool (Moorad Choudhry, 2006).

## **2.2. Green Bonds Development**

Green projects are described all these projects and activities that promote the development of environmentally sustainable activities, as defined by the bond issuer and in accordance with the issuer's project evaluation and selection process (Green Bond Principles, 2014). The green corporate bonds are funding present or future corporate projects which have climate or environmental benefits. The scope is very large and usually refers to energy efficiency projects (renewable), waste management, sustainable water management, pollution prevention and sustainable agriculture and forestry. Green bonds were created to finance projects with positive environmental impacts and to transition to a low carbon economy

There are 5 main types of Green Bonds issues:

1. Corporate green bonds,
2. The Municipal green bonds
3. The state green bonds
4. The federal green bonds
5. The bonds of international organizations.

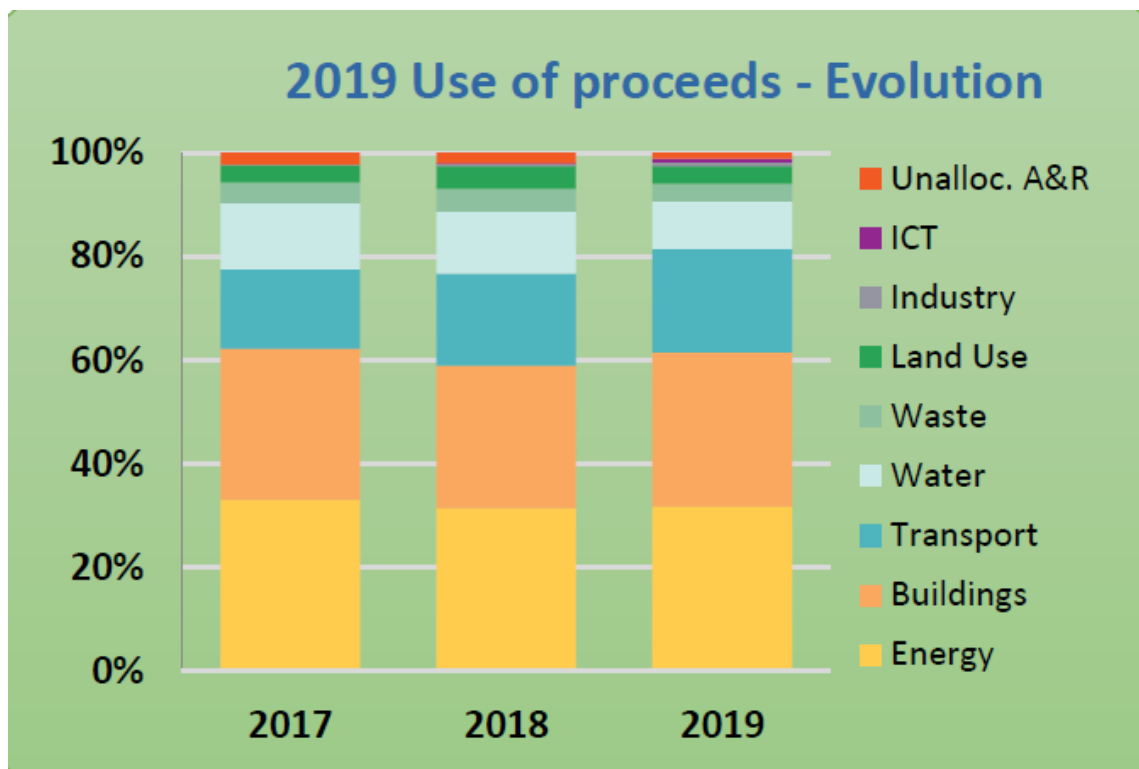
In 2007 European Investment Bank issued the first green bond, allocated exclusively to climate change mitigating activities in line with EU's sustainability objectives (EIB,2021). Then, in 2008, the World Bank (International Bank for Reconstruction and Development) launched the first labelled green bond (World Bank, 2019) covering a specific demand from

Scandinavian pension funds, which were seeking to support climate-focused projects through a simple fixed-income product. The specific movement was part of the World Bank's strategy to develop action for climate change (Freeburn and Ramsay, 2020).

These issues were the starting point for the rapid growth of green bonds throughout the world market. Yields on green bonds have been high since the beginning of their

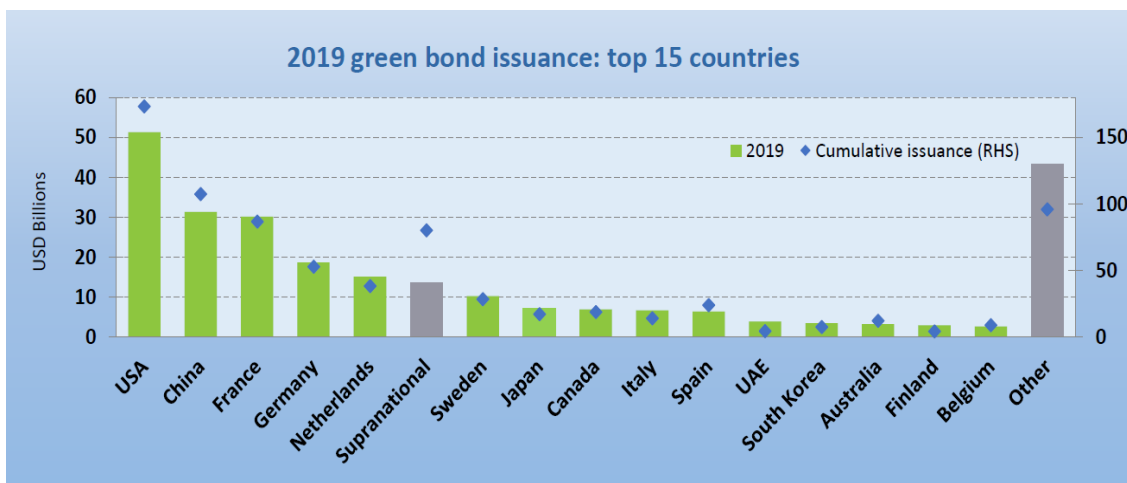
mass issuance. While their growth has been geometric in recent years the percentage remains a very small percentage of the total bond issue, about 1% of USA market in 2013 ((Climate Bonds Initiatives, 2018).

In 2019 clean energy made up 31.5 per cent of the use of proceeds of green bonds. From 496 issuers 1788 green bonds (Climate Bonds Initiative,2020). Below there is a graph with the use of proceeds of Green Bonds for the last years. The bigger use was on energy and buildings.



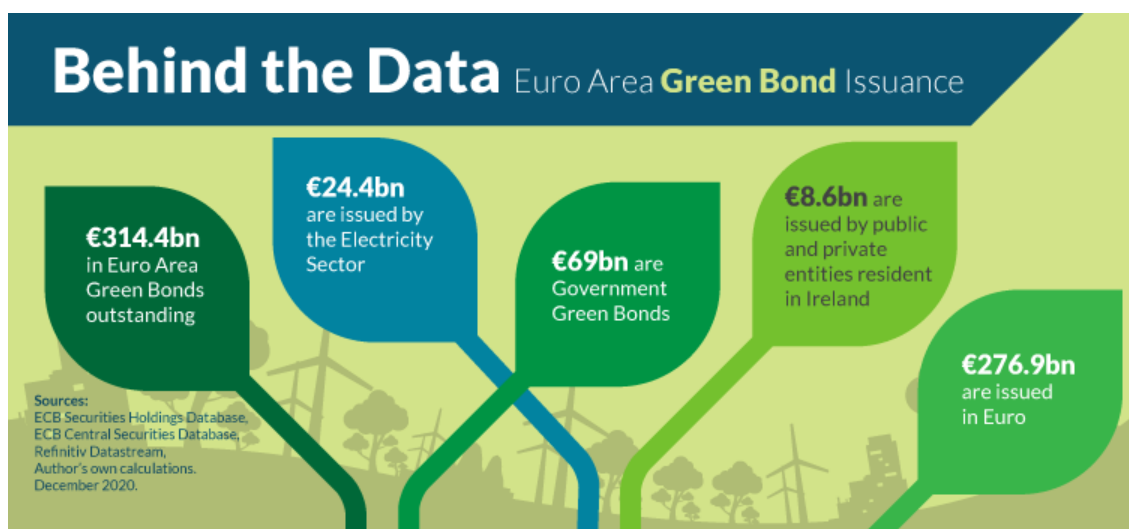
Graph 2. Evolution of Use of proceeds (2019) Source: Green Bonds Market Summary 2019

In recent years (2015 to 2019), the largest issuer of green bonds is the European Union, followed by the United States and China.



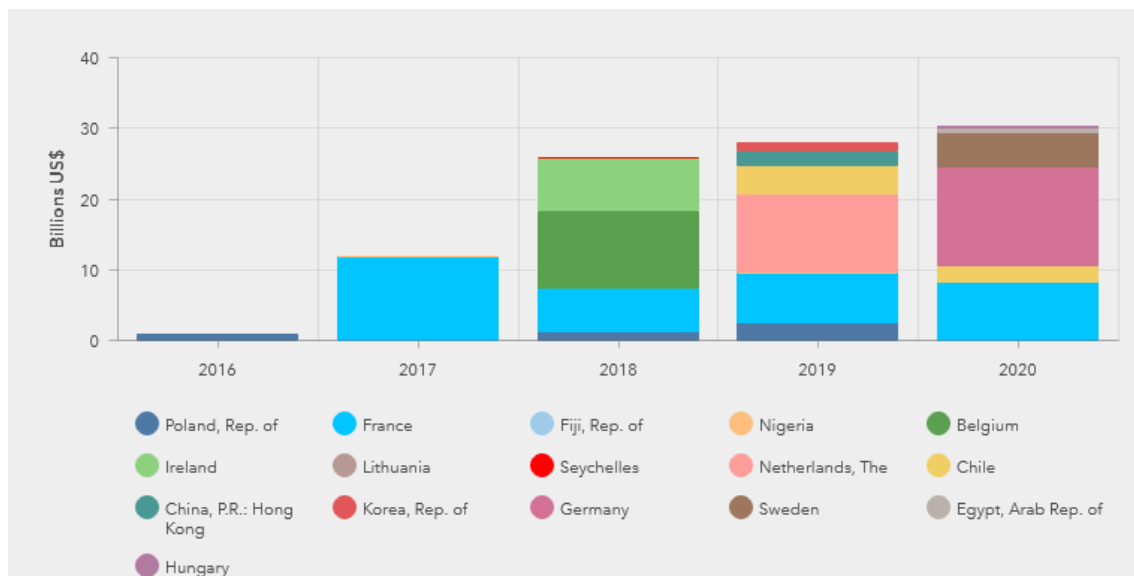
Graph 3. 2019 Green Bond Issuance. Source: 2019 Green Bond Market Summary

It is important to emphasize that according to the data of climate bond initiative (2020), the issuance of green bonds in 2019 compared to 2014 have increased by more than 700% (from 28 billion euros to 230 billion euros). Despite the fact that their participation in the global bond market is very small, this huge increase reflects the significant dynamics of recent years, which is in full agreement with the aims and objectives of both the Paris Agreement and those discussed at GOP26 in Glasgow. The largest issuer of green bonds in the Euro area is credit institutions with approximately 95.6 billion euros at the end of 2020. Government green bond issues are estimated at 69 billion euros in the same corresponding period. In the following graph is presented a snapshot of euro area green bond issuance.



Graph 4. 2019 Green Bond Issuance. Source: 2019 Green Bond Market Summary

According to IMF climate change dashboard The largest issuers of green bonds in the Eurozone are the countries of Central Europe. Green bond issuers in France, the Netherlands and Germany together account for about 75% of the amount outstanding by the end of 2020.



Graph 5. Sovereign Green Bond Issuances by Country. Source: IMF Climate Change Dashboard

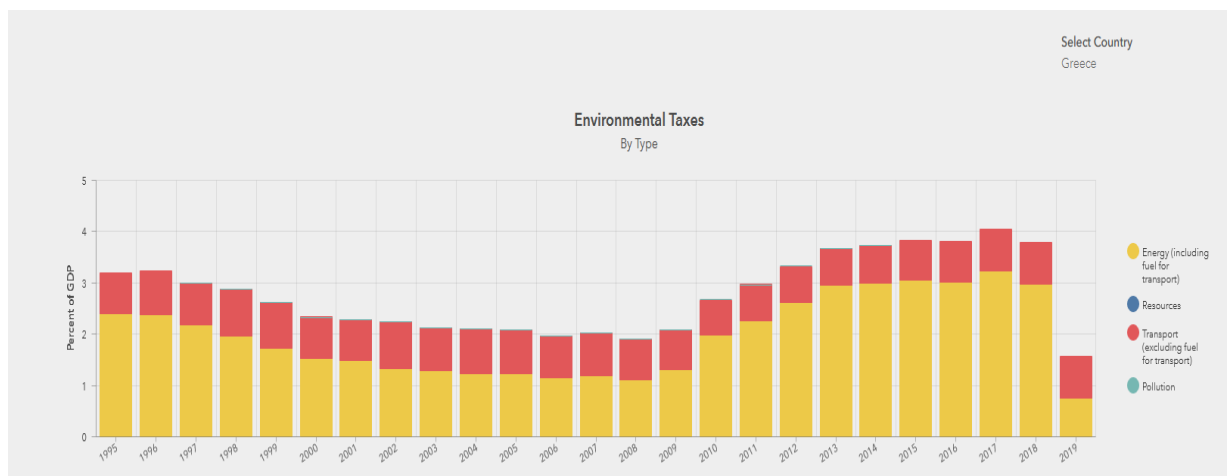
It should be mentioned that EBRD's green financing hit a record €5.4 billion, or 51 per cent, of total business volume of €10.4 billion in 2021. Bank's strong dedication to finance green projects has significant implications for the global effort to decarbonize the economy and enable the transition to a sustainable growth model (Bennett, 2022). Despite the fact that the pandemic of Covid-19 and its response measures significantly reduced the possibility of financing several initiatives, the bank managed to achieve these impressive figures by the implementation of the Green Economy Transition (GET) 2021-25 approach (which focus on building green, low carbon and resilient economies (The Green Economy Transition 2021-25, 2022)).

Based on all the above and the overall strategy of the European Union, the "green" corporate bonds are expected to dominate in the coming years as an investment option, in view of the EU commitment to reduce emissions by 55% by 2030. A Very important fact for the development of this market is that the European Central Bank

(ECB) has included green bonds as eligible for financing, under the securities purchase programs (ECB, 2018).

### 2.3. Green Corporate Bonds in Greece

The most common form of tackling climate change to date is the imposition of environmental taxes. An environmental tax is a charge levied by the state per unit of product on a good that has been shown to have a negative effect on the environment. A classic example of such a unit is a ton of waste that should end up in a landfill. In Greece, the most common type of environmental tax is the fuel tax, which places a significant burden on prices. Observing the relevant index, it is understandable that the state, through the exercise of government policy, is tackling climate change. In the following diagram we see the evolution of environmental taxes in Greece in recent years and their distribution into product categories and sectors

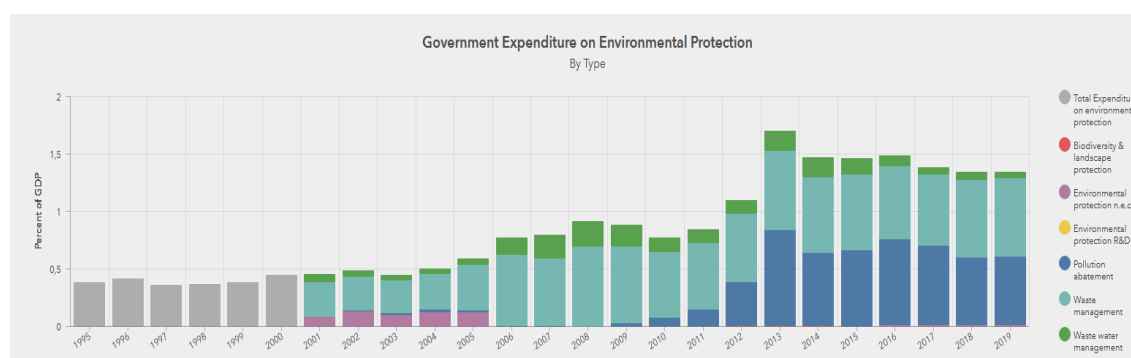


Graph 6. Environmental taxes in Greece. Source: OECD Environmentally Related Tax Revenue; IMF Statistics Department Questionnaire.

To tackle climate change beyond taxes the government is funding actions and spending on protection measures. This following graph shows how much money Greece government spends on environmental protection measures, as a percentage of the country's GDP. These measures are part of a defined set of activities, as described



in the Government Functioning Classification (COFOG) framework, and include pollution reduction, biodiversity protection, waste management and more.



Graph 7. Government Expenditure on Environmental Protection. Source: IMF Government Finance Statistics (GFS); IMF Statistics Department Questionnaire

A different approach to tackling climate change is to finance projects with a green impact. A very common financing tool is bond issuance. Bonds represent the choice of most investors who choose not to take a high level of risk as they usually have ratings from major credit rating agencies such as Fitch and Moodys. Corporate bonds are issued both to companies within the regulated market and to companies operating outside the stock market. Corporate bonds usually have a specific maturity period. The coupon (if there is any) is the interest on the corporate bond. Bonds enable their issuer to finance long-term investments with external funds. Usually in periods of low interest rates, companies issue bonds in order to implement investment plans and refinance the company's lending (Syriopoulos,2008). The choice of corporate bonds by investors is made mainly for the reasons of diversification of the portfolio (Papadamou, 2009) as well as for obtaining a regular fixed income until the maturity of the bond.

The Greek economy was slow to adopt the shift to a green economy and in this context, there was a delay in the growth of green financial products. The issuance of the first green corporate bond took place in October 2019 by TERN A S.A. The first green bond was 150 million euros with a nominal value of one thousand euros. During the bidding process, the bid was higher at 684 million euros and the issue was exceeded. 65% was covered by private investors and the remaining 35% by specialist investors who had undertaken from the contract to cover part of the bond. It should

be noted that an amount of 18 million euros was covered by the European Investment Bank (EBRD, 2019). The main contractors of the public offer and coordinators of the offer book were the National Bank of Greece, Piraeus Bank, Eurobank and Alpha Bank. Also Optima Bank and Euroxx Securities was contractors of the public offer. The bond with an interest rate of 2.6% and a seven-year maturity belongs to the category of fixed income securities. From the 150 million euros, 90 million euros concern the financing and 60 million euros the refinancing of the development of wind farms in Greece and America with a total capacity of 415 MW (Terna Energy, 2019). Prior to the issuance, the joint bond loan was verified by the consulting company Ernst & Young (Ernst & Young, 2019) based on requirements of Climate Bond Standard (version 2.1.) and received the certification «Certified Climate Bond» from the organization Climate Bond Initiative (Climate Bond Initiative, 2019).

The second green bond for the Greek market was the issuance by the National Bank of Greece of a green bond worth 500 million € 0 in October 2020. This was the first high-security bond with a coupon of 2.75% and a yield of 2.875% with a duration of 6 years and the possibility of revocation in five years. The purpose of the publication was to finance projects in the energy sector where the bank already has 40% of the financing of the RES sector while additional targeting is optimization of the capital structure of the bank (NBG, 2020). The transaction attracted the interest of a large part of the investing public, raising funds amounting to approximately € 1.2 billion with the participation of 80, most of them foreign, institutional investors. BNP Paribas, Commerzbank, Goldman Sachs International, HSBC and Morgan Stanley acted as co-organizers of the book.

Allen & Overy and the law firm Karatzas & Associates acted as legal advisers to the NBG. The EBRD also participated in the financing with an amount of 50 million euros, while the green bond was issued based on the principles (GBP) of ICMA for green bonds (ICMA, 2018). April 21 of 2020 we have the external opinion that the National Bank of Greece Green Bond Framework aligns with the four core components of the Green Bond Principles 2018 (Sustainalytics, 2020)

A company that attaches great importance to the promotion of sustainable development and the protection of the environment is the company Mytilineos S.A. The company issued the first green bond, with a nominal value of € 500 million, with an interest rate of 2.25%, maturing in 2026 and a 100% issue price (Mytilineos, 2021). The issuance of the "green" bond of Mytilineos, through which the company raised 500 million euros followed by 2 records. The first concerns the duration of the roadshow, as the book of offers opened just two days after the start of the meetings of the General Coordinators of the issue, on behalf of the company, with investors investing in fixed income securities in Europe. In fact, the investment interest proved to be so intense, that it "brought" the second record of the publication, with the book closing in less than 24 hours. The above two firsts are added to the significant over-coverage, as insider.gr wrote, the offers (close to 1.8 billion euros) exceeded by almost four times the raised funds.

Either directly or indirectly, all of the net capital will be used for "green" investments. Thus, for all the amounts of the issue allocated for the repayment of existing loan obligations, there will be equivalent capital expenditures for the development of "green" projects and infrastructure. The main target is the development of photovoltaics with a total capacity of 1.48 GW, which were recently acquired by the company from the Egnatia Group. BNP Paribas, Citigroup Global Markets Europe AG and HSBC Continental Europe S.A. acted as Joint Global Coordinators, and Alpha Bank SA, Credit Suisse Securities, Sociedad de Valores SA, Eurobank SA, Goldman Sachs Bank Europe SE, J.P. Morgan AG, Morgan Stanley Europe SE, National Bank of Greece SA, Nomura Financial Products Europe GmbH and Piraeus Bank SA acted as Joint Bookrunners. HSBC Continental Europe S.A. also acted as a Green Structuring Advisor. This bond issue was the starting point for the creation of the "MYTILINEOS Green Bond Framework", based on which it will be able to issue one or more Green Bond issues.

A part of the "MYTILINEOS Green Bond Framework" is the identification of green projects that can be financed in accordance with the international principles of green bonds published by the International Capital Market Association (ICMA). The "MYTILINEOS Green Bond Framework", has the positive opinion of ISS ESG, one of the

largest Second Party Opinion Providers internationally, with the highest possible score on the ISS-ESG scale, according to which the overall quality of MYTILINEOS is ascertained as well as the significant contribution of the Company to specific Global Sustainable Development Goals. In addition, in order for investors and other stakeholders to follow the evolution of the issuance of Green Bonds of MYTILINEOS and to be informed about the way in which the revenues from the green bonds are used, the Company will publish a special report "Green Bond Allocation & Impact Report", as part of the Sustainable Development Report which it publishes on an annual basis.

Piraeus Bank issued the first green bond in October 2021, raising 500 million euros, while the offers reached 850 million euros. 52% was covered by foreign institutional investors while 48% by the Greek market (Kathimerini, 2021). The green bond structuring advisor of the issue was BNP Paribas while the main joint managers of the issue were BofA Securities, Goldman Sachs Bank Europe SE, BNP Paribas, Morgan Stanley, Nomura and UBS Europe SE. The coupon was 2.75% and the duration is 6 years with the possibility of revocation to five years. The issue was based on the ICMA principles for "green" bonds, while the purpose was to finance new green projects (50%) and refinance existing loans (50%) (Piraeusholdings, 2021)

The maturation of the Greek market but also the trend for growth of financing in environmental and social sectors led smaller companies to issue green bonds. A typical example is the case of Noval Property.

Noval Property announces that on January 31, 2022 it proceeded with the full refinancing of the long-term Bond Loan through the proceeds of the Green Bond Loan issued by the Company. This loan is related to the completion of an office building in Chalandri, "THE BUTTERFLY" with LEED v4 for Core & Shell - Gold certification.

The amount of refinancing amounted to EUR 5.33 million and includes capital and corresponding interest for the interest period ending 31.01.2022, as provided in Annex 5 to Article 2.1 (i) of the Green Bond Program. The Company will inform the Athens Stock Exchange and the Hellenic Capital Market Commission about the use of the raised funds until their final disposal (energypress.gr, 2022). Briefly in the following

table we present the basic data of the 3 major corporate green bonds issued in the Greek market

<b>Company Name</b>	<b>Worth Of Bond</b>	<b>Interest Rate</b>	<b>Maturity</b>	<b>Purpose of Publication</b>
TERNA SA	150 m €	2,6%	7 years	Finance and Refinance Wind Farms
NATIONA BANK OF GREECE SA	500 m €	2,875%	6 years	Finance Energy Projects (mainly RES)
MYTILINEOS SA	500 m €	2,25%	5,5 years	RES and Productions of Green Aluminum
PIRAEUS BANK SA	500 m €	2,7%	6 years	Finance and Refinance Energy projects

*Table 1: Green Bond Comparison Table*

As we can see in the table above, all the green bonds were issued with a significantly lower coupon, enabling companies to finance green projects at a significantly lower cost. This image in relation to the significant offer that existed in all the above publications also shows the intention of investors to turn to environmentally friendly projects and to reward companies that turn to them.

The development of the green corporate bond market and the general shift to products with social characteristics led the Athens Stock Exchange in order to support and promote of internationally recognized best practices in communication between issuers and investors in the characteristics of sustainable investments available in the Greek capital market, the creation of the special information section "ATHEX BONDS GREENet".

In this section, there is a presentation of concentrated bonds that are traded in its markets and during their issuance they determined that following internationally defined standards (ICMA, CBI Certification, etc.), or will use the raised funds for financing Social or a combination of Green and Social Projects, or that their returns are linked to a sustainability clause (Athens exchange group, 2022). The plan to move to an environmentally friendly economy has been running at a rapid pace over the last two years and the growth of renewable energy sources can be greatly accelerated by the issuance of green bonds. The human geography of the country enables the achievement of high rates of development of renewable energy sources and the transition to a carbon-free economy. Financing the development of renewable energy

sources can give a significant impetus to the overall development of the Greek economy. Financing the development of renewable energy sources can give a significant impetus to the overall development of the Greek economy. At the moment it seems that Central Europe has the lead in the development of the green bond market but the comparative advantages of the country in the possibilities of developing projects in the fields of renewable energy sources enable it to achieve significant growth rates and to attract the interest of investors to finance projects with high quality green bonds

#### **2.4. Greenwashing**

In the effort to develop green policies, companies choose to issue green bonds in order to send a clear and strong message to investors about the company's commitment to environmental protection, an act compatible with the signal theory (Lyon and Montgomery, 2015; Flammer, 2020). On the other hand, the issuance of green bonds could be a form of deception of investors for the environmental awareness of the company and its intention to contribute decisively to the protection of the environment (Zhang et al, 2018). The use of green bonds without them being actually linked to financing environmental protection operations but only for characterizing the company as environmentally sensitive is called "Greenwashing" (Kirchhoff, 2000; Pearson, 2010; Walker & Wan, 2011; Neto et al 2020). Also common is the choice of green bonds by companies for access to cheaper lending as investors often reward green companies with lower interest rates in order to promote more environmentally friendly growth. For this reason, many companies choose to issue green bonds even if they do not intend to take actions and policies that help protect the environment but simply seek lower borrowing costs. There is significant scientific research in the past that shows that green bond financing has lower financing costs (Klassen and McLaughlin, 1996 ; Krueger, 2015).

In conclusion, the issuance of green bonds usually has one of the following three objectives:

1. The signaling of the company as committed to environmentally friendly actions and policies

2. Take advantage of investors' intention to finance companies that promote environmental practices and policies but do not actually apply green practices
3. Access to cheaper financing compared to traditional financing

### **3. Green bond regulatory framework**

The rapid increase in demand for green bonds as well as the pressure on achieving the goals of the green agreement, the reduction of emissions by 55% by 2030, intensifies the need to create a framework of rules for green bonds. The greenwashing phenomenon is a risk factor that must be tackled decisively and institutionally in order to secure the investors. The strategic choice by the European Central Bank to finance green bonds under the securities market program further reinforces the need to develop a regulatory framework for the verification of green bond issues. The need for efficient classification of green investments can only be verified through a specific classification standard that will verify both whether an investment is green and to what extent. The degree to which each project is green differs significantly and we can say that the projects have different shades of green depending on the type of each project. The need to standardize the ranking of a green bond in relation to securing expected returns will significantly increase investor confidence in the viability of their investments. Standardization should be based on a common language that will not confuse investors (Weber, and Saravade 2019). An important question that arises from the need for standardization is who is the body that should standardize and oversee the process as a whole. Market development requires a state regulatory framework, supervision and support (Weber and Saravade, 2018)

#### ***3.1. Green Bond Principles***

In 2014 and in the context of the development of an organized green bond market, the principles of the Green Bond (GBP) were issued by a consortium of major investment banks: Bank of America Merrill Lynch, Crédit Agricole, Citi, JPMorgan Chase, BNP Paribas, Deutsche Bank, Goldman Sachs, Daiwa, HSBC, Mizuho Securities, Morgan Stanley, Rabobank and SEBCiti (Climate Bond Net, 2014). It is essentially a set of guidelines that has now been audited by the International Capital Markets Association (ICMA), which operates as an independent authority. ICMA has as its main axis the evaluation of the bonds in order to be characterized as green as well as the report of



the use of the green bond income. The purpose is to promote the market of green bonds with voluntary instructions (principles) as well as to ensure quality information to all stakeholders (issuers, banks, investors, regulators, etc.). The main feature of the evaluation and characterization of green bonds is transparency and integrity, the main axes for the development of this market. It should be noted that the World Bank and IFC have their own criteria while the approach to the principles of green bonds does not support a strict process of explaining the degree of "green" of each bond as it is within the jurisdiction of the issuer. is more of a classification process into 8 major categories based on sectoral definitions by the scientific and industrial community. the categories are as follows:

- Energy
- Transport
- Buildings
- Water management
- Waste management & pollution control
- Industry & energy-intensive commercial
- Nature-based assets including land use, agriculture and forestry
- Information technology & communications (ICT)

The four core components for alignment with the GBP are:

1. Use of Proceeds
2. Process for Project Evaluation and Selection
3. Management of Proceeds
4. Reporting

In any case, it is recommended to use a reliable external evaluator who through an external review process before the final issue of the bond will ensure its alignment with the 4 basic elements set by the principles of green bonds as mentioned above.

There is a lot of research where it seems that there is a significant lack of knowledge and information about the practices and implementation frameworks of green bonds.

The absence of a commonly accepted standard is a key factor for the reduced knowledge and information but at the same time it is an obstacle to the development of this market despite the fact that the demand from investors is high and exceeds the supply (Green Finance Study Group, 2016)

The existence of a common standard but also the creation of certified valuation schemes based on the above principles will have a significant impact on the ability of investors to easily and reliably control the return on their investments in environmental conditions as well as to enable bond issuers to reliably verify the alignment of their issues with climate policies and green growth targets

### ***3.2. EU Taxonomy Regulation***

The bold green targets of the European Green Deal but also the medium-term targets for reducing greenhouse gas emissions and increasing the use of renewable energy sources have led the European Commission to set up a concrete action plan to facilitate and accelerate the achievement of the above objectives . A prerequisite for promoting sustainable investment was the creation of a regulatory framework or otherwise a commonly accepted classification system for sustainable economic activities. This need was covered by the European Union with the publication of the EU Taxonomy Regulation 2020/852. The regulation was published on 18/06/2020 and is valid from 12/07/2020. Under this regulation, an economic activity must meet certain conditions in order to be environmentally sustainable. More specifically:

1. Contribute substantially to one or more environmental objectives
2. Not to significantly harm any of the environmental goals that have been set.
3. To be carried out in accordance with the minimum specifications that have been set.
4. To comply with the technical control criteria set by the Commission.

In this context, the regulation sets out 6 key environmental objectives (European Commission, 2020):

1. Mitigating climate change

2. Adaptation to climate change
3. The sustainable use and protection of water and marine resources
4. The transition to the circular economy
5. Pollution prevention and control
6. The protection and restoration of biodiversity and ecosystems

In addition to pursuing at least one of the above 6 objectives in order for an activity to appear sustainable, this activity must not at the same time cause significant harm to any other of these objectives (Doyle, 2021). In this context, the process of not causing significant damage is based mainly on criteria arising from the obligation to comply with the environmental legislation of the European Union and in some places where the legislation does not cover specific activities there is sufficient scientific evidence to cause possible damage. Only where there is insufficient and non-convincing evidence the precautionary principle enshrined in Article 191 TFEU is used (EU Technical Expert Group On Sustainable Finance, 2019).

The specialization of technical criteria for the classification of the environmentally sustainable activities that contribute to the above objectives is done through the issuance of delegated acts for the compilation of a relevant list (European Commission, 2020).

The delegated acts adopted to date have their main points as follows:

04/06/2021 we have the official approval of the first delegated act with sustainable activities for the mitigation goals of climate change. Simultaneously the Commission proceed with the approval of the corporate sustainable reporting and sustainability preferences. The main purpose was to drive the funding to green deal objectives.

On 6 July 2021, the delegated act supplementing Article 8 of the Taxonomy Regulation sets out the content, methodology and presentation of information to be disclosed by financial and non-financial corporations reports regarding the percentage of environmentally sustainable economic activity in corporations. , their investments or lending activities.

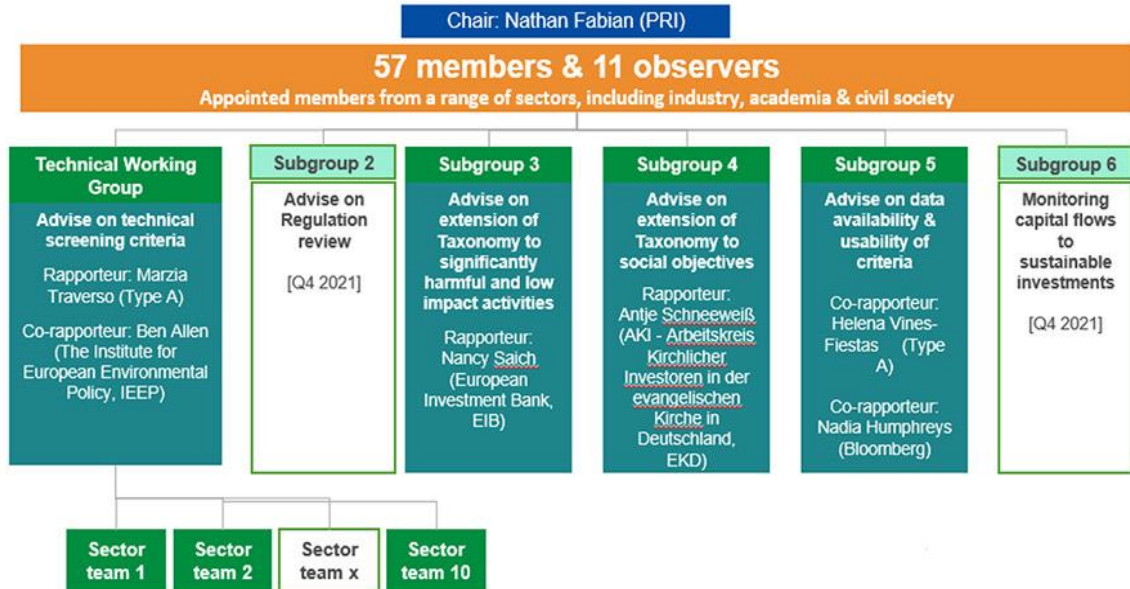
On 2 February 2022, the Commission unexpectedly adopted in principle a supplementary delegated climate law which includes both nuclear and gas activities in the list of economic activities covered by the EU Taxonomy. The selection is based on a technical report from the Joint Research Center according to the principle of non-significant harm. This choice received strong objections from many organizations and bodies, while it also contradicts the work of the Commission's technical expert group on Sustainable Finance for the Taxonomy, which did not include nuclear energy.

The European Commission has created a tool called the Taxonomy compass to make it easier to use the methodology of EU Taxonomy. At the moment it includes only activities in the areas related to the objectives of climate change mitigation and adaptation to climate change based on the delegated acts of the climate law in force from 01/01/2022. Gradually the tool (Taxonomy compass) will include future delegated acts that will describe the technical criteria by which the control will be done for economic activities that meet the climatic objectives of the regulation (European Commission, 2022).

The European Commission aims to make the regulation easier to implement but also to make it understandable to users and investors in order to ensure the maximum degree of transparency and impartiality. The alignment of an economic activity with the climate targets is validated by the use of technical criteria which should be easily understood by all stakeholders but also enable the future flexibility of incorporating new criteria and activities.

A very important part of achieving the objectives of the EU Taxonomy regulation and, more broadly, of Europe's climate objectives, is the platform for sustainable financing. Within the framework of Article 20 of the EU Taxonomy Regulation, a platform has been developed that will strengthen the effort for development of dialogue and cooperation in order to spread the know-how for development of sustainable financial policies in the context of cooperation between the private sector and the public sector, industry and academic sector, companies and civil society. The platform will complement and support the Commission as well as all the Commissions expert groups

in order to further develop the EU Taxonomy regulation (European Commission, 2022). The basic structure of the platform is shown in the figure below.



Graph 8. Organizational set-up of the Platform on Sustainable Finance. Source: European Commission, EU Taxonomy

The main responsibilities of the members and observers are the following four areas:

1. Advisory support to the Commission especially to the technical control criteria of the EU Taxonomy
2. Consulting on the process of revising the Taxonomy regulation as well as delineating new sustainability objectives and new environmentally harmful activities
3. Producing reports and monitoring financial flows to sustainable investments
4. Advisory support to the Commission for subjects of Sustainable Financing Policy

### 3.3. Taxonomy Regulation Disclosures

One point of particular importance for the companies and public is Article 8 of the EU Taxonomy Regulation for disclosures. From July 2021, with the Disclosures Delegated Act, the Commission supplemented Article 8 of the Regulation in order to provide investors with detailed information on the environmental performance of company's assets as well as their financial activities. This specific article aims to significantly enhance transparency and give greater credibility to the market in order to deal with greenwashing effects. The regulatory framework provides an extensive report and

details on both the content and the methodology that should be included in the information related to the activities and funding that are aligned with the EU Taxonomy Regulation. In particular, non-financial corporations are required to disclose their share of turnover, capital and operating expenses related to environmentally sustainable economic activities, as set out in the Classification Regulation and the EU Climate Classification Law (EU) 2021 / 21393. On the other hand for financial enterprises (mainly credit institutions and investment companies) the main performance targets of enterprises are related to the percentage of environmentally sustainable economic activities in their financial activities, such as lending and investment (European Commission, 2022).

Financial companies have a much greater potential impact on the climate than other firms as they fund a wide range of activities so that any results have a multiplier effect on the environment. For this reason, greater importance is given to the disclosures and the obligations arising from them. Sustainability risks require significant research, analysis and documentation and all these should be disclosed to investors. The regulation comes mainly to support investors but also to ensure the timeliness and transparency of funding by linking them directly to environmental policies and practices. Based on this framework of disclosures, a pressure is created for a much more careful and methodical control of the direction of funding and their impact no longer at the economic level but environmental and social. The aim is to prevent climate-damaging investments but at the same time to prioritize activities that can enhance the achievement of environmental pollution reduction policies. This pressure will deter investment in high carbon assets as they will be unsustainable and not at all tempting for most investors.

As of January 2022	<ul style="list-style-type: none"> <li>• Non-Financial entities report Taxonomy eligibility for the previous calendar year*</li> <li>• Financial entities report Taxonomy eligibility for the previous calendar year*</li> </ul>
As of January 2023	<ul style="list-style-type: none"> <li>• Non-Financial entities report eligibility and alignment for the previous calendar year</li> <li>• Financial entities report Taxonomy eligibility for the previous calendar year</li> </ul>
As of January 2024	<ul style="list-style-type: none"> <li>• Non-Financial entities report eligibility and alignment for the previous calendar year</li> <li>• Financial entities report Taxonomy eligibility and alignment for the previous calendar year</li> </ul>
As of January 2025	<ul style="list-style-type: none"> <li>• Financial entities may include estimates on Taxonomy alignment for DNSH assessments of third-country exposures subject to the 2024 review period</li> </ul>
As of January 2026	<ul style="list-style-type: none"> <li>• Credit institutions include Taxonomy alignment of their trading book and fees and commissions for non-banking activities</li> </ul>

*Graph 9. What undertakings should report and by when. Source: European Commission, Taxonomy Regulation Article 8 Disclosures Delegated Act*

It is expected that financial market players will take a closer look at the activities in which they finance and invest. Prior to this new regulation, it was easier to hide and ultimately finance investments that were not positive for the climate. This is no longer an option, and the obligation to disclose assets and indicators of high carbon activities is unlikely to make unsustainable investments very attractive. In the eyes of investors, it will hardly be attractive activities that are not environmentally friendly

With the EU Taxonomy Regulation, the companies in the financial sector as well as all the organizations involved in the financing, using the disclosure framework, will focus on analyzes for the risks and the effects of the companies that finance them. The object of these analyzes will include the evaluation of these activities in terms of environmental burden and contribution to climate change. The impact of funding for these activities should be assessed with both economic and environmental / social indicators and decisions made based on them. There will also be a detailed assessment and control of environmental risks and impacts (KPMG, 2019). This is expected to push the companies seeking funding themselves to turn to environmentally responsible investments but also to set up internal risk assessment and adoption of good practices. All companies looking for funding in order to be financed on good terms and at reasonable costs, they will have to make practical efforts to achieve the climate targets.

### **3.4. EU Green Bond Framework**

Given the ever-increasing pressure from the regulatory framework and transnational agreements to reduce greenhouse gas emissions, there are several initiatives to develop a clearly defined green investment framework that is an additional incentive to issue green bonds in order to create an effective, transparent, sustainable bond and reliable market. By adopting market best practices and creating a useful voluntary framework, the EU proposes the creation of a European green bond model by setting up a registration system for independent external verifiers. (TEG, 2019; European Commission, 2020).

The EU within the framework of the emblematic program Next Generation EU will become the largest issuer of green bonds while the proceeds from the first green bond issued under the program will finance the climate-related investments (at least 37%) of the recovery and resilience plans of the Member States. In this context, all this funding will contribute to the successful implementation of the European strategy and the national climate plans (Lehmann, A., 2021).

Another standard methodology that is widely used to evaluate green bonds is the Climate Bond Standards (CBS). The specific axis has as its main target the control of the eligibility of the bond (low carbon) as green with external reliable verification with specific criteria per sector. Also important in the evaluation is the control of the existence of appropriate control procedures. An important difference of CBS is the absence of a requirement for continuous monitoring and verification despite the fact that this verification is particularly important for investors with a medium to long term horizon (Ehlers and Packer, 2017). Also an important limitation for this model is its binary nature which does not allow benchmarking as it only classifies the bond as green or not.

The initiative for the European Green Bond Standard (EUGBS) was launched by the Commission High-Level Expert Group on sustainable finance. In 2020, a handbook was published by the Commission Technical Expert Group on sustainable finance (TEG)



giving instructions for align a bond issue with European Green Bond Standard. The development of the final standard was included in the Commission's Work Program for 2021 (European Commission, 2020). The coverage of specific requirements / conditions enables the issuer to name the bond as "EU Green Bond". The framework for the European Green Bond standard links the use of green bond revenues with the EU Taxonomy. The standard will not be limited to the European area, but the possibility of issuance will also exist outside Europe. Also, any authority or organization can issue a EUGBS not only companies.

There are 4 basic conditions for using the European Green Bond Standard:

1. Classification: The proceeds that will result from the issuance of the green bond should have to be fully allocated to projects that are in line with the EU taxonomy
2. Transparency: Full transparency in how the bond income is distributed by issuing detailed reports
3. External review: European green bonds must be review by an external independent reviewer to ensure compliance with the regulation and to align the financed projects with the taxonomy
4. Supervision by the European Securities Market Authority (ESMA) of Reviewers: Ensuring the quality and reliability of external reviews is essential both to protect investors and to ensure market integrity. This presupposes those external reviewers are registered and supervised by ESMA (European Commission, 2021)

The legal basis for the issuance of a standard green bond is based on Article 114 TFEU in the context of the functioning of the internal market in order to minimize obstacles to the development of green bonds in order to reap the benefits of the common market. All Green Bond Standards are based on voluntary standards, requirements and specifications and there is no nationally regulated standard. The green bond standard initiative is governed by the principle of subsidiarity as national standard legislation will not achieve the objectives as it will create fragmentation of the European green bond market. It is necessary to have common classification axes, measurement indicators and end-to-end definitions for the characterization of green bonds but also projects that contribute to tackling climate change. This cannot be limited on national

level to work effectively for organizations and investors but in European level (European Commission, 2021). The European Green Bond Working Group proposes a 2-step approach to the legal basis of the standard. The first step is to issue a non-binding act such as a recommendation in order to adopt the standard on a voluntary basis like most standards today. Gradually, after three years, to evaluate its implementation and for the European Commission to proceed with possible legislation (Natixis Green & Sustainable Hub, 2019).

Summarizing the three key parts of the European Green Bond Standard we note the following:

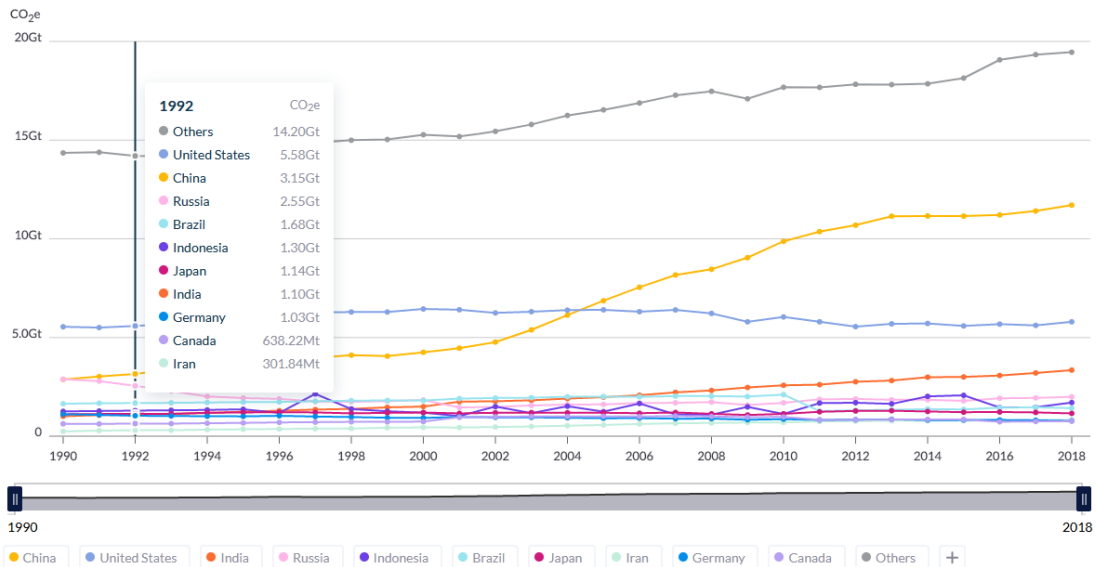
1. The Issuer has the obligation to confirm by explicit reference the alignment of the green bond with the European standard
2. Proceeds from green bond should be directed exclusively to the financing or refinancing of green projects
3. The alignment of the green bond with the European Standard is verified by a third accredited independent External Verifier

The basic design of the standard is largely based on alignment with the EU taxonomy system. The inability of the standards currently used to clearly identify projects eligible for funding, and spending on green bonds has created the need for the new European Standard to allow for an easy and unambiguous selection of eligible projects using the classification system contains sufficient documentation. An important innovation is the mandatory presence of some elements in the bond issue and more specifically the statement of the strategy and its content in relation to environmental objectives. The issuer's reasoning for issuing the green bond should also be recorded. The reporting component provides a more coherent framework with reports on a regular basis, more substantive details on resource allocation and bond alignment with the European standard framework. Finally, a detailed framework of conditions is provided for the use of certified verifiers who, with specific qualifications and the use of a documented verification process, can verify the alignment of the green bond with the European Standard.



## Conclusions

At a time when the debate on climate change is at its peak around the world, there is a question at the heart of the debate. Which countries are responsible for climate change? Most scientists place the measurement of pollutant emissions as the main axis of this question. Does not seem to be a specific answer as each member of this global debate has a different perspective and there is general skepticism about the way we measure pollution. Over time, the United States has cumulatively the highest emissions, while in recent years China, with a huge difference from the second, emits the most in order to achieve high growth rates. In the following diagram we can see in detail the emissions of pollutants



Graph 10. Global Historical Emissions. Source: [www.climatewatchdata.org](http://www.climatewatchdata.org)

Transnational agreements focus on measures and objectives to reduce emissions. On the one hand, the Kyoto Protocol recognizes responsibility and sets emission reduction targets only in developed countries. On the other hand, the Paris Agreement recognizes the problem of pollutant emissions as global and for this reason the targets concern all countries. Achieving these ambitious climate goals under this agreement requires significant funding for the transition to a low carbon economy. The Greek economy seems to have a comparative advantage in this transition with the

development of renewable energy sources that can replace its activities with high concentration in the use of carbon and emissions.

An important tool for financing green growth and achieving climate goals is the use of the green bond. Although green bonds do not differ from regular bonds in legal, operational and economic terms, they show significant growth potential while there seems to be strong demand from investors around the world. As to date, based on the available data, there does not seem to be a difference in performance, for the further development of this market, some problems that hinder the integration of the existing dynamics must be overcome. The main obstacle to investing in a green bond is limited transparency. There is a phenomenon that many projects and activities are baptized green without being related to anything that can have a positive contribution to climate goals or the development of green activities. One of the key issues for green bonds is the transparency and verification procedures that these bonds support. The absence of a strictly structured template has led to the creation of guidelines, reporting standards and evaluation procedures by stakeholders. However, the need for a common language led to the initiative of the European Commission for the development of a European Green Bond Standard. The goal is transparency, better information for investors to make the right decisions as well as the most efficient risk sharing while at the same time creating a framework for protection against the greenwashing phenomenon. The publication of the EU Taxonomy regulation is a key tool for further developing the green bond market and securing financing for sustainable projects and activities. Its effective operation and reliable disclosures to investors will focus on risk analysis at both environmental and financial levels. This will automatically determine the rate of transition of the economy to the expected combinations of environmental sustainability and economic efficiency.

In conclusion, sustainable green funding requires a coherent regulatory framework based on transparency and independent disclosure. The provision of high-quality information and the creation of risk reports on sustainability issues and not only financially is essential in order for the Green European Bond and the EU Taxonomy regulation to achieve their goal, namely the orientation of funds and investments in climate change-friendly activities and the carbon-free economy

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