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DISSERTATION

(**Green bond regulations in the UK: challenges and opportunities**)

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Green Bond Regulations in the United Kingdom: Challenges and Opportunities

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ABSTRACT

The disastrous consequences of climate change are apparent throughout the globe; deforestation, flooding, drought, melting of the polar ice caps and rising sea levels are negatively impacting the world's ecosystems. While some people show great concern and endeavour to address the issue, others are not bothered about the seriousness of the crisis that the planet is facing.

Representatives of countries concerned with climate change meet annually with the aim to find solutions to address the problems that arise in connection with the issue. Over the years, many measures have been taken to confront the impacts of an unsustainable environment, in an effort to reduce or reverse the effects of climate change. In recent years, the banking and finance sector has introduced green financing and green bonds. While these two mechanisms are an appealing and very sensible way of tacking climate change, their regulatory development is still at a very early stage. The industry benefits as well as faces challenges, by which various countries attempt to solve differently. Some countries are very advanced while the many are inexperienced on the application of the laws associated with the bonds. The United Kingdom (UK) has established a set of voluntary practices to regulate its green financing and green bond industry yet its growth seems to be slow. This paper explores the challenges and opportunities that the green market presents in the UK, with an aim to address these though reforms by establishing a tier-based system and an institution that would oversee the green finance industry. Throughout, it is argued that the regulatory framework of UK is not adequate in such that it needs a more uniform and coherent structure to attract green investors. Voluntary legislation that apply to UK signifies that there isn't a fixed definition of the term 'green'. It is also contended that the law as it stands does not provide sufficient security to investors.

This dissertation consists of 17,488 words inclusive of footnotes and is produced in Arial size 10 font, double spaced.

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CHAPTER 1

1. INTRODUCTION

Climate change has attracted a lot of attention not only from governments and public, but also from banking and finance industry.[1] As a sustainable environment is now a key goal to tackle the negatives impact of climate changes, the banking sector has contributed its share by developing the green finance and green bonds structures.[2] Green bonds are bonds which are issued to finance projects aimed at mitigating climate change and developing other environmental projects.[3] The concept of a green bond is relatively new, thus there is no uniform international legislations or regulations governing this sector.[4] Various countries across the globe have crafted their own legislation[5] while others rely on voluntary international frameworks that have been developed by agencies, banks, financial institutions, or new bodies that were set up to regulate green finance and green bonds.[6] Due to the inconsistencies in the legislations, some countries such as France, China, and the United States are growing faster than others such as the United Kingdom (hereinafter 'the UK'), Australia and Canada, that are equally vested as the others in achieving sustainable development.[7] In particular, in the UK, domestic and mandatory laws do not regulate the green bond industry. Instead, banks and other institutions are free to make or choose their terms of governance or simply rely on the voluntary Greed Bond Principles (hereinafter 'GBP') produced by the International Capital Market Association.[8] Besides, the UK government

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[1] Caroline Flammer, 'Green Bonds Benefit Companies, Investors, and the Planet' [2018] *Harvard Business Review* <https://hbr.org/2018/11/green-bonds-benefit-companies-investors-and-the-planet> accessed 3 September 2019.
[2] Yao Wang and Qiang Zhi, 'The Role of Green Finance in Environmental Protection: Two Aspects of Market Mechanism and Policies' (2016) 104 Energy Procedia 311, 314.
[3] Heike Reichelt, 'Green Bonds: A Model to Mobilise Private Capital to Fund Climate Change Mitigation and Adaptation Projects' (World Bank 2010) The Euromoney, Environmental Finance Handbook 1; Monica Filkova, 'Bonds and Climate Change: The State of the Market 2018' (Climate Bonds Initiative 2018) 4.
[4] 'The Role of Policymakers in Scaling the Green Bonds Market' (*Climate Bonds Initiative*, 22 January 2015) <https://www.climatebonds.net/role-policymakers-scaling-green-bonds-market-0> accessed 8 September 2019.
[5] For example, China has adopted PBoC rules that require each bond to be approved by the authorities. See more: Sean Kidney, 'Myth Buster: Why China's Green Bond Market Is More Orderly than You Might Think. An Overview from Climate Bonds Initiative' (*Climate Bonds Initiative*, 21 June 2017) <https://www.climatebonds.net/2017/06/myth-buster-why-china%E2%80%99s-green-bond-market-more-orderly-you-might-think-overview-climate> accessed 4 September 2019.
[6] 'Green Bond Principles' (ICMA 2018) Voluntary Process Guidelines for Issuing Green Bonds.
[7] Filkova (n 3) 2.
[8] Government Actuary's Department, 'Investment News. Monthly Bulletin from the Insurance & Investment Team' (2018) <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/735802/Jul_2018_update.pdf> accessed 26 August 2019.

established The Green Finance Taskforce whose role is to make suggestions with the purpose of increasing the rate of growth of green finance in the UK. [9]This Taskforce has taken initiatives to accelerate green financing, by proposing several recommendations to the UK government. [10.] This thesis will analyse the laws applied to green financing and green bonds in the UK with the aim to determine whether the slow growth of the green bonds market in the UK could be attributable to the lack of comprehensive regulations.

1.1 Methodology

The research in this dissertation will be conducted by doctrinal and comparative methodology. The thesis would explore the views of scholars, professionals, and critics on the sector of green bonds by analysing and comparing various reports and academic articles. In particular, the focus will lie with current regulations such as the Climate Bond Standard (herein ‘CBS’) and the Green Bond Principles. The European Union (EU) Green Bonds Standard will be considered in order to analyse how its provisions can affect the UK. In a quest to provide the best solution for the UK, further research will be conducted by analysing academic articles, reports of various organisations, and assessing the domestic implementation of the green regulatory framework in countries such as China, France, the EU (Norway, Sweden, Poland), the United States, Malaysia, and Indonesia. The UK was chosen as a focus for this dissertation because the current state of its green bond regulation lacks uniformity and clarity, while the UK has the potential to reach the top as a market for green bonds. Furthermore, the important influence that the UK has in the world makes it essential to have a proper green regulatory framework.

In order to determine the best system for the UK, the countries of China and France were firstly chosen for the analysis because these are the two countries that have adopted their own domestic legislation to regulate green bonds.[11] Secondly, Sweden, Poland and Norway will be discussed because they have taken valuable initiatives to encourage green investments.[12] Thirdly, it is important to analyse the legal

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[9] Green Finance Taskforce’ (*Green Finance Initiative*) <http://greenfinanceinitiative.org/workstreams/green-finance-taskforce/> accessed 4 September 2019.
[10] ‘Accelerating Green Finance’ (2018) A report to Government by the Green Finance Taskforce.
[11] Echo Kaixi Wang, ‘Financing Green: Reforming Green Bond Regulation in the United States’ (2018) 12 Brooklyn Journal of Corporate, Financial & Commercial Law 467, 469.
[12] ‘Shifting Global Financial Flows’ (*Stockholm Sustainable Finance Centre*) <https://www.stockholmsustainablefinance.com/sweden-and-sustainable-finance/> accessed 4

framework adopted by the EU because it recently published a comprehensive report on EU Green Bond Standard.[13] Fourthly, the United States will be examined because although it does not have a stable and binding regulatory framework, it currently has one of the largest amounts of green investments in the world.[14] Finally, Malaysian and Indonesian markets will also be examined because they have included the green aspect into Islamic banking practices.[15] These countries have their own Islamic institutions to regulate green investments, thus analysis of their systems can help to determine the aspects that could be imported into a contemporary non-Islamic banking system. The green bonds structures in the aforementioned jurisdictions will be compared in order to determine the most suitable system that could be adopted by the UK. The thesis argues in favour of a new regulatory model to address the challenges faced by the green industry in the UK.

The main resources that will be used in this thesis are reports, policies, scholarly works and journal articles, regulations, statutes, blogs, and contemporary newspaper articles. The website of references would include, without limitation, the Climate Bond Initiative, the European Commission website, and various other websites. This paper will also investigate research papers published by organisations such as the OECD, Clifford Chance, and Linklaters. Further, databases Westlaw and Lexis Nexis will be used to find articles that would facilitate the research on the topic. Finally, the research will make recourse to the business literature.

The motivation for this paper is driven by climate change. This paper is intended to assist the government of the UK and organisations to transit into a low carbon economy. It is driven by a motivated to reduce such impacts by producing researching strategies on how the UK government could draft new legislation that relates to green financing. Climate change imposes risks as well as presents benefits to the economy with the evolution of green financing which aims to reduce the negative impacts of the

September 2019; 'Poland's next Green Investment Scheme Agreed with the World Bank' (*World Bank*) <https://www.worldbank.org/en/news/press-release/2012/11/19/polands-next-green-investment-scheme-agreed-with-the-world-bank> accessed 4 September 2019; 'Norway's Wealth Fund to Double Green Energy Investment Cap - The Local' <https://www.thelocal.no/20190406/norways-wealth-fund-to-double-green-energy-investment-cap> accessed 4 September 2019.

[13] EU Technical Expert Group on Sustainable Finance, 'Report on EU Green Bond Standard' (2019) TEG Report Proposal for an EU Green Bond Standard.

[14] The Global Sustainable Investment Alliance (GSIA), '2018 Global Sustainable Investment Review' (2018) 14.

[15] Securities Commission Malaysia, 'Islamic Green Finance. Development, Ecosystem and Prospects' (World Bank Group 2019) 27.

climate change in the world. This research paper will be communicated to the UK Ministry of Environment in the hope that this research will help the UK to advance in the sphere of a lower carbon economy, regardless of how trivial the contribution is.

This paper's main goal is to unravel the challenges and opportunities that the green bond industry presents to the economy and find a solution to these challenges. This is very important as the concept of green financing is emerging in the banking and finance industry, investors need to feel secure in their investments. Several models will be proposed in order to determine the most suitable for the UK to follow. At the moment there are no known countries that have adopted a comprehensive system regarding how to protecting the risks of green investors. If, however, the UK manages to create a working system, it will attract many investors, which will undoubtedly help to facilitate the economy.

The main challenge that faced the present research is the lack of academic literature and other sources which are directly relevant to the legal framework of green financing. Therefore, this paper put more focus on the analysis of domestic laws of those countries that have attempted to establish a domestic regulatory framework of the green bonds. Further, the effort was invested in comparing directives and analysing existing standards to suggest the best solution to the challenges presented by the regulatory system of the UK. The most essential sources that were used in this paper are reports from the various organisations and governments. These reports produced analysis on the matters related to the development, regulation and opportunities of the green bonds.

1.2 The Structure of the Paper

The dissertation is divided into five chapters. Chapter one is an introduction and it provides the methodology, the motivations and the scope of the paper.

Chapter two initially provides a thorough overview of green financing and green bonds to address the importance of this sector to the banking and finance industry. It will then explain how green financing and green bonds came into existence. Further, it will explore the benefits of green financing and green bonds before looking at the performance of several countries in this sector. As follows, the main focus will be the opportunities for developing the green market in the UK. Furthermore, it will briefly present the three challenges brought by this new development not only in the UK, but across the world and in the UK.

Chapter three presents and discusses the main green bonds regulations in the world. Firstly, it looks at the international arena and refers to the GBP and the CBS. It compares these regulations and addresses the concerns that they raised. Then it studies in detail the domestic legal framework of the UK, the United States, France, China, and the positions in Europe and in the Islamic states. Particular emphasis will be placed in the UK's current legal position. Thus, along with the GBP, the CBS, the LSEG Green Bond Guide, the Corporate Green Bond Market, and the Guide to ESG Reporting and Guidelines published by banks will be analysed and discussed in the context of the UK's green bond industry.

Chapter four discusses the challenges of the green bond legal framework in the UK. It focuses on the problem with the UK's green bond regulatory framework, while also addressing the issues of credit rating, agency, tax invasion, and green washing. This chapter will propose a mandatory regulatory-tiered system model that would rank projects according to their greenness. The main purpose of this grading system is to allow the government of the UK to control the privileges that it gives to projects that are categorised as green or less green. It also looks at the type of green bonds definition that the UK should adopt to avoid the possibilities of greenwashing. Further, it suggests that the UK legislation should contain provisions to enforce against any fraudulent issuers of green bonds.

Chapter five is a conclusion. It will shortly present the findings of this paper and decide whether the stagnation in the green bond market of the UK can be attributed to the lack of regulation on this matter.

CHAPTER 2 – GREEN FINANCE AND GREEN BONDS

2.1 Sustainable Finance

Presently the world is facing several climate challenges that receives the attention of such important stakeholders as the United Nations (UN), Organisation for Economic Co-Operation and Development (OECD), Intergovernmental Science-Policy Platform on Ecosystem Services (IPBES), among others. At the 2015 United Nations Sustainable Development Summit, the General Assembly issued a Resolution setting out specific goals that countries are required to achieve in the next 15 years relating to poverty, inequality, climate, environmental degradation, prosperity, and peace and justice.[16] Furthermore, the research conducted in 2011 revealed that the world's population is likely to grow by 9bn by 2050.[17] Such significant growth is concerning because people would be using more resources every year. This tends to suggest that if humans continue to live unsustainably, the world's environment will be placed at further risks.[18] In fact, According to Finance Watch, humans have already significantly changed 75% of the lands surface, 66% of the ocean area and 85% of the wetlands.[19] Furthermore, in May 2019 IPBES reported that the activities of humans have put a million species at risk and human exploitation of natural resources is destroying the ecosystem on which we depend.[20]

In recognition of such urgent problems that have been occurring for a few decades now, the World Development Report 2014 stated that the climate change concerns could be solved provided that the world works towards creating a green environment.[21] In 2015, 200 representatives from different countries signed the Paris Climate Agreement, consenting to take measures to transit to a lower carbon economy and restricting the global average temperature to not more than 2 degrees Celsius.[22] The most important initiative was taken at the 2015 UN Sustainable Development Summit where every

[16] UNGA Res 70/1 (25 September 2015) Seventieth session A/Res/70/1.
[17] OECD, 'Perspectives on Global Development 2012: Social Cohesion in a Shifting World' (OECD Publishing 2011) 67.
[18] OECD, 'OECD Environmental Outlook' (OECD Publishing 2011) 40–45.
[19] Ludovic Suttor-Sorel, 'Making Finance Serve Nature' (2019) Finance Watch Report 12.
[20] Robert Watson, 'An Overview of the IPBES Global Assessment on Biodiversity and Ecosystem Services: Highlighted Findings and Contributions' Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services (IPBES) 22.
[21] The World Bank, 'Risk and Opportunity. Managing Risk for Development' (2013) World Development Report 51–55.
[22] Paris Agreement to the United Nations Framework Convention on Climate Change (adopted 12 December 2015, entered into force 4 November 2016) U.N. Doc. FCCC/CP/2015/L.9/Rev.1, Article 2(1)(a).

member state was encouraged to take action in their own jurisdictions to combat climate change.[23] As response, the banking and finance sector have developed green financing and green bonds to contribute towards the fight against climate change.[24]

However, before turning to the analysis of the green bonds, it is important to initially define the broader concept of sustainable finance. Although the definition of sustainable finance still suffers from the lack of certainty and uniformity[25] it could be defined as a financial system that incorporates environmental, social and governance features into business or investment decisions.[26] Sustainable finance includes both, green financing and green bonds. According to Dr. Nannette Lindenberg, there is no common definition for green finance.[27] Among the few existing definitions, green finance is a widely term used to describe green financial investments for the purposes of sustainable development and addressing climate change.[28] Pricewaterhouse Coopers Consultants (PWC) defines it as "*….financial products and services, under the consideration of environmental factors throughput the lending decision making, ex-post monitoring and risk management processes, provided to promote environmentally responsible investments and stimulate low-carbon technologies, projects, industries and businesses.*".[29]Other authors have defined green finance as an important factor of sustainable investment and banking where lending and investment decisions are made on the grounds of environmental screening to meet environmental sustainability standards.[30] At the same time, the G20's Sustainable Finance Study Group defined green finance as the "*financing of investments that provide environmental benefits in the broader context of environmentally sustainable development*".[31]

[23] UNGA Res 70/1 (25 September 2015) Seventieth session A/Res/70/1
[24] Clarence Tolliver, Alexander Ryota Keeley and Shunsuke Managi, 'Green Bonds for the Paris Agreement and Sustainable Development Goals' (2019) 14 Environmental Research Letters 2.
[25] William Sun, Celine Louche and Roland Perez, *Finance and Sustainability: Towards a New Paradigm? A Post-Crisis Agenda* (Emerald Group Publishing 2011) 8.
[26] Aloy Soppe, 'Sustainable Finance as a Connection Between Corporate Social Responsibility and Social Responsible Investing' (2009) 1 Indian School of Business WP Indian Management Research Journal 10; High-Level Expert Group on Sustainable Finance, 'Financing a Sustainable European Economy' (2017) Interim Report 16.
[27] Nannette Lindenberg, 'Definition of Green Finance' (German Development Institute 2014) 1.
[28] Barbara Buchner, 'The Global Landscape of Climate Finance 2013' (Climate Policy Initiative 2013) CPI Report 2.
[29] Pricewaterhouse Coopers Consultants (PWC), 'Exploring Green Finance Incentives in China' (2013) Final Report 15.
[30] Lindenberg (n 27) 2.
[31] Financial Conduct Authority, 'Climate Change and Green Finance' (2018) Discussion Paper DP18/8 9.

Similarly to the two concepts described above, there is a divergence of views on the definition of the green bonds. Anna Laskowska proposes to define green bonds as "*fixed – income securities, issued in order to obtain the capital for financing or refinancing of undertakings for the improvement of the natural environment*.".[32] KPMG defines green bonds as "*bonds that not only encompass financial obligations but also incorporate environmental benefits claimed by the green bond issuer*."[33] According to the government of the UK, green bonds are: "*ordinary fixed income assets that are issued to fund projects that will have a positive effect on the environment, the global climate and society*". [34] This paper will, however, follow the definition offered by the government of the UK as its main goal is to find the most suitable legislative solution for the UK. Furthermore, this definition offers the most precise description of a subject matter.

The main international organisation that administers all the matters related to the green bonds is The Climate Bonds Initiative (CBI).[35] CBI was established to provide climate change solutions by regulating green financing and green bonds.[36] The purpose of the CBI is to promote green investment in projects and assets that would ease the transition to a low carbon and resilient economy.[37] It protects the energy, transport, utilities, buildings, natural resources and industrial sectors of the economy.[38] Thus, with the help of CBI, sustainable finance encourages green investment in a wide variety of projects.

2.2 How Did Green Bonds Come into Existence?

The European Investment Bank issued the first sustainable bond in 2007.[39]The main goal of the first green bond was to help governments achieve their climate policy goals.[40] After this, the World Bank

[32] Anna Laskowska, 'The Green Bond as a Prospective Instrument of the Global Debt Market' (2017) 6 Copernican Journal of Finance & Accounting 69, 69.
[33] KPMG Advisory N.V., 'Mainstreaming the Green Bond Market' (2016) No.33263682 6.
[34] Government Actuary's Department (n 8).
[35] 'Climate Bonds Initiative' (*Climate Bonds Initiative*) <https://www.climatebonds.net/> accessed 5 September 2019.
[36] Climate Bonds Initiative, 'Climate Bond Standard' (2015) Prototype.
[37] ibid.
[38] Climate Bonds Initiative, 'Climate Bonds Taxonomy' (2018) A guide to climate aligned assets & projects 16.
[39] Alex Veys, 'The Sterling Bond Markets and Low Carbon or Green Bonds' (2010) A Report to E3G 26.
[40] Torsten Ehlers and Frank Packer, 'Green Bond Finance and Certification' [2017] BIS Quarterly Review 89, 90.

Group published a report "Strategic Framework for Development and Climate Change" to attract and encourage private and public investors to take actions to mitigate the consequences of climate change.[41] Green bonds indeed helped in the World Bank's mission to bring innovation in climate finance and by 2015 a staggering US $8.5bn in green bonds were issued.[42] Another major turning point occurred in 2013 when the 'Électricité de France' and the Bank of America issued the first sizeable corporate green bonds worth US $36bn.[43]

2.3 Types of Sustainable Finance and Green Bonds

Currently, there are six different forms of green bonds: corporate bond, project bond, municipal bonds, sovereign bonds, supranational bonds, and financial bonds.[44] This list is non-exhaustive and the forms of bonds continue to diversify and increase as the market grows.[45] It is worth highlighting that the non-conventional banking sector has also witnessed progress with regards to sustainable finance and green bonds. For example, Islamic banking has developed green Sukuk that is regulated by Islamic Shariah laws.[46]

2.4 What Are the Advantages of Green Bonds?

The green bond industry has various opportunities and benefits. This section will focus on the advantages related to the capital market and global rating agencies. Essentially, green bonds have

[41] Luke Trompeter, 'Green Is Good: How Green Bonds Cultivated into Wall Street's Environmental Paradox' (2017) 17 Sustainable Development Law and Policy Brief 6; The World Bank, 'Development and Climate Change : A Strategic Framework for the World Bank Group : Main Report' (2008) Working Paper.
[42] The World Bank, 'What Are Green Bonds?' (2015) Working Paper 99662 24.
[43] European Commission, 'Study on the Potential of Green Bond Finance for Resource-Efficient Investments' (European Union 2016) 27.
[44] OECD, 'Green Bonds Mobilising the Debt Capital Markets for a Low-Carbon Transition' (2016) Policy Perspectives 12.
[45] Amundi Asset Management (Amundi) and International Finance Corporation (IFC), 'Emerging Market Green Bonds Report 2018' (2018).
[46] Umar F Moghul and Samir Safar-Aly, 'Green Sukuk: The Introduction of Islam's Environmental Ethics to Contemporary Islamic Finance' (2015) 27 Georgetown International Environmental Law Review (GIELR) 28; Muhammad al-Bashir Muhammad Al-Amine, *Global Ṣukūk and Islamic Securitization Market: Financial Engineering and Product Innovation* (Brill 2012) 323–328.

increased the opportunities of investors across the globe, making an impact on the environment at large.[47]

2.4.1 Capital Market

Green bonds are of outmost importance to the capital markets because they have the ability to increase the variety of financial products that are available on the market.[48] For example, green bonds are listed in the stock markets such as the Solactive Indices[49], the London Stock Exchange[50], Luxembourg Stock Exchange[51], S&P Green Bond Index[52], Bloomberg MSCI[53], and Bond China Climate-Aligned Bond Index.[54] The listing of green indices allows stakeholders to compare the market benchmark to assess the performances of their bonds.[55] Moreover, green bonds allow capital raising and investment in current and new projects that have environmental benefits.[56] The stock exchange market has witnessed growth since green bonds came into existence.[57]Therefore, it can be said that green bonds brought novelty to the corporate world. It is worth noting that not all bonds that claimed to be green are listed in the stock market. Each green bond has to satisfy a test before it is listed. As discussed in more detail below.

[47] Trompeter (n 41) 5.
[48] Dragon Yongjun Tang and Yupu Zhang, 'Do Shareholders Benefit from Green Bonds?' [2018] Journal of Corporate Finance 2.
[49] GBP Databases and Indices Working Group, 'The GBP Databases and Indices Working Group – Summary of Green Fixed Income Indices Providers' (2017) Working Group 14.
[50] Climate Bonds Initiative, 'Green Bonds Market Summary' (2017) Q1 4.
[51] 'Green Bonds' <https://www.bourse.lu/green-bonds> accessed 5 September 2019.
[52] 'S&P Green Bond Index - S&P Dow Jones Indices' <https://us.spindices.com/indices/fixed-income/sp-green-bond-index> accessed 5 September 2019.
[53] Bloomberg Barclays Indices, 'Bloomberg Barclays MSCI Global Green Bond Index' (2014) <https://www.msci.com/documents/10199/242721/Barclays_MSCI_Green_Bond_Index.pdf/6e4d942a-0ce4-4e70-9aff-d7643e1bde96> accessed 9 May 2019.
[54] Climate Bonds Initiative, 'China Green Bond Market' (2017) A USD371bn Chinese Green Bond Market 9.
[55] Szilárd Erhart, 'Exchange-Traded Green Bonds' [2018] Journal of Environmental Investing 7.
[56] Financial Conduct Authority (n 31) 14.
[57] Sustainable Banking Network, 'Creating Green Bond Market - Insights, Innovations and Tools from Emerging Markets' (2018) 8 <http://documents.worldbank.org/curated/en/596711540800113453/pdf/131405-WP-SBN-Creating-Green-Bond-Markets-Report-2018-PUBLIC.pdf> accessed 9 May 2019.

2.4.2 Global Rating Agencies

One of the most important features of green bonds is that they allow global rating agencies to provide their contribution to the green market as they craft their own regulations for green certification.[58] For instance, in March 2016, the main global rating agency called the Moody Investor Services had issued guidelines on how to assess green bonds.[59] This helps investors to determine if their funds are going into actual green projects.[60]

2.5 The Growth of Green Bond Development in the World

While green bonds and sustainable finance are relatively new concepts, many countries around the world have successfully established markets for them.[61] In 2018, 1,543 green bonds were issued by 320 issuers with the value of USD $167.3 bn.[62] The growth was higher by 3% from the preceding year.[63] Belgium contributed significantly in 2017 as it had issued a transaction worth EUR4.5bn.[64] Moreover, Belgium, Ireland, Lithuania, Indonesia, Poland, Seychelles, and France were the first countries to issue sovereign green bonds, raising the amount of sovereign green bonds to USD 25 billion in 2018.[65] The obtained proceeds from the bonds were used to finance projects in the energy, building, transport, water, land, waste, recycling, industrial and technological sectors.[66] The countries that illustrated a higher growth in ascending order are the following: United States of America, China, France, Germany,

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[58] Ehlers and Packer (n 40) 95.
[59] Federal Ministry for Economic Cooperation and Development, 'Green Bonds – Ecosystem, Issuance Process and Regional Perspectives. Mexico Edition' (2018) Consultation Draft 56.
[60] Torsten Ehlers and Frank Packer, 'Green Bonds – Certification, Shades of Green and Environmental Risks' (Contribution to the G20 Green Finance Study Group, 2016) 3.
[61] World Bank and UN Environment, 'Roadmap for a Sustainable Financial System' (2017) 3rd annual global report by the UN Environment Inquiry 14 <http://documents.worldbank.org/curated/en/903601510548466486/pdf/121283-12-11-2017-15-33-33-RoadmapforaSustainableFinancialSystem.pdf> accessed 23 August 2019.
[62] Climate Bonds Initiative, '2018 Green Bond Market Summary' (2019) Market Highlights <https://www.climatebonds.net/files/reports/2018_green_bond_market_highlights.pdf> accessed 5 September 2019.
[63] 'Green Bonds - the Reasons for Their Success' (*BNP Paribas*) <https://group.bnpparibas/en/news/green-bonds-reasons-success> accessed 5 September 2019.
[64] 'EUR 4.5bn 1.250% 15-Year Inaugural Green OLO Transaction Due 22nd April 2033 (OLO86)' (2018) Press release – Kingdom of Belgium <https://www.debtagency.be/sites/default/files/content/download/files/olo_86_deal_summary.pdf> accessed 5 September 2019.
[65] Moody's Investors Services, 'Sovereign Green Bond Market on Course for Critical Mass, but Challenges Remain' (2018) Sector In-Depth 1125684 2.
[66] Diletta Giuliani, 'Sovereign Green Bonds Briefing' (Climate Bonds Initiative 2018) 6–11.

Netherlands, Belgium, Sweden, Spain, Canada, Australia Japan, UK, Ireland, Norway, and Italy.[67] In 2018, the top three countries had maintained their positions with US investing US$ 34.1bn, China US$ 30.9bn and France US$ 14.2bn.[68] The major investor in the US in 2018 was The Federal National Mortgage Association of the U.S. that contributed US$ 20.1 billion.[69] China had the second-biggest investor namely the Industrial Bank of China that issued green bonds having the worth of US$ 9.6bn and France followed with sovereign issuance amounting to US$ 6bn.[70]

The data shows that the financial or banking institutions were more proactive in 2018 than in 2017 in issuing green bonds.[71] In 2018, banks issued a total of US$ 49bn green bonds while in 2017 they issued US$ 23 billion worth green bonds.[72] More sovereign bonds were issued in 2018 than in 2017, showing an increase of 7%.[73] Poland was the first country to have issued a repeat sovereign bond of US$ 2 bn after its first issed bond that had a value of US$ 1bn.[74] Poland showed further dedication when its government issued a third bond in March 2019.[75] Furthermore, the non-financial corporate issuers also played an important role in 2018 green bonds increase. For example, Iberdrola, Engie, and EDF issued overall more than EUR 18.1bn, each making it to the top 10 of the green bond issuers.[76] Another non-

[67] Filkova (n 3) 9.
[68] Federal Ministry for Economic Cooperation and Development (n 59) 44.
[69] Bondevalue, 'Green Bonds - Everything You Need to Know' (*BondEvalue*, 16 July 2019) <https://bondevalue.com/news/green-bonds-everything-you-need-to-know/> accessed 5 September 2019.
[70] Christopher Kaminker, 'The Green Bond' (Climate and Sustainable Finance SEB 2018) Special Edition: Scenarios for 2019 2 <https://sebgroup.com/siteassets/large_corporates_and_institutions/our_services/markets/fixed_income/green_bonds/seb_the_green_bond_dec_2018_final.pdf> accessed 25 August 2019.
[71] Noemie Gorce, 'Green Finance: Modest 2018 Growth Masks Strong Market Fundamentals For 2019' (S&P Global Ratings 2019) 2 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Public-research-resources/SP-Global2019-01-29Green-Finance-Modest-2018-Growth-Masks-Strong-Market-Fundamentals-For-2019-130219.pdf> accessed 23 August 2019.
[72] Flammer (n 1); Climate Bonds Initiative, '2018 Green Bond Market Summary' (n 62).
[73] Nicholas Pfaff, 'The 2019 Green & Social Bond Principles Annual General Meeting and Conference' (Frankfurt, 2019) <https://www.icmagroup.org/assets/documents/Events/Presentation-of-2019-GBP-SBP-Publications-Innovations.pdf> accessed 27 August 2019.
[74] Filkova (n 3) 4.
[75] Piotr Nowak and others, 'Pioneering Poland Pumps up Environmental Credentials and Considers Local Green Bonds' (*Société Générale*) <https://wholesale.banking.societegenerale.com/en/about/news-press-room/news-details/news/pioneering-poland-pumps-environmental-credentials-and-considers-local-green-bonds/> accessed 5 September 2019.
[76] Monica Filkova, 'The Green Bond Market in Europe' (Climate Bonds Initiative 2018) 14 <https://www.climatebonds.net/files/reports/the_green_bond_market_in_europe.pdf> accessed 28 August 2019.

financial issuer, EDP has issued a first-ever green bond in Portugal [77], while Atlas Renewable Energy issued several bonds in Uruguay[78], and TLFF I Pte in Indonesia.[79]

Following the example of non-financial companies that participate in sustainable finance, the American company Apple with ten other investors issued US$ 300 million to fund clean energy investment in China.[80] The purpose of the investment was to produce renewable energy that would in turn supply power to millions of establishments in China.[81]Apple also has plans to generate more than 4 gigawatts of new clean energy across the globe by 2020. Furthermore, it is working with aluminium manufacturing companies such as the Alcoa Corporation and the Rio Tinto Aluminium to produce patented technology that would release greenhouse gas emissions from the smelting process.[82]

On the basis of the aforementioned, the conclusion can be drawn that 2018 experienced a slight growth in sustainable finance and green bond issuances across various fields compared to 2017. As the green bonds market continues to develops, more state and non-state stakeholders are willing to invest in green bonds to combat climate change and the difficulties that the environment is currently facing.

With regards to the UK, the government revealed that due to the high demand in the green bonds market, it expects this industry to grow threefold in the near future.[83] The first ever green bond that was

[77] Michael Gaynor and Martín Agustín, 'ESG Bond Market. Key Topics and Trends for 2019 and beyond – Getting the Harmony Right' (BBVA Corporate and Investment Banking 2019) 17; 'Portugal's First Ever Green Bond Lists on Euronext Dublin - Irish Stock Exchange' (*Irish Stock Exchange*, 2018) <https://www.ise.ie/Media/News-and-Events/2018/Portugal%E2%80%99s-first-ever-green-bond-lists-on-Euronext-Dublin.html> accessed 5 September 2019; 'Green Bond Fact Sheet - EDP' <https://www.climatebonds.net/files/files/2018-10%20PT%20EDP.pdf> accessed 27 August 2019.

[78] Atlas Renewable Energy, 'Atlas Renewable Energy Announces USD $114.4 Million Financing of Uruguayan Solar Energy Plants – Atlas Renewable Energy' <https://www.atlasrenewableenergy.com/en/atlas-renewable-energy-announces-usd-114-4-million-financing-of-uruguayan-solar-energy-plants/> accessed 5 September 2019; 'Green Bond Fact Sheet - Atlas Renewable Energy' <https://www.climatebonds.net/files/files/2018-07%20UY%20Atlas%20Renewable%20Energy.pdf> accessed 27 August 2019.

[79] 'RLU Transaction' (*Tropical Landscapes Finance Facility*) <http://tlffindonesia.org/rlu-transaction/> accessed 5 September 2019; 'Green Bond Fact Sheet - TLFF I Pte Ltd' <https://www.climatebonds.net/files/files/2018-02%20SG%20TLFF%20I%20Pte%20Ltd%281%29.pdf> accessed 27 August 2019.

[80] 'Apple Launches New Clean Energy Fund in China' (*Apple Newsroom*) <https://www.apple.com/au/newsroom/2018/07/apple-launches-new-clean-energy-fund-in-china/> accessed 6 September 2019.

[81] Ibid

[82] 'Apple Paves the Way for Breakthrough Carbon-Free Aluminum Smelting Method' (*Apple Newsroom*) <https://www.apple.com/newsroom/2018/05/apple-paves-the-way-for-breakthrough-carbon-free-aluminum-smelting-method/> accessed 6 September 2019.

[83] Government Actuary's Department (n 8).

listed in UK was in 2012 by the Nordic Investment Bank.[84] By January 2017, there were 40 green bonds that were listed across the main market of the London Stock Exchange as well as the Professional Securities Market.[85] These were issued by 15 different organisations that included supranational, local governments, municipalities and corporates. These stakeholders raised US$10.5billion in seven different currencies for a wide range of transactions. A report by the CBI revealed that US$42billion worth of green bonds were listed in 2015 and 82% of the green bond market was investment grade with more than half being AAA rated.[86]

According to research conducted by the UK government, there has been a significant increase in green bonds issuances from 2010 to 2017 as sustainable finance has started to gain popularity among investors.[87] However, while in 2018 the global green bonds valued US$ 29billion(bn) in Q1, the UK has only managed to reach a benchmark of US$ 2.7billion, which was only 2.5% of the global total value of the green bonds.[88] Nonetheless, at the moment, there are a lot of signs of the development of the green bonds market in the UK. For example, in March 2018, the Green Finance Taskforce published a report recommending the government to issue sovereign bonds to accelerate its growth and attract investors.[89]

2.6 Current State of the Green Finance Market

The Paris Agreement and UN Sustainable Development goals have increased international awareness about financial impacts of climate change. Further, these two institutions have encouraged collaboration of work across the globe to ensure the transition to a low carbon economy and the emergence of green financing.

[84] 'Green Bonds – An Introduction' (Robert Vielhaber – Credit Analyst Sub-Sovereigns & Agencies (SSA) 2014) UniCredit Research 9.
[85] London Stock Exchange, 'Your Guide to ESG Reporting' (2018) <https://www.lseg.com/sites/default/files/content/images/Green_Finance/ESG/2018/February/LSEG_ESG_report_January_2018.pdf> accessed 2 September 2019.
[86] Ibid.
[87] Federal Ministry for Economic Cooperation and Development (n 59) 19.
[88] 'Global green bond issuance hit record $29.64bn in Q1 2018 | News | Linklaters' </ar-ae/about-us/news-and-deals/news/2018/april/global-green-bond-issuance-hit-record-2964bn-in-q1-2018> accessed 6 September 2019.
[89] 'Green Finance Taskforce' (n 9).

2.7 Challenges Brought by Green Bonds across the Globe

Although from the first sight it seems that green bonds have only positive features, the World Bank recognises several drawbacks as well.[90] The following section will discuss some of the many challenges brought in by the green bonds.

The first challenge of the green bonds is the absence of any mandatory regulations unless it has been specifically adopted in domestic legislation.[91]The lack of mandatory regulations has the effect of causing stagnation in the growth of the green bond market.[92] For example, though there are suggested criteria to classify bonds as green. there are no mandatory provisions that require independent evaluators to assess how 'green' a bond is , some green bond issuers have a lot of liberties in labelling bonds 'green' although they might not be 'green' as such.[93] Fraudulent issuers may misconceive bonds to take advantage of governments offers on special benefits and tax exemptions for green bonds investors.[94]These issuers, consequently 'greenwash' the funds, leaving investors without recourse or remedies.[95] Most importantly, when the funds are greenwashed, the money is not used for the environmental purposes for which they were provided.[96] As a consequence of such cases, a lot of investors are prevented from investing in the green projects.[97] The CBS and the GBP have attempted to find a solution to the problem of greenwashing by setting standards for issuers to meet.[98] However, these regulations are not binding and they cannot be enforced.[99] Thus, the global green finance and

[90] Financial Conduct Authority (n 31) 13.
[91] OECD, 'Green Bonds: Country Experiences, Barriers and Options' (2016) In support of the G20 Green Finance Study Group 26–28 <http://unepinquiry.org/wp-content/uploads/2016/09/6_Green_Bonds_Country_Experiences_Barriers_and_Options.pdf> accessed 26 August 2019.
[92] John Chiang, 'Growing the US Green Bond Market.Volume 1: The Barriers and Challenges' (California State Treasurer 2017) 15.
[93] 'What Are Green Bonds and How "Green" Is Green?' *Bloomberg.com* (24 March 2019) <https://www.bloomberg.com/news/articles/2019-03-24/what-are-green-bonds-and-how-green-is-green-quicktake> accessed 6 September 2019; Wang (n 11) 488.
[94] Igor Shishlov, Romain Morel and Ian Cochran, 'Beyond Transparency: Unlocking the Full Potential June 2016 of Green Bonds' (Institute for Climate Economics 2016) 22.
[95] Kathrin Berensmann and Nannette Lindenberg, 'Green Finance: Actors, Challenges and Policy Recommendations' (Briefing Paper, German Development Institute/Deutsches Institut für Entwicklungspolitik (DIE) 2016)
[96] Caroline Flammer, 'Corporate Green Bonds' [2018] SSRN Electronic Journal 3 <https://papers.ssrn.com/abstract=3125518> accessed 6 September 2019.
[97] David Wood and Katie Grace, 'A Brief Note on the Global Green Bond Market' (IRI Working Paper, Initiative for Responsible Investment 2011) 4 <http://iri.hks.harvard.edu/files/iri/files/iri_note_on_the_global_green_bonds_market.pdf> accessed 28 August 2019.
[98] The Green Bond Principles and ICMA, 'Green Bond Principles. Voluntary Process Guidelines for Issuing Green Bonds' (2018).
[99] 'Green Bonds Must Keep the Green Promise!' (2016) WWT Report 19.

banking industry faces the main challenge of green labelling of unsustainable projects by issuers that intend to defraud investors.

Another main issue is that the notion of 'green' has never been given a standardised definition.[100] Philip Brown, managing director of Citi, emphasised that there is no clarity on the definition of 'green' because of the cultural differences of the international society and inability to determine a definition that would suit all the countries[101]Besides, Clifford Chance has produced a report on green bonds investments highlighting the difficulty of finding a common language for a unified definition.[102] Thus, notions of 'green' and 'green bond' are interpreted in many ways leading to significant uncertainties around the world.[103] This means that issuers can use their discretion unfairly by defining so-called brown bonds as green bonds.[104] Brown bonds are sustainable bonds issued by carbon-heavy or environmentally controversial companies.[105] There is a difference of opinions on the question of whether brown bonds that have some sustainable effects could be included in the green bond category.[106] Some issuers are arguing that a brown bond can be categorised in the green category as they are nevertheless contributing to the aim of saving the planet.[107] Others, on the other hand, are saying that green bond should not have any brown element as it would be purposeless.[108]

The most notable example of 'brown bond' situation is Repsol case. In May 2017, Repsol issued green bonds having a worth of EUR 500million that was intended to be developed in 2022.[109] The money was

[100] Ehlers and Packer (n 40) 89.
[101] Interview with Philip Brown, 'Driving Corporate Green Bond Growth through Diversification and Environmental Expertise :: Environmental Finance' (2018) <https://www.environmental-finance.com/content/the-green-bond-hub/driving-corporate-green-bond-growth-through-diversification-and-environmental-expertise.html> accessed 6 September 2019.
[102] Clifford Chance, 'Greening the Financial System' (2017) 13 <https://www.cliffordchance.com/briefings/2017/11/greening_the_financialsystem.html> accessed 28 August 2019.
[103] Serena Fatica, Roberto Panzica and Michela Rancan, 'The Pricing of Green Bonds: Are Financial Institutions Special?' (European Commission 2019) JRC Technical Reports.
[104] Clifford Chance (n 103) 14.
[105] ibid 14–15.
[106] Maria Bachelet, Leonardo Becchetti and Stefano Manfredonia, 'The Green Bonds Premium Puzzle: The Role of Issuer Characteristics and Third-Party Verification' (2019) 11 Sustainability 2.
[107] ibid 5.
[108] Clifford Chance (n 103) 14–15.
[109] 'Repsol Completes Massive Issue Of "Green Bonds"' (*OilPrice.com*) <https://oilprice.com/Latest-Energy-News/World-News/Repsol-Completes-Massive-Issue-Of-Green-Bonds.html> accessed 6 September 2019; 'Repsol Greases the Wheels of Green Bond Market' *Reuters* (9 May 2017) <https://af.reuters.com/article/energyOilNews/idAFL8N1IB3CM> accessed 6 September 2019; 'Repsol Markets Corporate Green Bond' *World Energy News* (9 May 2017)

used to manufacture refineries that would reduce the carbon dioxide level by building machines that aimed to operate with plants.[110] This issuance was not listed on the green bond indexes because it did not meet the general conditions of a green bond.[111] The CBI supported this decision arguing that positive environmental effects of this issuance are only for a short period of time. Even if the machine would release a small amount of carbon dioxide, the total amount released over many years would still have a negative effect on the environment.[112] Repsol, on the other hand, argued that even if the bonds are not entirely green, they would still conserve 1.2 million tonnes of carbon dioxide annually.[113]However, according to the green bond evaluator Vigeo-Eiris, the issuances could be considered as 'green' because of its environmental contribution.[114]

An example of regulated brown bonds is China. China takes a very interesting position as it allowed its companies to issue and invest in green bonds that are wholly or even partly green.[115] For example, the company Tianjin SDIC Junneng Electric Power Co.Ltd issued green bonds valued at a total of US$150 million that was invested in clean coal.[116] It is very unlikely that the CBI or other international regulatory bodies would regard such issuances as 'green'.[117] This summarises the discrepancies between the different types of projects that could nevertheless amount to green bonds.

<https://www.worldenergynews.com/news/repsol-markets-corporate-green-bond-660545> accessed 6 September 2019.

110 Repsol, 'Repsol Green Bond Framework' (2017) 15 <https://www.repsol.com/imagenes/global/en/Repsol_Green_Bond_Framework_tcm14-71041.pdf> accessed 25 August 2019.

111 Olaf Weber and Vasundhara Saravade, 'Green Bonds. Current Development and Their Future' (Centre for International Governance Innovation 2019) CIGI Papers No. 210 11.

112 'An Oil & Gas Bond We Knew Would Come Eventually: Repsol: Good on GBPs, Not so Sure on Green Credentials': (*Climate Bonds Initiative*, 23 May 2017) <https://www.climatebonds.net/2017/05/oil-gas-bond-we-knew-would-come-eventually-repsol-good-gbps-not-so-sure-green-credentials> accessed 6 September 2019.

113 ibid.

114 Vigeo Eiris, 'Second Party Opinion on the Sustainability of Repsol's Green Bond' (2017) 7 <https://www.repsol.com/imagenes/global/en/Repsol_GreenBond_Second_Party_Opinion_tcm14-71044.pdf> accessed 27 August 2019.

115 'Why Green Bonds Could Be Key to Fighting Climate Change' (*State of the Planet*, 2 August 2019) <https://blogs.ei.columbia.edu/2019/08/02/green-bonds-fighting-climate-change/> accessed 6 September 2019.

116 'China Coal-Fired Power Plant Issues Green Bonds' *Reuters* (4 August 2017) <https://www.reuters.com/article/china-power-financing-idUSL4N1KP3RQ> accessed 6 September 2019.

117 'Why Some Chinese Green Bonds Fall Short of International Standards' (*South China Morning Post*, 25 November 2017) <https://www.scmp.com/business/global-economy/article/2121438/why-are-some-chinese-green-bonds-not-so-green-eyes> accessed 6 September 2019.

The third global challenge that green-financing faces is the complexities of greenwashing. Hortense Bioy, the European Director of Passive Strategies and Sustainability Research at Morningstar, said that greenwashing means different things to different people,[118] suggesting that there is no agreed definition of greenwashing. Catherine Howarth, the chief executive of the responsible investment group Share Action, told the Financial Times "*quite a bit of greenwashing is going on*," and she observed that it could lead to the next mis-selling scandal.[119] Essentially, greenwashing is a system where money invested in green projects are used for projects that are not green, but on the contrary, have adverse effects on the environment.[120] One of the world's leading companies, Coca Cola had in the past advertised that 30% of its bottles are made up from plant-based products and therefore presented that it contributed positively to the reducing carbon dioxide.[121] However, the company was unable to show evidence proving that its bottles were in fact plant-based. Thus, the funds invested in making the so-called 'green bottles' were greenwashed.[122] Therefore, the possibility of the greenwashing prevents a lot of investors from investing in green bonds.

2.8 The Opportunities of the Green Bond Market in the United Kingdom

Following the Paris Agreement of 2015 and the 2015 Sustainable Development Goals, the UK became more alerted of its duty to contribute to reaching the two degrees Celsius goal. Claire Perry, the Minister of State for Energy and Clean Growth, and John Glen, Economic Secretary to the Treasury, said that the UK government was prepared to achieve its global and domestic climate change commitments.[123] Therefore, the government set up the London Green Finance Initiative in 2016.[124] Sir Roger Gifford, the

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118 Jennifer Thompson, '"Green" Funds Can Fall Short of Buyers' Expectations' [2019] *Financial Times* <https://www.ft.com/content/644c1ec4-39d9-11e9-9988-28303f70fcff> accessed 6 September 2019.
119 Jennifer Thompson, 'Catherine Howarth Is on a Mission to Hold Asset Managers to Account' [2019] *Financial Times* <https://www.ft.com/content/e0fa26ee-0a3c-3573-aed2-7e20d652c529> accessed 6 September 2019.
120 William S Laufer, 'Social Accountability and Corporate Greenwashing' (2003) 43 Journal of Business Ethics 253, 255.
121 'Coca-Cola: A Case Study In Sustainability' (*Environmental Leader*, 8 August 2011) <https://www.environmentalleader.com/2011/08/coca-cola-a-case-study-in-sustainability/> accessed 6 September 2019.
122 'Coca-Cola Company (KO) Busted For "Greenwashing": PlantBottle Marketing Exaggerated Environmental Benefits, Says Consumer Report' <https://www.ibtimes.com/coca-cola-company-ko-busted-greenwashing-plantbottle-marketing-exaggerated-1402409> accessed 6 September 2019.
123 Government Actuary's Department (n 8).
124 'City Launches Initiative to Make London the World Leader in Green Finance' (*City launches initiative to make London the world leader in Green Finance*) <https://news.cityoflondon.gov.uk/city-launches-initiative-to-make-london-the--world-leader-in-green-finance/> accessed 6 September 2019.

senior banker at SEB and the Chair of the committees Green Finance Initiative and Green Finance Taskforce, stated that green finance in the UK is at an early stage of development , emphasising that this area shows the potential of growth.[125]

As the UK is one of the largest economies in the world, the government has been working towards creating and promoting opportunities to encourage UK-based investments in green bonds.[126] The UK Green Finance Taskforce submitted a report to the government that highlighted several green sectors including innovation, business and industry, homes, power, transport, natural resources, and public sector.[127] From this list, those of transport, homes, business and industry represent 62% of all of the carbon emissions in the UK.[128] In order to reduce this amount, the government anticipated that £2.5billion would be invested in inventing low carbon technologies.[129] Furthermore, the government is working towards stopping the sale of new conventional petrol and diesel vehicles by 2040 by encouraging investments in low carbon cars.[130] The government expects the business and industry sector to be more energy efficient by at least 20% by 2030.[131] Added to that, £180billion has already been allocated for clean electricity and supporting green infrastructure.[132] In addition, in 2018, the government published its 25-Year Environment Plan on environmental quality, protection, and enhancement.[133] The plan contains a set of strategies, aims, concepts, and commitments that would help to meet the goal of improving the environment and to mitigate consequences of climate change. The UK is making a lot of commitments but as these initiatives are new, it will take time before the significant effect appears.

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[125] 'Accelerating Green Finance' (n 10) 4.
[126] Green Finance Initiative, 'Fifteen Steps to Green Finance' (2017) A discussion paper from the UK Green Finance Initiative 20.
[127] 'Accelerating Green Finance' (n 10) 14.
[128] ibid.
[129] ibid 48.
[130] HM Government and Industrial Strategy, 'The Road to Zero.Next Steps towards Cleaner Road Transport and Delivering Our Industrial Strategy' (Department for Trasport 2018) 14 <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/739460/road-to-zero.pdf> accessed 28 August 2019.
[131] ibid 9.
[132] 'Accelerating Green Finance' (n 10) 14.
[133] HM Government, 'A Green Future: Our 25 Year Plan to Improve the Environment' (2018) <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf> accessed 27 August 2019.

Over the years, the UK has witnessed a growth of green finance products in its financial services market.[134] In 2018, more than 70 green bonds were listed on the London Stock Exchange in seven currencies that had the value of more than US $22bn.[135] Furthermore, 38 green companies raised funds having a worth of US $10bn in London and this also included 14 renewable investment funds.[136] Interestingly, the retail-banking sector has introduced green mortgages for homeowners who want to invest in energy-efficient new properties.[137]

2.9 The Sustainable Bond Challenges that UK is Currently Facing

Although the green industry is growing, this growth is not sufficiently rapid.[138] The Committee on Climate Change estimated that UK would have to spend £22bn per year to meet its fifth carbon budget, which amounts to 1% of its GDP, including public investment of £2.2bn for bigger projects.[139] With regards to the infrastructure sector, the Infrastructure and Projects Authority (IPA) said that at least £500 billion would have to be invested by 2021 for the plan to work.[140] Although these plans present a lot of opportunities, the UK runs the risk of lagging behind as other countries compete to innovate, invest and design policy frameworks.[141] As mentioned above, France is already ahead of the UK, having issued more green bonds.[142] Surprisingly, although the UK is considered to have one of the biggest economies

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[134] Green Finance Initiative and City of London, 'Globalising Green Finance: The UK as an International Hub' (2016) City of London Corporation Research Report 3.
[135] House of Commons and Environmental Audit Committee, 'Green Finance: Mobilising Investment in Clean Energy and Sustainable Development: Government Response to the Committee's Sixth Report' (2018) Ninth Special Report of Session 2017–19 para 6.
[136] 'Facts & Figures' (*Green Finance Initiative*) <http://greenfinanceinitiative.org/facts-figures/> accessed 6 September 2019.
[137] 'European Banks Launch Green Mortgage Pilot Scheme - Climate Action' <http://www.climateaction.org/news/european-banks-launch-green-mortgage-pilot-scheme> accessed 6 September 2019.
[138] Long Finance Initiative and Finance Watch, 'The Global Green Finance Index 3' (2019) 5 <https://www.finance-watch.org/wp-content/uploads/2019/03/GGFI_3_Full_Report.pdf> accessed 29 August 2019.
[139] Paul Ekins, 'Costs and Benefits of Net-Zero Advisory Group' (2019) Report to the Committee on Climate Change 13 <https://www.theccc.org.uk/wp-content/uploads/2019/05/Advisory-Group-on-Costs-and-Benefits-of-Net-Zero.pdf> accessed 27 August 2019.
[140] Infrastructure and Project Authority, 'National Infrastructure. Delivery Plan 2016–2021' (2016) Report to HM Treasury and Cabinet Office 105.
[141] Third Generation Environmentalism Ltd (E3G), 'The Kaleidoscope of Global Green Finance Is Being Shaken- Can the UK Regain Its Lead? | E3G' (*E3G | Third Generation Environmentalism*) <https://www.e3g.org/library/kaleidoscope-of-global-green-finance-is-being-shaken-can-the-uk-regain-lead> accessed 6 September 2019.
[142] Delphine Cuny, 'France Returns to Top of Global Green Bond Ranking' (*euractiv.com*, 26 June 2019) <https://www.euractiv.com/section/energy-environment/news/france-returns-to-top-of-global-green-bond-ranking/> accessed 6 September 2019.

in the world, it is involvement in the green bond market is well behind other economies and it did not make it up to the top 10 list in 2017.[143]

In October 2018, the Financial Conduct Authority of the UK stated that a lack of standards for calculating the performance and impact of green finance products is the main problem in the green finance market.[144] The Financial Stability Board Taskforce on Climate-Related Financial Disclosures showed that only some companies disclose the financial impact of climate change on their businesses or the strengths of their strategies under distinct climate projects.[145] The Taskforce also found that insufficient information creates a risk to the value of long-term investments provided that current valuations do not sufficiently show in climate-related risks.[146] As at the moment, there is no universally agreed principle that regulates disclosure, the risks of mis-selling are high. For example, clients are left without an understanding of what they are buying, and they are often sold misleading financial products and services.

The Bank of England published a report where it raised two types of environmental risks currently faced by the UK. The first one is the physical risks and the second one is the transition risk. Under the physical risk, it identifies droughts, floods, storms, and sea-level rises.[147] If projects associated with these risks are not insured, it will lead to economic disruption, and consequently to a reduction in tax revenues, thereby increasing fiscal expenditures.[148] Transition risks are financial risks which occur in the process of UK transition into a lower carbon economy.[149] This gives rise to the need of making a re-valuation of a range of assets as a result of alterations in climate policy, technology, or market sentiment.[150] For instance, the top four US coal producers have sunken by 95% since 2010 and three of the top five have filed for bankruptcy.[151] The Bank argued that risks to financial stability would be reduced if the transition

[143] 'Accelerating Green Finance' (n 10) 17.
[144] Financial Conduct Authority (n 31) 10.
[145] TCFD, 'Task Force on Climate-Related Financial Disclosures: Status Report' (2019) 2019 Status Report 4 <https://www.fsb.org/wp-content/uploads/P050619.pdf> accessed 28 August 2019.
[146] 'Green Finance Taskforce' (n 9) 3.
[147] Matthew Scott, 'The Bank of England's Response to Climate Change' (Bank of England 2017) Quarterly Bulletin 2017 Q2 ISSN 2399-4568 98.
[148] ibid 100.
[149] ibid 98.
[150] ibid.
[151] ibid 103.

started at an earlier date and followed a predictable path, thus assisting the market to predict a transition to a 2 degrees Celsius planet. [152]

2.10 Current development in the UK

On 2 July 2019, the UK government launched its Green Finance Strategy, releasing its green finances aims.[153] Its main goal is to increase investments in sustainable projects and infrastructure while making sure that the UK stays an international leader of decarbonisation and meets its 2050 net-zero carbon emission goal.[154] The strategy expects public listed companies and large companies to make disclosures by 2022 on how climate change affects their activities.[155] The strategy is three-folded into greening finance, financing green and capturing the opportunity. Greening finance is responsible for ensuring that climate and environmental elements are introduced in the core of the financial decision-making.[156] Financing green is meant to speed up investment, encouraging Clean Growth Strategy and environmental goals in the UK.[157] Capturing the opportunity makes sure that the UK secures an adequate market share of the developing global green finance market.[158] Dr. Nina Seega, a research director at the Centre for Sustainable Finance at the University of Cambridge Institute for Sustainability Leadership, said that the new Green Finance Strategy would enable the UK to become a big sustainable finance hub that would produce expertise and novelty to the world's economy.[159] Furthermore, the new strategy is a significant indication that the UK government is serious about fusing climate and

[152] ibid 100.
[153] HM Government, 'Green Finance Strategy' (2019) <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/820284/190716_BEIS_Green_Finance_Strategy_Accessible_Final.pdf> accessed 29 August 2019.
[154] 'CISL's Centre for Sustainable Finance Welcomes the UK's Green Finance Strategy — Cambridge Institute for Sustainability Leadership' <https://www.cisl.cam.ac.uk/centres/centre-for-sustainable-finance/news/cisls-centre-for-sustainable-finance-welcomes-the-uks-green-finance-strategy> accessed 6 September 2019.
[155] HM Government, 'Green Finance Strategy' (n 154) 8.
[156] 'Green Finance' (*GOV.UK*) <https://www.gov.uk/guidance/green-finance> accessed 6 September 2019.
[157] '"Greening Finance" and "Financing Green": UK Government Unveil Strategy to Make Finance Fit for a Net-Zero Future' <https://www.cms-lawnow.com/ealerts/2019/07/greening-finance-and-financing-green-uk-government-unveil-strategy> accessed 6 September 2019.
[158] 'CISL's Centre for Sustainable Finance Welcomes the UK's Green Finance Strategy — Cambridge Institute for Sustainability Leadership' (n 155).
[159] Nina Seega, 'CISL's Centre for Sustainable Finance's Analysis of the Green Finance Strategy' (Centre for Sustainable Finance 2019).

environment elements in making decisions related to finance and speeding green investment.[160] This suggests a potential for the UK to eventually position itself at a top in the global green finance market.

2.11 Case Studies

This part will address two examples of green projects in the sectors of transportation and electricity. The Transport for London Inaugural Green Bond that had a worth of £400 million was the first Green Bond Framework developed mainly for sustainable transport.[161] It was the longest Sterling Green Bond that was ever issued in the UK with a coupon of 2.125% which was the second-lowest fixed-rate coupon that the TFL had published.[162] The object of this bond was to achieve diversity in its investor base and tight pricing. The price was set at a £400 million transaction at G+57bps and 10 years maturity was imposed.[163] At that stage, the concept of the green bond was still very novel and there were no specific regulations to govern such transaction.

In another example, the UK Climate Investment announced that it concluded a £14 million contract with H1 Holdings to help with the development of 254 MW of clean energy projects across South Africa.[164] The proceeds were intended to finance the development of the Kruisvallei Hydro project in the Free State province, Kangnas Wind Farm in the Northern Cape province (140 MW).[165] The anticipated date of completion for the project is 2020 and it is presumed to provide electricity to at least 200,000 homes and establishments per year.

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[160] 'A Conversation on the Green Finance Strategy | LexisNexis Blogs' <https://www.lexisnexis.co.uk/blog/built-environment/a-conversation-on-the-green-finance-strategy> accessed 6 September 2019.
[161] 'Transport for London' (*Green Finance Initiative*) <http://greenfinanceinitiative.org/case-studies/transport-of-london/> accessed 6 September 2019.
[162] ICMA, 'The Practice and Prospects for Green Bond Market Development at Home and Abroad' (2016) NAFMII-ICMA Working Group 41.
[163] OECD, 'Green Bonds: Country Experiences, Barriers and Options' (n 92) 9.
[164] 'UK Climate Investments Supports Development of 254MW of Clean Energy with ~£14 Million (R253 Million) Agreement in South Africa' (*Green Investment Group*) <http://greeninvestmentgroup.com/news-and-insights/2019/uk-climate-investments-supports-development-of-254-mw-of-clean-energy-projects-with-14-million-r253-million-agreement-in-south-africa/> accessed 6 September 2019.
[165] Ibid.

CHAPTER 3

GREEN BONDS REGULATIONS IN THE WORLD

3.1 LSEG Green Bond Guide in The United Kingdom

Currently, there is no domestic legislation that directly regulates the green bond industry. This means that green bonds issuers can choose any rules to be applied to their transactions. The following section will discuss the existing types of rules in the green bonds market.

The London Stock Exchange provides a list of conditions that need to be satisfied before a bond can be considered 'green'.[166] First of all, it is important to look at how the LSE defines green bonds. 'Green bonds' are "*any type of bond instrument where the proceeds will be used exclusively to finance or re-finance in part or in full new/and or existing eligible 'green' projects*."[167] The issuer must be able to explain the use of the proceeds in the legal documentation which are generally managed within a company.[168] LSE favours projects that finance renewable energy, energy efficiency projects, sustainable waste management, sustainable waste management, sustainable land use, biodiversity conservation, clean transportation, and climate change adaption, inter alia other eligible projects.[169] According to LSE, the regulation process of green bonds is the same as the regulation process of normal bonds.[170] The additional feature for a green bond to be listed on the LSE is to have a green certificate that certifies the bonds as 'green'.[171] There are few conditions that the certification body has to fulfil. Firstly, it needs to be a legal body that has a registered office in the European Economic Area or Switzerland and has the necessary financial resources to conduct the verification.[172] Secondly, it

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166 London Stock Exchange, 'Green Bonds: Listing Process' <https://www.londonstockexchange.com/specialist-issuers/green-bonds/green-bonds-listing-process.pdf> accessed 25 August 2019.
167 ibid 1.
168 'A Guide to Listing on the London Stock Exchange' (London Stock Exchange 2010) 22 <https://www.londonstockexchange.com/home/guide-to-listing.pdf> accessed 25 August 2019.
169 London Stock Exchange, 'Green Bonds on London Stock Exchange' 2 <https://www.londonstockexchange.com/specialist-issuers/green-bonds/greenbondspresentation.pdf> accessed 2 September 2019.
170 London Stock Exchange, 'Green Bonds: Listing Process' (n 167) 2.
171 'Green Bonds' (*London Stock Exchange Group*) <https://www.lseg.com/green> accessed 6 September 2019.
172 London Stock Exchange, 'Green Bonds: Listing Process' (n 167) 3.

needs to be independent of the entity that is issuing the bond and it should not have any connection with its directors, senior management, and advisers.[173] Further, the corporation that provides the second opinion need not be a subsidiary or owner whether it is in part or entirely of the entity that is issuing the bond.[174] The certification body has to be remunerated in a way that does not create any conflicts of interests that emerge as a result of a fee structure.[175] Finally, the institution must have sufficient financial and market-specific expertise to perform a clear assessment of the use of the proceeds.[176]

The guide that the London Stock Exchange Group issued provides recommendations for practice in Environmental, Social and Governance reporting (hereinafter 'ESG').[177] The Guide is essential in the green bond transaction because it answers the demand from investors for a clearer approach to ESG reporting.[178] The main purpose of this guide is to assist companies to obtain a comprehensive understanding of the ESG information that investors need from the issuing companies to promote good practice across the banking and finance industry.[179]

As there is no standard regulation, the ESG identified eight strategies to help investors and issuers understand what types of information they have to disclose in green investments[180] Firstly, it provides that companies should provide a strategic perspective on the possible trends or characteristics of their business models.[181]Secondly, it also developed the concept of materiality concept. As such the International Accounting Standard Board has defined materiality as "*information that which could, if omitted or misstated, influence the economic decisions of readers relying on the financial statements. The UK FRC' Clear & Concise guidance to narrative reporting states that 'information' is material if its*

[173] ibid.
[174] ibid.
[175] London Stock Exchange, 'Introduction to London Stock Exchange Capital Markets' (2015) 10 <https://www.lseg.com/sites/default/files/content/documents/LSE%20Capital%20Markets%20brochure%202015.pdf> accessed 2 September 2019.
[176] London Stock Exchange, 'Green Bonds: Listing Process' (n 167) 3.
[177] London Stock Exchange, 'Your Guide to ESG Reporting' (n 85).
[178] ibid 3.
[179] 'The Importance of ESG Reporting Guidance Explained' (*London Stock Exchange Group*) <https://www.lseg.com/markets-products-and-services/our-markets/global-sustainable-investment-centre/sustainable-news-and-resources/importance-esg-guidance-explained> accessed 6 September 2019.
[180] London Stock Exchange, 'Your Guide to ESG Reporting' (n 85) 6–7.
[181] ibid 8.

omission or misrepresentation could influence the economic decisions shareholders take on the basis of the annual report as a whole".[182] Thirdly, the guideline helps to create accuracy by deploying rigorous data collection systems. It creates boundaries between investors and issuer by aligning fiscal year and business ownership model. The examples of such barriers are timeframes and data reporting.[183] It creates balance with regards to the provision of information by ensuring comparability, consistency, and external assurance. Fourthly, it recognises the need to have standardised regulations to make sustainability an important part of a dialogue between investors and issuers.[184] It encourages them to make information available to one another prior to entering into any transactions. It introduced the stand-alone sustainability report and integrated report that is aimed at ensuring that issuers provide annual reports to their investors.

It also gives guidance as to how companies could navigate regulations and communicate properly. It emphasises the importance of a mandatory reporting system by stating that 64 countries around the world have adopted 400 new mandatory instruments.[185] In the UK, London Stock Exchange Main Market, the EEA regulated companies, the NYSE or the NASDAQ are presumed to explain how they are using green funds to manage concerns relating to environmental performance, human rights, social and community involvement, and diversity. [186]

Furthermore, the UK has implemented the EU non-Financial Directive (NFRD) that has the main purpose of creating a minimum standard for ESG reporting across the EU.[187] The Directive contains provisions that require the biggest companies to report on matters relating to the environment, social

[182] 'IFRS - IASB Clarifies Its Definition of "Material"' <https://www.ifrs.org/news-and-events/2018/10/iasb-clarifies-its-definition-of-material/> accessed 6 September 2019.
[183] London Stock Exchange, 'Your Guide to ESG Reporting' (n 85) 20.
[184] ibid 22.
[185] Wim Bartels and Teresa Fogelberg, 'Carrots Sticks.Global Trends in Sustainability Reporting Regulation and Policy' (KPMG International, GRI, United Nations Environment Programme (UNEP) and The Centre for Corporate Governance in Africa (at the University of Stellenbosch Business School) 2016) 10.
[186] 'U.K. Weighs Mandatory Climate Reporting in Green Finance Push - Bloomberg' <https://www.bloomberg.com/news/articles/2019-07-01/u-k-financial-services-told-to-take-lead-on-climate-change> accessed 6 September 2019.
[187] Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups [2014] OJ L 330

and employee concerns, human rights, and anti-corruption and bribery problems.[188] Following the implementation of this Directive, companies and groups with more than 500 employees that are categorised as public interest companies have to disclose a greater scope of non-financial data in their strategic reports.[189] This essentially means that eligible companies are required to disclose information on aspects relating to the environment, employee, social and human rights.[190]

The most important part of the guide refers to green revenue reporting that addresses how issuers an achieve recognition for their green products and services.[191] The transition from normal to green has to be clear and transparent, allowing investors to measure if their funds are being invested into green projects.[192] To ensure investment flow, the ESG guide requires an issuer to explain what opportunities have a positive environmental impact, by providing details on the green bonds that they are going to issue.[193] For example, a UK chemical company has distributed its revenues into specific subcategories to allow investors to understand how the revenues would make a contribution to the green economy.[194] One of the segments is called the 'Precious Metal Product' that is broken into two other subcategories namely 'Recycling' and 'Other Activities'. This helps investors to see that the green funds would go into recycling, while other activities do not contribute to making the economy green. Another company that conducts its businesses in fixed-line telecommunications explained that it aims to cut its carbon emissions by three times by 2020. By quantifying the report, it gives investors an idea as to what extent would the environment.[195]

A major global organisation, the London Stock Exchange Market, the policymakers, and the G20 Green Finance Study Group recognise the importance of green bonds-fixed income instruments that are

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188 CRI, 'Member State Implementation of Directive 2014/95/EU' (CSR Europe and GRI 2017) 8 <https://www.globalreporting.org/resourcelibrary/NFRpublication%20online_version.pdf> accessed 28 August 2019.
189 ibid.
190 European Commission, 'Disclosure of Non-Financial Information: Europe's Largest Companies to Be More Transparent on Social and Environmental Issues' <https://europa.eu/rapid/press-release_STATEMENT-14-291_en.htm> accessed 29 August 2019.
191 London Stock Exchange, 'Your Guide to ESG Reporting' (n 85) 36.
192 Shishlov, Morel and Cochran (n 95) 4.
193 London Stock Exchange, 'Your Guide to ESG Reporting' (n 85) 44.
194 Anna Bernasek and DT Mongan, 'Big Data Is Coming for Your Purchase History - to Charge You More Money | Anna Bernasek and DT Mongan' *The Guardian* (29 May 2015) 38 <https://www.theguardian.com/commentisfree/2015/may/29/big-data-purchase-history-charge-you-more-money> accessed 13 July 2019.
195 Ibid

designed to finance environmental projects.[196] The G20 Green Finance Study Group, presided by China and the United Kingdom, was designed to examine the opportunities of sustainable development and to tackle barriers with the purpose to create a sustainable environment.[197] Undoubtedly, the UK already has disclosing standards and regulations but additional certification on green bond segments is important to attract more investors and to give them the confidence of investing safely in green bonds.[198] In short, the guidance is at the end only a non-binding document. The integrity of the green regulatory system cannot be met if there are only involuntary guidelines. This will be discussed in more details in the following chapter.

3.2 The United Kingdom Companies Act 2006

Section 172 of the UK Companies Act 2006 provides: "*a director of a company must act in the way he considers, in good faith, would be most likely to promote the success of the company for the benefit of its members as a whole, and in doing so have (amongst other matters) regard to….the impact of the company's operations on the community and the environment*."[199]In other countries such as Australia, the directors are only concerned by the interest of the company rather than any other stakeholders.[200]However, in this context the UK is one step ahead as it requires directors of companies to consider the green element aspects in their decision-making process.[201] Most importantly, the Act has introduced a requirement for all large and medium-sized companies to include a business review in their annual reports that gives a 'fair review' on the business in concern and its main risks and

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[196] Ceres and The B Team, 'Getting Climate Smart: A Primer for Corporate Directors in a Changing Environment' (2018) 6 <https://s3.amazonaws.com/tlddocuments.llnassets.com/0014000/14453/ceres_climatesmartprimer_060118_web%20(1).pdf> accessed 25 August 2019.
[197] 'G20 Sustainable Finance Study Group Document Repository - UN Environment Inquiry' <http://unepinquiry.org/g20greenfinancerepositoryeng/> accessed 6 September 2019.
[198] 'Green Stock Exchange :: Environmental Finance' <https://www.environmental-finance.com/content/the-green-bond-hub/green-stock-exchange.html> accessed 6 September 2019.
[199] Companies Act 2006, section 172
[200] Shelley D Marshall and Ian Ramsay, 'Stakeholders and Directors' Duties: Law, Theory and Evidence' (Legal Studies Research Paper No 411, University of Melbourne 2012) 89.
[201] Department for Business, Energy & Industrial Strategy, 'Corporate Governance Reform' (2016) Green Paper 37.

uncertainties. Furthermore, they should include information on matters relating to the environment.[202] In 2013, an amendment was made by replacing the business review requirement by a need for a strategic report.[203] Accordingly, the strategic report should contain a separate section on disclosure, such as green gas emission reporting.[204] The strategic report should be clear on the risks of the environment and the uncertainties as well as the environmental gains and the losses. [205]

3.3 International Green Bonds Standards

Currently, there are two types of voluntary regulations on green bonds: the Green Bond Principles (GBP) and the Climate Bonds Standards (CBS).[206] These two standards serve the aim of guiding the international community to determine the 'greenness' of a bond.[207]

The GBP are voluntary process guidelines that govern the issuances and certification of green bonds.[208] It was published by the ICMA in 2014 and it was revised and updated in 2017.[209] The ICMA is a body that carries research on good governance.[210] The GBP consists of three main purposes : promotion of integrity in the green bond market, establishment of the guidelines for issuing green bonds, and making recommendations for transparency, disclosure, and reporting.[211] Under the GBP, there are four steps that have to be followed in order to qualify a bond as 'green'. The first step is to make sure that the bond is classed under the categories of eligible green projects that reduce environmental impacts. Secondly,

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202 ICAEW, 'Environmental Issues and UK Annual Reporting. Sustainable Business Initiative' (2015) 10 <https://www.icaew.com//media/corporate/files/technical/sustainability/tecpln12453-eiafr-annual-report-2nd-edition-final.ashx?la=en> accessed 27 August 2019.
203 Department for Business Innovation and Skills, 'The Future of Narrative Reporting. A New Structure for Narrative Reporting in the UK' (2012) 10 <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/34745/12-979-future-of-narrative-reporting-new-structure.pdf> accessed 26 August 2019.
204 Financial Reporting Council, 'Guidance on the Strategic Report' (2018) Accounting and Reporting 10.
205 ibid 3.
206 'Green Bond Principles' (n 6); Climate Bonds Initiative, 'Climate Bond Standard' (n 36).
207 Ehlers and Packer (n 60) 3.
208 The Green Bond Principles and ICMA (n 99).
209 'Who We Are' <https://icma.org/who-we-are> accessed 6 September 2019.
210 Ibid.
211 The Green Bond Principles and ICMA (n 99).

the bond would have to be evaluated, thirdly there has to be a management of proceeds and finally, the issuer must comply with the annual reporting on the use of proceeds. [212]

Like the GPB, the CBS is also a voluntary guideline that governs green bonds issuances.[213] It is issued by Climate Bond Initiative, a non-profit organisation that has the predominant aim of governing the capital market for climate change strategies. It created the CBS policies that were introduced in 2009 by the Carbon Disclosure Project.[214] It has 46 subcategories which means that issuers have a wide range of options. Furthermore, it provides a list of external verifiers that could approve bonds to comply with CBS.

3.3.1 The challenges raised by the GBP and the CBS

The problem with both of these policies are that they are voluntary. This means that an issuer can still issue bonds without any accreditation. Both mechanisms require issuers to release annual reports but a year is a sufficient time for frauds to occur and be unnoticed. It could lead to uncertainties such as that investors who want disclosure on how their proceeds are being used would then have to wait for longer periods before disclosure. Further, issuers are allowed to receive second party opinions from consultant that works for the same company or institution which means that the risks of proving misleading information could be high.

3.4 The Domestic Green Laws of Relevant Countries

There are several countries that have implemented provisions relating to green finance in their domestic laws.[215] However, as the concept of green finance is still an emerging one, legislation in this area are often very scarce.[216] For instance, although China has adopted green provisions in its laws, its domestic

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[212] ibid.
[213] Climate Bonds Initiative, 'Climate Bond Standard' (n 36).
[214] Ibid
[215] 'Sustainable Finance: Regulatory Intervention on the Horizon | Global Law Firm | Norton Rose Fulbright' <https://www.nortonrosefulbright.com/en/knowledge/publications/a2ea041c/sustainable-finance-regulatory-intervention-on-the-horizon> accessed 6 September 2019.
[216] ibid.

law is still at a very early stage and it does not cover many very important issues.[217] The EU Standard labels bonds as green but yet such definition is still voluntary and non-enforceable.[218] The countries that have legislated green bonds are China, India, Brazil, Morocco, France, and Poland.[219] Countries that have not legislated their green bonds normally use the GBP or the CBS.[220]

China was ranked in the first top-five for green financing on many occasions.[221] Its leading position on the green bond market can be explained by the fact that it is one of the few countries that regulates the issuance of green bonds. The Central Bank of China created two regulations which apply along with the domestic laws.[222] The regulation contains sections relating to green financial bonds in the interbank market as well as green enterprise bonds.[223] Further, the Chinese Securities Regulatory Commission produced an opinion that explained how green bonds in China could be developed.[224] Issuers in China have the obligations to produce a quarterly report describing how the proceeds are being used.[225] It appears that the regulations imposed in China are stricter in approach compared to the GBP and the CBS.[226] Another reason is that China approach is mandatory which means that it supports bond issuers in the sense that they are able to get third-party verification prior to labelling a bond as green.[227] India also has adopted a green legal framework for its green bond industry.[228] The Securities and Exchange

[217] Virginia Ho, 'Sustainable Finance & China's Green Credit Reforms: A Test Case for Bank Monitoring of Environmental Risk' (2018) 51 Cornell International Law Journal 609, 624.
[218] EU Technical Expert Group on Sustainable Finance, 'Report on EU Green Bond Standard' (n 13) 48–60.
[219] '2017: The Year for Sovereign Green Bonds? | White & Case LLP' <https://www.whitecase.com/publications/insight/2017-year-sovereign-green-bonds> accessed 6 September 2019.
[220] Wang (n 11) 480.
[221] 'China's Bond Market' (*CSOP Asset Management*) <https://csopasset.us/markets/bond-market> accessed 6 September 2019.
[222] IDB and Climate Bonds Initiative, 'How to Issue a Green Panda Bond' (2018) Handbook 5 <https://www.climatebonds.net/files/files/CBI-Green-Panda-Bonds-30Nov18.pdf> accessed 26 August 2019.
[223] Federal Ministry for Economic Cooperation and Development, 'Green Bonds – Ecosystem, Issuance Process and Case Studies' (2018) Consultation Draft 62.
[224] 'China Issues Special Green Bonds Guidelines for Listed Companies + New China Local Govt Green Bond Policy Recommendations' (*Climate Bonds Initiative*, 3 May 2017) <https://www.climatebonds.net/2017/05/china-issues-special-green-bonds-guidelines-listed-companies-new-china-local-govt-green-bond> accessed 7 September 2019.
[225] Sean Kidney and Beate Sonerud, 'Growing a Green Bonds Market in China' (Climate Bonds Initiative 2015) 17.
[226] Wang (n 11) 479.
[227] Ibid.
[228] Justin Pugsley, 'Regulators Starting to Catch up with Green Bond Boom' <https://www.globalriskregulator.com/Subjects/Capital/Regulators-starting-to-catch-up-with-green-bond-boom> accessed 7 September 2019.

Board of India published its regulations in 2016 and most of the provisions were replicated from the GBP.[229]

The European Parliament and the Council, which are responsible for the promotion of the use of energy from renewable sources have adopted the Renewable Directive 2009/28/EC.[230] The Directive was mainly concerned with promoting energy from a wide range of renewable sources. For instance, article 3(1) of the Directive provides that the target of 20% of renewable energy has to be achieved by 2020. Some countries have met this obligation and even exceeded 20% benchmark while others are still behind on this requirement. For example, Sweden fulfilled this section by 49% while Malta is still at 10%.[231] Further, article 3(4) of the Directive provides the obligation that states that 10% of renewable energy should be used in the transport sector in every member state. In addition, the Directive encourages cooperation among member states by asking them to disclose statistics on renewable energy.[232]The main reason why this directive received mostly positive reaction is that defines renewable energy. However, it should be noted that the Directive focuses mainly on the core of the energy and resources industry rather than the financial part of it.

The EU has also proposed an establishment of an EU Green Bond Standard in 2018. Technical Expert Group on Sustainable Finance was invited to provide feedback on this document.[233]104 replies were obtained from 22 countries with most of them favouring the creation of a voluntary EU Green Bond standard through a regulation.[234] The report has, however, identified a few barriers such as reputation risk, uncertainties on the definition of green bonds, cost external review procedures and the unclear expectation of use of proceeds.[235] The report suggested that the market needs to be built on the best

[229] Ibid.
[230] Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC [2009] OJ L 140
[231] Sotirios MOUSTAKIDIS, 'Renewable Energy – Recast to 2030 (RED II)' (*EU Science Hub - European Commission*, 12 December 2018) <https://ec.europa.eu/jrc/en/jec/renewable-energy-recast-2030-red-ii> accessed 7 September 2019.
[232] Ibid
[233] 'Invitation for Feedback on the TEG Preliminary Recommendations for an EU Green Bond Standard' (*European Commission - European Commission*) <https://ec.europa.eu/info/publications/190306-sustainable-finance-interim-teg-report-green-bond-standard_en> accessed 7 September 2019.
[234] ibid.
[235] EU Technical Expert Group on Sustainable Finance, 'Report of the Technical Expert Group (TEG) Subgroup on Green Bond Standard. Proposal for an EU Green Bond Standard' (Green Bond Standard Subgroup 2019) Interim Report 14.

practices, there should be better prescriptive environmental regulations, and broader taxonomies.[236] It also recommended for a centralised accreditation regime for external verifiers.[237]

France has adopted the Energy Transition for Green Growth Act 2015 that governs green financing in France.[238] The purpose of this legislation is to reduce climate change and increase the scope of the energy mix.[239] The Act also contains sections that explain how France intends to decrease its greenhouse gas emissions and energy consumption.[240] Article 173 of the Act is a very important provision mainly because it imposes mandatory obligations on listed companies, banks, and credit providers as well as institutional investors who are required to disclose their annual report.[241] Again, the question of whether a report should be annual or quarterly is raised. This Article requires credit providers and institutional investors to disclose their annual reports, while listed companies must also explain what environmental measures they have been taking to reduce the risks to the environment. On another note, banks and credit providers must disclose the risk of extra leverage and the risks showed by frequent stress test. Institutional investors are also required to disclose information on the actions they are taking to promote environmentally sustainable goals. It is observed that this law is a good initiative, but it fails to make provision on enforcement of non-compliance, thus giving rise to ambiguity as to the powers of the financial regulators. It was argued that this law goes against the EU Directive 2009/138/CE as it violated the freedom of investors to invest but the constitutional council rejected this argument.[242]

[236] ibid 17–22.
[237] ibid 22–28.
[238] 'Energy Transition' (*Gouvernement.fr*) <https://www.gouvernement.fr/en/energy-transition> accessed 7 September 2019.
[239] Ministry of Environment, Energy and the Sea, 'Energy Transition for Green Growth Act in Action' (2016) 25 <https://www.ecologiquesolidaire.gouv.fr/sites/default/files/Energy%20Transition%20for%20Green%20Growth%20Act%20in%20action%20%20Regions%2C%20citizens%2C%20business%20%28%2032%20pages%20-%20juillet%202016%20%20Versions%20anglaise%29.pdf> accessed 28 August 2019.
[240] ibid 7.
[241] Energy Transition for Green Growth Act 2015
[242] Principles for Responsible Investment, 'French Energy Transitional Law. Global Investor Briefing' <https://www.unepfi.org/fileadmin/documents/PRI-FrenchEnergyTransitionLaw.pdf> accessed 1 September 2019.

In Norway, the green bond sector is regulated by the Norway Center for International Climate Research (CICERO) that uses a shade of green scale to determine how green a project is and thus what impacts a project would have on the environment.[243]

[243] Christa Clapp, 'Green Bonds and Environmental Integrity: Insights from CICERO Second Opinions' (CICERO Senter for klimaforskning 2016) Policy Note 2016:01 10.

CHAPTER 4 – DISCUSSION, SUGGESTIONS AND RECOMMENDATIONS

4.1 Key Findings

The research in the previous chapters revealed that some states have progressed rapidly in the green finance industry while others have been very slow to adopt regulations or to identify risks and opportunities.[244] It was found that countries like China and France were ahead of other countries in enacting domestic green legislation while others have either not adopted any domestic laws or potentially rely on voluntary mechanisms.[245] It appears that the fluctuations in growth appear because some countries are not fast enough to regulate the finance sector or potentially that their laws are not suited for green financing. The lack of uniform and certain legislation deters investors from making investments.[246] This is because it is impossible to give investors certainty and protection for their investments if there are no legislative instruments to govern their actions. However, the ambiguity arises looking at the United States that has adopted no regulations for its green bond industry but yet excel. It is ahead of China and France although these two latter countries have adopted their own laws.[247]

4.2 UK Green Finance Initiatives

On 18 September 2017, the government of the UK announced many initiatives to encourage green finance. These initiatives included a Green Finance Taskforce, more assistance to the City of London's Green Finance Initiative, and endorsement of the Financial Stability Board's Task Force on Climate related Financial Disclosure.[248] The government is also working on the Industrial Strategy which is

[244] 'Climate Change: Implications for Investors and Financial Institutions' (European Climate Foundation (ECF), the Institutional Investors Group on Climate Change (IIGCC), the United Nations Environment Programme Finance Initiatives (UNEP FI) and the University of Cambridge's Judge Business School (CJBS) and Institute for Sustainability Leadership (CISL)) Key Findings from the Intergovernmental Panel on Climate Change Fifth Assessment Report.
[245] Eco-Business, 'How China Became a Global Leader in Green Finance' (*Eco-Business*) <http://www.eco-business.com/news/how-china-became-a-global-leader-in-green-finance/> accessed 7 September 2019.
[246] 'Growing the US Green Bond Market' (2018) A Report from a Milken Institute Financial Innovations Lab Volume 2: Actionable Strategies and Solutions.
[247] 'China Emerges as Key Player in Green Bonds Market - World - Chinadaily.Com.Cn' <http://www.chinadaily.com.cn/a/201903/11/WS5c855866a3106c65c34edc7f.html> accessed 7 September 2019.
[248] 'Green Finance' (n 157).

intended to develop the worlds' first green finance capabilities.[249] The report by HM stated that *"We will extend the UK's global leadership in green finance—building on our world-leading financial sector—working with industry through our new Green Finance Taskforce. We are now working with the British Standards Institution and the City of London's Green Finance Initiative to develop the world's first green financial management standards."*.[250]

4.3 Green Finance Taskforce

The Green Finance Taskforce works in collaboration with the Department for Business, Energy and Industrial (BEIS) and HM Treasury.[251] The purpose of this body is to assist in delivering the investment that is important to help the Government's Industrial Strategy and Clean Growth Strategy.[252] Additionally, it consolidates the leadership of the United Kingdom to finance international clean investments.[253]

4.4 City of London's Green Finance Initiative

The Green Finance Initiative (hereinafter 'GFI') was established by the City of London Corporation in January 2016 together with the UK government.[254] Its main purpose is to bring together members from various financial organisations and service providers to promote public and market leadership on green

[249] 'UK Government Launches Plan to Accelerate Growth of Green Finance' (*GOV.UK*) <https://www.gov.uk/government/news/uk-government-launches-plan-to-accelerate-growth-of-green-finance> accessed 7 September 2019.

[250] HM Government, 'Industrial Strategy. Building a Britain Fit for the Future' (2017) White Paper 47 <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/664563/industrial-strategy-white-paper-web-ready-version.pdf> accessed 29 August 2019.

[251] ibid 6.

[252] Department for Business, Energy & Industrial Strategy, 'Clean Growth Strategy: Executive Summary' (2018) Policy Paper <https://www.gov.uk/government/publications/clean-growth-strategy/clean-growth-strategy-executive-summary> accessed 1 September 2019.

[253] Department for Business, Energy & Industrial Strategy and HM Treasury, 'Green Finance Taskforce: Terms of Reference' <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/675361/Green_Finance_Taskforce_-_terms_of_reference.pdf> accessed 1 September 2019.

[254] 'City of London Launches New Green Finance Initiative as It Bids to Cement Position as Climate Finance Capital' (*http://www.businessgreen.com*, 15 January 2016) <https://www.businessgreen.com/bg/news/2442004/city-of-london-launches-new-green-finance-initiative-as-it-bids-to-cement-position-as-climate-finance-capital> accessed 7 September 2019.

financing.[255] Moreover, it is a platform for advocating specific regulatory and policy proposals that might encourage the green finance sector throughout the world. This organisation promotes London and the UK as the main centres in the world for the provision of green financial and professional services.[256]

4.5 The Financial Stability Board's Task Force on Climate-related Financial Disclosure

The Financial Stability Board (FSB) was established with the purpose of creating recommendations for voluntary climate-related financial disclosures that are consistent, comparable, reliable, clear and efficient, and also to give information that could be useful for decision making to lenders, insurers, and investors.[257] The TCFD current has 32 members that prepare of disclosures across the G20.[258] It published its report on 29 June 2017, making made several recommendations that included a requirement for the companies to "*disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process*."[259]As following on from these recommendation, the UK government has adopted TCFB's recommendations and it has encouraged all listed companies to implement such recommendations.[260]

4.6 The Regulators in Further Details

The Bank of England has a department named the Prudential Regulation Authority (hereinafter 'PRA') that has the responsibility of prudential regulation and supervision of approximately 1,500 banks, building societies, credit unions, insurers, and major investment firms.[261] While the PRA regulates around 56,000 financial services firms and financial markets in the UK and it is also the prudential

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[255] 'Accelerating Green Finance' (n 10) 3.
[256] Charley Coleman, 'Green Finance and the Resilience of the Financial Sector to Climate Change' (2018) Debate on 18 January 2018 4.
[257] 'Task Force on Climate-Related Financial Disclosures | TCFD - About' <https://www.fsb-tcfd.org/about/> accessed 7 September 2019.
[258] 'Task Force on Climate-Related Financial Disclosures (TCFD) – Climate Action in Financial Institutions' <https://www.mainstreamingclimate.org/tcfd/> accessed 7 September 2019.
[259] Taskforce on Climate-Related Financial Disclosures, 'Implementing the Recommendations of the Task Force on Climate-Related Financial Disclosures' (2017) 50 <https://www.fsb-tcfd.org/wp-content/uploads/2017/06/FINAL-TCFD-Annex-062817.pdf> accessed 29 August 2019.
[260] Ibid.
[261] HM Government, 'Green Finance Strategy' (n 154) 19.

regulator of more than 18,000 of these financial institutions.[262] The other two regulators are the Financial Reporting Council and the Pension Regulator.[263] All of these regulators have released a joint statement on climate change to explain how climate-related financial risks need a uniform approach and collective action.[264] Many actions have already taken place. For example, the banking and insurance sectors have published reviews that explain the way in which climate exposes firms to financial risks and how such risks have different characteristics that need to be approached from an enhanced angle.[265] Other adopted initiatives include the establishment of a climate financial risk forum, network for greening the financial system, climate disclosures initiatives, sustainable insurance forum, and green mortgage market that establishes a link between energy efficiency and credit risks.[266] Further, the GreenFinTech challenge was launched to create innovative solutions to help the UK transit into a low carbon economy.[267] The Bank of England co-founded the Network for Greening the Financial System, it promoting the importance of climate-related disclosures by lending support to the TCFD, and it also conveyed an intention to undertake climate disclosures.[268] While the main initiatives taken by the FCA include the publication of a discussion paper on climate change and green finance,[269] it also introduced new conditions to improve the shareholder engagement and increase transparency in the area of stewardship.[270] The Financial Reporting Council has published corporate governance and stewardship codes to help companies and investors report on how they have adopted of long-term sustainability

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262 Ian Pagdin and Michelle Hardy, *Investment and Portfolio Management: A Practical Introduction* (Kogan Page Publishers 2017) 514.
263 HM Government, 'Green Finance Strategy' (n 154) 20–21.
264 Prudential Regulation Authority and others, 'Joint Statement on Climate Change' <https://www.bankofengland.co.uk/-/media/boe/files/prudential regulation/publication/2019/joint-statement-on-climate-change.pdf?la=en&hash=048A8F67AC5620F0D1BF420D8EC5D1FD57A39530> accessed 25 August 2019.
265 Andrew Voysey and Nina Andreeva, 'Environmental Risk Analysis by Financial Institutions – a Review of Global Practice' (Cambridge Centre for Sustainable Finance 2016) An input paper for the G20 Green Finance Study Group 26.
266 HM Government, 'Green Finance Strategy' (n 155) 19.
267 Tanya Andreasyan, 'UK Regulator Launches Green Fintech Challenge' (*FinTech Futures*) <https://www.fintechfutures.com/2018/10/uk-regulator-launches-green-fintech-challenge/> accessed 7 September 2019.
268 Governor of Bank of England Mark Carney, Governor of Banque de France François Villeroy de Galhau and Chair of the Network for Greening the Financial Services Frank Elderson, 'Open Letter on Climate-Related Financial Risks' <https://www.bankofengland.co.uk/news/2019/april/open-letter-on-climate-related-financial-risks> accessed 2 September 2019.
269 Financial Conduct Authority (n 31).
270 Financial Conduct Authority, 'Proposals to Promote Shareholder Engagement: Feedback to CP19/7 and Final Rules' (2019) Policy Statement PS19/13.

goals.[271] It also utilises the Joint Forum on Actuarial Regulation to expose the risks to high-quality actuarial work that surface from climate change in the annual risk perspective.[272] Furthermore, it monitors whether companies are compliant with the statutory needs of the strategic reports.[273] The other initiatives it took include the audit monitoring[274], the financial reporting lab[275] and the FRC's project on the future of corporate reporting.[276]

4.7 Regulatory Recommendations Recently Presented

The European Commission High-Level Expert Group on Sustainable Finance published a series of recommendations in 2016 which was adopted in the EU Green bond standard.[277] It is observed that Annex I of the final report, section 4.1 with regards to green projects states: *"Green projects shall align with these criteria allowing however for exceptional cases where these may not be directly applicable as a result among other of the innovative nature, the complexity, and /or the location of the Green Projects."*.[278]There is no doubt that innovation can precede in projects that precede taxonomy, but it is not clear on how and why the complexity would prevent the application of taxonomy. More guidance on this subject should be suggested to ensure a uniform application.

Annex 1, section 4.2 states that the issuer shall list the following requirements in their Green Bond Framework: *"The environmental objectives of the EU Green Bond or EU Green Bond Programme and how the issuers strategy aligns with such objectives."*. Essentially, this should be reversed to base disclosures on how the green bond objectives align with the strategy of the issuers. Annex 1, section

[271] Financial Reporting Council, 'Proposed Revision to the UK Stewardship Code' (2019) Consultation 16.
[272] Financial Reporting Council, 'Joint Forum on Actuarial Regulation: 2016 Risk Perspective Update' (2016) <https://www.frc.org.uk/getattachment/f2635eef-7a08-4652-bb19-3c14aea92928/JFAR-Update-of-risk-perspective-(December-2016).pdf> accessed 27 August 2019.
[273] ibid 12.
[274] Financial Reporting Council, 'Audit Firm Monitoring Approach' <https://www.frc.org.uk/auditors/audit-firm-monitoring-approach> accessed 7 September 2019.
[275] Financial Reporting Council, 'Financial Reporting Lab' <https://www.frc.org.uk/investors/financial-reporting-lab> accessed 7 September 2019.
[276] Financial Reporting Council, 'FRC to Examine the Future of Corporate Reporting, Calls for Participation' <https://www.frc.org.uk/news/october-2018/frc-to-examine-the-future-of-corporate-reporting> accessed 7 September 2019.
[277] High-Level Expert Group on Sustainable Finance (n 26) 51.
[278] EU Technical Expert Group on Sustainable Finance, 'Annex 1.Informal Supplementary Document on Green Bonds' (2018) Final Report 2018 by the High-Level Expert Group on Sustainable Finance 1.

4.3 on reporting states " *that issuers shall report at least annually, until full allocation of the bond proceeds to Green Projects, and thereafter, in case of any material change in this allocation."*[279]The word 'material' should be interpreted to allow consistent application of this condition. Annex 1, section 4.4 on verification states "*although reporting is required by the issuer at least annually and in the case of any material changes to allocations, the GBS does not contemporarily make it certain if an external review is needed for each round of allocation and impact reporting.*". Therefore, it is recommended that clarifications are sought with regards to this condition.

Before the European Commission adopted these recommendations, Price Water Cooper (PWC) had voiced its opinion on the suitability of such suggestions.[280] It commented that if the green bond is defined clearly and appropriate condition to make sure of a consistent application of the definition. EU labelled green bonds should assist to give clarity, consistency, and confidence for investors with regards to green financing.[281] It also perceived that standardised external review procedures would further assist to build confidence and growth in the market, allowing capital to mobile the funds needed to transit into a lower carbon economy.[282] It also proposed the annual reporting the impact metrics to be a condition in the standard as investors are asking for increased demand for robust and credible information with regards to the green performance of investments.[283] Further, it was highlighted that as the green bond industry grows, the focus is likely to be placed on the historical green performance of an issuer or a project or asset . It would likely be used as one of the key elements for the basis of investment decision-making by investors, which escalate the demand for independent assurance with respect to distributing proceeds and impact metrics.[284]

Moreover, because there is an administrative cost to function within a centralised accreditation scheme, PWC suggested that it would appreciate if the Accreditation Committee to allow existing national

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279 Ibid
280 Jan McCahey, 'Response to Proposal for an EU Green Bond Standard' <https://www.pwc.com/gx/en/about/assets/eu-green-bond-standard-interim-report.pdf> accessed 6 September 2019.
281 ibid 3.
282 Wim Bartels, Paul Holland and Tim Metzgen, 'Gearing up for Green Bonds' (KPMG's Global Center of Excellence for Climate Change and Sustainability 2015) Sustainable Insight 7.
283 McCahey (n 282) 1.
284 ibid.

accreditation schemes that have been adopted on the same subject matter.[285] The examples of such schemes are the French law implementing the EU Directive on non-financial reporting and the Green Bond Standard by the EU. PWC concluded that the Green Bond Standard appears to be efficient. It also referred to the accreditation criteria for external reviewers and stated that they should not be so narrow that only a small number of main verifiers actively participate because this will slow the development of an open, fair and competitive market for external review services.[286] For instance, while clear independence conditions are vital for an accreditation regime, for the ESMA accreditation regime for the Simple and Standardised (STS) regulation, they were interpreted in such a manner that the amount of accredited third-party verification agents is restricted to only two firms, because the provision of all other services to the issuer is not allowed.[287]

The Green Finance Study Group has recommended that green bond policies need improvement to become more transparent and to reflect the sustainability of the environmental stabilisation goals.[288] In 2016, the GFSG listed seven voluntary options for the G20 countries to adopt.[289] The group suggested that these countries may "*provide strategic policy signals and frameworks, promote voluntary principles for green finance, expand learning networks for building capacity, support the development of local green bond markets, promote international corporation to ease cross-border investment in green bonds, support and facilitate knowledge sharing on environmental and financial risk and improve the measurement of green finance activities and their impacts*.".[290]

Following the 2017 meeting, the GFSG focused on two subject matters: the environmental risk analysis in the finance industry and the use of publicly available environmental data for financial risk analysis and informed decision-making.[291] However, the main issue is that as the GFSG does not explain what these policies should be, no improvement can be made.

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285 McCahey (n 282).
286 ibid 2.
287 European Securities and Market Authority (ESMA), 'Draft RTS on Authorisation of Firms Providing STS Verification Services' (2018) Final Report 3.
288 G20 Green Finance Study Group, 'G20 Green Finance Synthesis Report' (2016) 16 <http://unepinquiry.org/wp-content/uploads/2016/09/Synthesis_Report_Full_EN.pdf> accessed 1 September 2019.
289 ibid 30.
290 Clifford Chance (n 104) 10.
291 'Enhancing Environmental Risk Assessment in Financial Decision-Making' (2017) In support of the G20 Green Finance Study Group 16 <http://unepinquiry.org/wp-

The GBP has also made a few recommendations which were published in June 2017. It suggested four changes that relate to the use of proceeds, the process for project evaluation and selection, the management of proceeds, and the reporting conditions.[292] As for the process of project evaluation and selection, it suggests that the issuer has the obligation to communicate its environmental objectives and explain the procedures whereby project fall within the categories of eligible green projects and makes recommendations for external review.[293] Regarding the management of proceeds, it requires the formal tracking of applications of the net proceeds of green projects.[294] It also suggested that a prospective issuer must appoint an independent verifier to give a verification statement that the bond is in line with the CBI standard.[295]

4.8 Discussions, recommendations and suggestions

There is a consensus that for the UK to succeed in the green finance industry, it has to attract more investors. However, in order for this to happen, the sustainable finance market has to be properly regulated.[296]Although there are many good recommendations, guidelines, and regulations, none of these are binding except the Companies Act 2001 that does not deal with green bonds separately. Thus, there is a compelling need to set up proper legislation that reflect elements of trusts, certainty, and transparency.[297] This paper has, therefore, three suggestions to make in relation to the domestic legislation of the UK. Following Brexit, London may no longer be the financial hub of Europe, while Frankfurt will most likely become the main focus.[298] This means that there will be a drain of investments from London to Frankfurt, the competition would be tremendous, the freedom of movement policy would

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content/uploads/2017/07/Enhancing_Environmental_Risk_Assessment_in_Financial_Decision-making.pdf> accessed 29 September 2016.

292 The Green Bond Principles and ICMA (n 100).

293 ibid.

294 The World Bank, 'Green Bond Proceeds Management & Reporting' (2018) A World Bank Guide for Public Sector Issuers 2.

295 Climate Bonds Initiative, 'Climate Bond Standard' Version 20 22.

296 'Climate Change: Implications for Investors and Financial Institutions' (n 246).

297 'Sustainable Finance: Regulatory Intervention on the Horizon | Global Law Firm | Norton Rose Fulbright' (n 217).

298 Jamie Dettmer, 'Will Post-Brexit London Remain Global Financial Hub?' (*Voice of America*) <https://www.voanews.com/europe/will-post-brexit-london-remain-global-financial-hub> accessed 7 September 2019.

cease to apply for the UK.[299] This is pointing towards uncertainties in the London market. One way to prevent such chaos at least in the green finance market in the UK is to create new laws and practice that would encourage investors to invest in the UK.[300]

Firstly, it is suggested the UK adopts a tiered system and a mandatory verification system. Further, it should address violations made by green bond issuers and make provisions for an enforcement mechanism.[301] A tiered system is a system which classifies different shades of 'green'. Such a system would provide investors with certainties and allow them to understand how their proceeds are being spent on a quarterly basis.[302] Therefore, it would also be transparent whether the investments are being used for a green purpose or not. The system would be very strict on issuers who greenwash funds as it would contain enforcement mechanisms. It is suggested that the offence should be quasi civil and criminal so that a fraudulent investor could be tried under both systems, thus reinforcing protection in the green finance sphere. It was seen that one of the most daunting problems of the regulation is that there is no uniform definition for green bonds.[303] Thus, it is recommended that an international definition is adopted upon which every country should rely. However, the suggestion of adopting a unified definition could be problematic in the sense that each country has its own circumstances and environmental needs.[304] Alternatively, each country should adopt its own definition rather than having a set of different definitions. The United Kingdom's prime task should be to determine a definition that is clear, complete, comprehensive and logical that would help investors and issuers understand what requirements need to be fulfilled in order to label a bond green. There are many advantages for having a specific definition of green bond against which all the products could be assessed. Having a definition would remove the concerns of greenwashing and it would make some policy incentives less difficult to

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[299] Ben Chapman, 'Brexit Will Cause London to Lose €800bn to Frankfurt, Lobby Group Predicts | The Independent' *Independent* (2018) <https://www.independent.co.uk/news/business/news/brexit-london-banks-frankfurt-germany-assets-economy-finance-lobby-group-a8659041.html> accessed 7 September 2019.
[300] EY, 'Climate Change. The Investment Perspective' (EY Climate Change and Sustainability Services 2016) 16.
[301] Brianna Baily, 'An Institutional Truth: Increasing Institutional Investor Involvement in Climate Finance' (2014) 27 Georgetown International Environmental Law Review 447, 463.
[302] Wang (n 11) 448.
[303] Ulrich Volz, 'Fostering Green Finance for Sustainable Development in Asia' (Asian Development Bank Institut 2018) ADBI Working Paper Series 814 8.
[304] Interview with Brown (n 103).

achieve.[305] As explained in the above paragraphs, even the TCFD recommendations have pushed for consistency and standardisation.[306] The High-Level Expert Group mentioned in its report that there remains a lack of common definitions and metrics.[307]Accordingly, the definition should contain specific elements that issuers should be required to prove. For example, in a criminal offence, the prosecution or the accused is required to prove specific elements of the offence to establish a case. Similarly, a green bond issuer should be subjected to proving such elements in order to establish that a project is in fact green. The weight put on establishing such elements would give investors the certainty that the projects in which they are investing are in fact green.[308]

UK legislation should consider bonds that are not only green but partially green. The system that is being suggested is very similar that the categorisation system that the GBP and the CBS use.[309] Its advantage with this situation is that issuers of brown bonds would not try to market their bonds as 'green' if there is a brown category. However, this might be a very difficult process because there is no certainty as to what amounts to green or even there is no established definition of what is brown. In the absence of such definitions, it is very difficult to distinguish between brown and green bonds. As a matter of guidance reference of the GBP could be the best possible action because it already uses a categorisation system whereby it use nine categories of green projects that would give a user a green certification.[310] However, it is worth highlighting that the problem with the GBP is that is to oust anything that is not completely green, which means that a brown bond might not essentially pass the gateway.[311] However, even if the bond is not completely green, it might still have some green aspects which contribute to the environment in a positive way. The concern with the system that would allow brown bonds to qualify as 'green' is two-folded. Firstly, it allows brown bonds into the system which can have both, positive and negative consequences. Secondly, if a bond is brown and it is defined as green, the brown issuer would be able to enjoy all the tax benefits and privileges that green issuer usually enjoy.[312]

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[305] Thomas Hale, 'When Finance Becomes a Beneficiary of the Green Agenda' *Financial Times* (2018) <http://ftalphaville.ft.com/2018/01/05/2197221/when-finance-becomes-a-beneficiary-of-the-green-agenda/> accessed 7 September 2019.
[306] 'Accelerating Green Finance' (n 10) 33.
[307] High-Level Expert Group on Sustainable Finance (n 26) 19.
[308] Wang (n 11) 489.
[309] ibid 487.
[310] The Green Bond Principles and ICMA (n 100).
[311] Mike Cherney, '"Green Bonds" for a Parking Garage? - WSJ' <https://www.wsj.com/articles/green-bonds-for-a-parking-garage-1426176294> accessed 7 September 2019.
[312] 'Climate Change: Implications for Investors and Financial Institutions' (n 246).

This is problematic in many ways because the government would be losing tax funds. If the UK would attract too many brown issuers, the reputation of the country as an investment hub would be impaired and less environmental-friendly international companies would be ready to make their investments in the UK. In China, for example, the domestic legislation allows coal miners to implement clean coal projects by listing such projects as 'green' even after it is only 70% cleaner than coal.[313] Thus, China promotes brown projects as green, which is not permissible under international laws.[314] In order to find a solution to this problem, it would be strategical if the United Kingdom adopts the tier-based system that was adopted in Poland.[315] In Poland, bonds are separated into three main categories which include dark green, green and brown and each category has a distinct tax exemptions gradient.[316] This appears to be a suitable strategy for the UK. 'Brown' issuers would still be able to claim tax benefits (although less of them than the green ones) while providing a contribution to the transition into a lower carbon economy.[317]

Another recommendation is that the green bond industry in the UK should adopt a mandatory verification system that would be provided by the third parties that run independently. This body would be evaluating and carrying proper due diligence before every project is labelled green. The GBP and CBS have a similar system in place. However, as it is not mandatory, the issuers do not have to subject their bonds to the verification.[318] If the UK makes the verification procedure a mandatory requirement, it would be projecting more assurances to investors with regards to their green investments. In order to make this easy disclosure requirements become so are important. Most of the organisations discussed above have consistently emphasised the importance of the disclosures.[319] The current disclosure

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313 David Stanway, 'China Provides $1 Billion in "green" Finance to Coal Projects In...' *Reuters* (19 August 2019) <https://www.reuters.com/article/us-china-greenbonds-coal-idUSKCN1V90FY> accessed 7 September 2019.
314 'Why Some Chinese Green Bonds Fall Short of International Standards' (n 119).
315 'Government of Poland. Green Bond Assessment – February 2018 Issuance' (Moody's Investors Service 2018) 8.
316 'Climate Strategis and Metrics. Exploring Options for Institutional Investors' (WRI, UNEP-FI AND 2° INVESTING INITIATIVE PORTFOLIO CARBON INITIATIVE) 48 <https://www.unepfi.org/fileadmin/documents/climate_strategies_metrics.pdf> accessed 28 August 2019.
317 'Climate Change: Implications for Investors and Financial Institutions' (n 246).
318 Ehlers and Packer (n 61) 93.
319 Mathew Joywin, 'Shades of Green in Financing: A Discussion on Green Bonds and Green Loans | Insights | DLA Piper Global Law Firm' (*DLA Piper*) <https://www.dlapiper.com/en/us/insights/publications/2018/06/shades-of-green-in-financing/> accessed 7 September 2019.

system requires issuers to report to investors every year.[320] It would, however, be more efficient if the disclosure requirement would come down to half or a quarter reports. This is because, during the course of a year, a lot of fraudulent activities might occur. If the time is reduced to fewer months, investors would be in better positions to identify any risks and they would have the time to prevent themselves from investing in fraudulent projects. It also provides investors with an understanding of how their proceeds are being spent.

Finally, the government of the UK must draft provisions that relate to enforcement actions. Currently, there are no provisions in the law that gives investors proper remedies when their funds have been greenwashed.[321]In the absence of remedial solutions, fraudulent issuers have more opportunities to greenwash. However, the absence of a definition of green bond comes in as an impediment again. If the standardised definition is not established, it would be difficult to set a legal framework for enforcement. Furthermore, as all the requirements at the moment are only voluntary, there are no possibilities for an investor to determine if a bond issuer has deviated from its duty of care. Therefore, the law has to include disclosure provisions to make sure that the issuer has used the proceeds for the causes they were allocated for. However, the need of disclosure could prevent growth in the green bond market. This is because many issuers do not want to disclosure everything as disclosure might not be good to their reputation or for some other reasons which might not be malicious.[322] This could explain why most disclosure elements are voluntary. However, when issuers of normal bonds issue shares in the market, they are also required to follow a lengthy process of disclosure as a matter of managing risks.[323] Similarly, this process should be adopted in this instance.[324]

[320] GRESB Green Bond Guidelines, ‘Green Bond Guidelines for the Real Estate Sector’ (2015) 6.
[321] Desirée Schmuck, Jörg Matthes and Brigitte Naderer, ‘Misleading Consumers with Green Advertising? An Affect–Reason–Involvement Account of Greenwashing Effects in Environmental Advertising’ (2018) 47 Journal of Advertising 127, 127.
[322] ‘Disclosure Is a Lure for Green Bond Investors’ (*Financial Times*) <https://www.ft.com/content/b70a098e-1f24-11e9-b126-46fc3ad87c65> accessed 7 September 2019.
[323] European Commission, ‘Analysis of European Corporate Bond Markets’ (2017) Analytical report supporting the main report from the Commission Expert Group on Corporate Bonds 43.
[324] Aaron Franklin, ‘How to Minimise the Legal Risks of Green Bonds’ *Environmental Finance* 3 <https://www.lw.com/thoughtLeadership/minimize-legal-risks-green-bonds-environmental-finance> accessed 29 August 2019.

CHAPTER 5 - CONCLUSIONS

This paper aimed at examination of the challenges and opportunities on the UK Green Bonds market and answering a question of whether there is a need in the legislation governing this market. The research illustrates there is a need to mobilise green and to climate smart. The United Kingdom signed the Paris Agreement to hold the global average temperature increases below 2 degrees Celsius. Indirectly, it has made a commitment to "*make finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient developments*.". The regulators and the government of many countries have responded to the commitments of such ratifications. The United Kingdom responded by setting up various financial bodies to look at the options of creating a sustainable environment. One of the main topics that this paper discussed is what constitutes 'green financing' actually is. The financing of renewable energy assets is maybe the most important example of developing green financing with a wide range of projects that include offshore wind farms, solar plant portfolio financing, etc. It was seen that many initiatives such as the LSE guide and initiatives taken by banks to draft green issuances policies were taken by the UK to improve its green financial sector. However, the UK is still not in the top of the world's lists of green investment. The reasons for this are debatable. On the one hand, it was argued that the green financial system of the UK is based only on voluntary and non-binding regulations that are not harmonised. However, as a contra-argument, that the United States is on the top of the list although it does not have a mandatory regulation either. Several issues in the green bonds market were discussed. The most important ones are that currently there is no common language and harmonised tool for defining 'green bond' and there is no harmonised framework for impact reporting. Further, the system at the moment does not include brown issuers although brown projects improve energy efficiencies.

The research has shown that for thr UK green bond market to grow faster, it is necessary to adopt a domestic legislation that is specific to regulating green bonds in lieu of having various different non-binding regulations. Such initiatives would have a wide social impact and it would also allow investors to finance projects that are green because rigid and concrete legislation would give them the confidence of investments. It was also concluded that the legislation should focus on defining green bonds, it should contain provisions that regulates disclosure, enforcement and agency ratings, etc. The UK has many opportunities for green investments and in order to embrace them, it is very important for parliament to make transparent, clear and concise legislation to regulate green bonds.

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