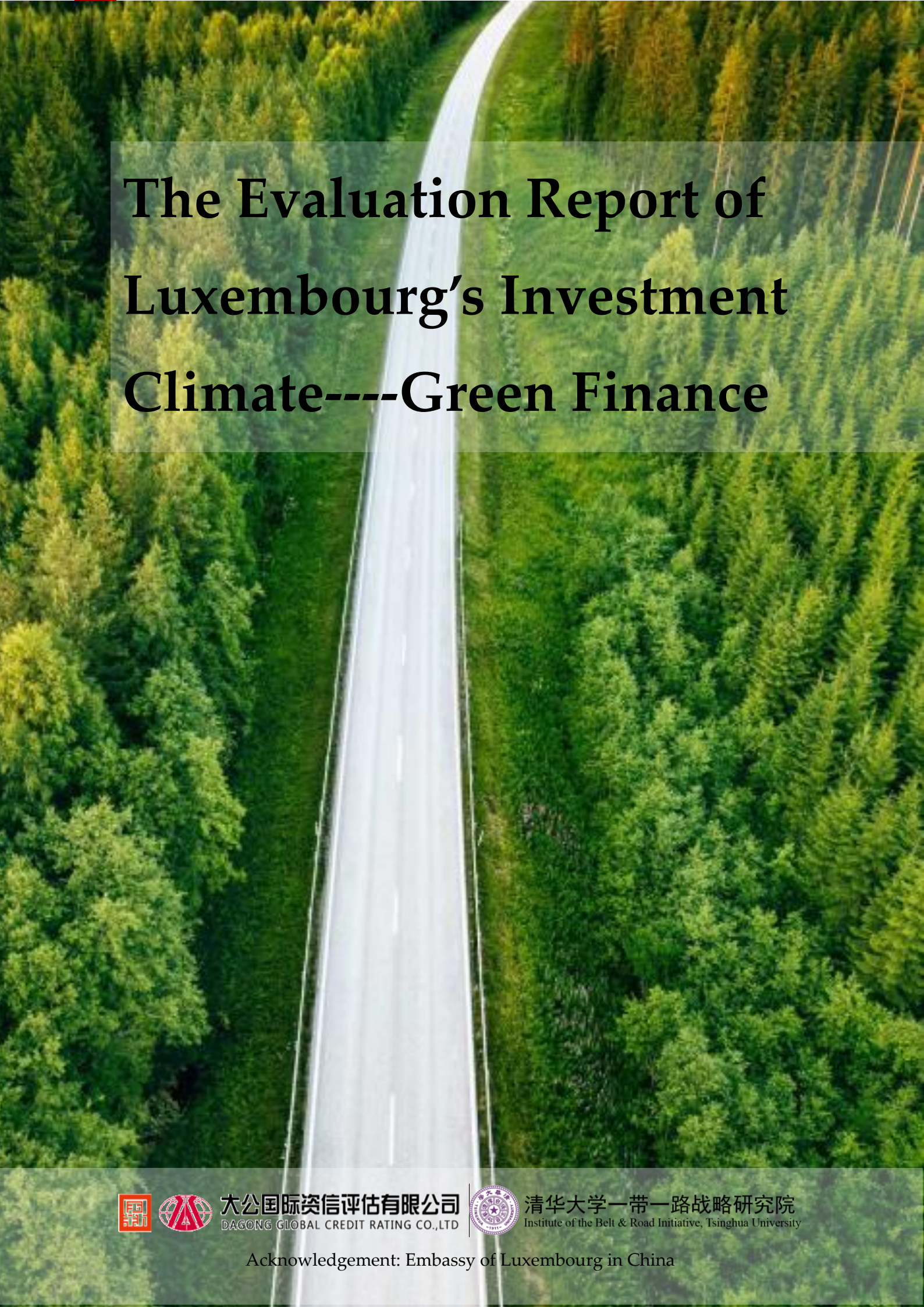
The Evaluation Report of Luxembourg's Investment Climate----Green Finance



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【Foreword】

To Pursue Green and Sustainable Finance in the new wave of the Belt & Road Investment

President Xi Jinping has said, "Urging efforts to foster new opportunities amid challenges and make new advances amid changes". As the world is experiencing profound shifts unseen in a century, the new technological and industrial revolutions have accelerated shifts in the international landscape, resulting in major test for the international community with choices to be made between multilateralism and unilateralism, openness and seclusion, cooperation and confrontation. For all that, however, economic globalization is an irreversible historical trend, and the idea of a community of shared future for mankind is deeply rooted. Against this background, how financial intermediaries and think tank institutions serve national strategies, provide high-level financial services, and help high-quality international cooperation have become new challenges.

As an old Chinese saying goes, "even mountains and seas cannot distance people with common aspirations". Facing new opportunities and challenges, all parties have reached a consensus on "embracing openness and cooperation for mutual benefit". Dagong Global Credit Rating Co., Ltd, Institute of the Belt & Road Initiative of Tsinghua University and the embassies of various countries in China jointly released series of reports on transnational investment environment. One side, through an evaluation system on transnational investment environment, the report helps the investor country seize investment opportunities, avoid risks and optimize resource allocation by mitigating information asymmetry in international cooperation. The other side, the report helps the invested country locate itself in the global system through its own

strengths and weaknesses, so as to complement each other's advantages and achieve win-win cooperation. The three parties, by doing so, contribute to the implementation and integration of China's "Belt & Road" and "Dual Circulation" strategies.

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Chapter 1 Introduction of Luxembourg's Green Finance

Luxembourg is one of the international financial centers and one of the largest investment fund management centers in the world, whose financial industry is highly developed. In recent years, green finance has been a key driver of Luxembourg's development.

First, Luxembourg has long been a pioneer in sustainable finance and green finance. Back in 2007, the Luxembourg Stock Exchange listed the world's first green bond -- the Climate Awareness Bond of the European Investment Bank. Since then, the Luxembourg Stock Exchange has become the main trading venue for this category. The United Nations Sustainable Development Goals in 2015 and the *Paris Agreement on Climate Change* in 2016 provide green finance huge growth potential. In 2016, Luxembourg took the lead in launching a global platform dedicated to sustainable securities trading, the Luxembourg Green Exchange (LGX). This is the first platform fully dedicated to green, social and sustainable financial instruments. In recent years, as the European Union (EU) has continuously strengthened the supervision of the green field, the standards have been gradually unified and more transparent, while Luxembourg is regulated by the EU and has developed earlier in green finance, therefore, securities listed on the LGX have a high recognition on a global scale. Currently, more than 660 green bonds are listed on the platform, with issuers ranging from sovereign states, public international institutions, development banks, financial institutions to corporations. In addition, the government of Luxembourg and the European Investment Bank (EIB) launched a collaborative project in October 2016, the EIB Climate Finance Platform[1]. According to the EIB website, as of October 2021, the platform could leverage €18.2 billion to invest in projects with significant impacts on climate change.

Second, Luxembourg has launched a sustainable finance roadmap. On October 4, 2018, the Minister of Finance and the Minister of Environment of Luxembourg with the Head of the United Nations Environment Programme (UNEP) Finance Initiative officially launched the Luxembourg Sustainable Finance Roadmap. The Luxembourg Sustainable Finance Roadmap covers many aspects of the financial market, such as developing products for

[1] The platform has been launched since 2017 for a period of 3 years. Luxembourg and the European Investment Bank have now extended the platform until December 31, 2024.

sustainable finance, developing training and education programmes for the needs of the financial sector, and financing sustainable development through innovation. The purpose of the roadmap is to outline specific measures for Luxembourg in the area of sustainable finance, to lay the foundation for a sustainable finance strategy and to contribute to the goals of the United Nations (UN) 2030 Agenda and the *Paris Agreement on Climate Change* drawing on its strengths and expertise in investment funds, hybrid finance, bonds, securitization and sustainable label. Meanwhile, it also aims to consolidate Luxembourg's financial center's leading position in sustainable finance.

Last, Luxembourg was the first European country to have defined a framework for sustainability bonds. On September 2, 2020, Luxembourg launched its Sustainability Bond Framework, which meets the International Capital Markets Association (ICMA) Green, Social and Sustainability Bonds principles. The framework is also in line with the recommendations of the EU Technical expert group on sustainable finance (TEG) and with the draft of the European Green Bond Standard (EU GBS)[2]. That is, all green, social and sustainable bonds issued by Luxembourg within this framework will be recognised internationally. The establishment of the framework contributes to the realization of the country's commitments on the *Paris Agreement on Climate Change* and the 17 United Nations Sustainable Development Goals (SDGs), and consolidates Luxembourg's position of green and sustainable finance. Subsequently, Luxembourg issued Europe's first sovereign sustainable bond under the framework, which totalled €1.5 billion, mainly to finance and refinance sustainable projects such as Luxembourg's electric public transport.

In April 2022, according to the Global Green Finance Index (GGFI), Luxembourg ranked 7th in the world and 3rd in the EU in green finance. Although the country slipped two places in the overall global ranking[3], it performed well in human capital related competitiveness, underscoring the depth of sustainable finance talent and expertise. And more than 70% of the respondents also expect Luxembourg to improve its green financial products in the next two to three years, indicating that Luxembourg is making

[2] The proposal will be submitted to the European Parliament and the EU Council members for deliberation and discussion, and the formal implementation has yet to complete the legislative process.
[3] Part of the decline in this ranking is due to an increase in the number of subjects included in the assessment, which has expanded from 47 three years ago to 81 currently.

continuous progress in sustainable financial development.

Chapter 2 Green Bonds of Luxembourg

I. Standard and Comparison of Green Bond

Definition of Green Bond

At present, there is no unified definition of green bond on a global scale. The concept of green bond was first proposed by the World Bank in 2007. The World Bank defines green bond as "debt instruments issued specifically to support climate-related or environmental projects". The International Capital Markets Association defines a green bond as "any bond instruments that dedicates the proceeds to funding or refinancing green projects that meet specified conditions". The purpose of green bond is to financing projects with positive environmental or climate change benefits. The difference from ordinary bonds is that the funds raised by issuing green bonds are dedicated to climate or environmental projects. The world's first green bond was issued in Europe, and the funds were invested in energy facilities projects in the process of sustainable development. The emergence of green bonds limited the green use of project funds and filled the gap of green industry special bonds.

Standard and Comparison of Global Green Bond

In the practice of green bonds, domestic and foreign countries have formulated their own green bond definition Standard. Due to the different energy and environmental status of each country, there are a number of internationally recognized standard in the current green bond market. The existing green bond standard around the world mainly includes two categories. One is the market-led green bond issuance principles formulated by international organizations, with high market acceptance. These include the *Green Bond Principles* of the International Capital Markets Association (ICMA) and the *Climate Bonds Standard* of the Climate Bonds Initiative (CBI). *Green Bond Principles* mainly provide guidance for issuers in four aspects: use of proceeds, project evaluation and screening process, management of the use of proceeds, and information disclosure. The purpose is to enhance the transparency of green bond information disclosure and promote the healthy development of the green bond market by clarifying the issuance method of green bonds.

According to the *Green Bond Principles*, the proportion of funds raised by green bonds to be invested in green projects shall not be less than 95%.The *Climate Bonds Standard* strives to drive investment in projects and assets needed in the rapid transition to a low-carbon and climate-resilient economy. Its strategy is to develop a large, liquid green and climate-related bonds market, and reduce the financing costs of climate project in developed and emerging markets. Compared with the *Green Bond Principles*, the *Climate Bond Standard* puts forward more detailed and clear requirements for issuers on the use of proceeds, income management, information disclosure, etc., and provides reviewers with guidance on work details. It also explains to investors how bond certification guarantees the authenticity of green bonds. The second is national or regional standard, which are formulated according to local national conditions, economic development stage and energy structure. For example, the People's Bank of China *Green Bond Endorsed Projects Catalogue*, the *ASEAN Green Bond Standards* issued by the ASEAN Capital Markets Forum (ACMF), and the European Commission's High-Level Expert Group (HLEG) and the EU's Technical Expert Group on Sustainable Finance (TEG) proposed *EU Green Bond Standard* (EU GBS). Internationally, the above-mentioned green bond standards are continuously updated and revised, and the green bond standard represented by the latest *European Green Bond Standard* issued in 2021 are becoming more and more stringent, aiming to improve the effectiveness, transparency, comparability and credibility of the green bond market. The above green bond standards vary in terms of project types, disclosure of the proportion of proceeds used for refinancing, and external review (Table 1).

Table 1 Comparing Green Bond Standards and Frameworks

Specific Topic	ICMA Green Bond Principles	CBI Climate Bonds Standard	PBC Green Catalogue	Proposed EU Green Bond Standard	ASEAN Green Bond Standards
Reference of alignment with standard/framework in legal documentation	Recommended	Required	Not required	Required, Alignment with the EU Taxonomy	Recommended
Project categories	Guidance on high-level categories	Linked to detailed qualification criteria	Detailed green catalogue	Compliance with the EU, Taxonomy. Green Bond Framework required.	Guidance on high-level categories. The ASEAN GBS explicitly exclude fossil fuel power generation projects.
Disclosure of proportion of proceeds used for refinancing	Recommended	Required	Recommended	Required	Recommended

Table 1 Comparing Green Bond Standards and Frameworks

Specific Topic	ICMA Green Bond Principles	CBI Climate Bonds Standard	PBC Green Catalogue	Proposed EU Green Bond Standard	ASEAN Green Bond Standards
Impact monitoring and reporting	Recommended	Addressed in Climate Bonds Standard qualification criteria	Recommended	Required	Recommended
External review requirements	Recommended	Required	Recommended	Required	Recommended
Publication of external review	Recommended	Recommended	Recommended	Required	Required
Accreditation of external reviewers	Not addressed in GBP	Have a dedicated "Approved verifier" list	Required	A centralized scheme of accredited verifiers, operated by ESMA. Voluntary interim registration scheme for an estimated transition period of up to 3 years.	The external review provider must have the relevant expertise and experience in the components of the ASEAN Green Bonds which they are reviewing and must also disclose their relevant credentials and expertise, and the scope of the review conducted in the external review report.

Source: Luxembourg Green Exchange

The LGX recognizes a number of international bond standard. The LGX does not set uniform standard for green transactions and climate issues, but use internationally recognized standard as reference. The recognized international bond standard mainly include the *Green Bond Principles* of the International Capital Market Association (ICMA). *Social Bond Principles*, *Sustainability-Linked Bond Principles* and *Sustainability Bond Guidelines, the Climate Bonds Standard* of Climate Bonds Initiative (CBI), the *Green Bond Endorsed Projects Catalogue* of People's Bank of China (PBC), *ASEAN Green Bond Standards* and other frameworks.

II. Laws and Regulations

Regulations on Luxembourg Green Bond

Regulations related to green bonds in Luxembourg mainly include the policies, regulations and legal frameworks both at the EU and Luxembourg level.

From the EU aspect, the EU has formulated a relatively comprehensive framework on green finance. The UN Sustainable Development Goals and the *Paris Agreement on Climate Change* laid the foundation for the development of a sustainable financial system in the EU. In December 2019, the European

Commission proposed the *European Green New Deal*, which aims to transform the EU into a resource-efficient, inclusive and competitive modern economy, and achieve net-zero greenhouse gas emissions by 2050. In January 2020, the EU announced the *European Green New Deal Investment Plan*, which aims to mobilize at least €1 trillion in sustainable investment over the next decade to support the green transition. To implement the above policies and strategies, the EU has introduced a series of guidelines and regulations (Table 2).

Table 2 EU guidelines and regulations related to green transition

Time	Regulations	Introduction
January 2019	Guidelines on Reporting Climate-related Information	With regard to corporate climate-related disclosures, the guidelines complement the 2017 non-binding standard on non-financial reporting, and adopts the recommendations of the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD).
April 2020	Low Carbon Benchmark Regulation	It sets out minimum EU-level requirements for the EU Climate Transition Benchmark and the EU Paris Agreement Benchmark, as well as the relevant ESG disclosure standard. These benchmarks help investors compare the carbon emissions of their investments.
June 2020	EU Taxonomy	The program aims to provide policymakers, related industries and investors with a practical tool to identify which economic activities are environmentally sustainable and to help capital markets identify investment opportunities that contribute to the achievement of environmental policy objectives.
March 2021	Sustainable Financial Disclosure Regulation (SFDR)	It stipulates the sustainability information disclosure obligations of financial institutions such as fund managers, insurance companies and banks that provide financial products and services to end investors in the EU.
July 2021	Draft of EU Green Bond Standard	As part of the European Green New Deal Investment Plan, it has given a strong boost to capital flows to projects that will help the EU achieve its net-zero carbon emissions target by 2050. The standard will use the detailed definition of green economic activity in the EU Green Taxonomy to define what green investment is.

Source: European Commission

The latest green bond standard issued by the European Union reflects the tightening of standard and will promote the high-quality development of the green bond market. The latest draft of the *European Green Bond Standard*(EU GBS) released by the European Union on July 6, 2021 aims to promote the high-quality development of the green bond market and avoid the risk of "greenwashing" by creating a strict "gold standard". The draft of EU GBS is a voluntary standard against which all EU and non-EU green bond issuers of all types can benchmark. The investment direction of its proceedings will be consistent with the existing *EU taxonomy*, but it will put forward higher requirements in terms of information disclosure, and add rigid regulations for external audits. The draft of EU GBS specifically includes the following four requirements: the first item is mandatory requirements. The draft requires that the use of proceedings must comply with the *EU Taxonomy*. The second item is transparency requirements. Green bond issuers are required to report on the

distribution of proceedings every year, and publish an impact report at least once after the distribution of proceedings and throughout the duration of the bond. The third item is external assessment requirements. Green bonds are subject to review by an external assessment agency to ensure that the projects funded by the proceedings comply with regulations and classification standards. The fourth item is the regulatory requirements of European Securities and Markets Authority (ESMA). The external assessment agencies must be registered with and supervised by the ESMA to ensure its quality and reliability of external assessment.

From the perspective of Luxembourg, Luxembourg's green bond issuance should also comply with its *Sustainability Bond Framework*. The Framework complies with the highest international standard and best industry practices in sustainable finance. On September 2, 2020, Luxembourg launched its *Sustainability Bond Framework*, becoming the first European country to develop a Sustainability Bond Framework. The framework meets the International Capital Markets Association (ICMA) Green, Social and Sustainability Bonds principles, and compliant with the EU GBS, and fully incorporates the recommendations of the EU's Technical Expert Group on Sustainable Finance (TEG). The framework presents a normative process in five parts: use of proceedings, project evaluation and screening, management of the use of proceedings, reporting, and external assessment (Table 3). As a follow-up to the publication of the framework, on September 14, 2020, Luxembourg issued Europe's first sovereign sustainability bond under the sustainability framework. The bond is listed on the Luxembourg Stock Exchange and displayed on the LGX. The bond worth €1.5 billion with a maturity of 12 years. The funds raised are mainly used to financing and refinancing for social and environmental projects.

It is worth highlighting that the LGX has mandatory requirements of external assessment for the green bonds. As there are different forms of external assessment (including second-party opinion, verification, certification and rating), the issuer needs to hire a third-party evaluation agency to conduct the assessment and issue an external assessment report every year. For green, social and sustainable development bonds, the pre-issuance external review usually focuses on two aspects. One is to review the bond's use of proceeds and judge

whether the framework complies with an approved green, social or sustainable taxonomy method; the other one is to review whether the selection and evaluation of projects, the management and reporting of proceedings comply with internationally recognized principles, such as the *Green Bond Principles*, *Social Bond Principles* and *Sustainability Bond Guidelines* issued by the International Capital Markets Association. The LGX requires the external assessment to follow the *Guidelines for External Reviewers* issued by the Executive Committee of the Green Bond Principles Capital Markets Association, including the organizational structure, content and information disclosure of the report, etc.

Table 3 Luxembourg Sustainability Bond Framework

Use of proceeds	Green Categories	Green buildings, Energy Transition, Low Carbon Transport, Protection of the environment, Water and wastewater management, Climate Finance and R&D.
	Social Categories	Education, Healthcare, Social Inclusion, Affordable Housing, socio-economic advancement and empowerment.
Process for Evaluation and Selection	Sustainability Bond Committee	The members: State Treasury (chair), The Ministry of Finance, and the Inspectorate of Finance.
	Responsibility of the Sustainability Bond Committee	The selection and approval of project; The review of the allocation of the proceeds; The validation of the reports, The maintenance and update of the Framework if necessary.
Management of proceeds	Pending full allocation, the net proceeds of the Green, Social and/or Sustainability Bond issuances will be managed by the State Treasury in accordance with the Grand Duchy of Luxembourg's regulatory framework and treasury policies.	
Reporting	For all issuances under this Framework, the Grand Duchy of Luxembourg intends to pro-duce an allocation report (the "Allocation Report") as well as an impact report (the "Impact Report") at least annually until full allocation of the Green, Social and/or Sustainability Bond proceeds.	
External review	The Grand Duchy of Luxembourg aims to adhere to the highest standards in terms of external reviews of the Green, Social and/or Sustainability Bond. Consequently, an external reviewer will provide an annual report review, until all the proceeds of the Green, Social and/or Sustainability Bond have been allocated.	

Source: Luxembourg Green Exchange

Eligibility Criteria for Luxembourg Green Exchange

Since its creation in 2016, the LGX has expanded from purely green bonds to social bonds, sustainability bonds, sustainability-linked bonds and other financial instruments. The LGX has different definitions, standard and project types for different types of sustainable financial bonds (Table 4). The bonds displayed on the LGX need to meet relevant regulations in four aspects: listing, classification, transparency and disclosure, and ongoing reporting (Table 5).

Table 4 Bond Classification, Definition and Methodology of LGX

Classification	Definition	Methodology	Project Category
Green Bond	Green bonds are debt instruments issued to fund projects that have a positive environmental or climate impact. Proceeds from these bonds are typically earmarked for green projects and are backed by the issuer's entire balance sheet.	ICMA's Green Bond Principles, CBI Climate Bonds Standard, PBC Green Bond Catalogue, the ASEAN Green Bond Standards or another framework aligned with the above mentioned standards.	Renewable energy; Energy efficiency; Pollution prevention and control; Environmentally sustainable management of living natural resources and land use; Terrestrial and aquatic biodiversity conservation; Clean transportation; Sustainable water and wastewater management; Climate change adaptation; Eco-efficient and/or circular economy adapted products, production technologies and processes; Green buildings which meet regional, national or internationally recognized standards or certifications.
Social Bond	When the proceeds from an instrument are used exclusively to finance or refinance social projects, the bond will be displayed on LGX as a social bond.	ICMA's Social Bond Principles (SBP)	Affordable basic infrastructure (e.g. clean drinking water, sewers, sanitation, transport, energy); Access to essential services (e.g. health, education and vocational training, healthcare, financing and financial services); Affordable housing; Employment generation including through the potential effect of SME financing and microfinance; Food security; Socioeconomic advancement and empowerment.
Sustainability Bonds	When the proceeds of a bond are used to finance a blend of green and social projects and are aligned with the GBP and SBP, the bond will be classified as a sustainability bond.	ICMA's Green Bond Principles and Social Bond Principles	The classification of the use of proceeds of the bond should be determined by the issuer based on its primary objectives for the underlying projects.
Sustainability-Linked Bond (SLB)	SLBs are performance-based bond instruments where the issuer commits to future improvements in sustainability outcomes within a predefined timeline. The novelty of this instrument is that the financial or structural characteristics of the bond can vary depending on whether the issuer achieves the predefined sustainability objectives.	ICMA's Sustainability-Linked Bond Principles (SLB), are voluntary guidelines that cover five core principles: selection of key performance indicators (KPIs); calibration of sustainability performance targets (SPTs); bond characteristics; reporting; verification.	Unlike Green, Social and Sustainability Bonds, the proceeds of the SLBs are used to finance general corporate activities and the scrutiny is placed at the level of the issuer itself. As such, SLBs represent a source of financing for companies that set clear and ambitious science-based targets to become more sustainable, without earmarking the proceeds of the bond for a specific, investable project.

Source: Luxembourg Green Exchange

Table 5 Eligibility Criteria for Displaying on LGX

Item	Description
Listing	An issuer must first list its bond on one of LuxSE's listing venues: the EU-regulated Bourse de Luxembourg (BdL) market, the exchange-regulated Euro MTF, or the Securities Official List (SOL).
Bond classification	In order to join LGX, you must either: (i) Declare your bond as green, social or sustainable, or (ii) be a recognised Climate-Aligned Issuer whose securities, while unlabelled, are considered sustainable through their positive environmental impact and so offer investors an additional range and diversity in the climate-aligned investment universe.
Transparency and Disclosure	1) Issuers of labelled green, social or sustainable bonds must provide information about where the proceeds from their bond will be allocated and which framework is applied to classify their bond; 2) To ensure that proceeds are independently verified, we ask that issuers provide an external review of the bond from a third-party expert before applying to join LGX; 3) LGX has adopted the Guidelines for External Reviewers issued by the Executive Committee of the Green Bond Principles.
Commitment to Ongoing Reporting	1) To remain on LGX, issuers of labelled green, social or sustainable securities must provide information about the intended and actual use of proceeds. The aim of ongoing reporting is to inform investors about how funds are being allocated to projects and, where possible, the expected environmental, social and sustainable impacts. 2) The first mandatory reporting should be supplied as from 12 months after the bond was issued or as at another date, as agreed with LuxSE. Issuers can also publish reports more frequently, on a voluntary basis. 3) Issuers are encouraged to report on the use of proceeds and impact throughout the duration of the bond up until maturity; at a minimum, issuers shall report up until full allocation of proceeds. 4) Accepted formats of ongoing reporting include: dedicated use of proceeds reports; ESG/Sustainability reports featuring; information on the funding behind the bond; newsletters (or equivalent) giving appropriate information on the use of proceeds (projects, sectors, geographies and, expected impact); impact reports.

Source: Luxembourg Green Exchange

III. Advantages of Luxembourg

The Center of the Global Green Bond Industry

Luxembourg is the center of the global green bond industry. As early as 2007, the Luxembourg Stock Exchange was entrusted by the European Investment Bank to issue the first green bond in Europe. Luxembourg is a leading global center for green and sustainability-related bonds, a hub for sustainable finance in the EU. Sustainable investments can use privately issued green bonds to structure their investments through a Luxembourg-based SPV (special purpose vehicle), thereby gaining direct access to the EU market through Luxembourg's business-friendly regulatory environment. Meanwhile, Luxembourg is a leading center for green and sustainability-related bonds, as evidenced by the issuance of Europe's first sovereign sustainability bond in 2020, a €1.5 billion bond to raise funds for Luxembourg's electric public transport and hospitals.

Advantages of Luxembourg Green Exchange

First, the LGX is the world's first leading platform focused on sustainable finance, and also the first platform that makes industry best practices for sustainable securities a mandatory requirement, providing a clear and transparent framework for sustainable financing. So far, the LGX now has nearly half of the world's listed green bonds, with more than 160 listed green bonds in different currencies.

Second, the LGX acts as a unique repository for documentation on sustainable financial instruments and thus constitutes an accessible and comprehensive place where trustworthy information can be retrieved easily and free of charge. Investors have unrestricted access to information relating to securities displayed on LGX (e.g. frameworks, external reviews, verifications, allocation and impact reports, KPI reports, etc.). This translates into lower costs of research, analysis and comparison for investors and thus enables granular due diligence on securities.

Third, issuers joining the LGX will benefit from a dedicated security card where they can display all relevant supporting documentation. It includes, but not limited to, post-issuance reporting information in line with internationally recognised best practices. LGX allows issuers to choose from a variety of disclosure methods and increases the commercial value for their additional disclosure efforts via the free display of their sustainable documentation.

Last, the LGX has strict standard, effectively reducing the risk of "greenwashing". Strict requirements for relevant bond standard and principles effectively reduce the risk of green laundering. All securities listed on the LGX are considered 100% green globally. Only issuers committed to entry requirements and providing transparency can be displayed on LGX.

IV. China-Luxembourg Cooperation Potential

Status Quo and Prospects of Global Green Bond Development

The scale of global green bond issuance has continued to grow, becoming one of the highlights of the capital market. In 2021, the issuance of international green bonds continued to maintain rapid growth. According to statistics from the Climate Bonds Initiative, the issuance of global green bonds exceeded US$500 billion for the first time in 2021, reaching US$522.7 billion, an increase

of 75% compared to 2020.

From a regional perspective, Europe remains the region with the most circulation. 73% of total green bonds in 2021 came from developed markets, 21% from emerging markets and 4% from supranational institutions. Europe remained the region with the most volumes, with green bond issuance reaching US$265 billion in 2021, accounting for about 50% of total global issuance. The emerging green bond market has grown in size in recent years, with issuance increasing from US$800 million in 2014 to US$112.2 billion in 2021.

In terms of issuer types, the issuers of global green bonds are increasingly differentiated. The types of issuers have gradually developed from mainly non-financial enterprises and development banks in 2014 to the current eight types (Figure 1). Financial and non-financial corporate issuances grew strongly in 2021, up 143% and 111% year-on-year, respectively, and these two issuer types together accounted for 44% of the cumulative green bond issuance in 2021. The issuance of sovereign green bonds has been a major feature of the green bond market in recent years. Sovereign green bond issuance reached a cumulative US$161 billion of which US$72.8 billion was added in 2021. The UK provided 30% of the supply. In addition to the UK, new countries joining the Sovereign Green Bond Club in 2021, including Spain, Italy, Serbia, South Korea and Colombia. The largest individual sovereign issuer is France which had two green bonds worth a combined US$44 billion outstanding at the end of 2021.

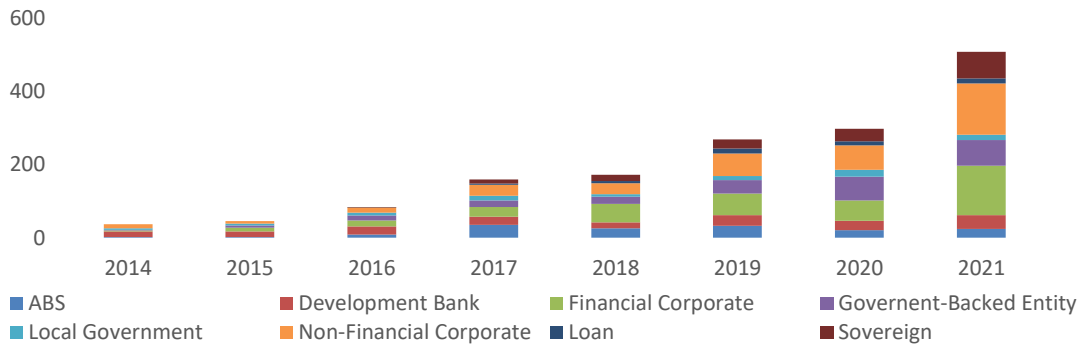
Judging from the use of proceedings, Energy, Buildings, and Transport were the three largest use of proceedings categories, collectively contributing 81% to the 2021 total. Non-financial corporate issuers were the strongest supporters of Energy and Transport providing 40% and 27% of the total capital, respectively, while Buildings received most support from financial corporates (37.5%).

In terms of currencies, the number of currencies remained static at 33. The share of the top three currencies EUR, USD, and RMB remained similar to the prior year (81%). RMB issuance rebounded to US$58.7 billion from US$17.4 billion in 2020. GBP (Great Britain Pound) increased its footprint by 686% to US$ 35 billion moving from seventh to fourth place, helped by the issuance of US$ 21billion worth of green Gilts.

In terms of deal size, the share of large-scale transactions of more than

US$500 million has gradually increased, with a size of US$500 million accounting for 70% of the volume in 2021, up from 62% in 2020. The average size of green bond transactions in 2021 increased from US$170 million in 2020 to US$250 million.

Figure 1 2014-2021 Most green volumes came from private sector (billion dollars)



Source: Climate Bonds Initiative

Looking ahead, the outlook for the global green bond market is promising. The COVID-19 epidemic ("epidemic") has brought the world's worst economic recession since World War II. Although the global economy has begun to recover, the epidemic has sounded the alarm for people. Also, all countries in the world urgently need to work together to solve the climate change, the common concern of Humankind. In this context, countries are accelerating the pace to support a green, sustainable and environmentally friendly recovery. The data show that in the first half of 2021, the size of sustainable bonds issued to finance or refinance green and social projects soared to US$90.4 billion, much larger than the US$71 billion for the whole of 2020. According to the *G20 Global Infrastructure Outlook* report, the funding gap in infrastructure alone is as high as US$15 trillion, and many of the proceedings will be linked to environmental protection and greenness. Specifically, it is said that Europe would issue around $297 billion in green bonds from mid-2021 to 2027 in the recovery plan. The United States officially released the *International Climate Finance Plan* in December 2021 to promote the role of green finance in the post-pandemic recovery. In 2022, China will take the lead in completing the *G20 Sustainable Finance Roadmap*, the first sustainable finance framework document of the G20. Under the new situation, the G20 will focus on the coordination of economic and financial policies and jointly promote global economic recovery. Nevertheless, on the whole, the development of the international green bond

market still needs to be improved, and the focus should be on the unification of global green bond identification standard and rating systems. At present, there are still policy differences and obstacles in the global green bond market in terms of green definition, information disclosure and capital control, which hinder the international cooperation process of green bonds to a certain extent. With the gradual unification of green bond standard, it is expected that the future green bond market will usher in comprehensive development.

Status Quo of Green Bond Development in China

Although China's green bond market started relatively late, it has developed rapidly, with its market size ranking among the top in the world. In 2015, China officially launched the green bond market. In 2017, it became the second largest country in the world in terms of green bond issuance, accounting for 20% of the issuance. Under the guidance of carbon peaking and carbon neutrality goals, China's green bond market ushered in rapid development in 2021. In 2021, a total of 247 issuers in China issued a total of 755 green bonds, with an issuance amount of US$68.2 billion, second only to the US at US$83.5 billion. In 2021, the issuance of green bonds by non-financial companies increased by 482% to US$31.2 billion, accounting for nearly half (46%) of the overall green bond market issuance in China. This is also the first time that non-financial companies have issued more green bonds than financial companies. According to the number of green bonds issued, state-owned enterprises accounted for 97% of the green bonds issued in China in 2021, accounting for nearly 99% of the total. Most of the proceedings (88.3%) in China's green bond market in 2021 were used in renewable energy, low-carbon transportation and low-carbon buildings.

In recent years, China's green bond market has ushered in significant positives. First, under the guidance of carbon peaking and carbon neutrality goals, the implementation of low-carbon transformation has been accelerated, and the demand for green financing has greatly increased. As the country with the largest carbon emission in the world, China needs a lot of financial support to achieve the dual carbon goals and promote a large-scale low-carbon transition. According to the report *Research on China's Long-term Low-Carbon Development Strategy and Transformation Path* released by the Institute of Climate Change and Sustainable Development of Tsinghua University, to achieve the

1.5°C target-oriented transformation path, a large amount of new investment of about 138 trillion yuan is required, and the annual investment exceeds 2.5% of GDP. Second, the standard of China's green bond projects tends to be unified and gradually aligns with international standard. In May 2020, the updated *Green Bond Endorsed Projects Catalogue* (2020 Edition) (Draft for Comment) removed fossil fuels, bringing China's green finance classification system closer to international standard (such as the new EU *Sustainable Finance Classification* and the *Climate Bonds Taxonomy*). The *Green Bond Endorsed Projects Catalogue* (2021 Edition) was officially released in April 2021, further unifying different classification standard and enhancing the confidence of international investors. Last, positive progress has been made in international standard cooperation. In November 2021, China and the EU jointly released the *Common taxonomy for sustainable finance.* The catalogue includes a list of economic activities recognized by China and Europe that have made significant contributions to climate change mitigation, covering 61 major economic activities in six major sectors: energy, manufacturing, construction, transportation, solid waste and forestry. The catalogue will promote the convergence of international green bond standard and facilitate the issuance and investment of green bonds by Chinese and foreign market players.

China-Luxembourg Cooperation Model and Cases

China is one of the largest green bond markets in the world, and Luxembourg has an advanced green financial trading platform in the world. The cooperation between the two countries in the field of green bonds has achieved fruitful results, mainly including overseas green bond issuance, "Green Bond Connect" and green "Belt and Road" construction.

First, issuing offshore green bonds on the Luxembourg Stock Exchange. As an important financial center in Europe, Luxembourg radiates major financial markets in Western Europe. At present, more than half of the world's green bonds are listed on the LGX to expand the European investor network and connect with international green investors. The first overseas green bonds issued by well-known financial institutions such as Industrial and Commercial Bank of China and China Construction Bank also landed on the Luxembourg Stock Exchange. For example, on September 28, 2018, China Construction Bank's first EUR 500 million green bond was listed on the Luxembourg Stock

Exchange, with projects covering clean transportation, renewable energy, and pollution prevention and control fields. The green bond issuance has attracted many international institutional investors, with orders in euros exceeding 1 billion and orders in US dollars exceeding 2.7 billion.

Second, the "Green Bond Connect". Since 2016, the Shanghai Stock Exchange and the Luxembourg Stock Exchange have carried out a series of cross-border cooperation with green bonds as a breakthrough, and successively realized the two-site exhibition of the Shanghai Stock Exchange Green Bond Index and the smooth launch of the Green Bond Connect, which is a link-up between the Luxembourg Stock Exchange and China to facilitate access to Chinese green bonds. On September 12, 2018, the Shanghai Stock Exchange, the Luxembourg Stock Exchange and the Bank of China signed a memorandum of understanding on the tripartite cooperation on the "Green Bond Connect". The participation of Bank of China has strongly promoted the cooperation between the other two institutions to move forward from information to capital. In 2019, the Shanghai Stock Exchange and the Luxembourg Stock Exchange signed a supplementary agreement on the cooperation of the "Green Bond Connect" to provide green bond issuers with simultaneous information disclosure services at home and abroad. On the one hand, the listing of the Shanghai Stock Exchange is displayed on the Luxembourg Stock Exchange platform (displayed to the west), on the other hand, information of green bonds listed on the Luxembourg Stock Exchange is displayed on the Shanghai Stock Exchange (displayed to the east). The establishment of this cooperation mechanism is conducive to the promotion and introduction of Chinese green bonds to the international market, and also provides convenience for foreign investors to actively participate in Chinese bonds.

Third, China and Luxembourg have deepened cooperation to facilitate the construction of the green "Belt and Road". Green bonds play an important role in China's support for countries along the "Belt and Road" to carry out green upgrades in infrastructure and other aspects. In recent years, China has insisted on integrating the concept of green development into the specific projects of the "Belt and Road" construction, and has jointly created green international public goods with all parties including the EU, and the "green effect" has continued to emerge. As the second founding member of the European Union to join the

"Belt and Road" initiative, Luxembourg and China's concepts of "Belt and Road" construction and sustainable development are very compatible. As an ideal platform for cross-border investment under the "Belt and Road", Luxembourg's cooperation with China in green construction has achieved fruitful results. Chinese financial institutions have issued several green bonds with the theme of "Belt and Road" or sustainable development, all listed on the Luxembourg Stock Exchange, raising billions of dollars to support the construction of green projects in relevant countries.

In the future, China and Luxembourg still have a lot of room for cooperation in the field of green bonds. First, relying on the cooperation between China and Europe in green bond standard formulation and carbon emission trading mechanism, China and Luxembourg can deepen research and cooperation in green bond related standards by holding seminars and other forms, and jointly promote unification and development of green bond standards. Second, China and Luxembourg can promote mutual recognition of green bond labelling and green bond rating, so as to promote the further development of the green financial market of both sides.

Chapter 3 Luxembourg's ESG Investment Fund

I. Laws and Regulations

Luxembourg's ESG regulators and key laws and regulations

The main regulators of ESG[4] in Luxembourg include not only the Commission de Surveillance du Secteur Financier (CSSF), but also the Environment Agency and the main regulators within the European Union. First of all, the CSSF, as the main financial regulator in Luxembourg, sets out guidelines for market entities to comply with ESG. On the one hand, the CSSF has the responsibility to ensure that supervised entities meet new regulations on sustainable financing, especially the European Commission's regulatory requirements, and to urge the sustainable development to be included as part of organizational activities, corporate strategies and values within regulated entities. On the other hand, the CSSF requires regulated entities to incorporate

[4] ESG is the acronym for the three English words of Environment, Social Responsibility and Corporate Governance, including three aspects of the company's impact on the environment, social responsibility and corporate governance within the company. It is an emerging enterprise evaluation method and an important consideration in today's social investment strategy.

ESG factors into the assessment of investment decisions, as financial market participants need to have clear, open and transparent sustainability information. Meanwhile, the CSSF has established an internal group on sustainable finance, which is actively coordinating with international and European countries on this issue. Second, the Environment Agency is responsible for protecting the environment and the quality of the local living environment. Since the ESG field involves the environment, fines may be imposed for violations of relevant regulations in some cases. Last, Luxembourg is a member of the European Union and needs to comply with relevant ESG regulations within the European Union. Within the EU, key regulators on ESG-related issues include the European Commission, the ESMA, the European Banking Authority, the European Insurance and Occupational Pensions Authority, and the EU TEG on Sustainable Finance. The relevant policy documents are mainly related to disclosures (table 6).

Table 6 Luxembourg's Main Policy Documents of ESG

Year	Organization	Policy Documents
2007	European Parliament	*Shareholder Rights Directive (SRD)*
2014	European Commission	*Non-Financial Reporting Directive (NFRD)*
2017	European Commission	*Shareholders Rights Directive II*
2019	European Commission	*EU Climate Transition Benchmark Regulation*
2020	European Commission	*EU Taxonomy*
2019	European Commission	*Low-Carbon Benchmark Regulation*
2021	European Commission	*Corporate Sustainability Reporting Directive (CSRD)*
2021	European Commission	*Sustainable Financial Disclosure Regulation (SFDR)*
2022	European Commission	*Regulatory Technology Standards (RTS)*

Data Source: Collation of public information.

Luxembourg's regulations on ESG disclosure

First, in October 2014, the European Commission issued the *Non-Financial Reporting Directive*. This is the first legal document in the EU to include the three elements of ESG in regulations. The law requires certain large corporations and groups to disclose information related to environmental, social and employee matters, human rights, anti-corruption and bribery matters. It also stipulates that large enterprises (with more than 500 employees) should cover ESG factors in their external non-financial information disclosure, but the degree of mandatory disclosure of the three ESG factors is different. Mandatory disclosure is clarified for environmental factors, but only reference disclosure scope is provided for social and corporate governance factors.

Second, in December 2019, the European Commission's *Low-Carbon Benchmark Regulation* came into force, most of whose regulations were officially applied in April 2020, and some additional obligations were applied from December 31, 2022. Based on the EU's Sustainable Development Initiative, the benchmarking regulation incorporates ESG-related factors into the core content of the financial system, and mainly introduces two new "climate benchmarks" to ensure the integrity of low-carbon benchmarks - the EU Climate Transition Benchmark (EU CTB) and the EU Paris-aligned Benchmark (EU PAB). These two benchmarks mainly introduce indicators and standards that are consistent with the goals of the *Paris Agreement on Climate Change*. Among them, the benchmark portfolio generated by the EU Climate Transition Benchmark (EU CTB) needs to provide a "decarbonization trajectory", and the carbon emissions of the benchmark portfolio generated by the EU Paris-aligned Benchmark must meet the goals of the *Paris Agreement on Climate Change*. This is mainly to provide more transparent and robust benchmarks across the EU, and also reducing the risk of "greenwashing". Meanwhile, it also requires portfolio managers pursuing ESG objectives to publish a description of how key elements of the approach reflect ESG factors, as well as an explanation of how ESG factors are reflected in each benchmark or series of benchmarks in the benchmark statement.

Third, in April 2020, the European Commission formally adopted the *EU Taxonomy*. The taxonomy introduces a new approach to sustainability assessment focusing on economic activity, assessing economic activity in the agriculture, manufacturing, electricity, transport, buildings and communications sectors, playing an important role in scaling up ESG investment and implementing the European Green Deal.

Fourth, on March 10, 2021, the *Sustainable Financial Disclosure Regulation* (SFDR) issued by the European Union came into effect. This regulation imposes basic requirements on the disclosure of sustainable investment information for all financial market participants and financial advisers in the EU, as well as higher disclosure requirements for financial products that focus on ESG investments. Besides, in addition to the 27 EU member states, companies that have subsidiaries and operations in the EU, companies that provide registered financial products in the EU, and companies that provide investment advice to

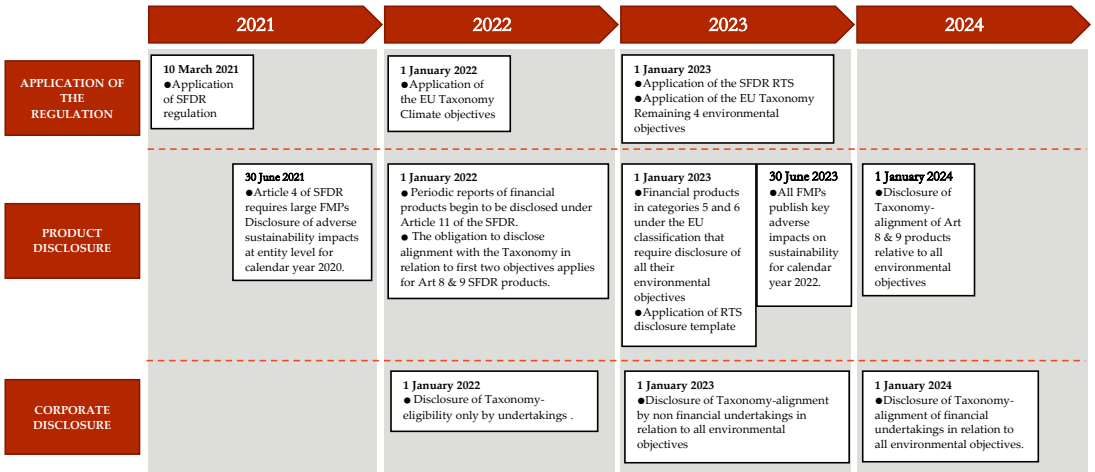
EU companies are also directly or indirectly subject to the disclosure regulation. It should be noted that companies offering financial products in the EU should disclose why their products are not related to sustainability risks, even if they are not related to ESG. The *Sustainable Financial Disclosure Regulation* classifies financial products into financial products and products with ESG characteristics. Article 6 applies to all financial products and requires all fund managers to disclose the integration of sustainability risks and their possible impact on the returns of financial products. Article 8 applies to financial products with sustainable or ESG characteristics, requiring disclosure of how they contribute to environmental or social performance, and how the financial products related companies follow good corporate governance. Article 9 applies to financial products that target sustainability or carbon emissions reduction, and need to disclose in the contract how they achieve this target and whether to designate an index as a reference benchmark.

Fifth, on April 6, 2022, the European Union announced the adoption of the *Regulatory Technology Standard* (RTS) in the form of an enabling regulation to supplement the *Sustainable Financial Disclosure Regulation*, which will come into force on January 1, 2023[5]. The regulatory technical standards specify the content, method and presentation of investment companies and their products and services at the entity and product level under the *Sustainable Financial Disclosure Regulation.*

In order to enhance the transparency of sustainable investment and financing, the European Commission and European regulators are still working to improve and integrate the *EU Taxonomy* and the *Sustainable Financial Disclosure Regulations*, as well as the Regulatory Technical Standards, in order to provide a unified standard for the market to promote ESG-related investment. The effectiveness and provisions of relevant EU disclosure regulations are shown in Figure 2.

[5] In December 2021, the European Commission clarified that the application date of the Regulatory Technical Standard (RTS) for the *Sustainable Financial Disclosure Regulation* has been postponed from the previous July 1, 2022 to January 1, 2023.

Figure 2 Relevant EU disclosure regulations come into force and related regulations



Data Source: Eurosif, Collation of Public Information

Luxembourg's ESG Evaluation System

The growing global focus on sustainable development and the transition to a more sustainable and inclusive economy has increased investors' demand for environmental, social and governance (ESG) transparency and data. The Luxembourg Stock Exchange (LuxSE) has published a comprehensive set of ESG reporting guidelines to promote transparency in capital markets, providing guidance on ESG reporting for different stakeholders.

The Luxembourg Stock Exchange is committed to promoting transparency by encouraging stakeholders to report ESG-related information, and the ESG Reporting Guidelines provide key stakeholders with guidance on how to incorporate ESG matters into their reporting. First, the reporting guidelines identify the scope of three key stakeholders, namely companies with disclosure obligations in general, issuers of sustainable debt instruments, and assets management companies for sustainable and responsible investment funds. These three parties are the most important groups for ESG reporting, and developing a consistent and well-structured ESG report is the most important for improving the transparency of the entire market and meeting market needs. Second, the three parties have specific needs for ESG, which makes their ESG reports have certain differences and reporting priorities. The ESG reporting guidelines list the reporting priorities of different stakeholders (Table 7).

Table 7 Key Reporting Priorities of the Luxembourg's ESG Reporting Guidelines

Companies with disclosure obligations in general	Issuers of sustainable debt instruments	Assets management companies for sustainable and responsible investment funds
•→Defining roles for the preparation of the report •→Aligning the report with the corporate strategy •→ Engaging stakeholders •→Identifying and understanding the audience •→ Identifying the themes and defining a materiality matrix •→ Assessing the relevance of the performance indicators •→ Collecting data for the report •→ Identifying the format and communication channels •→ Considering internal audit and external assurance	•→ Identifying and defining ESG activities and strategies •→ Defining ESG procedures and disclosing information pre-issuance •→ Evaluating relevant reporting categories and performance indicators •→ Taking stock of internal data processes and collecting data •→ Deciding on the best format and reporting period for publication •→ Considering external assurance	•→ Identifying and defining ESG activities and strategies •→ Defining ESG procedures and disclosing information •→ Evaluating relevant reporting categories and performance indicators •→ Taking stock of internal data processes and collecting data •→ Deciding on the best format and reporting period for publication •→ Considering external assurance

Data Source: Luxembourg Stock Exchange.

The LGX platform displays relevant regulations for funds. According to the *Sustainable Financial Disclosure Regulations*, funds that comply with Article 8 and 9[6] will be automatically classified as "ESG Funds" or "Impact Funds" displayed on the LGX platform. Meanwhile, funds labelled by labelling agencies benefit from greater credibility, transparency and superior quality standards, ESG funds with the above agency labels are showcased on the Luxembourg Stock Exchange. ESG fund labelling companies recognized by the Luxembourg Stock Exchange include FNG Label, Label ISR, LuxFLAG ESG, The Austrian Ecolabel, Nordic Ecolabelling, and Central Labelling Agenc.

II. Advantages of Luxembourg

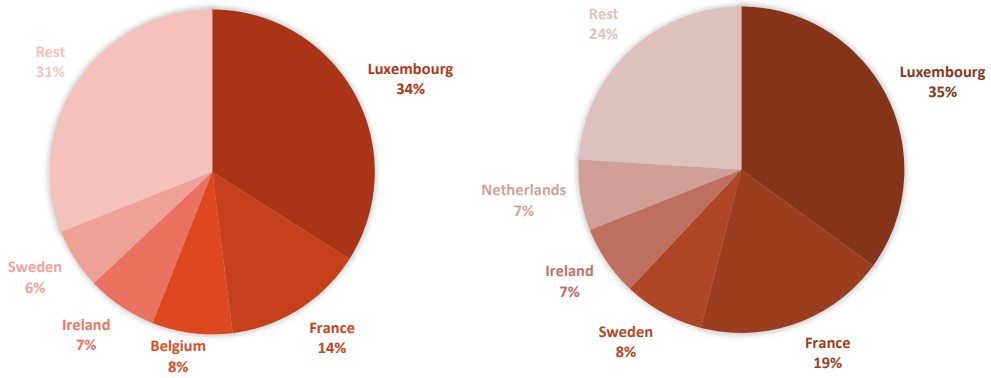
Luxembourg ESG investment in the leading position of Europe

Luxembourg has been at the forefront of ESG development and has long been the preferred domicile for ESG funds. According to KPMG European Responsible Investing Survey 2019, the European sustainable investment divided by domicile, in terms of underlying ESG strategies, Luxembourg has

[6] Article 8 is "funds that promote environmental or social characteristics or a combination of these characteristics, provided that the companies in which they invest follow good governance practices." Article 9 is a fund that is "sustainably invested" or "targeted to reduce carbon emissions".

the leading European market share of investment funds in each of the underlying strategies. Environmental investment strategy, accounting for 38% of funds and 57% of assets under management; social strategy, accounting for 34% of funds and 36% of assets under management. Figures 3 and 4 show the number of Luxembourg funds and the proportion of fund size in European responsible investment.

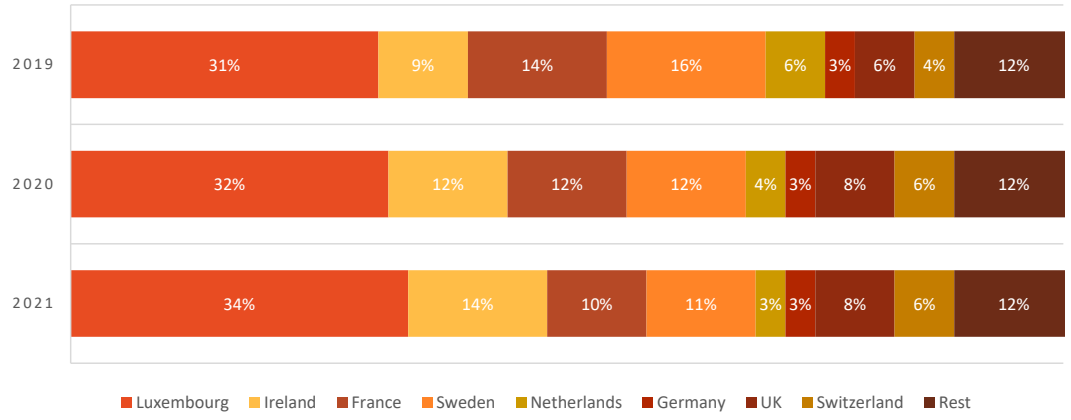
Figure 3 Luxembourg's share in number of funds（%） **Figure 4 Luxembourg's share in AuM（%）**



Data Source: KPMG European Responsible Investing Survey 2019

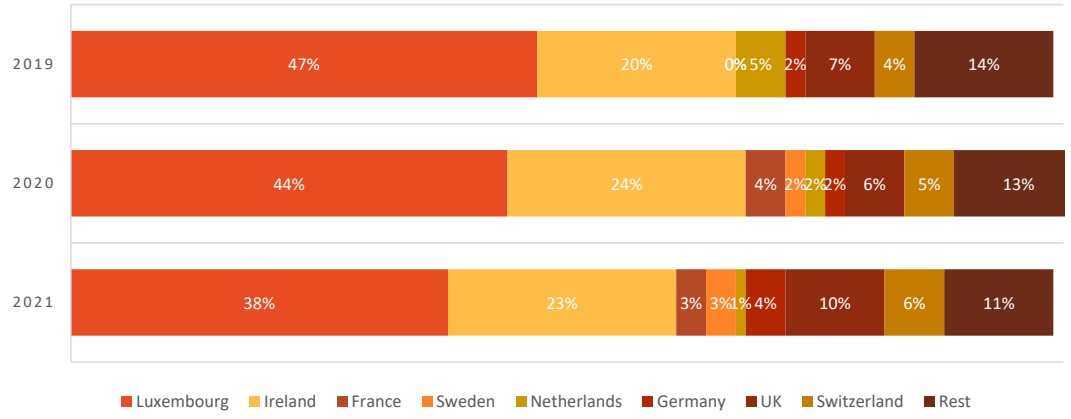
From the perspective of the proportion of the net assets of sustainable funds, Luxembourg's market share in Europe in the past three years has steadily ranked first and increased slightly. In 2021, Luxembourg's proportion of the net assets of sustainable funds in Europe was 34%, as shown in Figure 5. From the perspective of the proportion of net funds flows into the sustainable funds, due to the rapid development of countries such as UK, Switzerland and Germany, the proportion of the flows into sustainable funds in Luxembourg has decreased, but the proportion of flows has remained the largest in the past three years (Figure 6).

Figure 5 Luxembourg's share in net assets of sustainable funds



Data Source: Association of the Luxembourg Fund Industry

Figure 6 Luxembourg's share in net fund flows into sustainable funds



Data Source: Association of the Luxembourg Fund Industry

Advantages of register ESG fund in Luxembourg

First, Luxembourg is the globally leading domicile for investment fund, the second largest investment fund center in the world after the United States and the largest fund domicile in Europe with currently more than €4.7 trillion of assets under management. Luxembourg has a total market share of 31% of responsible investment funds in Europe, over 60% of European impact funds, over 61% of global microfinance assets, as well as being amongst the top 4 domiciles for Islamic funds. Luxembourg has accumulated rich professional knowledge in asset management, alternative funds and sustainable finance, and has a full functioned rules and regulatory framework.

Second, Luxembourg has a long history of promoting sustainable investment innovation. In order to support new and innovative asset managers

in launching projects to mitigate or manage the effects of climate change, the Luxembourg government, together with key industry players, is setting up the International Climate Finance Accelerator (ICFA). The Accelerator offers various forms of support, including help raising funds from institutional and public investors, as well as financial and operational support during a fund's launch phase.

Third, among the most successful developments in the Luxembourg sustainable finance sector is the "layered fund" structure, where risks and rewards are differentiated according to the type of shareholder. This allows for the issuance of shares and notes with different characteristics, according to the needs of each type of investor. By accepting "first loss" liability and granting priority to retail investors on income earned, the foundation shareholders create a low-risk environment that encourages private investment. In 2017, Luxembourg and the European Investment Bank established the Luxembourg-EIB Climate Finance Platform, which adopted a layered fund structure. The Luxembourg government contributes €30 million as the first loss guarantee to mitigate the risks faced by private sector investors when co-investing in funds for climate change mitigation and adaptation.

Last, Luxembourg has a flexible fund toolbox and benefits from the European passport, so that it can be sold in the EU and the European economic area. All Luxembourg investment funds can be used for sustainable finance, whether they are regulated retail funds or professional investment funds. The most popular investment fund structure in Luxembourg is shown in Table 8. Among them, structures commonly used for funds with an ESG overlay are UCITS and SIF. Luxembourg UCITS benefit from a global network of sales agreements that make this product ideal for companies seeking international distribution.

Table 8 The list of most popular investment fund structures in Luxembourg

Fund Structure	Main Feature
UCITS[7]	Mainly oriented towards retail investors and highly regulated;
SIF[8]	Provides an operationally flexible and fiscally efficient multi-purpose vehicle that can be used for all asset classes;
SICAR[9]	Specifically designed for private equity investment and venture capital;

7 Undertaking for Collective Investment in Transferable Securities, a standardized EU Retail Fund.
8 Specialized Investment Funds.
9 Investment Company in Risk Capital.

Table 8 The list of most popular investment fund structures in Luxembourg

Fund Structure	Main Feature
UCI[10] Part II	A flexible but more regulated pooled vehicle;
RAIF[11]	A fast time-to-market vehicle, which is regulated via the fund manager.

Data Source: Luxembourg for Finance

III. China-Luxembourg Cooperation Potential

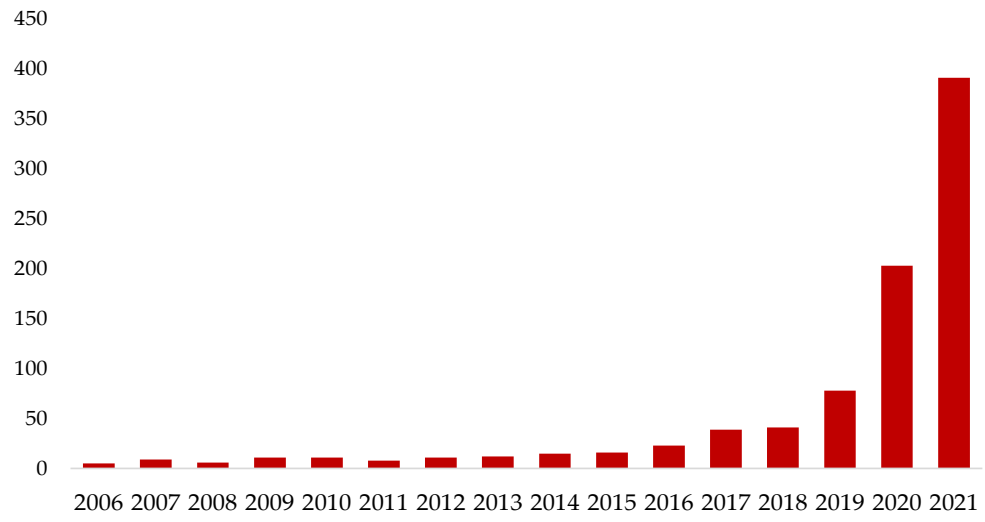
Increasing Global Focus on ESG

Social and environmental issues, especially climate change, have been paid more and more attention by enterprises, investors and governments. Market participants have gradually incorporated ESG factors into their risk, performance and impact management. Sustainable investment funds also show greater flexibility than traditional investment funds. The research conducted by Morningstar in 2020 shows that 70% of sustainable funds have survived in the past decade and remain available to investors, while only 45.9% of traditional funds stood the test of time over the same period. The 2008 financial crisis and the COVID-19 pandemic were catalysts for sustainable investing, the turmoil in financial markets encouraged many investors to adopt long-term thinking in their investment behavior, and investors increasingly incorporated ESG criteria into their investment decisions. As of May 2022, there are 4,979 Asset Owner, Investment Manager and Service Provider around the world have signed up to the Principles for Responsible Investment. 2020-2021 is also a big year for ESG-related fund growth. According to statistics, as of 2021, the global ESG ETF asset size is US$391 billion, a significant increase from US$5 billion in 2006. The year-on-year growth rate of asset size in 2020 and 2021 are 160.3% and 92.6% respectively, showing that the rapid growth of ESG investment (Figure 7).

10 Undertaking for Collective Investments, Investment Fund established under Part II of the 2010 UCI law.

11 Reserved Alternative Investment Fund.

Figure 7 The size of Global EGS ETF asset （billion USD）



Data Source: Statista

In addition, investors are increasingly demanding reliable and relevant disclosure of ESG factors, and relevant regulatory policies are gradually become stricter. On April 6, 2021, the European Securities and Markets Authority published the annual report on the enforcement and regulatory activities of European law enforcement personnel in 2020. The report showed that European law enforcement agencies increased their enforcement activities on the compliance of non-financial information disclosure in 2020, and reviewed the compliance of 737 non-financial statements, accounting for 37% of the total number of issuers required to issue non-financial statements. A total of 39 enforcement actions were taken during these inspections, with an action rate of 5%. This shows the increasing importance of the company's ESG disclosure, and the regulatory level has gradually taken substantive actions.

China-Luxembourg ESG Cooperation Potential

China's economy has entered a new stage of high-quality development, especially in September 2020, China's goal of achieving carbon dioxide peaking before 2030 and striving for carbon neutrality before 2060 was proposed by the 75th United Nations General Assembly, China's ESG development will usher in period of historical opportunity. According to the *White Paper on China's ESG Development (2021)* published by the Securities Times, China's ESG investment is showing accelerated development. By the end of 2021, there are 200 ESG-related funds established in China, with a total scale of over 257.8 billion yuan, and the average rate of return in the past 2-3 years is more than 30%. In terms

of A-share market ESG information disclosure, there is also a trend of increasing year by year. In 2020, the A-share market ESG report disclosure rate reach 27%, the highest level in history.

China's ESG is also gradually strengthened at the regulatory level. First, in June 2021, The China Securities Regulatory Commission (CSRC) has issued the *Standards for the Contents and Formats of Information Disclosure by Companies Offering Securities to the Public No. 2—Contents and Formats of Annual Reports (2021 Revision)* (Contents and Formats of Annual Reports (2021 Revision)) and the *Standards for the Contents and Formats of Information Disclosure by Companies Offering Securities to the Public No. 3—Contents and Formats of Semi-annual Reports (2021 Revision)* (Contents and Formats of Semi-annual Reports (2021 Revision)), further improved the ESG information disclosure framework of A-share market listed companies. Compared with the annual report format standards issued by the CSRC in 2017, the new version adds the disclosure standards for ESG information of listed companies, details listed in Table 9. Second, on January 7, 2022, Shanghai Stock Exchange issued the *Rules Governing the Listing of Stocks on Shanghai Stock Exchange (January 2022 Revision)*, which stipulates that listed companies should actively practice the concept of sustainable development, actively assume social responsibilities, safeguard social public interests, and attach importance to ecological environment protection. Shenzhen Stock Exchange has also included ESG disclosure in the assessment measures according the *Measures of Shenzhen Stock Exchange on the Examination of Information Disclosure of Listed Companies (2020 Revision)*. Third, on April 15 2022, CSRC promulgated Guidelines for the *Investor Relations Management of Listed Companies (2022)*, which included the company's ESG information in the communication content of investor relations management for the first time. As of April 2022, there are 99 Asset Owner, Investment Manager and Service Provider in China have signed the Principles of Responsible Investment. Since 2021, the number of signing institutions in China has increased significantly, as shown in Figure 8.

At present, Luxembourg and China still have a large space for cooperation in ESG-related fields. First, green finance in Europe, especially in Luxembourg, started early and the market is relatively mature. China still needs to learn from Luxembourg for its ESG-related policy standards and integrate it into its own

national conditions, refine ESG supervision and standards, and effectively connect Chinese standards with international ones. Second, China still needs a lot of financial support, especially green financing, in order to achieve the carbon peaking and carbon neutrality goal and the green finance transformation. ESG funds issued by China in the future can be registered in Luxembourg, and large international investment institutions such as pension funds, insurance funds, and sovereign funds can purchase through Luxembourg. Therefore, the two countries still have a lot of room for cooperation in ESG-related fields in the future. Third, China already has ESG indices and funds listed on the Luxembourg Stock Exchange. In 2019, the International Institute of Green Finance of the Central University of Finance and Economics cooperated with China Securities Index Company released the CSI CUFE SH-SZ 100 ESG Leading Index, which has been launched on the Shanghai Stock Exchange and the Luxembourg Stock Exchange. In 2020, the world's first ESG UCITS fund to invest in China's equity market managed by ChinaAMC has been successfully launched in Luxembourg and the Netherlands.

Table 9 *Annual Report Format Guidelines* (2021 Revision) and *Interim Report Format Guidelines* (2021 Revision) on ESG-related disclosure requirements

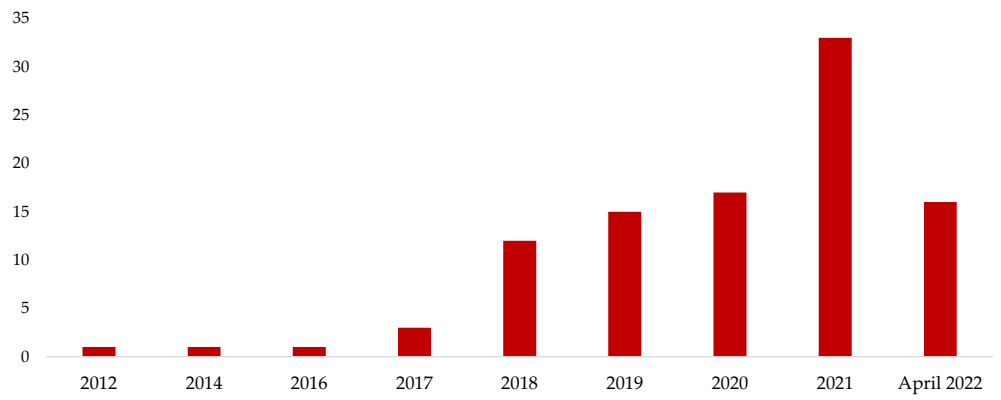
	Annual Report Format Guidelines (2021 Revision)	Interim Report Format Guidelines (2021 Revision)
Environment (E)	●Information about companies and their subsidiaries that are required to be key controlled by the environmental protection department; ●Pollution information (qualitative and quantitative); ●Construction and operation of pollution prevention facilities; ●Environmental impact assessment of construction projects; ●Whether to obtain an environmental permit or not; ●Emergency plan for environmental emergencies; ●Environmental penalties; ●Third-party agency verification and attestation; ●Emission reduction and carbon reduction measures and their effects;	●Information about companies and their subsidiaries that are required to be key controlled by the environmental protection department; ●Pollution information (qualitative and quantitative); ●Construction and operation of pollution prevention facilities; ●Environmental impact assessment of construction projects; ●Whether to obtain an environmental permit or not; ●Emergency plan for environmental emergencies; ●Environmental penalties; ●Third-party agency verification and attestation; ●Emission reduction and carbon reduction measures and their effects;

Table 9 *Annual Report Format Guidelines* (2021 Revision) and *Interim Report Format Guidelines* (2021 Revision) on ESG-related disclosure requirements

	Annual Report Format Guidelines (2021 Revision)	Interim Report Format Guidelines (2021 Revision)
Society (S)	●Information on employees of parent and subsidiary companies (number, professional composition, salary system, training status, etc.); ●Employee equity incentive plan; ●Expenses for retirees; ●Employee rights protection mechanism; ●Customer and consumer rights protection mechanism; ●Supplier information; ●Public relationship; ●Social welfare; ●Poverty alleviation and rural revitalization;	●Employee equity incentive plan; ●Poverty alleviation and rural revitalization;
Corporate Governance (G)	●Corporate basic information; ●Corporate sustainable development strategy; ●Corporate social responsibility purpose and philosophy; ●Core competencies and explanations; ●Responsibilities and composition of directors, supervisors and senior management (gender, age, professional background, etc.); ●Internal control review and risk analysis; ●Protection of shareholders and creditors' rights and interests; ●Reputation and credit of key stakeholders; ●Related party transaction information; ●Investor relations;	●Corporate basic information; ●Corporate sustainable development strategy; ●Core competencies and explanations; ●Responsibilities and composition of directors, supervisors and senior management (gender, age, professional background, etc.); ●Protection of shareholders and creditors' rights and interests; ●Reputation and credit of key stakeholders; ●Related party transaction information; ●Investor relations;

Source: China Securities Regulatory Commission, collation of public information.

Figure 8 Number of PRI signed by Chinese institutions each year (Number)



Data Source: UN Principles for Responsible Investment