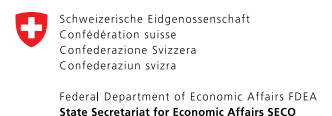
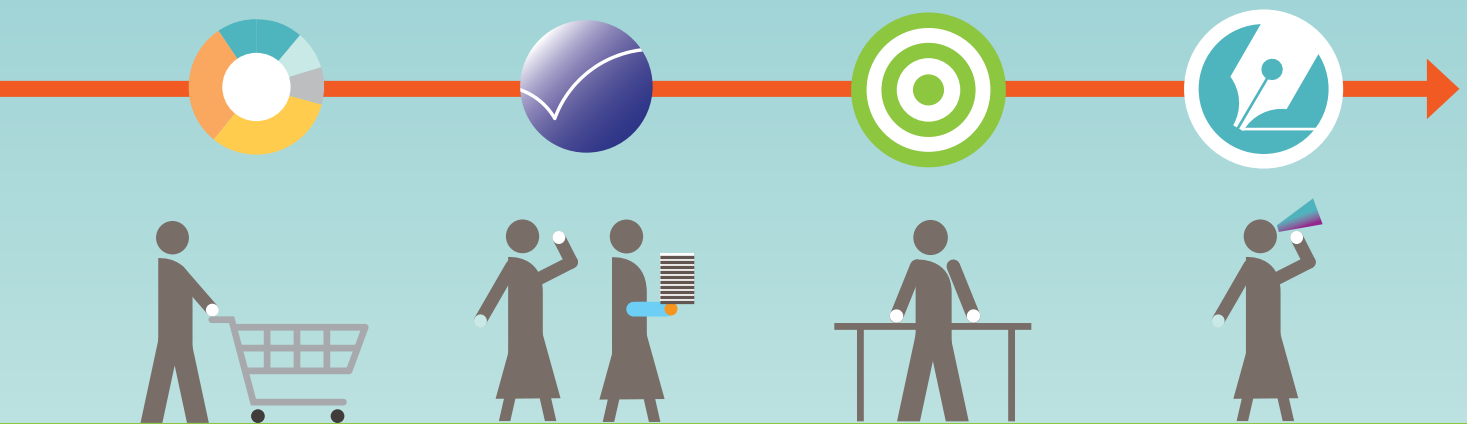
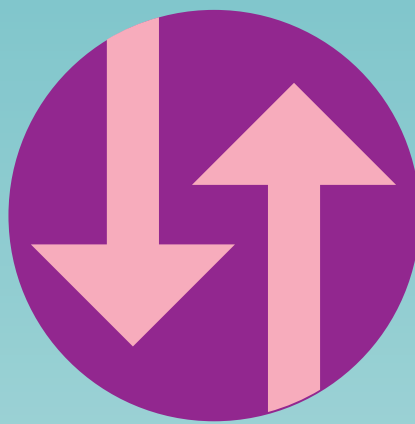


# How to Issue Green Bonds, Social Bonds and Sustainability Bonds



Prepared by Climate Bonds Initiative

Commissioned by State Securities Commission of Vietnam

Supported by International Finance Corporation and Swiss State Secretariat for Economic Affairs (SECO)



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# 1. State Securities Commission of Vietnam's Foreword

Sustainable development has been the global trend to prevent and mitigate the damaging effects of climate change on human life quality, particularly on the next generation. Vietnam is one of the most vulnerable countries suffering the effects of climate change. Recognizing these challenges and to fulfill Vietnam's commitments at the United Nations Summit on Climate Change (COP-21), the Government of Vietnam has put in place several robust responses and measures, which includes promoting green bond issuance. Through green bonds, funds can be mobilized to finance green projects, contributing towards the sustainable development of a greener national economy.

Green, Social, and Sustainability bonds are meant to raising private sector finance for projects with environmental and social benefits. These are innovative financing tools to mobilize financing from the private sector to scale up and achieve national climate plans, support the Sustainable Development Goals and the 2015 Paris Climate Agreement. As a member of the ASEAN Capital Markets Forum (ACMF), SSC has been active in promoting the ASEAN Green Bond Standards (AGBS), ASEAN Social Bond Standards (ASBS), and ASEAN Sustainability Bond Standards (ASUS), based on the International Capital Market Association (ICMA)'s Green Bond Principles, Social Bond Principles, and Sustainability Bond Guidelines, to create a sustainable asset class in Vietnam.

To continue the efforts to strengthen the knowledge of the capital market players in these new instruments, SSC developed the Handbook on "**How-to Issue Guide for Green Bonds, Social Bonds and Sustainability Bonds**" to guide corporate issuers and other market players in applying the standards of green bonds, social bonds and sustainability bonds which can help mobilize resources from domestic and international capital markets for socio-environmental friendly and sustainable projects. The SSC acknowledges and thanks the IFC and the Climate Bond Initiative for supporting the development of this material. The SSC would like to extend our special thanks to **Swiss State Secretariat for Economic Affairs (SECO)**, who has been our main sponsor for the development and publication of this important material.

The SSC hopes that Vietnamese businesses will find this Handbook useful and will gain a better understanding of the process to issue green, social and sustainability bonds, to manage the proceeds from those bonds as well as to follow the related environmental and social impact reporting. The SSC considers the development of such green products as a key factor contributing to the sustainable development of Vietnam's capital market.



## 2. Introduction and context

The increased frequency and costs of the impacts caused by climate change in Vietnam are predicted to result in extreme losses to agriculture production, water supply, and human health, which if not abetted will in time become major social, economic and national security issues. Meeting these challenges will require the country to take advantage of a diverse range of 'green' capital-raising tools and sources of funding, which can be used for the delivery of positive environmental outcomes. Green bonds are one tool that can offer Vietnam an opportunity to leverage private capital at scale, for the establishment of a more climate resilient and greener economy.

This "**How-to Issue Guide for Green Bonds, Social Bonds and Sustainability Bonds**" is part of a wider effort to expand the knowledge and understanding of Vietnamese market participants about how to issue green, social and sustainability bonds based on the best available international practices and experiences already applied by other issuers across the region.

### Context

Vietnam ranks sixth among the most vulnerable countries to climate change,<sup>1</sup> and at the same time, it is a fast-growing emerging economy with a real GDP growth rate of 7% in 2019.<sup>2</sup> To achieve rapid economic development, build resilience and meet adaptation and mitigation Nationally determined contributions (NDCs) targets, it is fundamental that not only the government, but also the corporate community be aligned and well informed about the debt instruments available and the opportunities that these issuances avail.

The Vietnamese government is continuously implementing policies and legislation to support and regulate corporate issuances, notably developing private-public partnerships to attract private foreign investment over the last years. However, complex legal and regulatory requirements, combined with challenging risk-sharing arrangements between the public and private sectors have inhibited the engagement of investors.

Amongst other efforts in the region, it is essential to highlight the influence of the emerging market green bond reports jointly produced by the IFC and Amundi. The IFC has also deployed significant efforts to promote the development of the corporate sustainable bond market. Another noteworthy action is the contribution of the Amundi Planet Emerging Green One Fund and the HSBC Real Economy Green Investment Opportunity GEM Bond Fund, driving the interest of investors in green bonds issued by Vietnamese financial institutions and corporates.

Vietnam is a bank-centered economy with around 70% of capital need in the economy being financed by the banking system.<sup>3</sup> Therefore, the local banking system will need to play an important role in the growth of the country's green financial market. So far, the State Bank of Vietnam (SBV) has actively participated in the campaigns of green economy. In 2015, SBV issued Directive No.03/CTNHNN on promoting green credit growth and environmental/social risk management in credit granting activities.<sup>4</sup>

In response to this Directive, a number of green credit campaigns have been started. According to SBV, by the end of June 2019, there were more than 20 credit institutions providing green credit loans with a lending balance of VND317.6 trillion (USD13.8 billion), an increase of 32% compared to 2018.<sup>5</sup> Agriculture, renewable and eco-friendly power projects are among the focus of the loans, accounting for 45% and 17% of the total outstanding green credit respectively.<sup>6</sup>

To respond to the growing demand for capacity-building and aiming to boost Vietnam's issuance and investment in these thematic-labelled bonds, the SSC, IFC and Climate Bonds Initiative joined forces publishing the How-to Issue Guide for Green, Social and Sustainability Bonds. ASEAN is increasingly appealing to investors, including foreign entities, development banks and foreign commercial banks that have issued green bonds in local ASEAN currencies, demonstrating their interest in these domestic markets. We are living in extraordinary times. Indeed, it has never been more urgent for the culture of investment to evolve. This guide aims to reach a significant network of potential corporate issuers and can, thereby, help to enhance Vietnam's activity in the thematic-labelled bond market. Vietnam can aspire to lead green, social and sustainability issuances in the ASEAN region, boosting the domestic market and attracting international investment capital to climate change solutions.

**Disclaimer:** This guide is created for general information about green, social and sustainability bonds and it offers guidance on the steps of labelling bonds as green. This guide must not in any way be taken as a piece of advisory work on bond issuances. The bond-issuing process requires a set of specific steps that only Financial Advisors and Underwriters may advise on.

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### 3. Background on green, social and sustainability bonds

Thematic bond markets first developed in a voluntary manner, with the European Investment Bank's first "Climate Impact Awareness" bond and the World Bank's first "Green Bond" setting precedents in 2007/8. Subsequently, best practices have developed at the international level to guide issuers and deliver consistent markets to maintain investor confidence and avoid the risk of "greenwashing".<sup>7</sup>

At the international level, two main voluntary guiding principles for the green bond issuance process have emerged:

- **The Green Bond Principles**,<sup>8</sup> coordinated by the International Capital Markets Association (ICMA), provide process guidance around transparency on the use of proceeds, project selection process, management of proceeds and reporting.
- **The International Climate Bonds Standards**, managed by the Climate Bonds Initiative<sup>9</sup> and developed by a network of technicians, industry players and investors, incorporates the Green Bond Principles and adds science-based criteria to identify assets that are compliant with a sub-two degree world,<sup>10</sup> in line with the Paris Climate Agreement.

In 2017 ICMA also developed the *Social Bond Principles*,<sup>11</sup> and the *Sustainability Bond Guidelines*,<sup>12</sup> which adopt the same pillars around transparency of the Green Bond Principles and add new eligible categories for social financing. The Sustainability Bond Guidelines refer to eligible assets in the Green and Social Bond Principles (the Green

Bond Principles, the Social Bond Principles and the Sustainability Bonds Guidelines are collectively referred to as the "Principles").

In general, a green bond, social bond, or sustainability bond is a bond (a debt instrument), which can be issued by entities such as corporates (banks and other companies), governments and quasi-governments (councils, municipalities) to finance or refinance projects. The issuer of the bond (the borrower) owes the bondholder/investor (the creditor) a debt and depending on the terms they agreed, is obliged to pay back the amount lent within a certain period of time (tenor) and with a certain interest (coupon). Unlike a loan, the bond is a transferable instrument that can be traded on a secondary market if publicly issued.

#### What is a green bond?

Green bonds are regular bonds with two distinguishing features: the proceeds are allocated exclusively for projects with environmental benefits (understood to be intrinsically coupled with social co-benefits) and provide clear transparency and disclosure on the management of the proceeds. In other words, structurally, green bonds are the same as regular bonds, offering comparable risk/reward profiles and following the same issuance procedures, but the proceeds are used for a wide variety of climate and other environmental projects.



#### What is a social bond?

According to ICMA, social bonds are any type of bond instrument where the proceeds will be exclusively applied to finance or refinance in part or in full new and/or existing eligible social projects and which are aligned with the four core components of the Social Bond Principles.



Similar to green bonds, social bonds are also fixed-income instruments with proceeds focused on activities with predominantly positive social outcomes such as, but not exclusively, access to infrastructure, food security and affordable housing. Social bonds may also have environmental co-benefits.

#### What is a sustainability bond?

As defined by ICMA, sustainability bonds are bonds where the proceeds will be exclusively applied to finance or refinance a combination of both green and social projects and assets. Sustainability bonds are aligned with the four core components of the Green Bond Principles and the Social Bond Principles, with the former being especially relevant to underlying green projects and assets and the latter to underlying social projects and assets.



As is the case of green and social bonds, sustainability bonds can be used to partially or fully (re)finance new and/or existing projects and assets.

Figure 1: Climate, green and sustainable finance landscape

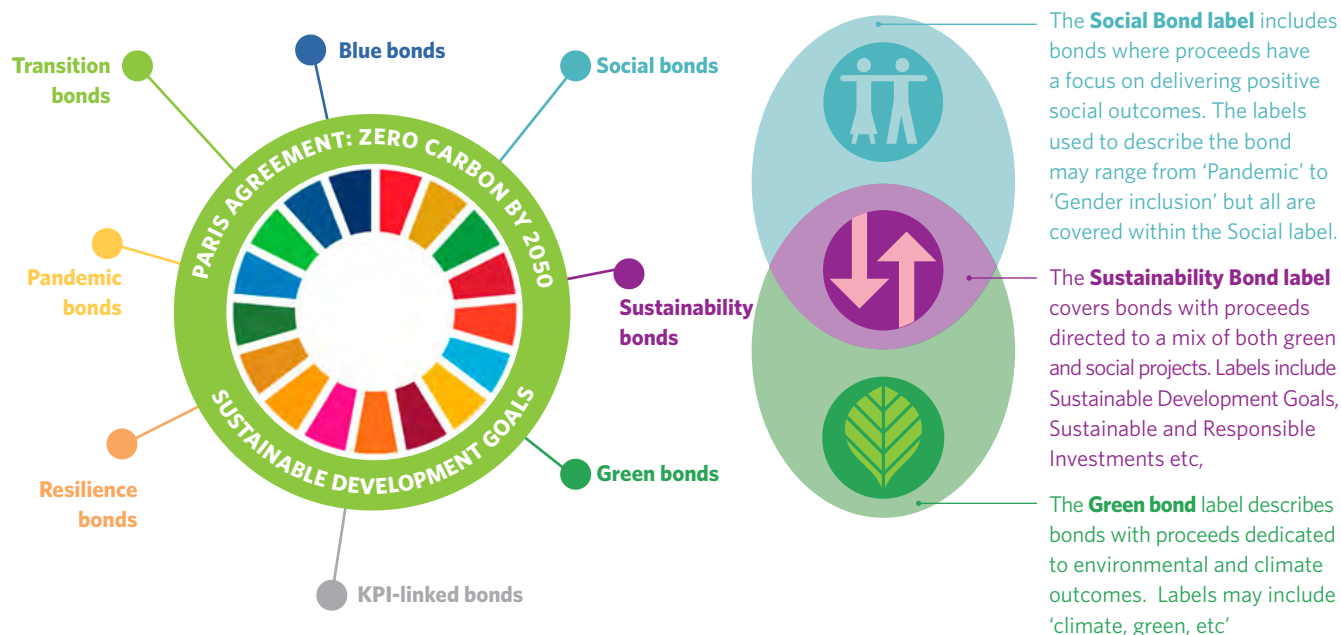




Figure 2: Labelled bond definitions

Tangibles	
<b>Green Bond</b>	A bond is labelled 'green' or 'environmental' where the proceeds from the bond are directed to projects or assets with environmental benefits
<b>Climate Bond</b>	A subset of green bonds, where proceeds are directed to projects/assets that have specific climate benefits
<b>Certified Climate Bond</b>	Where a green bond has been certified against the Climate Bonds Standards as having met the criteria for Use and Management of Proceeds, External Review and disclosure for Pre- and Post-Issuance Reporting
<b>Social Bond</b>	Where the proceeds of the bond are used for projects and assets with positive social outcomes such as health care and education
<b>Sustainability Bond</b>	A bond that is financing a range of both social and environmental projects/assets
<b>SDG Bond</b>	An SDG bond invests in projects and assets that are aligned and contribute to the achievement of the Sustainable Development Goals (SDGs)
<b>Transition Bond</b>	Transition finance refers to investments that are not yet low- or zero-emission (i.e. not green) but have a short-term role to play in decarbonising an activity or supporting an issuer in its transition to Paris Climate Agreement alignment. This widely debated concept is built on the premise that "transition bonds" can fill a market gap by extending the labelling to a more diverse set of sectors and activities. Many of the candidates are currently highly polluting, hard to abate, and do not fall within existing sets of green definitions but are key to meeting global climate targets. Examples include extractives like mining; materials such as steel and cement; and industrials, including certain types of transportation, e.g. shipping and aviation. Find out more about Transition Bonds by accessing the Climate Bonds Initiative's White Paper. <sup>13</sup>
<b>Other types of bonds</b>	<p>There are other types of bonds that support the development of climate-related activities including sustainability-linked bonds, pandemic bonds, catastrophe bonds, or blue bonds. In traditional sustainability bonds, issuers have to prove that the capital they raise will be allocated to specific sustainable projects and assets. Sustainability-linked bonds qualify as sustainable because they are issued with a structural component (for example, a coupon) that varies depending on whether or not a defined environmental, social, and/or governance (ESG) objective is achieved.</p> <p>Pandemic bonds, using Climate Bonds definition of the pandemic theme (i.e. deals with a label related to COVID-19), emerged in early 2020 as actors across the global economy organised themselves to facilitate an immediate, effective response to the COVID-19 outbreak and subsequent pandemic.</p> <p>Catastrophe bonds are insurance-linked investment securities that can be used to manage risks that are associated with catastrophic events, such as hurricanes or earthquakes. Companies issue catastrophe bonds to insure themselves against major disasters, and investors who buy catastrophe bonds profit if the underlying catastrophe does not occur.</p> <p>In blue bonds, the proceeds are used for projects and assets related to the marine and coastal industries and ecosystems. A blue bond could be categorised as a green bond if the project brings climate and/or other environmental benefits</p>

For more information about green, social and sustainability bonds, with a full analysis of green bonds issued in H1 2020 and an in-depth historic analysis of other debt themes – sustainability, social and pandemic bonds – from 2014 to H1 2020, consult Climate Bonds Sustainable Debt Report:<sup>14</sup>



## Similarities and differences between green, social and sustainability bonds

Generally, green, social and sustainability bonds share several similar traits. First, green bonds, social bonds and sustainability bonds are all fixed-income debt instruments that are structured similarly and in the same way as traditional bonds, with similar characteristics in terms of seniority, rating and structuring process. A labelled bond

may carry characteristics related to more than one label at once. In this case, the issuer has the prerogative to determine the most suitable one, according to its preferred procedures, market and investors targeted. Myriad labels are applied in practice, such as 'sustainability', 'SDG', 'climate' or more specific ones like 'renewable energy', 'solar', or 'blue'.

In terms of structure, these bonds can take several forms (Figure 3 below):

Figure 3: Common forms of green, social and sustainability bonds

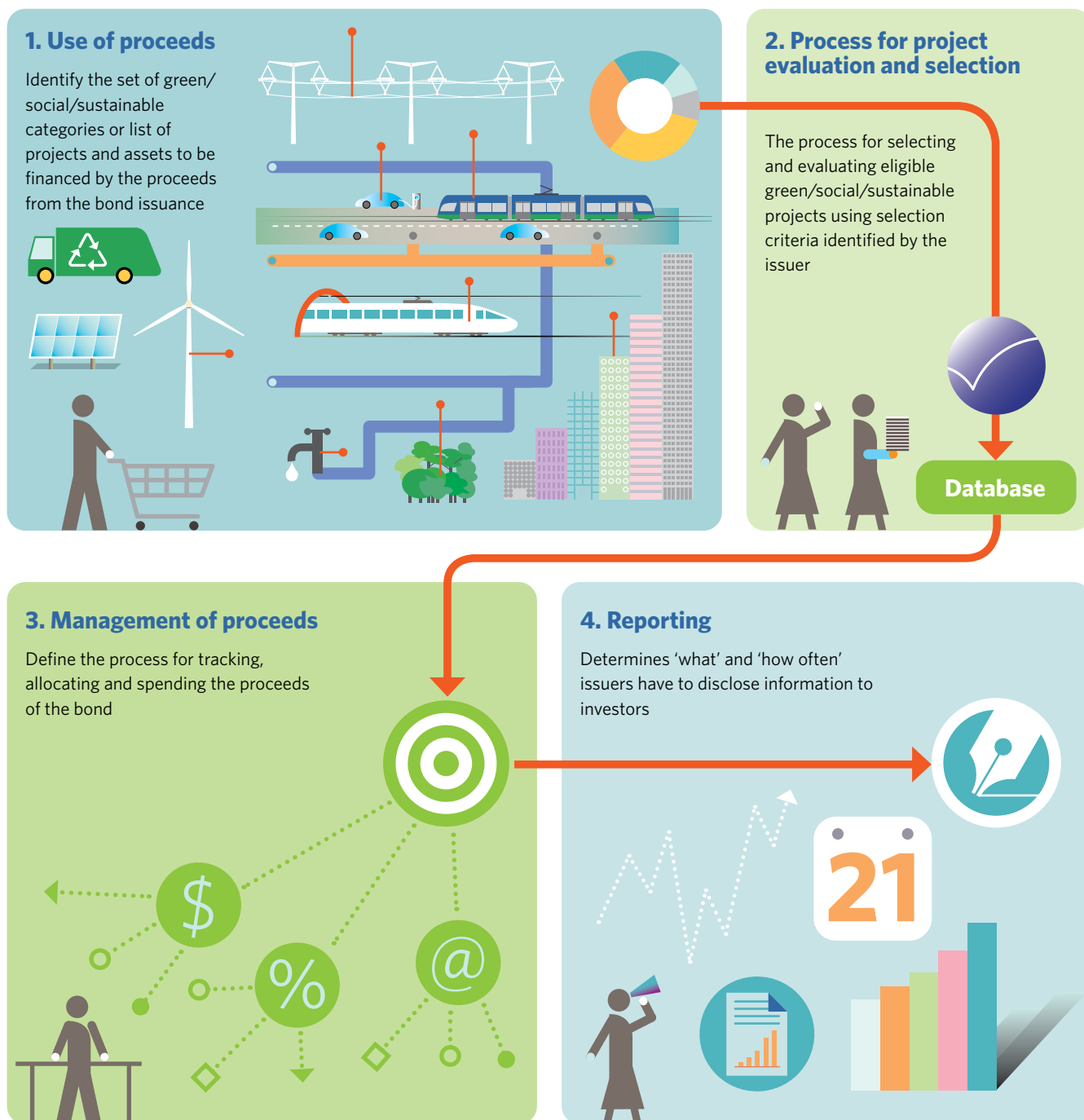
Type	Proceeds raised by bond sale are	Debt recourse	Example
<b>"Use of Proceeds" Bond</b>	Earmarked for green projects	Recourse to the issuer: same credit rating applies as issuer's other bonds	EIB "Climate Awareness Bond" (backed by EIB); Barclays Green Bond; Singapore state development bank DBS group green bond
<b>"Use of Proceeds" Revenue Bond or ABS</b>	Earmarked for or refines green projects	Revenue streams from the issuers through fees, taxes, etc are collateral for the debt	Hawaii State (backed by a fee on electricity bills of the state utilities); Beijing Enterprises Water Group (backed by water treatment service fee receivables)
<b>Project Bond</b>	Ring-fenced for the specific underlying green project(s)	Recourse is only to the project's assets and balance sheet	Invenergy Wind Farm (backed by Invenergy Campo Palomas wind farm); Tadau Energy Sdn Bhd Green Sukuk for solar energy plants in Kudat and Sabah, Malaysia
<b>Securitisation (ABS) Bond</b>	Used to refinance portfolios of green projects or proceeds are earmarked for green projects	Recourse is to a group of projects that have been grouped together (e.g. solar leases or green mortgages)	Tesla Energy (backed by residential solar leases); Obvion (backed by green mortgages); HarvestCapital (China) (backed by a LEED Gold Certified office building)
<b>Covered Bond</b>	Earmarked for eligible projects included in the covered pool	Recourse to the issuer and, if the issuer is unable to repay the bond, to the covered pool	Berlin Hyp green Pfandbrief; Sparebank 1 Boligkreditt green covered bond; National Australia Bank secured green note (backed by loans to Australian renewable energy developers)
<b>Loan</b>	Earmarked for eligible projects or secured on eligible assets	Full recourse to the borrower(s) in the case of unsecured loans. Recourse to the collateral in the case of secured loans, but may also feature limited recourse to the borrower(s).	MEP Werke, Ivanhoe Cambridge and Natixis Assurances (DUO), OVG, Ghana, Phu Yen TTP (Vietnam)
<b>Other debt instruments</b>	Earmarked for eligible projects		Convertible Bonds or Notes, Schuldschein, Commercial Paper, Sukuk, Debentures

In addition, these thematic bonds are all aligned with the same four core components under the Principles, which include: (i) use of proceeds, (ii) process for project evaluation and selection, (iii) management of proceeds, and (iv) reporting. This is because the issuance process of green/social/sustainability bonds emphasizes the

required transparency, accuracy and integrity of the information that will be disclosed and reported by issuers to stakeholders.

On the contrary, the main difference among green, social and sustainability bonds lies in their allocation of proceeds, as highlighted below.

Figure 4: Four components of the Principles



## 4. Benefits of labelling for issuers and investors

Green, social and sustainability bonds can deliver several benefits for both issuers and investors, as summarised in Figure 5. The main benefits reported by issuers have been an enlargement of the investor base and reputational benefits. There is also increasing evidence of pricing benefits for some issuers, driven by strong investor demand and limited supply. Oversubscription has in fact been the norm for thematic-labelled bonds.

The growth of the green bond market has attracted a diversified and more mainstream investor base. The institutional investor community (pension fund managers, assets managers, High-Net-Worth Individuals), with large portfolios including those with sustainability-related mandates, are increasingly seeking green and low-carbon investment opportunities.

As the impact of climate change risks is recognised and better understood, asset owners are increasingly looking for low-carbon opportunities to shift investments out of potentially stranded assets in order to minimise their exposure. Investor demand for green bonds has also increased in Vietnam. However, despite the numerous opportunities to scale, the issuance of green debt has been slow to date.

Even at a time of a global pandemic, the demand for green, social and sustainability bonds continues to hit record oversubscriptions, confirming that both issuers and investors remain keenly focused on green finance as a strategy for ensuring the right investments are put forward to keep environmental and social issues at the top of the agenda.

With interest rates in the developed economies at an all-time low, the demand for yield coupled with the demand for green presents emerging markets with an unprecedented opportunity to tap new sources of capital at scale during this crisis period. Capital that can support a healthy and resilient recovery.

Figure 5: Benefits of labelled bonds

Benefits for investors	Benefits for issuers
<ul style="list-style-type: none"> <li>Comparable financial returns with the addition of environmental and/or social benefits</li> <li>Satisfy ESG requirements for sustainable investment mandates</li> <li>Contribute to national climate adaptation, food security, public health, energy supply, among others</li> <li>Enable direct investment in the 'greening' of brown sectors and social impact activities</li> <li>Increased transparency and accountability on the use and management of proceeds, becoming an additional risk management tool</li> <li>Green bonds can help mitigate climate change-related risks in the portfolio due to changing policies such as carbon taxation which could lead to stranded assets. Instead, a green bond invests in climate-friendly assets, such as green buildings, renewable energy, that over time bear a lower credit risk</li> </ul>	<ul style="list-style-type: none"> <li>Provide an additional source of sustainable financing</li> <li>Increase alignment regarding the durability of instruments and the project lifecycle</li> <li>Improve investor diversification</li> <li>Enhance issuer reputation</li> <li>Attract strong investor demand, which can lead to high oversubscription and pricing benefits</li> </ul>

In 2019, Climate Bonds Initiative surveyed 48 of the largest Europe-based fixed-income asset managers to gain a comprehensive understanding of how the fixed-income investment community is making investment decisions when addressing climate risks and other environmental and social factors. The total Assets Under Management (AuM) of respondents was in the order of EUR13.7tn, and their total fixed income AuM at EUR4.3tn. From this Investor Survey,<sup>15</sup> it emerged that investors are demanding more green emerging market debt. Their appetite for local currency and longer tenor is also increasing.

## 5. International & local principles

### The Principles (ICMA)

As presented in chapter 3 above, the Principles are currently the most commonly accepted framework for green, social and sustainability bonds' issuance. They are coordinated by ICMA, which provides not only administrative support but also guidance for their governance process. The figure below demonstrates the similarities, differences and characteristics of the Principles:

### International Climate Bonds Standards

The International Climate Bonds Standards is a standard for green bonds that is consistent with the Green Bond Principles with a set of science-based sector criteria that lay out clear definitions (thresholds and requirements) which are used in the Certification of green projects and assets.

Certification under the Climate Bonds Standards confirms that the bond, loan or

debt instrument used to finance a project is:

- Fully aligned with the Green Bond Principles;
- Uses best practices for internal controls, tracking, reporting and verification; and
- Used to finance assets consistent with achieving the goals of the Paris Climate Agreement.

For further information check the latest version of the Climate Bonds Standards for download [here](#).

Figure 6: Principles – Green Bond Principles, Social Bond Principles and Sustainability Bond Guidelines

Type	Green Bond Principles	Social Bond Principles	Sustainability Bond Guidelines
<b>1. Use of proceeds</b>	<p>The Green Bond Principles do not provide details on 'green'. The green definitions are left to the issuer to determine. Broad (and non-exhaustive) green project categories suggested by the principles include:</p> <ul style="list-style-type: none"> <li>▪ Energy</li> <li>▪ Buildings</li> <li>▪ Transport</li> <li>▪ Water management</li> <li>▪ Waste management &amp; pollution control</li> <li>▪ Nature-based assets including land use, agriculture and forestry</li> <li>▪ Industry &amp; energy-intensive commercial</li> <li>▪ Information technology &amp; communications (ICT)</li> </ul>	<p>Social Project categories suggested by the principles include:</p> <ul style="list-style-type: none"> <li>▪ Affordable basic infrastructure</li> <li>▪ Access to essential services</li> <li>▪ Affordable housing</li> <li>▪ Employment</li> <li>▪ Food security and sustainable food systems</li> <li>▪ Socioeconomic advancement and empowerment</li> </ul>	Combination of Green and Social Bonds Principles
<b>2. Process for project evaluation and selection</b>	<p>The issuer of a green bond should clearly communicate to investors:</p> <ul style="list-style-type: none"> <li>▪ the environmental sustainability objectives;</li> <li>▪ the issuer decides the process on how the projects fit within the eligible green projects</li> <li>▪ the related eligibility criteria</li> </ul>	<p>The issuer of a social bond should clearly communicate to investors:</p> <ul style="list-style-type: none"> <li>▪ the social objectives;</li> <li>▪ the issuer decides the process on how the projects fit within the eligible Social Projects</li> <li>▪ the related eligibility criteria</li> </ul>	Combination of Green and Social Bonds Principles
<b>3. Management of proceeds</b>	<p>The net proceeds of the green bond [social or sustainability bond as well], or an amount equal to these net proceeds, should be credited to a sub-account, moved to a sub-portfolio or otherwise tracked by the issuer in an appropriate manner, and attested to by the issuer in a formal internal process linked to the issuer's lending and investment operations for the projects. (Source: Green Bond Principles)</p>		
<b>4. Reporting</b>	<p>Issuers should make, and keep, readily available up to date information on the use of proceeds to be renewed annually until full allocation, and on a timely basis in case of material developments.</p> <p>Transparency is of particular value in communicating the expected impact of projects. (Source: Green Bond Principles)</p>		

## ASEAN standards

In November 2017, the ASEAN Capital Markets Forum (ACMF) – a forum comprising market regulators from the 10 ASEAN countries – released the ASEAN Green Bond Standards, a set of voluntary guidelines based on the international Green Bond Principles, to create a green asset class for the ASEAN region. The ASEAN Green Bond Standards, **updated in October 2018**, seek to enhance transparency, consistency and uniformity to help reduce issuance and investment costs.<sup>16</sup>

In addition to the ASEAN Green Bond Standards, ACMF has established the ASEAN Social Bond Standards<sup>17</sup> and the ASEAN Sustainability Bond Standards.<sup>18</sup> Their main characteristics are presented in Figure 7.

## Principles and standards in Vietnam

With the introduction of Decree 163/2018/ND-CP<sup>19</sup> and the growing financial market in Vietnam, corporate green bonds were expected to have their presence increased in the Vietnamese bond market. Decree 163, issued by the Government on December 4th, 2018, related specifically to corporate bond issuance. The Decree was considered the first-ever legal framework for corporate green bonds in Vietnam. It provided a leverage tool to encourage further investment in green projects in the private sector. The Decree aimed to support the Vietnamese road map for bond market development for 2017-2020, which set out mechanisms and policies for the distribution of the green bond market with the objective of enabling issuers to raise capital for implementing green projects through the issuance of bonds. Decree 163 has been recently replaced by Decree 153/2020/ND-CP, dated December 31, 2020, which now regulates further private offering and trading of corporate bonds in the domestic market and offering corporate bonds to the international market.<sup>20</sup>

Figure 8 right underscores the main differences and similarities between the principles and standards discussed in this guide in relation to the main topics to be observed in a labelled bond issuance:

Figure 7: ASEAN Green Bond Standards, Social Bond Standards and Sustainability Bond Standards

	ASEAN Green Bond Standards	ASEAN Social Bond Standards	ASEAN Sustainability Bond Standards
<b>Eligible Issuers</b>	The issuer or issuance of the green/social/sustainability bond must have a geographical or economic connection to the region		
<b>Ineligible Projects</b>	Fossil fuel power generation projects are excluded	Projects which involve activities that pose a negative social impact related to alcohol, gambling, tobacco and weaponry are excluded	Combination of ASEAN Green and Social Bonds Standards
<b>Continuous Accessibility to Information</b>	Information on the process for project selection and the use of proceeds, as well as external review reports, must be made publicly available on a designated website  ASEAN standards require that issuers report to investors at least on an annual basis and are encouraged to make more frequent reporting on the use of proceeds until full allocation, and on a timely basis in the case of material developments.		
<b>Encourage More Frequent Reporting</b>	Recommendation to obtain an external review for the green, social or sustainability bond framework, recommended, particularly for the management of proceeds and annual reports.		
<b>External Review</b>	Recommendation for the external review providers to be required to disclose their relevant credentials and expertise, and the scope of the review conducted		

Sources: [ASEAN Green Bond Standards](#), [ASEAN Social Bond Standards](#) and [ASEAN Sustainability Bond Standards](#)

Figure 8: Comparative table of international and local labelled bond principles and standards

Topic	Green Bond Principles	CBI Standards	Asean Standards
<b>Eligibility criteria</b>	High level	CBI Taxonomy	High level
<b>External review</b>	Recommended but not required	Required	Recommended
<b>Publication of external review</b>	Recommended but not required	Required	Required (if conducted)
<b>Accreditation of reviewers</b>	No	Yes	No
<b>Impact reporting</b>	Recommended but not required	Not required. Allocation and Eligibility reports required	Recommended
<b>Use of proceeds in legal documentation</b>	Recommended but not required	Required	Required

## 6. Taxonomies of green definitions

Although the ASEAN Green Bond Standards will guide local issuances, it is essential for local issuers to know and understand the importance and influence of the first ever Climate Bonds Taxonomy as well as the EU taxonomy because they do influence external investors. Moreover there is international interest to have harmonized taxonomies around the world. The ultimate goal of these taxonomies is to support facilitating more investment into sustainability priorities.

In an attempt to encourage countries to develop their local green taxonomies,<sup>21</sup> the World Bank published the guide “Developing a National Green Taxonomy: A World Bank Guide”,<sup>22</sup> suggesting the following main actions for a country to set the contents of its own green taxonomy:

- “1. Define its strategic goal.
2. Select environmental objectives relevant to the country’s sustainable development priorities and agenda.
3. Specify sectors that are expected to deliver on the objectives.
4. Assess and select specific investments in these sectors that contribute to addressing the selected environmental objectives. Whenever possible, the criterion for selection should be the expected performance of these investments in connection with national environmental targets.
5. Identify intended taxonomy users and beneficiaries, their roles, and, ideally, their respective responsibilities in the implementation and use of the taxonomy.
6. Outline reporting guidelines for market actors applying the taxonomy.”

Source: World Bank, June 2020. *Developing a National Green Taxonomy: A World Bank Guide*

To exemplify recent developments in the taxonomy realm, the World Bank’s guide also included a comparison of several existing taxonomies,<sup>23</sup> elucidating the differences and similarities between them. In the next subsections, we will therefore analyse two of the existing taxonomies mentioned in the guide: (i) the Climate Bonds Taxonomy, as the pioneer and international example, and (ii) the EU Taxonomy, as the first regional document developed to address the demand for market harmonisation. Finally, we will also pinpoint some recent developments in Vietnam in relation to green definitions and harmonisation.

### Climate Bonds Taxonomy

The Climate Bonds Taxonomy is a guide to climate aligned assets and projects. It is a guiding tool for issuers, investors, governments and municipalities to help them understand what the key investments are that will deliver a low-carbon, climate-resilient economy.

A large number of institutional investors have indicated their support for action to address climate change. However, when it comes to environmental criteria, investors currently have too few tools to help ensure that their investments are making a significant impact, particularly for debt-based investments. The market needs independent, science-driven guidance on which assets and activities are consistent with a rapid transition to a low-carbon economy. The Climate Bonds Taxonomy identifies the assets and projects needed to deliver a low-carbon economy and gives global greenhouse gas (GHG) emissions screening criteria consistent with a sub-two degree global warming target (ideally 1.5°C) set by the COP21 Paris Climate Agreement. It has been developed based on the latest climate science including research from the Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA), and has benefited from the input of hundreds of technical experts from around the world. It can be used by any entity looking to identify which assets and activities, and associated financial instruments, are compatible with a sub-two degree decarbonisation trajectory.

First released in 2013, the Climate Bonds Taxonomy is regularly updated based on the latest climate science, the emergence of new technologies and on the Climate

Bonds Standards Sector Criteria. Through the development of the Climate Bonds Standards (chapter 5 above), the Climate Bonds Taxonomy convenes sector-specific Technical and Industry Working Groups who work together to identify assets and projects that are aligned with a two degree trajectory. All this research has been fed into the updated Climate Bonds Taxonomy.

The Taxonomy also includes the Sector Criteria, which provides in-depth detail on what assets may be financed with Climate Certified Bonds. Each Sector Criteria sets climate change benchmarks for that sector that are used to screen assets and capital projects so that only those that have climate integrity, either through their contribution to climate mitigation and/or to adaptation and resilience to climate change, will be certified. Where a bond encompasses a mixed portfolio of assets across several sectors, each sub-category of assets will be subject to the relevant Sector Criteria for those assets. The Sector Criteria are determined through a multi-stakeholder engagement process, including Technical and Industry Working Groups, convened and managed by the Climate Bonds Initiative, and are subject to public consultation and revised as needed as a result of that feedback. Finally, they are reviewed and approved by the Climate Bonds Standards Board.<sup>24</sup> The Criteria are a subset of the Climate Bonds Taxonomy.<sup>25</sup>

### Reading the Taxonomy

The Taxonomy uses a traffic light system to indicate eligible assets and projects, according to Figure 9 below.

- Indicates asset or project is automatically compatible with a low carbon economy and does not have to comply with any requirements.
- Indicates asset can be compatible with a low carbon economy if it complies with set screening requirements.
- Indicates asset or project is not compatible with a low carbon economy.
- Indicates that this is an area where more work is required before we can classify these types of projects or assets.

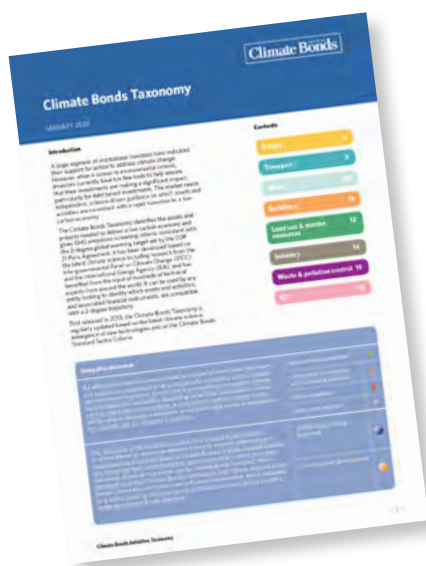


Figure 9: Climate Bonds Taxonomy

The Climate Bonds Taxonomy identifies the assets and projects needed to deliver a low carbon economy and gives GHG emissions screening criteria consistent with the 2-degree global warming target set by the COP 21 Paris Agreement. More information is available at <https://www.climatebonds.net/standard/taxonomy>.



ENERGY	TRANSPORT	WATER	BUILDINGS	LAND USE & MARINE RESOURCES	INDUSTRY	WASTE	ICT
Solar	Private transport	Water monitoring	Residential	Agriculture	Cement production	Preparation	Broadband networks
Wind	Public passenger transport	Water storage	Commercial	Commercial Forestry	Steel, iron & aluminium production	Reuse	Telecommuting software and service
Geothermal	Freight rail	Water treatment	Products & systems for efficiency	Ecosystem conservation & restoration	Glass production	Recycling	Data hubs
Bioenergy	Aviation	Water distribution	Urban development	Fisheries & aquaculture	Chemical production	Biological treatment	Power management
Hydropower	Water-borne	Flood defence		Supply chain management	Fuel production	Waste to energy	
Marine Renewables		Nature-based solutions				Landfill	
Transmission & distribution						Radioactive waste management	
Storage							
Nuclear							

Certification Criteria approved  
 Criteria under development  
 Due to commence

10/2020

## EU Taxonomy

Climate Bonds has been a major contributor to the development of local and regional taxonomies around the globe, most notably, the EU Sustainable Finance Taxonomy,<sup>26</sup> applicable to the following three groups of Taxonomy users:

- Financial market participants offering financial products in the EU, including occupational pension providers;
- Large companies who are already required to provide a non-financial statement under the Non-Financial Reporting Directive; and
- The EU and Member States, when setting public measures, standards or labels for green financial products or green (corporate) bonds.

The EU Taxonomy is a tool to help investors, companies, issuers and project promoters navigate the transition to a low-carbon,

resilient and resource-efficient economy. Similarly to the Climate Bonds Taxonomy, the EU Taxonomy sets its own sector criteria (the 'technical screening criteria') for economic activities which:

- make a substantive contribution to one of the following six environmental objectives:
  - Climate change mitigation;
  - Climate Change adaptation;
  - Sustainable and protection of water and marine resources;
  - Transition to a circular economy;
  - Pollution prevention and control;
  - Protection and restoration of biodiversity and ecosystem.
- do no significant harm (DNSH) to the other five, where relevant;

- meet minimum safeguards (e.g., OECD Guidelines on Multinational Enterprises and the UN Guiding Principles on Business and Human Rights).

The technical screening criteria will help companies, project promoters and issuers access green financing to improve their environmental performance, as well as helping to identify which activities are already environmentally friendly. In doing so, it will help to grow low-carbon sectors and decarbonise high-carbon ones.



## Vietnam's local context

Having approved the domestic guidelines for green bond issuances outlined below, Vietnam is progressing towards sustainable finance regulation and harmonization of green definitions:

### Green Growth Strategy

Vietnam has approved the Green Growth Strategy for 2011 to 2020.<sup>27</sup> In February 2016, two Vietnamese local government entities – Ho Chi Minh City and People's Committee of Ba Ria Vung Tau Province – issued the first VND-denominated green bonds and listed them on Hanoi Stock Exchange. These issuances came out of a pilot program between the Ministry of Finance and the German International Cooperation Agency (GIZ), aiming to prepare the market for future issuances.<sup>28</sup>

### State Bank of Vietnam's Green Lists

Under the National Action Plan for Green Growth for the period of 2014 - 2020,<sup>29</sup> the State Bank of Vietnam's Governor has issued (i) Directive No.03/CT-NHNN<sup>30</sup> dated March 24, 2015 on scaling up the green credit and environmental and social risk management in credit operations; (ii) Decision No.1552/QD-NHN dated August 6, 2015 promulgating the Action Plan of the Banking Industry to implement the National Strategic Plan on Green Growth to 2020; and (iii) Decision 1604/QD-NHNN dated August 7, 2018 approving the Scheme<sup>31,32</sup> on green bank development in Vietnam in order to:

- a. Promote the ratio of lendings to green industries;
- b. Increase the application of new technologies to environmental practice and habits among bank's clients within the framework of banking operations;
- c. Develop the internal regulations on environmental and social risk management in lending activities of the banks to 2025.

### Minister of Planning and Investment Climate-Related Expenditure Criteria

The Minister of Planning and Investment announced Decision No. 1085/QD-BKHDT on July 16th, 2018<sup>33</sup> to promote the guidelines on the classification of public investment for climate change and green growth as highlighted in Figure 10:

Figure 10: Vietnam's Related Guidelines

#### A: Minister of Planning and Investment Climate-Related Expenditure Criteria<sup>36</sup>

Purpose	Scope of activities	Purpose	Scope of activities
<b>Reduction</b>	<ul style="list-style-type: none"> <li>▪ Efficient energy</li> <li>▪ Low-carbon manufacturing and electricity</li> <li>▪ Sustainable manufacturing in industry</li> <li>▪ Building and developing sustainable urbanization</li> <li>▪ Sustainable agriculture and livestock farming</li> <li>▪ Sustainable forestry management</li> <li>▪ Sustainable transportation development</li> <li>▪ Sustainable waste management</li> <li>▪ Medical and social service</li> <li>▪ Irrigation</li> <li>▪ water supply &amp; drainage quality</li> <li>▪ Sustainable fish farm and aquaculture</li> <li>▪ Eco diversity and preservation</li> </ul>	<b>Adaptation</b>	<ul style="list-style-type: none"> <li>▪ Promoting information about Meteorology, Hydrology and Climate and alert</li> <li>▪ Manufacturing, transmitting and distributing low-carbon electricity</li> <li>▪ Disaster reduction</li> <li>▪ Building, developing sustainable urbanization</li> <li>▪ Sustainable transportation development</li> <li>▪ Sustainable waste management</li> <li>▪ Sustainable agriculture and livestock farming</li> <li>▪ Sustainable forestry management</li> <li>▪ Medical and social service</li> <li>▪ Irrigation</li> <li>▪ Water supply &amp; drainage quality</li> <li>▪ Sustainable fish farm and aquaculture</li> <li>▪ Eco diversity and preservation</li> <li>▪ Sustainable water resources management</li> <li>▪ Seaside protection</li> </ul>

### MONRE Handbook on Environmental Related Criteria for Green Projects

In 2012, the Vietnamese government approved the extension of its National Green Growth Strategy 2011-2020 vision to 2050,<sup>34</sup> with the aim of building an efficient and sustainable economy that supports the implementation of the national climate change strategy. Nearly 30 provinces (cities) in Vietnam have already developed and implemented their Green Growth Action Plan. This is important, as decentralized climate policy implementation could position the provincial government as key actors in enabling green investment. Provincial government could enable green investment in green infrastructure, public transport, renewable energy and

energy efficiency through tax incentives and effective regulations and institutional arrangement. This could take the form of public-private partnerships, which could potentially remove the burden from local and state finances. It could also occur through the issuance of sub-sovereign or local government green bonds.

In terms of a local green taxonomy,<sup>35</sup> Vietnam has yet to start developing its own national version. The implementation of the steps listed in the World Bank's guide "Developing a National Green Taxonomy: A World Bank Guide" could encourage Vietnam's government to move towards a low-carbon and sustainable economy, reinforcing its commitment to the Paris Climate Agreement, not only internationally but especially domestically.

Figure 10: Vietnam's Related Guidelines

B: Environmental criteria for green projects

Criteria	Projects	Criteria	Projects
<b>1. Energy Efficiency</b>	<ul style="list-style-type: none"> <li>Energy efficiency improvements in new or existing facilities through the installation of more-efficient equipment and technology for reduction of heat losses, and greater waste heat recovery</li> <li>Energy efficiency improvements in new or existing building facilities</li> <li>Energy efficiency improvements in new or existing production, public service facilities through installation of more efficient lighting technology and systems</li> <li>Energy efficiency improvements in existing facilities through changes in management processes to save energy and reduce heat losses</li> <li>Researches and pilot production of innovative energy efficiency products.</li> </ul>	<b>5. Efficient and effective use of natural resources</b>	<ul style="list-style-type: none"> <li>Adoption of clean technology in recovering or reusing materials and waste</li> <li>Recycle and reuse wastewater for production, business or service towards saving water resources</li> <li>Researches and planning for more productive land use</li> <li>Researches of new technologies for efficient and effective use of natural resources and for environmental conservation</li> <li>Installation of new more-efficient equipment and change in production processes to save production inputs</li> </ul>
<b>2. Production and/or use of clean energy, renewable energy</b>	<ul style="list-style-type: none"> <li>Wind energy;</li> <li>Solar energy;</li> <li>Energy from biomass sources;</li> <li>Energy from biofuel, biogas captured through waste treatment;</li> <li>Geothermal energy;</li> <li>Marine energy (tidal and wave energy)</li> <li>Hydropower including reservoir hydropower with storage of up to 100,000 m3 and generating capacity of up to 10 megawatts</li> </ul>	<b>7. Other environmental benefits</b>	<ul style="list-style-type: none"> <li>Productions of products which are certified as organic or environmentally friendly by authorised organizations</li> </ul>
<b>4. Conservation of natural resources and ecosystem</b>	<ul style="list-style-type: none"> <li>Projects with investment components aimed at conserving natural resources and/or the natural ecosystem.</li> </ul>		

## 7. Overview of specific sector criteria most relevant to Vietnam under the Climate Bonds Standards

### Vietnam's state of the green market

As of October 2020, Vietnam has seen 4 green debt issuances totaling USD283,849,378, issued by one government-backed entity (USD 23,4m in 2016), one municipal government (USD 3,6m in 2016) and two green loans<sup>37</sup> (USD71m and USD 186m, respectively, both in 2020).

As highlighted in Figure 12, the majority of the proceeds (78%) have been used towards renewable energy, which still figures as the main sector of interest of Vietnamese stakeholders along with waste and agriculture.<sup>38</sup> The confounding factors of climate change, rapid urbanization and strong population growth mean that Vietnam needs to prioritize more resilient and sustainable water management and low-carbon transport development.<sup>39</sup> In light of these local characteristics and growth potential, we will further analyse these sectors in depth.

### Renewable energy sector

Vietnam's renewable energy sources include solar, wind, small hydro, and biomass, accounting for only 2.1% of the total power generated in 2019.<sup>40,41</sup> In 2016, the Vietnamese government approved the revised National Power Development Plan for 2011 to 2020, with a vision for 2030 that emphasises renewable energy development and power market liberalisation.<sup>42</sup> The Government aims to increase the share of renewable energy production to 7% by the end of 2020 and 10% by 2030, whilst reducing the use of imported coal-fired electricity. These actions will contribute towards energy security, environmental protection and sustainable socio-economic development.

### Hydro Energy

Hydropower has been the largest contributor to Vietnam's national power capacity, with significant capacity yet to be harnessed. 818 hydropower projects have been approved with a total registered capacity of about 23,182 MW. Currently, the country has 385 operational hydropower plants with a total electricity output of about 18.5 GW. Additionally, 143 projects with a capacity of 18,564 MW are under construction. Another 290 projects of 2,770 MW are in the feasibility study stage.<sup>43</sup>



Figure 11: Green bonds and loans market in Vietnam - Amount issued by issuer type

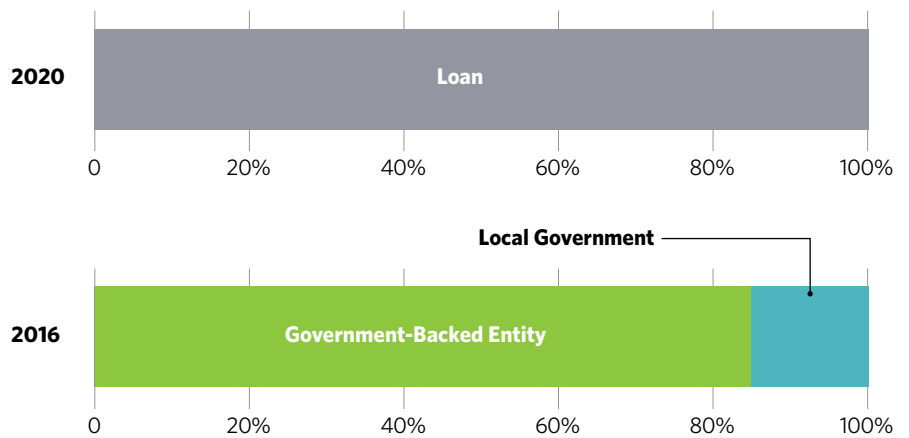


Figure 12: Green bonds and loans market in Vietnam - Amount issued by use of proceeds

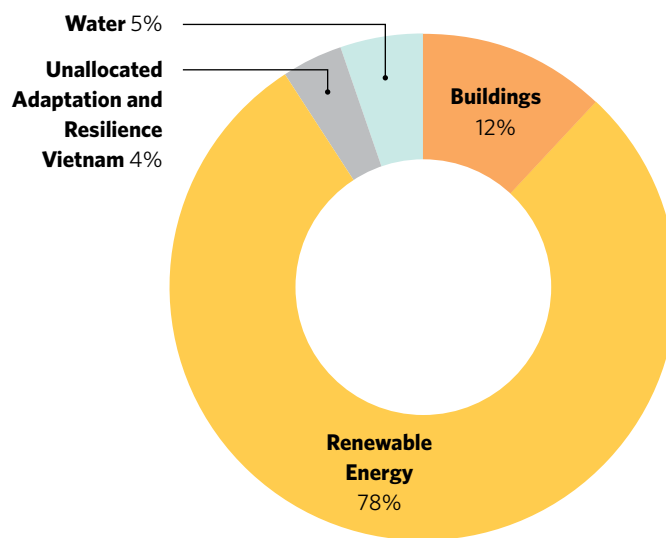
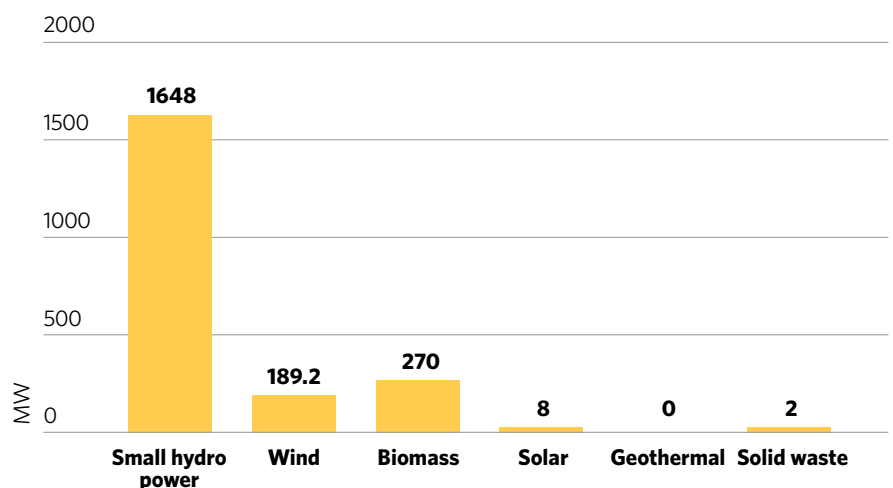


Figure 13: Energy sector investment in Vietnam



Source: Vietnam Renewable energy report (2018)

## Solar energy

Vietnam is reported to have enormous potential in developing solar power due to an average natural solar energy intensity of 5kWh per square metre.<sup>44</sup> The growth of solar began after the Government's Decree No.11/2017/QĐ-TTg106 on mechanisms for encouraging the development of solar power in Vietnam was released. As of August 2020, there were 102 solar power plants and nearly 50,000 rooftop solar systems in operation in the country with a total capacity of 7,500 MWp.<sup>45</sup>



## Wind energy

Vietnam's potential for wind energy is promising – with a long coastal line experiencing an average wind speed of six metres per second.<sup>46</sup> Wind energy plants could potentially generate 500-1000 kWh per metre squared per year.<sup>47</sup> Similar to solar projects, the number of operational wind energy projects is limited – only six plants with a combined capacity of 189.2 MW, although there are an increasing number of projects beginning construction.<sup>48</sup> In June 2020, an additional 7 GW worth of new wind projects were approved to be built in the country, putting it on track for a total wind power generation capacity of nearly 12 GW by 2025.<sup>49</sup>



## Biomass energy

As an agricultural country, Vietnam has abundant biomass energy potential. Biomass projects are expected to generate about 900 MW.<sup>50</sup> Currently, there are 38 bagasse-based biomass power plants in Vietnam with a total registered capacity of around 352 MW.<sup>51</sup> However, biomass has generally been treated as a non-commercial energy source, as it has been being collected and consumed locally. Only eight plants with a combined capacity of 82.51 MW are connected to the national grid, selling only 15% of electricity produced from biomass.<sup>52</sup>



According to IFC Climate Investment Opportunity report,<sup>58</sup> Vietnam's climate-smart business investment potential is an estimated \$753 billion from 2016–2030, with the majority (\$571 billion) going towards the country's transportation infrastructure needs by 2030. Potential investment in renewable energy totals \$59 billion, with over half of this (\$31 billion) in solar PV and another \$19 billion for small hydropower projects. New green buildings represent an almost \$80 billion investment opportunity.

## Waste management sector

Vietnam generates over 28 million tons of waste annually.<sup>53</sup> The volume of waste is anticipated to significantly increase in the coming years, especially in large urban areas. The emissions produced by this waste are also expected to increase. It is projected that GHG emissions from waste in Vietnam will reach 26.6m MtCO<sub>2</sub>e in 2020, and almost double to 48m MtCO<sub>2</sub>e by 2030.<sup>54</sup> At the moment, the common practice of solid waste management in Vietnam is by incineration or landfilling.<sup>55</sup> These methods result in low economic and environmental values, and cause severe environmental and health issues, including land pollution, toxic emissions, air contamination and communicable diseases.



According to the National Strategy on solid waste management, by 2025, 100% of regular solid waste in urban cities and 90% of solid waste from rural areas should be collected and treated up to Vietnamese environmental standards; 90% of the urban waste should be recycled and reused.<sup>56</sup> Currently, recycling in Vietnam is mainly done by informal private waste pickers or collectors who deliver their loot to one of the approximately 15 plastic recycling plants in Vietnam.<sup>57</sup> To meet the waste management targets, the Government plans to support the development of further recycling facilities as well as increase the demand for recycled materials.

Investment in advanced technologies for waste management, including waste-to-energy (WtE) technology, is also being promoted by the Government. WtE technology was introduced to Vietnam in 2012 and has the potential to generate 320 MW; however, the current energy generated by WtE is only 2.4 MW.<sup>58</sup> To increase the development of WtE facilities in Vietnam, the Government is calling for private investment as well as developing favourable policies and incentives for the investors.

## Green agriculture sector

Vietnam is considered to be one of the global agricultural giants. Cultivated land for farming makes up nearly 40% of Vietnam's total landmass, and about 39.45% of the total labour workforce are working in the agriculture sector. Rice is by far the main crop of the country, providing 21.5 million metric tons each year for domestic consumers since 2019.<sup>59</sup> Vietnam is additionally a significant producer of the world's coffee, rubber and fish.



The cultivation of rice paddy produces a sizeable carbon footprint, accounting for over 10% of global agricultural greenhouse gas emissions and consuming 21% of the total water volume used for crop production worldwide.<sup>60</sup> Considering the degree of dependence that the country has on the rice industry, there are growing concerns for economic stability, as the negative impacts on the environment outweigh the benefits. The temperature in Vietnam has risen by 0.9 °C in 2019 alone, leading to record droughts in the Mekong delta and worsening water shortages.<sup>61</sup> Moreover, the country is also a victim of its own success, with challenges such as pests, overfishing, deforestation, climate change and natural disasters.<sup>62</sup> It is predicted that climate change will reduce harvests in the region by as much as 17% and shrink arable land by as much as 20% by 2050.<sup>63</sup>

In response to these challenges, in 2013, the Vietnamese government issued Decision 899/QĐ-TTg approving the Scheme on agricultural restructuring towards higher added value of agricultural products and sustainable development of agriculture.<sup>64</sup> Later in 2015, the Government approved the Master plan of agricultural areas and zones with a high-tech application by 2020, with an orientation to 2030.<sup>65</sup> Up to 2018, there were 33 provinces applying organic agriculture models with a total of 76.700 ha of farmland.<sup>66</sup> Currently, Vietnam is approaching the agriculture 4.0 models with the hi-tech agriculture projects implemented. For instance, VinEco is a high-tech agriculture company, with a keen focus on clean and standardised crops across its network of more than 14 farms and leading a more sustainable agricultural industry in Vietnam. As part of its scheme, the company also aims to help smallholders implement more effective and sustainable farming practices on the way to GLOBAL G.A.P.<sup>67</sup>

## Low-carbon transport sector

Existing transport in Vietnam comprises road, railway, air and waterway (both inland and coastal line) modalities.



Among them, road transport represents the largest share of the emissions at approximately 68%.<sup>69</sup> With a population of around 96 million people, Vietnam is home to nearly 40 million vehicles - most of which run on oil and petroleum.<sup>70</sup>

Nevertheless, electric bicycles and scooters, which are considered much greener, have attracted growing attention from Vietnamese consumers.<sup>71</sup> In 2017, Vietnamese people obtained 400,000 electric vehicles. In the near future, given the country's existing policies on low-carbon growth, this new mode of transport can be expected to fill up to 20% of the market demand.<sup>72</sup> Recently, Vinfast, a local automobile manufacturer, successfully launched its first e-scooter, boosting the country's immature e-vehicle manufacturing market.<sup>73</sup>

Other green transport in Vietnam include rail, metro, light rail and Bus Rapid Transit (BRT) - mostly concentrated in Hanoi and Ho Chi Minh City. Even though these modes are available, the share of public transport remains relatively low, accommodating less than 10% of commuters' needs.<sup>74</sup> This is due to its low level of network development, limiting accessibility and the convenience of private vehicles.

Whilst the Hanoi BRT system (financed by the World Bank's ODA, at a cost of USD53.6m<sup>75</sup>) has been in operation since 2016, the BRT system in Ho Chi Minh City was suspended in 2017 after one year of operation due to insufficient passengers.<sup>76</sup> In line with its plan to make Ho Chi Minh City a green and environmentally-friendly city, the Ho Chi Minh City government recently approved the development of a new, smart BRT system with electric buses in the city.<sup>77</sup>

Despite the poor patronage of some networks in the past, public transport infrastructure development has become a priority for the major cities. Accordingly, public transport investment has considerably increased in recent years, with the largest investments seen for the five metro lines developed in Hanoi and Ho Chi Minh City. These multi-billion-dollar projects are either complete or under construction.<sup>78</sup> They are expected to ease the congestion problems in these two cities, provide a more comprehensive network - increasing accessibility for more people - and shift commuters from private vehicles to public means.

Beyond urban transport systems, freight and passenger rail networks exist throughout the country. The nation's principal route is connecting Hanoi with Ho Chi Minh City, with four other main lines going through 35 remote provinces, with international links to China.<sup>79</sup> Generally, the railway system in Vietnam is old-fashioned and the rollingstock relies on fossil fuels.<sup>80</sup> Although, this might soon change.

Vietnam Railway is undergoing a comprehensive revamp with plans to attract foreign investment into the industry.<sup>81</sup> There are also plans to build a North-South high speed railway system, running from Hanoi capital to Ho Chi Minh City, which may be worth USD58bn. The project is based on Japan's Shinkansen bullet train technology and is expected to improve transport quality for nearly half of the country's population. It is anticipated that, in the future, the share of green transport in Vietnam will increase.

## Water management sector

Vietnam's inadequate and ageing water infrastructure has meant that water supply for residential and industrial purposes has not yet met the demand.<sup>82</sup> In 2015, piped water only reached 10% of rural households and 61% of urban households.<sup>83</sup> With an estimated urban population of 44 million, demand for water is expected to be 9.4-9.6 million cubic metres per day by 2020.<sup>84</sup> Large urban cities also see high demand for clean water. For instance, Hanoi is estimated to need two million cubic metres per day of clean water by 2020, about three million and 3.5 million cubic metres per day by 2030 and 2050, respectively.<sup>85</sup>



Vietnam's government has set high targets for future water supply. By 2030, 100% of the population should have access to safe drinking water.<sup>86</sup> By 2020, urban water supply should reach 85% and rural water supply should achieve 75% of the demand.<sup>87</sup> The Government's 'National Strategy on Climate Change' also states that improving water security is an important response to climate change.<sup>88</sup> Furthermore, in the 'National Strategy on Green Growth' the Government highlights the need for water and irrigation infrastructure to be sustainable.<sup>89</sup>

Vietnam suffers from increasing wastewater problems, whereby discharging of domestic and industrial wastewater directly into the water sources without treatment is affecting the quality of water supply. The amount of domestic wastewater generated daily is around 1.75 million cubic metres,<sup>90</sup> with only 10% of city households' wastewater being treated. This is due to a significant deficit in wastewater treatment facilities.<sup>91</sup>

In response to these issues, the Government is working to increase the treatment capacity of about 900,000 cubic metres per day by another 1.6 million cubic metres per day by 2020.<sup>92</sup> The Government has also set the target of having centralized municipal wastewater treatment and collection systems in most urban cities, by 2025; 70-80% of municipal wastewater will be collected and treated properly. By 2050, all urban cities, with an urban population of more than 50,000 people<sup>93</sup> and above, should also receive stormwater discharge and wastewater treatment systems.<sup>94,95</sup>

Major urban centres like Ho Chi Minh City and Hanoi are pushing to upgrade and expand their existing wastewater infrastructure. For example, the Ho Chi Minh's Urban Flood Control Program (2016-2020) is expected to build and upgrade 6,000km of drains, 12 wastewater treatment plants and over 5,000km of canals, all of which should cost approximately USD4bn. Hanoi plans to spend USD2bn to renovate its drainage and effluent treatment capacity in the coming years.<sup>96</sup>

Vietnam is highly vulnerable to flooding, with flash flooding being particularly common during the rainy season due to insufficient flood prevention planning and infrastructure. Urban water drainage facilities are outdated and inefficient as a consequence of rapid urbanisation. As a result, new stormwater channels and canals are needed to cope and build resilience. In the Government's Nationally Determined Contributions (NDCs), Vietnam acknowledges the important role of water infrastructure in combating rising sea levels and urban flooding.<sup>97</sup> The Government has set the target that by 2025, 100% of urban areas should experience less frequent floods during the rainy season.<sup>98</sup> Ho Chi Minh City's Department of Transport aims to protect over 900 storm drains, channels and canals.<sup>99</sup> This means Vietnam needs to allocate considerable funding to flood infrastructure in the near future.

## 8. Labelled bond issuance process

The intensified awareness and concern for environmental threats has permeated the financial sector and given rise to a variety of financial instruments that provide environmental and social benefits alongside financial returns. The development of the sustainability and social segments of the market was marked by the release of the Sustainability Bond Guidelines and the Social Bonds Principles in June 2018, drawing upon the good practice recommendations around transparency and the market integrity of the Green Bond Principles.

Indeed, the green bond market acted as a trailblazer within the sustainable finance market. For the purposes of this guide, we will illustrate the issuance steps of a bond labelled as green.

From a financial perspective, the process of issuing a green bond (or any thematically-labelled bond) is the same as that of issuing a traditional bond. In Vietnam, Securities Law 201993 and Decree 153/2020 on the issuance of corporate bonds currently set the legal framework to be observed in all corporate bond issuances, labelled or not. Attributing a label to it reveals the adoption of additional steps by the issuer. Figure 14 shows two columns:

- **Column A** describes the regular bond issuance process that is generally kicked off when the issuer decides to get rated and ends with the monitoring of the performance of the bond in the secondary market;
- **Column B** shows the simple supplementary steps that the issuer should undertake in order to add the green label to the bond based on international best practices.

Figure 14 also shows how the regular bond issuance process (A) and the green bond issuance process (B) can take place concurrently. The two processes are both described in terms of the internal procedures the issuer should set up before and after the launch of the bond into the market, which correspond to the Pre-Issuance and to the Post-Issuance phases respectively.

Figure 14: Process comparison between regular bonds and bonds labelled green issuances

A. Issuing a regular bond	B. Issuing a green bond - Additional steps
<p><b>Pre-Issuance</b></p> <ul style="list-style-type: none"> <li>▪ Get rated</li> <li>▪ Get market intelligence on currency, tenor, size</li> <li>▪ Decide on underwriters</li> <li>▪ Register with local regulator</li> <li>▪ Issue prospectus</li> <li>▪ Comfort letter / due diligence</li> <li>▪ Outreach through road shows and sales</li> </ul>	<p><b>Pre-Issuance</b></p> <ul style="list-style-type: none"> <li>▪ Define a Green Bond Framework:               <ol style="list-style-type: none"> <li>1. Preparation</li> <li>2. Define how project meets green bond eligibility criteria (Use of Proceeds)</li> <li>3. Put in place project selection process and select eligible projects (Selection of Projects and Assets)</li> <li>4. Set up accounts and process to earmark and allocate proceeds - ring-fence the proceeds (Management of Proceeds)</li> <li>5. Establish Reporting processes</li> <li>6. Get pre-issuance external review (External Review)</li> </ol> </li> <li>▪ Check for support mechanisms</li> </ul>
<p><b>Issuance: Launch the bond into the market</b></p> <ul style="list-style-type: none"> <li>▪ Build the book of investors who are interested in the bond</li> </ul>	<p><b>Issuance: Launch the bond into the market</b></p> <ul style="list-style-type: none"> <li>▪ Include the green attributes in marketing materials and investor documents</li> </ul>
<p><b>Post-Issuance</b></p> <ul style="list-style-type: none"> <li>▪ Price and allocate bond to support secondary market performance</li> <li>▪ Communication to the capital market</li> <li>▪ Monitor secondary market</li> </ul>	<p><b>Post-Issuance</b></p> <ul style="list-style-type: none"> <li>▪ Allocate proceeds to the projects</li> <li>▪ Monitor the projects and track allocation over time</li> <li>▪ Publish impact Report</li> <li>▪ Post issuance Audit if necessary</li> </ul>

## Pre-Issuance steps

The procedures of a green bond issuance do not significantly differ depending on either the nature of the issuer (for instance corporate, sovereign or semi-sovereign) or the bond type (use of proceeds bond, project bond or sovereign bond) and they are now widely understood by investors and the market at large.

### Green Bond Framework

The first step in a green bond issuance is the preparation of a Green Bond Framework. This is a document that discusses how the internal processes of the issuer meet commonly accepted green bond eligibility criteria and are subdivided into two sets: one set of processes that should be implemented at Pre-Issuance (Use of Proceeds, Selection of Projects and Assets, Management of Proceeds, External Review) and one set that should be implemented at Post-Issuance (Post-Issuance Audit and Reporting).

An issuer's Green Bond Framework is a physical document that is generally made publicly available to the market and is considered the centrepiece of the green bond issuing process. Whilst there is not a prescribed way to write it, the structure of Green Bond Framework commonly reflects the four pillars of the Green Bond Principles,<sup>100</sup> which are also fully integrated in the Climate Bonds Standards. The main sections of a Green Bond Framework examine the steps in the green bond issuance process as included in Figure 14 (Column B) and are usually accepted to be as follows:<sup>101</sup>

#### 1. Preparation –“Introduction” or “Overview” section of Green Bond Framework

The issuer of a green bond should establish, document and maintain an internal decision-making process that it will use to determine the eligibility of the underlying projects and assets (Use of Proceeds, Selection of Projects and Assets, Management of Proceeds, Reporting). This decision-making process begins with the elaboration of a statement regarding the environmental objectives of the green bond and is generally reflected in the “Introduction” or “Overview” section of Green Bond Framework.<sup>102</sup>

This is a very important aspect of the issuance process because it provides the issuer with the opportunity to directly explain to investors why and how green bonds fit within their long-term vision or corporate strategy.



#### 2. Use of Proceeds – Define how the project meets green bond eligibility criteria

The main difference between a plain ‘Vanilla Bond’<sup>103</sup> and a green bond is that, for green issuances, the proceeds are allocated to projects and assets that are considered green. It is therefore crucial that the issuer clearly identifies the categories of “Green” that the underlying projects and assets need to fall under in order to be eligible for inclusion in the bond.

These categories of green are linked to the intrinsic nature of the underlying projects and assets that the issuer wants to finance/re-finance and are generally aligned with either the Green Bond Principles or the Climate Bonds Taxonomy. The former describes broader categories of green such as energy efficiency, renewable energy, sewage management systems, air pollution and so on, whereas the latter tends to define green in a more narrowed down way such as solar energy, low-carbon buildings (residential/commercial), off-shore wind and water.

Some issuers want to provide an increasingly in-depth description of the nature of the underlying projects and assets so that they directly choose to align their bond with the Sector Criteria of the Climate Bonds Standards. Normally, it is left to the issuer to decide which categories of green to align with but, it is important to note that the Green Bond Principles represent the minimum required by the market while the Sector Criteria of the Standard are the most specific as they provide very clear requirements and thresholds projects and assets have to meet.

The issuer should also clarify, if applicable, the exclusion criteria used when selecting assets and projects, such as (i) exploration and production of fossil fuels, (ii) burning of fossil fuel for power generation, (iii) nuclear power generation, (iv) alcohol, weapons, tobacco, gaming, or palm oil industries, (v) production or trade in any product or activity deemed illegal under national laws, regulations, international conventions and agreements, and any other process applied to identify and manage potentially material environmental and social risks associated with the projects.

It is important to highlight that, while each issuer might have a different way of selecting underlying projects and assets, the key point is that this selection process should be as transparent as possible in order to provide investors with comfort that the internal



processes of the issuer are robust.<sup>104</sup> Once the underlying projects and assets have been selected, they are referred to as “Nominated Projects and Assets”.

#### 3. Selection of Projects and Assets – Implementing a project selection process and select eligible projects

This describes the issuer's internal set up for the selection of projects and assets. It is about the specific governance mechanisms the issuer has established to select the underlying projects and assets. For instance, most issuers will set up a Selection Committee consisting of Senior Members of staff from relevant departments (such as Finance, Engineering and Corporate Social & Responsibility) who will be in charge of screening the underlying projects and assets according to the requirements discussed in the Use of Proceeds section above. The Committee will generally provide recommendations for the selection of projects and assets that will then be sent to the Board of Directors for final approval.

Similarly, a sovereign issuer will describe the governance process for the selection of projects and assets. For instance, it could be that the relevant projects and assets are screened by a joint committee consisting of representatives of both the Ministry of Finance and the Ministry of Environment (or equivalent) and then sent to Parliament for final approval. For more information on Sovereign issuances, please refer to Chapter 9.

#### 4. Management of Proceeds – Define how the proceeds will be managed after the issuance and set up accounts accordingly

This step refers to the mechanisms that the issuer needs to establish in order to manage and track the proceeds internally. Generally, there are two ways to manage the proceeds:

- **Earmarking:** The proceeds enter the balance sheet of the issuer and are set aside for future allocation to the Nominated Projects and Assets. This is common practice amongst issuers of green bonds (including sovereign issuers) and is widely used to finance future capital investment or to refinance payments on long-term projects.
- **Ring-fencing:** This occurs when the issuer decides to separate the proceeds from its business-as-usual operations. For instance, ring-fencing could happen when a public utility company managing wind farms decides to financially separate itself from the parent company in order to allow



investors to have more of a direct link to a specific asset (the wind farms) while also enjoying the full credit support of a parent company's balance sheet.

Furthermore, when establishing the processes for the Management of Proceeds, it has become best practice in the market for the issuer to clarify in the Green Bond Framework how the unallocated proceeds will be managed. Typically, any balance of proceeds that have not been allocated to Nominated Projects and Assets should be held in temporary cash investments, short-term deposits and other short-term liquidity instruments (for instance, short-term notes with a tenor of less than one year). To better understand the management of unallocated proceeds in the Post-issuance phase, please see sections 5 and Post-Issuance Steps on page 23.

### 5. Reporting - Establish reporting process to be followed at the Post-Issuance phase



The reporting process is essential for investors because it creates a direct link between their investment and the environmental performance of the Nominated Projects and Assets. For this purpose, the issuer should report to investors at least once annually,<sup>105</sup> but some issuers might opt to report twice per year or even every quarter. The issuer should report about the following aspects:

- **On-going eligibility of projects and assets:** the issuer should include a list of the Nominated Projects and Assets to which Green Bond proceeds have been allocated, as well as a brief description of these Projects and Assets, the amounts allocated, and their expected impact. It should also report any material changes<sup>106</sup> that have occurred to the Nominated Projects and Assets since issuance and whether those changes have affected eligibility. In case the eligibility of a portion of the Nominated Projects and Assets has been compromised, the issuer should report on whether the proceeds have been re-allocated to new eligible assets and, if not, how the issuer intends to proceed with it.
- **Balance of unallocated proceeds:** the issuer should report the total balance of unallocated proceeds and how they are being held in accordance with the processes set up in the Management of Proceeds. Typically, this will also include a confirmation that the unallocated proceeds are not being used to fund carbon-intensive projects.

- **Key Impact Indicators (KPIs):** this optional aspect refers to qualitative and quantitative environmental performance metrics of the Nominated Projects and Assets. For instance, these indicators could be the number of annual tonnes of abated CO<sub>2</sub>, generated electricity in terms of Kw per hour, miles of transmission lines installed or number of hectares of restored forest land. KPIs are generally determined at Pre-Issuance but their relevant data is gathered, monitored and presented at Post-Issuance.

As an attempt to create reporting harmonisation among green bond issuances' reports, ICMA has launched the Handbook: Harmonized Framework for Impact Reporting in 2009, led by an informal Technical Working Group comprising EBRD, EIB, IFC) KfW, NIB and the World Bank, framing general core principles and recommendations for reporting.<sup>107</sup>

As a minimum requirement, the reports should be made available to the bond's investors but most issuers decide to go a step further and to publish them on their website as a way to enhance the transparency of their green bond issuance. Whilst the reporting process is established at Pre-Issuance, the publication of the reports actually happens at Post-Issuance (See Figure 14).

### 6. External Review - Define the type to be followed and get a Pre-Issuance external review



The phrase "External Review" refers to the independent assessment on the green credentials of a bond provided to the issuer by an external auditor (reviewer). While external reviews released at issuance are important to verify compliance to the Green Bond Principles, Post-Issuance auditing confirms whether the proceeds have been allocated in accordance with the bond's Green Bond Framework, thus increasing the transparency and the reliability of the deal.

According to Figure 15, almost all the external reviews for green bonds will fall under one of the three categories below:

- **Second-Party Opinion (SPO):** these are the most popular forms of external review in the green bond market. They are independent, research-based assessments on the sustainability credentials of green bonds and their underlying projects and assets. The methodological approach underpinning the assessment is generally designed by the Opinion Provider, in alignment with the Green Bond Principles. Second-Party Opinions are normally

issued at Pre-Issuance with no follow up after issuance and allocation of proceeds, and can vary quite a lot depending on the methodology used by the Opinion Provider. As an example, the Republic of France commissioned Vigeo Eiris (the reviewer) to provide a Second-Party Opinion on the Green Bond issuance in January 2017.

- **Assurance:** it is an independent audit conducted following the procedures described in ISAE 3000, which is a standard used by accountants to process historical non-financial information. Assurance Opinions provide an assessment of both the green credentials of the bond as well as of the internal procedures established by the issuer. Assurance Opinions are used by independent Third-Parties Auditors (or Verifiers in the language of the Climate Bonds Standards) to provide an assessment of a bond's eligibility against the Climate Bonds Standards.<sup>108</sup> Limited or Reasonable Assurance Reports are issued to award Certification under the Climate Bonds Standards (see bullet point below as well as section 7).
- **Certification:** an assessment by qualified and attested parties of the green bond against a recognised external green standard or label, followed by a certification of the issuance if the bond complies with objective requisites. The Climate Bonds Certification Scheme is currently the reference standard and the gold standard of external reviews in the market (for further details and requirements please check section 7 on page 22).

Most external reviews can provide both a Second-Party Opinion as well as an Assurance Report against the Climate Bonds Standards. The most comprehensive list of external reviewers is provided on the Climate Bonds Initiative Website, which also lists the reviewers in terms of geographical scope.

Additionally, an issuer can also opt for an external review in the form of a scoring/rating process, though less common in the current green bond market:

- **Scoring/Rating:** report from a rating agency or specialised firm which scores the issuer's framework or bond against an established range, rather than an opinion statement provided in the Second-Party Opinion, the Assurance/Verification and the certification processes. Usually involves proprietary methods and datasets for the assessment, which may compromise the objectiveness and harmonisation of the analysis. Scoring/Rating are normally issued at Pre-Issuance, confirming the alignment of the bond with the Green Bond



Principles, with no follow up after issuance and allocation of proceeds.

External reviewers are generally engaged while or soon after the issuer has set up a Green Bond Framework and the review is normally made public before the roadshow. This is because the issuer can then use the independent review as a way to promote the green credentials of the bond during the roadshow and it is now common practice for the review to accompany the bond's prospectus when it is sent to potential investors.

## 7. Certification

Bonds and loans which are verified to conform with the Climate Bonds Standards are called Certified Climate Bonds. The Standard



contains rigorous scientific criteria that are consistent with the 2°C warming limit declared in the 2015 Paris Agreement and targeting the 1.5°C scenario. The Scheme acts as a universal adapter across jurisdictions. It incorporates the Green Bond Principles and Green Loan Principles and is aligned with the proposed EU Green Bond Standard and the guidelines and rules in China, ASEAN, Japan, India and other countries and regions.

Climate Bonds certification works as an effective screening tool for Investors to assure the best standards for climate integrity of their fixed-income investments, as well as the employment of best practices in the management of proceeds and transparency. Consequently, Certified bonds are an effective tool to expand the issuers' investor basis.

### Sectors are available for Certification:

Bonds can only be Certified if the type of physical assets or infrastructure they fund is already available at the Climate Bonds Initiative's Sector Criteria.<sup>109</sup>

In practice, the certification process is divided into two phases:<sup>110</sup>

- **Pre-issuance Verification:** prior to issuing the bond, when the bond is structured, confirmed, launched, registered, priced and marketed.

**a.** The Verifier provides a Pre-issuance Verifier's Report which states whether the bond conforms to the Pre-issuance requirements of the Climate Bonds Standards.

**b.** The Climate Bonds Standards Board will review the Pre-issuance Verifier's Report, the Information Form and the Agreement with the Climate Bonds and award Certification as appropriate. Upon

approval, the issuer receives a formal Certification Letter as well as a Certificate, which they can use to market their bond.<sup>111</sup>

**c.** Certification of a Climate Bond at the pre-issuance phase enables the issuer and underwriters to market the bond as a Climate Bonds Certified bond in their investor roadshow.

- **Post-issuance Verification:** is undertaken up to 24 months - the period when the proceeds of the bond are allocated to the nominated projects & assets.

**a.** Post-Issuance Verification must be conducted within 24 months after issuance of the bond in order to maintain the Climate Bonds Certification.

**b.** The Climate Bonds Standards Board reviews the Climate Bond Information Form updated after bond issuance and the Verifier's Report for Post-Issuance. Where the Climate Bonds Standards requirements are met, post-issuance Climate Bonds Certification is confirmed and it is valid for the term of the bond.

**c.** After the Post-Issuance verification, the Certification must be maintained by the issuer submitting annual reports throughout the tenor of the bond, up until it matures.

Vietnam has recently seen its first certified green instrument under the Climate Bonds Standards. The Asian Development Bank and Phu Yen TTP Joint Stock Company have signed in October 2020 a USD186m loan to develop and operate a 257 megawatt solar power plant in Hoa Hoi, Phu Yen Province, Vietnam. The loan consists of a USD27.9m loan funded by ADB, a USD148.8m loan granted by commercial banks<sup>112</sup> with ADB as Lender of Record, and finally a USD9.3m loan provided by Leading Asia's Private Sector Infrastructure Fund.<sup>113</sup>

## Check for support mechanisms

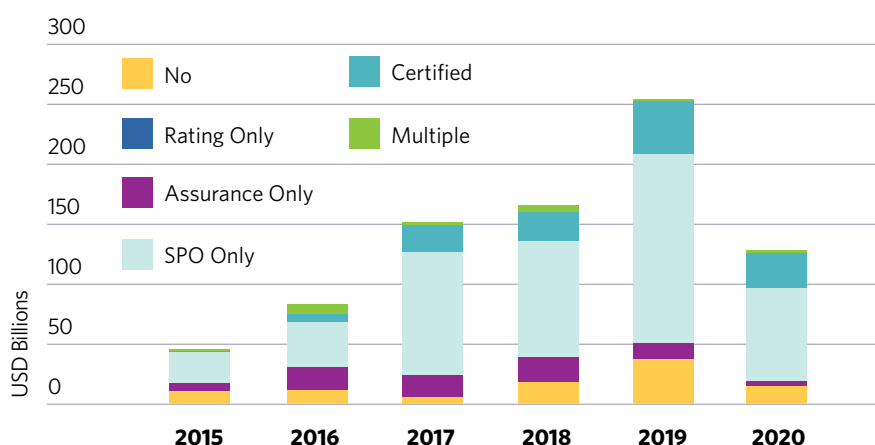
At this stage, there are no specific mechanisms for green bond issuance in Vietnam. It is recommended for issuers to check favorable investment mechanisms, interest rates, taxes and fees to encourage businesses, listing procedure, and incentives for green bond investors. In addition, there are support mechanisms in the ASEAN region that Vietnamese issuers can take advantage of. For instance, Singapore and Hong Kong offer incentives that can be utilized to Vietnamese issuers.

In some countries, local organisations, securities regulators/capital market authorities and/or central banks provide support mechanisms to encourage green, social and sustainability bonds issuance. Stock exchanges can also provide such support services for issuers of thematic-labelled bond issuers, including the reduction of fees and support in the organisation of roadshows. It is worth checking these potential support mechanisms locally, especially since sustainable finance policy is changing rapidly.

## Issuance - Launch of the bond into the market

When launching the green bond into the market, issuers may include their green or climate attributes in marketing materials and investor documents to attract a broader range of investors. For instance, it is becoming relatively common practice for issuers to include their Green Bond Framework as an annex to the Prospectus.

Figure 15: Volume of green bonds issued by type of external review



Source: Climate Bonds Initiative. Data as of 31 August 2020

## Post-Issuance Steps

### Allocate proceeds to the projects & Management of Unallocated Proceeds

- **Allocation of Proceeds:** Once the green bond is issued, it is time for the issuer to assign the proceeds to the corresponding account, depending on the type of management of proceeds chosen in the Green Bond Framework (typically earmarked or ring-fenced). Subsequently, the issuer must allocate the green bond proceeds to the Nominated Projects and Assets within 24 months. As mentioned in section 5 on page 21, the issuer should also report any material changes that have occurred to the Nominated Projects and Assets since issuance and whether those changes have affected eligibility.
- **Management of Unallocated Proceeds:** It is recommended that proceeds that have not been allocated to specific projects:
  - a. Held in temporary investment instruments that are cash, or cash equivalent instruments, within a Treasury function; or
  - b. Held in temporary investment instruments that do not include greenhouse gas intensive projects which are inconsistent with the delivery of a low-carbon and climate-resilient economy; or

- c. Applied to temporarily reduce indebtedness of a revolving nature before being redrawn for investments or disbursements to Nominated Projects & Assets.

### Monitor the projects and track allocation over time

Until the maturity of the green bond, the issuer must monitor the Nominated Projects and Assets and periodically adjust the balance of the tracked net proceeds in order to match allocations to the net proceeds.

### Publish applicable Report(s)

Applicable reports must be published according to the model established in the Green Bond Framework (please refer to section 5 on page 21).

### Post-Issuance Audit

In order to provide an extra layer of comfort to investors, issuers might decide to re-engage an external reviewer at Post-Issuance. This kind of audit can refer to:

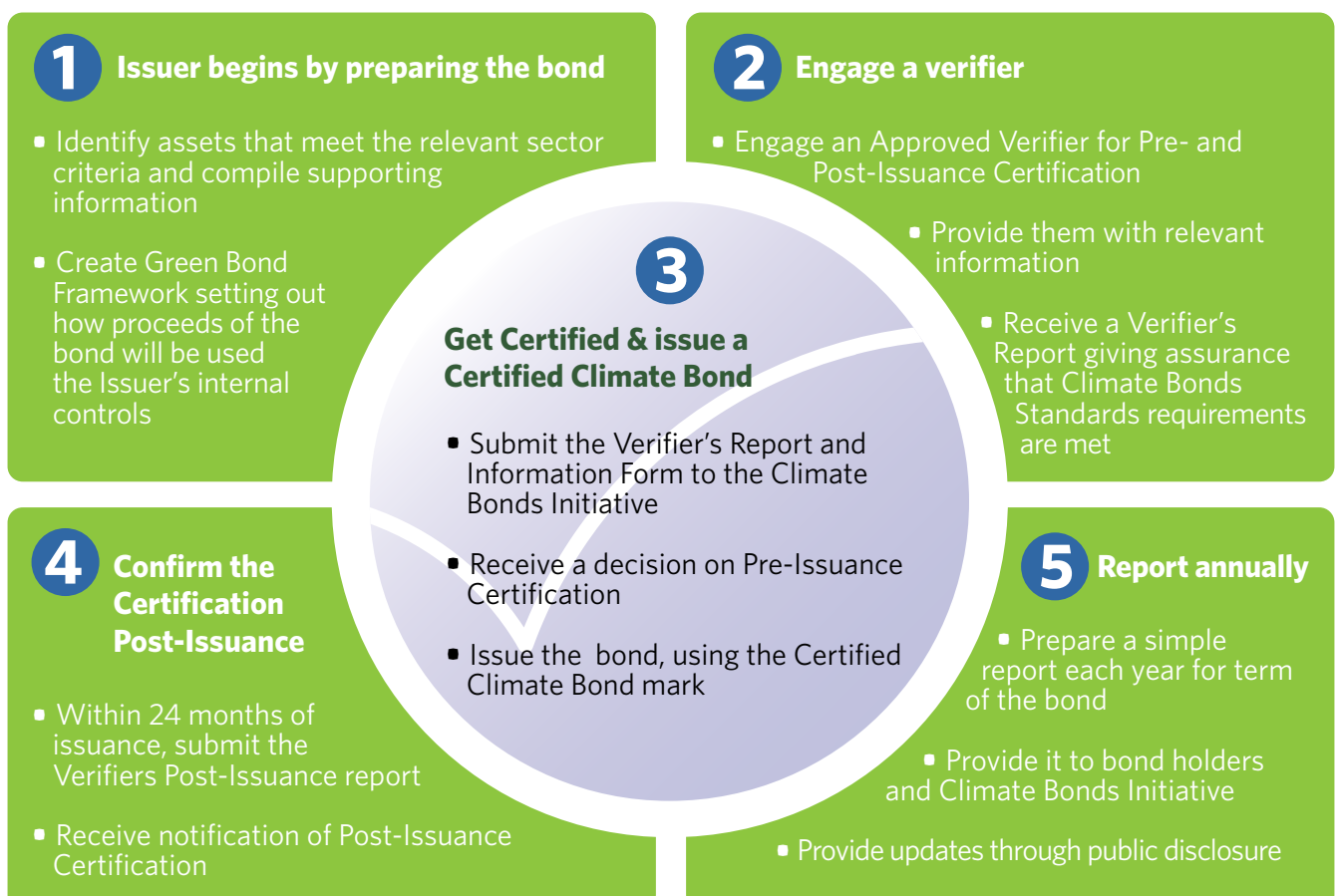
- **Post-Issuance Reviews:** the reviewer is engaged to provide a more thorough assessment of the green credentials of the bond and of the eligibility of internal procedures within the issuer. Generally, Post-Issuance Reviews provide investors with

extra assurance that the proceeds are being allocated correctly to the Nominated Projects and Assets. While a Post-Issuance Review is voluntary in the Second-Party Opinion model, it is indeed mandatory under the Climate Bonds Standards and Certification Scheme (please see section 7 on page 22)

- **Report Audit:** the issuer might decide to engage a reviewer (generally annually) in order to have their reports to investors periodically assessed. The practice allows issuers to provide investors with the certainty that the data gathered for the elaboration of the predetermined KPIs is robust.

Under the Climate Bonds Standards and Certification Scheme, Post-Issuance Audits are referred to as Post-Issuance Assurance Reports and, while periodic external review is not mandatory, the release of an annual report throughout the lifetime of the bond is required to maintain Certification under the Standard.

Figure 16: Certification process under Climate Bonds Standards



## 9. Distinctive Characteristics of Sovereign, municipal and corporate issuances

GSS bond market creation as well as enhanced collaboration, and extra transparency were all considered additionalities by most participants. The former was stated as a key motivation for issuing a sovereign GSS bond by multiple respondents. Sovereign issuers can serve as role models for other types of issuers and can provide investors with safe, liquid investment opportunities.

Green bonds are a key tool for governments to raise capital to implement infrastructure plans in line with national climate targets, increasingly this is the case as governments move to achieve their NDC targets, as set in the Paris Climate Agreement and the SDGs. A sovereign green bond issuance, which requires the involvement of multiple departments in government (traditionally treasury and sustainability), inter-ministerial collaboration can support ongoing efforts to implement a country's long-term low-carbon, sustainable economy and growth strategies. It also helps bring down the cost of capital for green projects by attracting new investors and mobilising private capital towards sustainable development.

Although green bonds are about assets and not entities, issuers are often scrutinised as to how their investments contribute to the transition. For sovereigns, green bonds issuance should be complementary to other government action on climate change and infrastructure, not an alternative. Whilst corporate issuances can finance with a wider range of projects that are not related to public services or infra-structures.

Credible policies that support a low-carbon transition are an important foundation for green finance as they create a pipeline of green assets on the ground to be financed through green financial markets. The Polish government amended the Polish Public Finance Act dated 27th August 2009 to support its Green Bond Framework, including transparency and traceability of proceeds.

The first sovereign green bond in the Americas was issued by the Republic of Chile in 2019 and was of the value of USD1.42bn. The bond-financed projects dedicated to infrastructure for electrified public transport (trains, buses); solar projects; energy efficiency; renewable energy; water management and green buildings. The project portfolio has been Certified under the Climate Bonds Standards whilst verification was provided by Vigeo-Eiris. The process of issuance was supported by the Inter-American Development Bank.<sup>114</sup>

Figure 17: Sovereign issuances up to October 2020

Country	Year	Size (USD)	
<b>Poland</b>	2016, 2018, 2019	4.3bn	First Sovereign issuer
<b>France</b>	2017, 2018, 2019, 2020	30.2bn	Largest Sovereign issuer to date; tied with France's ambitious climate goals
<b>Fiji</b>	2017	47.7m	First emerging market issuer. Linked to hosting UN Climate Summit in 2017 First "Small Island State" issuer Bond size is equivalent to 2% of its national debt
<b>Ireland</b>	2018	5.7bn	Third largest single sovereign bond issuance
<b>Indonesia</b>	2018, 2020	2.75bn	First Green Sovereign Sukuk, First Sovereign in Asia
<b>Nigeria</b>	2018, 2019	71m	First Climate Bonds Certified Sovereign bond; Oil exporting country
<b>Lithuania</b>	2018, 2020	77m	This is ambitious for an emerging European economy
<b>Hong Kong</b>	2019	1bn	Debut sovereign Green Bond
<b>Chile</b>	2019, 2020	6.23bn	The first Sovereign Issuance in the Americas 92% project portfolio green transportation - Santiago metro lines
<b>Seychelles</b>	2018	15m	World's first blue sovereign bond. Proceeds are expected to eligible activities related to sustainable fisheries and marine projects.
<b>Hungary</b>	2020	1.77bn	Debut sovereign Green Bond
<b>Germany</b>	2020	7.2bn	Debut sovereign Green Bond
<b>Sweden</b>	2020	2.1bn	Debut sovereign Green Bond
<b>Luxembourg</b>	2020	1.77bn	Debut sovereign bond; first government Sustainability Bond
<b>Egypt</b>	2020	750m	Debut sovereign Green Bond

Another example at the regional level is represented by the Indonesian Sukuk. Standard & Poor's upgrading of Indonesia to investment grade in 2017 was one of the factors which drove strong demand for the issuance to USD1.25bn as well as driving down the coupon from a previously touted 4.05%. The Republic of Indonesia was advised on the United States and English law aspects of the programme and the issuances.<sup>115</sup>

Sub-sovereign bonds represent the debt of state, provincial, territorial, municipal or other governmental units other than sovereign governments. Cities at the forefront of the battle against climate change are in need of investing in climate-resilient infrastructure with low-carbon emissions. This is an opportunity to meet

the objectives of NDC, under the Paris Climate Agreement. Integrating climate mitigation and resilience criteria into municipal infrastructure planning provides countries with the opportunity to access new flows of capital seeking green, especially in the international market.

Sub-sovereign entities at the state and city level have been pioneering green bond issuances in the public domain. Some states, such as California, have gone as far as developing green bond strategies, while others have raised awareness by issuing green bonds to raise funds for local green infrastructure. Sub-sovereigns in Australia, Canada and the US have issued green bonds financing renewable energy, energy efficiency, low-carbon public transport, and sustainable land use.

In the US, states and municipalities have issued over USD33.75bn worth of green bonds as of July 3rd 2020, accounting for 18% of the country's total issuance and 65% of issuances if government-backed entities are added. Sub-sovereign issuances, which include subnational governments, state agencies and state-owned investment vehicles and companies have reached over USD119.5bn in the US, representing 47% of global issuances. European sub-sovereigns are responsible for 37% of the global sub-sovereign market (USD94bn issued as of July 3rd, 2020), followed by the Asean sub-sovereign market with 11% (USD27bn on the same date). Vietnam currently accounts for 0,01% of global sub-sovereign issuances (USD27m), with one USD23.4m government-backed issuance and one USD3.58m local government issuance, both in 2016.

As of November 11th, 2020, there have been over 940 Green Bonds issued by sub-sovereign bodies. For being the most relevant market for sub-sovereign issuances, several notable bonds originating in North America are highlighted for Figure 18:

As described in the previous chapters, the process of issuing a sovereign green bond is similar to that of issuing a standard green bond, of which corporate issuances are part. However, there are some additional steps to consider, given the more complex organisational nature of governments, the type of expenditures they can entail and their debt's benchmark role in domestic capital markets.

#### A. Engage governmental stakeholders

Cross-collaboration between ministries is a central part of the sovereign green bond issuance process. The Ministry of Finance or other relevant ministries, such as the Ministry for Environment or Development may set the goals for the green bond issuance. Because of budgetary and debt management responsibilities, typically it is the Ministry of Finance that is at the core of the issuance. It may be useful to expand the engagement to external stakeholders to include other capital market players (including stock exchanges, banks, investors, pension fund regulators). Establishing a Public-Private Green Bond Advisory Council is one way of organising the stakeholder engagement. Engagement can also include roundtables and bilateral dialogues.

#### B. Establish a Green Bond Framework

A standard step for green bond issuers, this can also serve as a basis for national green bond guidelines.<sup>16</sup> In general, the purpose of the Framework is to determine eligible sectors and to establish a monitoring and reporting practice:

Figure 18: Sub-sovereign issuances up to October 2020

Issuer	Year	Totals (USD)
<b>Fannie Mae</b>	2017, 2018, 2019, 2020	81.18bn
<b>New York Metropolitan Transport Authority</b>	2016, 2017, 2018, 2019, 2020	10.4bn
<b>Ontario</b>	2014, 2016, 2017, 2018, 2019	3.7bn
<b>Quebec</b>	2017, 2018, 2019	1.8bn
<b>Indiana Finance Authority</b>	2015, 2016, 2017, 2018, 2019	1.7bn
<b>San Francisco Public Utilities</b>	2015, 2016, 2017, 2018	1.4bn
<b>City of Los Angeles</b>	2015, 2016, 2017, 2018	1.1bn

1. Select categories of green for eligible projects and assets refers to existing science-based categorisation systems such as the Paris-compliant Climate Bonds Taxonomy and Standard. It is recommended to consider how the selected sectors align with the country's wider climate policies, in particular, NDCs;
2. Determine eligible types of expenditures in the budget: direct investments or potentially intangible assets such as tax exemptions, subsidies, etc. Both new projects and refinancing of past projects, as well as direct or indirect expenditures, can be included;
3. Decide on reporting practices: set up a tracking and reporting procedure. Yearly reporting and ensuring current information is publicly available on the allocation of proceeds, including project sectors, geographies and whether they are new or operational is current best market practice;
4. Amend existing legislation if needed.

#### C. Identify eligible green budget items

Key ministries (including energy, transport, water, agriculture, environment, development, etc.) identify eligible assets from their budgets. The assets identified must be equal to or greater than the size of the bond. Identifying more eligible assets than the planned bond size enables to upsize the issuance as well as prepare for future issuances. Green assets and projects financed by green bonds can occur also outside the country of issuance to include cooperation and development projects overseas.

#### D. Arrange independent review

A credible independent review and verification provides investors with assurance of the green credentials of the bond. An external consultant can also support the identification of the green portfolio of projects and assets. Options include third-party certification against the Climate Bonds Standards or a bespoke second-party opinion.

The review/verification is carried out by a reputable science organisation/qualified consultancy firm.

#### E. Issue the green bonds

The usual steps for a conventional sovereign bond issuance will apply here. Supporting materials to promote the transaction can include a Green Bond prospectus, an investor presentation and an FAQ on green bonds. Additional marketing material can be developed to promote the issuance, showcasing the projects financed, the main elements of the Green Bond Framework (eligible sectors, the guidelines/standards of reference, management of proceeds, reporting), and the alignment with the government strategy for economic growth/job creation/poverty alleviation/transition to a low-carbon economy. Following the issuance, there is the investment phase.

#### F. Monitor and report

As with other Green Bonds types, reporting typically occurs at a minimum on an annual basis and includes a statement that the proceeds are being used for the eligible projects and assets identified. The reporting should occur based on what is stated in the Green Bond Framework. It is an important part of the transparency and investor confidence of the green bonds market. In nascent markets, the sovereign can set a precedent on good reporting practices through its framework.

#### G. Repeat issuers

Not all eligible expenditures may be included in a first green bond. Once a Green Bond Framework is set up, most issuers return to the market, revealing the benefits of labelling the issuance as green. Some issuers opt for a programmatic approach, i.e. issue green bonds on an ongoing basis. The Climate Bonds Standards & Certification Scheme provides for programmatic certification, requiring one pre-issuance review and one yearly post-issuance review for all bonds issued during one year.

The same steps apply for sub-sovereign of municipal bonds, with the difference of the involvement of local government representatives and that the issuance may refer to a national climate change strategy, but that can be responded on a local level.

For more information on Sovereign Green, Social and Sustainability bond issuances (GSS), please consult Climate Bonds Initiative's recently launched survey,<sup>117</sup> with 19 issuing nations sharing their perspectives. The survey was carried out during late 2020 to aggregate and assess the experiences of Sovereign GSS bond issuers and their role in market growth.

Figure 19: Sovereign green bonds – Why issue?

Benefits:	Impact of sovereign Green Bonds:
<ul style="list-style-type: none"> <li>▪ Raising capital to finance infrastructure in line with its national contribution to meeting the goals of the Paris Climate Agreement</li> <li>▪ Attracting new investors</li> <li>▪ Providing policy certainty</li> <li>▪ Improving collaboration between ministries</li> <li>▪ Drawing international attention to its environmental policies</li> </ul>	<ul style="list-style-type: none"> <li>▪ Kick-starting a domestic market</li> <li>▪ Providing scale and liquidity to the green bond market</li> <li>▪ Using signalling power to other market stakeholders</li> <li>▪ Diversifying the green bond market/ tapping into new investor segments</li> </ul>

## 10. Financial institutions

Financial institutions have a vital role in scaling up sustainable finance action and facilitate green bond market development. In their different roles, financial institutions can act as underwriters of the potential green bond issuances and be would-be issuers of green bonds as well.

### Financial institutions as underwriters

Issuing bonds is a complex process involving several steps to meet requirements of specific markets and countries of issuance. One of the most important requirements that entities issuing green bonds must meet is the disclosure of financial information to regulators, rating agencies, and investors. Thus, green bond issuers often appoint investment banks or other financial institutions to help them meet these requirements, drawing on their expertise of green bond markets, government regulations and other related factors.

Common roles of the underwriter in a green bond transaction:

- **Introduce:** "Educate investors on the green bond product and how it could fit into their investment policies", including green bonds concept, benefits & mechanics to issuers
- **Strategy:** Help issuers clarify sustainable financing proposition and links with strategy
- **GB Framework:** Help issuers design overall Green Bond Framework e.g. procedures to select projects and manage proceeds
- **Green alignment:** Help issuers define the scope of eligible green projects
- **Deal execution:** Match issuers with differing green & mainstream investors, advice on green pricing
- **Emergence of green structuring advisers**

To a larger extent, green bond issuers may also depend on such "underwriters" for green bond pricing and distribution. In other words, an underwriter works closely with the issuing body to determine the offering price of the green bonds, buys them from the issuer, and sells them to investors via the underwriter's distribution network.

In the ASEAN region, both local and foreign banks are comparatively active in underwriting green bonds. HSBC leads the underwriter ranking, both by the number of deals and amount issued. In recent years, the participation of regional banks (especially from Malaysia and Singapore) is strong and growing. One bank from the United Arab Emirates (Dubai Islamic Bank) made it into the top 5, reflecting the strong interest from Islamic investors.

Figure 20: Top 5 underwriters of ASEAN green bonds

Rank	Underwriter	Country	Deals	Amount issued (USDm)
1	HSBC Holdings PLC	UK/HK	8	800
2	Malayan Banking Bhd	Malaysia	5	448
3	Dubai Islamic Bank PJSC	UAE	2	400
4	Citi	USA	5	393
5	CIMB Group Holdings Bhd	Malaysia	2	368

### Financial institutions as issuers

Like corporates, supranational organizations, municipalities and national governments, financial institutions are also potential issuers of green bonds. Commercial banks, investment banks, and development banks can all issue green bonds to diversify their offering and allow for greater reach to potential investors. Also, green bond issuances could signal their commitment to sustainable development.

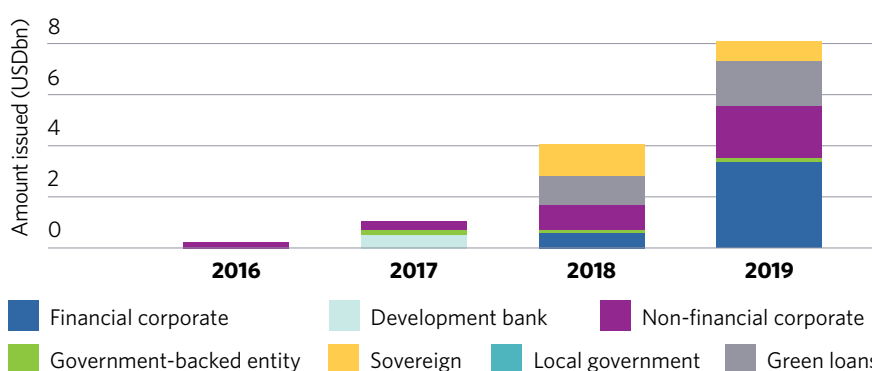
Globally, 2018 set a precedent for financial institutions and their role in the green bond market. Remarkably, it saw their green bond issuance more than double compared to 2017. Commercial banks were the most active of all financial institutions. Their issuance nearly doubled from 2017 levels with contributions from a wide variety of institutions, from the second largest global issuer Industrial Bank (China) to one of the most recent market entrants, Bank Windhoek (Namibia). Property banks and real estate investment trusts (REITs) were also very much involved, the vast majority from developed markets. Four property banks entered the green bond market in 2018, spurring green covered bond growth, while the geographic diversity of REIT issuance greatly increased, together with volumes.

According to the Climate Bonds Initiative's *ASEAN Green Finance State of the Market 2019 Report*,<sup>118</sup> financial corporates became

the largest issuer type in 2018 in the ASEAN region. Significant growth in financial corporate issuance resulted in that issuer type becoming the largest in ASEAN, representing 29% of the total, overtaking non-financial corporates with 27% and sovereign issuers with 15%.<sup>119</sup> Green loans also featured strongly in the ASEAN market, with USD2.9bn issued, representing 22% of the total, largely related to Singapore's real estate sector.

In January 2020, VP Bank of Vietnam received a USD71m loan from the IFC with a tenor of 5 years. The proceeds will be used for the energy and building sectors. The loan will help to expand the bank's lending to small and medium enterprises (SMEs), hence creating new options for businesses to obtain green financing at a favourable interest rate. The IFC's loan represents a great example of how to channel institutional investment into emerging markets. Participation of regional and international lenders in this financing package shows the high interest of institutional and private investors in climate finance in Vietnam, facilitating a new source of capital while helping the country tackle climate change at the same time. As part of this transaction, VP Bank has also adopted an international comprehensive standard in green lending, sending a positive signal to the market as well as to international investors.

Figure 21: The mix of issuer types has been dominated by financial and non-financial corporates



# 11. Key service providers in the ASEAN market

## Credit rating agency

Credit rating is common in many countries around the world, aiming to supply transparent information for investors and businesspeople. It is meant to support the stock and bond markets, improve transparency, promote capital mobilisation via the stock market and protect investors' rights. To learn more about its characteristics, please refer to chapter 8, section 6, page 21.

Vietnamese enterprises usually have their credit rated by global credit rating agencies such as Standard & Poor's, Moody's Investors Service, Fitch Ratings, DBRS. The Sai Gon Phat Thinh Rating Joint Stock Company is licensed by the Ministry of Finance to provide credit rating services, the first of its kind in Vietnam. FiinGroup Joint Stock Company is the second company to be licensed and has just announced the official start of providing its credit rating service (FinnRating) since June 5, 2020.

## Second Party Opinion Provider (SPO Provider)

An issuer can seek advice from consultants and/or institutions with environmental expertise that are independent from the issuer. These are independent, research-based assessments on the sustainability credentials of green bonds and their underlying projects and assets. To revisit its characteristics, please refer to chapter 8, section 6, page 21.

Based in Malaysia, RAM Holdings Berhad<sup>120</sup> offers Second Part Opinion services on issuer's framework against market practices and applicable standards and guidelines for the issuance of Green Bond / Social Bond / Sustainability Bond and SRI Sukuk.

Global ESG service providers (such as Oekom, Sustainalytics, Vigeo Eiris, DNV GL) and scientific experts (such as CICERO, CECEP Consulting) are also present in the ASEAN Market. Other local environmental consultants and assessment organisations can be found in the region.

## Verifier under the Climate Bonds Standards

External reviewers under the Climate Bonds Standards are approved by the Climate Bonds Standards Board following the submission of an application prepared by the applicant and are subject to a due diligence process in order to assess their credentials and competencies. Applicants must be able to demonstrate competency and experience in the following areas:

- Issuance of debt instruments in the capital markets and management of funds within issuing organisations
- Technical characteristics and performance of low-carbon projects and assets in the areas covered by the specific criteria available under the Climate Bonds Standards
- Provision of Assurance Services in line with the International Standards on Assurance Engagements ISAE 3000

In addition to the 3 criteria laid out above, approval of Verifiers is also based on their geographical coverage and areas of technical competence:

- Geographic coverage of the approval is aligned with the coverage provided by the Verifier's insurance policies for professional indemnity/professional liability
- Technical scope of the approval is determined by the Verifier's levels of experience and expertise in the different technical sectors covered by the Climate Bonds Standards

Refer to the Climate Bonds Initiative website for a comprehensive list of Approved Verifiers,<sup>121</sup> along with their geographic scope, technical scope and contact details. Below, 3 examples of Approved Verifiers under the Climate Bonds Standards who can provide services in Vietnam:

- KPMG India<sup>122</sup>
- DNV GL<sup>123</sup>
- Sustainalytics<sup>124</sup>

## 12. Case studies from other countries

### Malaysia: Telekosang Hydro One Sdn Bhd



In 2019, **Telekosang Hydro One Sdn Bhd** issued a MYR120m (USD42m) 20-year green junior bond (Telekosang ASEAN Green Junior Bonds) and a MYR470m (USD166m) 18-year green sukuk (Telekosang ASEAN Green SRI Sukuk). Telekosang Hydro One is a private limited company. It was formed in 2017 for the construction of this hydro plant. The Telekosang ASEAN Green Junior Bonds are subordinated to the Telekosang ASEAN Green SRI Sukuk in terms of security and priority of payments. The bond was privately placed.<sup>125</sup>

**Use of the proceeds:** The green bond and the sukuk were issued to finance the construction of a 24MW run-of-the-river hydro plant. The issuer signed a 21- year Renewable Energy Power Purchase Agreement (REPPA) with Sabah Electricity, with a scheduled Feed-in Tariff commencement date for the project of 31st July 2021, i.e. expected 24-month construction period

**Underwriter:** MIDF Amanah Investment Bank

**Certification Verifier:** N/A

**Second-party opinion:** RAM Consultancy Services Sdn Bhd (RAMC)



Source: <https://www.gloabalethicalbanking.com/malaysiancompany-issues-green-sukuk-finance-small-hydroconstruction>

**Green Bond Framework:** Available [here](#)<sup>126</sup>

**Green Bond Standard:** ASEAN Green Bond Standard; Green Bond Principles and SRI Sukuk Framework<sup>127</sup>

**Certification Standard:** Not certified

**Green Bond rating:** AA3 by RAM ratings of Malaysia

### Thailand: B.Grimm Power Public Company Limited



**B.Grimm** was established in 1993 and is one of Thailand's largest private power producers with a total capacity of 2,045 megawatts across 15 gas-fired plants. In recent years, it has diversified into renewable energy and now also operates 15 solar power plants. Based on this success and strong potential for expansion in the Association of Southeast Asian Nations (ASEAN) countries, B.Grimm plans to increase the share of renewable energy generation in its portfolio from 10% to 30% by 2021. Its business interests include electricity generation, healthcare and property development. This bond will be issued through their power generation business which owns and operates power generation assets in neighbouring countries including Vietnam and Laos.

In 2018, B.Grimm issued a five billion Thai baht (USD155m)-worth Use of Proceeds Green Bonds with a tenor of five years. This is the first Certified Climate Bond issued in Thailand. They were wholly bought by Asia Development Bank (ADB).

**Use of the proceeds:** Proceeds will be allocated to financing and refinancing seven new and nine existing solar generation assets in Thailand, with a capacity of 31.5MW and 67MW respectively.

**Project selection:** B.GRIMM proposes to select Solar PV projects and associated development/construction costs for inclusion into a green bond. Projects selected for inclusion will be selected based on compliance with the Climate Bonds Standards Sector Technical Requirements for Solar Power.

**Management of proceeds:** B.GRIMM has committed to holding green bond proceeds raised in internal treasury cash accounts for allocated to existing equity and debt obligations associated with nominated projects and assets. Proceeds will be fully allocated by



Source: [https://investor.bgrimmpower.com/news.html?id/692505/group/newsroom\\_clippings](https://investor.bgrimmpower.com/news.html?id/692505/group/newsroom_clippings)

B.GRIMM within six months of issuance to refinance and finance the nominated projects and assets. Green bond proceeds will not be invested in fossil fuel-related projects.

**Reporting:** B.GRIMM confirms that green bond reporting will be conducted to investors on an annual basis and will include: (i) financial data associated with the allocation of Green Bond Proceeds to the nominated Projects and Assets, and; (ii) operational performance details including MWh of generation for each Nominated Project and Asset.

**Certification Verifier:** DNV GL Business Assurance Australia Pty Ltd (for both Pre-Issuance and Post-Issuance)

**Second-party opinion:** N/A

**Certification Standard:** Climate Bonds Standards (Climate Bonds sector criteria: solar)

**Green Bond credit rating:** N/A



## Philippines: Bank of the Philippine Islands



**The Bank of the Philippine Islands (BPI)** was founded in 1,851 and based in Makati City. It provides commercial banking services. Products include debit and credit card systems amongst others. BPI is a market leader in sustainable energy finance and has an extensive sustainability strategy in place

In 2019, BPI issued a senior unsecured green bond of USD300m with a tenor of five years. The bond was listed on the Singapore Stock Exchange.<sup>128</sup>

**Use of the proceeds:** There are five eligible categories for the use of proceeds: renewable energy, energy efficiency, sustainable water & wastewater management, pollution prevention & control and green buildings. Eligible buildings criteria are based on certification schemes such as LEED "Gold".

**Reporting:** The allocation report will be included in the annual Integrated and Sustainability Report and is intended to be externally audited. It will contain information such as a list of eligible green projects, allocated amounts and unallocated proceeds. If applicable there will also be an impact report of the outcomes of the green projects through KPIs such as GHG emissions reduced or avoided and buildings certification levels.

**Underwriter:** N/A



Source: <https://www.bpi.com.ph/cor/id-19-service/bpiinstitutes-expanded-sustainable-funding-framework>

**Certification Verifier:** N/A

**Second-party opinion:** Sustainalytics

**Green Bond Framework:** Available [here](#)<sup>129</sup>

**Certification Standard:** N/A

**Green Bond credit rating:** N/A

**Credit rating:** Baa2 by Moody's

## 13. Conclusion

The growth of the green bond market has attracted a diverse and more mainstream investor base. The institutional investor community (pension fund managers, assets managers, High-Net-Worth Individuals, with large portfolios including those with sustainability related mandates are increasingly seeking green and low-carbon investment opportunities.

As the impact of climate change risks are recognized and better understood, asset owners are increasingly looking for low-carbon opportunities to shift investments out of potentially stranded assets in order to minimize their exposure. Investor demand for green bonds has also increased in Vietnam. However, despite the numerous opportunities to scale, issuance of green debts has been slow to date.

This green bond toolkit has been developed as a resource for potential issuers in Vietnam who are interested in learning more about the opportunities and process for issuing green bonds. Green bonds and other thematic labeled debt products provide a promising new opportunity for tapping into private sector investment for sustainable development. Vietnamese capital markets may be in their infancy, but green bonds have already started to emerge in the country, attracting both domestic and international investors to support investments that have a positive environmental impact for its economy. State Securities Commission Vietnam strongly recommends this tool kit to support issuers on how to issue green bonds based on international best practices that will lead to new sources of capital while ensuring a long term credible Vietnamese green bonds market.

# Appendix 1 - How to issue a green bond, a social bond and/or a sustainability bond

## Who can issue green, social and/or sustainability bonds?

Any entity which has suitable green or social projects or assets can issue green, social and/or sustainability bonds. Sustainable green assets include, among others, renewable energy, low-carbon transport, low-carbon buildings, sustainable water and waste management, sustainable land use as well as climate change adaptation measures. Social projects will have its proceeds used to achieve social benefits, such as education or health. Finally, sustainability bonds will combine “green” and “social” features.



### 1 Develop a green bond framework

- Define eligibility criteria for projects/assets
- Create selection process
- Set up tracking & reporting

#### Available guidelines & standards:

**International:** Green Bond Principles (GBP), Social Bonds Principles (SBP), Sustainability Bonds Guidelines (SBG), Climate Bonds Taxonomy and Climate Bonds Standards

**Country and Region-specific:** Vietnam and ASEAN



### 2 Best practice: Arrange an external review



**Assurance report:** an external party confirmation of compliance with GBP/SBP/SBG

**Second Party Opinion:** an external assessment of the issuer’s green, social or sustainability bond framework, confirming GBP/SBP/SBG compliance and analysing the eligible asset categories

**Rating:** an evaluation of the labelled bond framework against a third-party rating methodology, which considers the environmental/social aspects of the investments. In Vietnam, these mainly include products developed by international rating agencies such as S&P and Moody’s.

**Verification report for Certified Climate Bond (green bonds only):** third party verification, pre- and post-issuance, which confirms that the use of proceeds adheres to the Climate Bonds Standards and Sector Criteria and the Paris agreement to keep global warming to 2°C and achieve full decarbonisation by 2050

### 3 Check for support mechanisms:

**In some countries,** local organisations provide support mechanisms to encourage green, social and sustainability bonds issuance. It is mainly stock exchanges that provide this kind of support services for labelled bond issuers, including the reduction of fees and support in the organisation of roadshows. It is worth checking this locally, especially since sustainable finance policy is changing rapidly.



### 4 Issue the bond



### 5 Post-issuance reporting

- Allocate proceeds to the projects & Management of Unallocated Proceeds
- Monitor the projects and track allocation over time
- Publish applicable Report(s)
- Post-Issuance Audit (best practice)



# Appendix 2 – Climate Bonds Initiative’s profile & Climate Bonds Standards and Certification Scheme

## Profile

The Climate Bonds Initiative started in 2009 as a project of the Network for Sustainable Financial Markets (NSFM), an international network of finance sector professionals, academics and others dedicated to improving financial market integrity and efficiency.

The Climate Bonds Initiative is the world’s leading organization working to mobilize the largest capital market of all, the USD100tn global bond market, for climate change solutions. It is an investor-focused, not-for-profit organization, whose outputs are an open source public good.

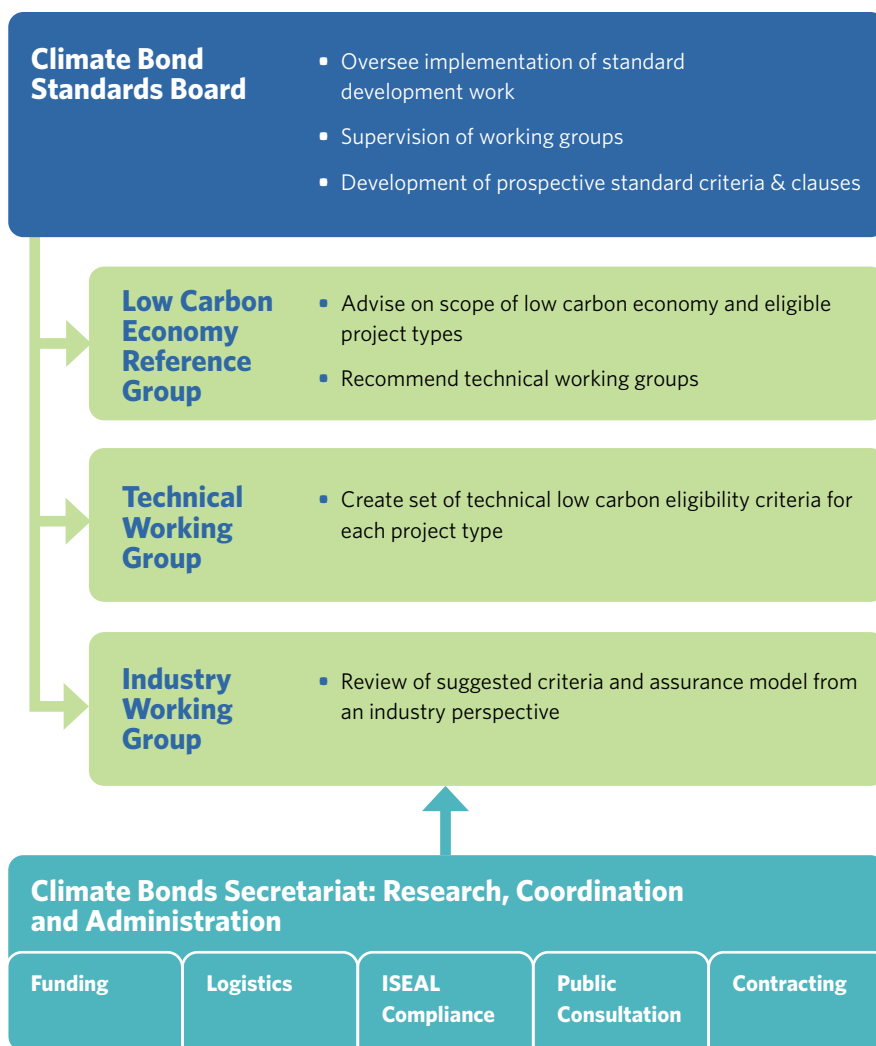
A core part of the Climate Bonds Initiative’s role is to engage in outreach to inform and stimulate the market through market and policy research and its partnership program with governments, investors and issuers. Particular focus is given to emerging markets; country programmes exist in China, India, Brazil, Indonesia, Nigeria and Kenya.

The Climate Bonds Initiative works closely with core stakeholders globally, namely Issuers, investors and governments and Multilateral Development Banks, and coordinate priorities such as:

- Supporting governments around the world in developing policy that aligns with industry innovation and institutional finance towards the transition to a low-carbon and climate-resilient economy.
- Providing assurance to investors on the integrity and credibility of green financial products that will deliver measurable impacts
- Providing quality market data and intelligence that serves as a reliable leading source of information on Green Bond market development
- Driving local market development of green finance by working to lower the cost of capital for climate change-related investments and encouraging credible pipelines of investable assets and instruments

The Climate Bonds Initiative is a registered charity based in London, led by Sean Kidney, CEO and co-founder. The Climate Bonds Initiative has more than 45 expert staff in the United Kingdom, China & Hong Kong, India, Brazil, Mexico, Australia, Singapore, the Netherlands and the United States and a network of contributors globally including leading minds in the climate change arena.

Figure 22: Climate Bonds Standards and Certification Scheme - Governance



## Climate Bonds Standards and Certification Scheme - Governance

The Climate Bonds Standards and Certification Scheme is coordinated through the work of dedicated working groups. It’s overseen by a Climate Bonds Standards Board representing institutional investors and environmental NGOs. The Standard Board reports to the Governors of the Climate Bonds Initiative.

## Climate Bonds Standards Board

The Climate Bonds Standards Board provides oversight over the implementation and operation of the Climate Bonds Standards & Certification Scheme. The Board reports to the Governors of the Climate Bonds Initiative, a registered charity in England and Wales.

All standards and documentation relating to guidance and strategic development of the Scheme are reviewed by the Board. Decision-making is implemented through consensus. The Board members represent USD51tn of assets under management.

## Climate Bonds Scientific Framework

The Climate Bonds Scientific Framework is a rigorous, scientifically grounded analysis on emission mitigation pathways, technology options and impact that anchor the Climate Bonds Taxonomy and certification criteria of the Climate Bonds Standards to the latest views of the climate-science community.

It will also provide a coherent foundation for the Climate Bond Initiative’s continued development of sector-specific eligibility criteria that prospective debt issuances must meet in order to be Certified as Climate Bond.

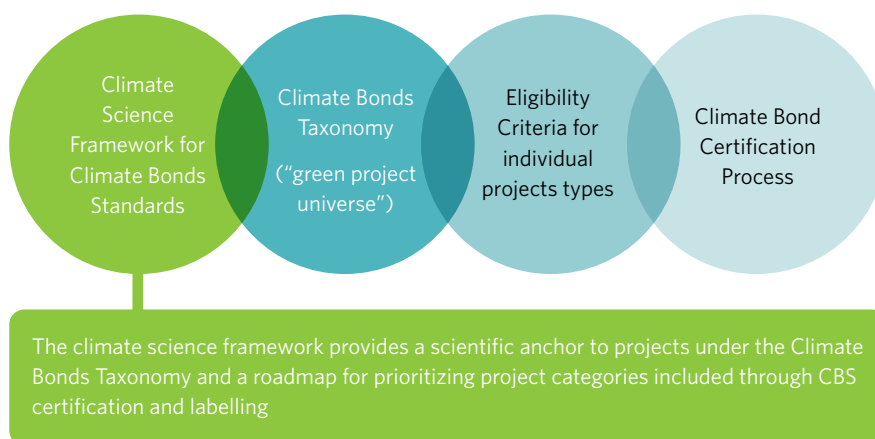
The Climate Bonds Scientific Framework is overseen by the Climate Bond Initiative Board and implemented by the Climate Bonds Initiative’s staff, Climate Wedge and a network of climate research institutions reviewed by the Potsdam Institute for Climate Impact Research (PIK).<sup>130</sup>

The Framework is based on a joint research effort between Climate Analytics in Germany and IIASA in Austria, with an eye to broadening the institutional network further. The scope of work is based on analyzing the existing body of research on emission pathways and related technology alternatives and mitigation impacts, behind e.g. the IPCC’s 5th assessment report, updated and supplemented with more country and technology specific studies and modelling.

The research outcome highlights the importance of different technology categories in achieving a 2°C cap in the growth of global average surface temperatures. Initial findings of the research group are validated among a broader scientific review group including leading institutions in the US and China.

A permanent Climate Science Advisory Panel of the Climate Bonds Initiative has been established to manage the ongoing development of the Science Framework and act as a close advisor to the Climate Bonds Initiative Board.

Figure 23: Climate Bonds Scientific Framework



### Technical Working Groups

Technical Working Groups consisting of key experts from academia, international agencies, industry and NGOs, develop eligibility criteria for each low-carbon investment area.

Working Groups are responsible for:

- Drafting a research brief that identifies the key issues and investment opportunities for the sector
- Develop a discussion paper that reflects the technical working group process with proposed eligibility criteria for the key investment areas within the sector;
- Making final recommendations about eligibility criteria to the Standards Board;
- Technical Working Groups are established for each criteria and are detailed on the relevant webpage for each sector criteria. As new criteria begin to be developed, new TWG’s are formed.

### Industry Working Group

The Climate Bonds Industry Working Groups provide sector specific experience and input to ensure that criteria are practical and conducive to rapid diffusion of the product. The group is made up of representation from each sector and will include individual companies as well as industry associations in order to receive input from as broad a perspective as possible. The group is consulted on the structure and content of the Standard and they also comment on proposed certification and verification processes for compliance with the Standard. Members are listed on the sector specific webpage.<sup>131</sup>

# Appendix 3 – Labelled Bond Framework Template

The following document sets out the Green Bond Framework (the “Framework”). The Framework serves as a template for issuers when preparing their green bond issuance. The Framework follows the requirements set forth in the Green Bond Principles and leverages the experience of other green bond issuers as well as feedback from investors gathered by the Climate Bonds Initiative.

**Sections 1 (Introduction), 2 (Background on issuer’s commitments and environmental policies) & 3 (Issuer’s Green Bond and/or Program)** provide a background on the issuer’s sustainability rationale/strategy to issue a green bond. The Framework below provides some guidance on what the issuer should include to develop the narrative for these sections.

**Sections 4 & 5:** These sections correspond to the main body of the Framework, according to the minimum requirements of the Green Bond Principles.

**Sections 6 (Amendments to this Framework) & 7 (Annexes):** These sections are left as placeholders. While it is not mandatory, nor a best practice from an investor perspective some issuers have opted to include them to abide with internal procedures / government practices.

## Green Bond Framework template – Climate Bonds Initiative

### 1. Introduction to the Issuer

This section is the start to the issuer’s Framework, which provides an introduction to the issuer and objectives for issuing a Green Bond. The following information could be used:

- a. Background to issuer
- b. Issuer commitment to supporting the local climate economy
- c. Issuer level climate change mitigation and environmental policies
- d. Context for issuing Green Bonds as a tool to channel investments towards the issuer’s sustainable development path, low in carbon emissions, with strong climate resilience
- e. Purpose of the Framework


### 2. Background on International Commitments and Local Environmental Policies

This section is mainly dedicated to sovereign and sub-sovereign issuances, where the issuer will highlight international and national commitments, as well as key existing sectorial legal frameworks that can arrange the issuance and the use of proceeds into “green” projects.


### 3. Issuer’s Green Bond and/or Program

Outline issuer’s sustainability objectives and strategy. Describe the purpose of the green bond and/or program and how it aligns to national regulations, to international agreements and to the Sustainable Development Goals (SDGs):


### 4. Issuer’s Green Bond Framework

Green Bond Frameworks set obligations that the issuer needs to fulfill when issuing a green bond (also used to Social and Sustainability Bonds) or a Programme of bonds. Green bonds must be in compliance with obligations already in place for the bond issuance process, as set out by the local legislation, the Green Bond Principles and the Climate Bonds Standards V.3.0 (2020). It therefore details the four core components of these Principles: (i) Use of Proceeds; (ii) Project Evaluation and Selection Process; (iii) Management of Proceeds; and (iv) Reporting. The issuer will make an introduction to the Green Bond Framework by highlighting the Principles above and the overall structure of the Framework:

#### 4.1. Use of Proceeds

Proceeds must be used for the financing or refinancing of eligible green projects (and their related expenditures). The projects and assets to which the net proceeds are allocated must be described in the issuance documentation disclosed by issuers.

The issuer needs to disclose:

- The categories of eligible green projects to which the bond proceeds will be allocated
- The information on specific projects to which the bond proceeds have been allocated


Eligible Green Expenditures may include:

- a.** Tax expenditures (subsidies and tax exemptions);
- b.** Operational expenditures (funding for state agencies, local authorities and companies’ instrumental to deploying the country’s climate and environmental strategy);
- c.** Investments in real assets (land, energy efficiency, infrastructure, etc.) and maintenance costs for public infrastructure;
- d.** Intangible assets (research and innovation, human capital and organization).

### Proposed Eligible Projects and Assets

The information contained in the Framework should be aligned with the local green bond regulation, if existent, to be assessed by an approved verifier. Eligible projects and assets are expenditures that qualify according to the guidelines set forth in the issuer’s Framework.

Assets that can be considered as “green” under the Framework will:

- a.** Promote the country’s transition to a low-carbon, climate-resilient and environmentally sustainable economy
- b.** Be funded, in whole or in part and whether directly or indirectly, through a green bond (or other type of debt instrument) detailed in this section.

Set out below is a list of eligible categories, which are anticipated to be relevant to categorisation of certain projects, which may qualify as Eligible Green Projects under the Framework:

For green bonds, eligible projects shall fall under the categories identified in the international Climate Bonds Taxonomy, the Sector Criteria of the Climate Bonds Standards and the Green Bond Principles. In the case where local, regional or domestic certificates exist that determine an asset is low-carbon and climate-resilient (e.g. standards for buildings, FSC certification for forestry, etc.), these may be taken into account:

### Exclusions

The issuer may also decide to exclude specific projects and assets that support or promote the certain activities. Examples of excluded projects and assets are:

Example: Industry Sectors

- Exploration and production of fossil fuels
- Burning of fossil fuel for power generation
- Nuclear power generation
- Transmission infrastructure and systems where 25% or more of electricity transmitted to the grid is fossil-fuel-generated
- Alcohol, weapons, tobacco, gaming, or palm oil industries
- Production or trade in any product or activity deemed illegal under national laws or regulations or international conventions and agreements

Eligible Green Categories	Scope for the Eligible Green Expenditures and examples
Energy Efficiency	
Resource Efficiency	
Renewable Energy	
Clean transportation	
Water Efficiency and Wastewater management	
Sustainable agriculture	
Green Buildings	





#### 4.2. Process for Project, Asset and Expenditure Evaluation and Selection

The Issuer will establish, document and maintain a decision-making process to determine the eligibility of the assets as part of its Framework, which includes:

- A statement on the environmental objectives of the bond
- A process to determine project eligibility
- The related eligibility criteria, exclusion criteria or any other process used to identify and manage environmental and/or social risks associated with the projects

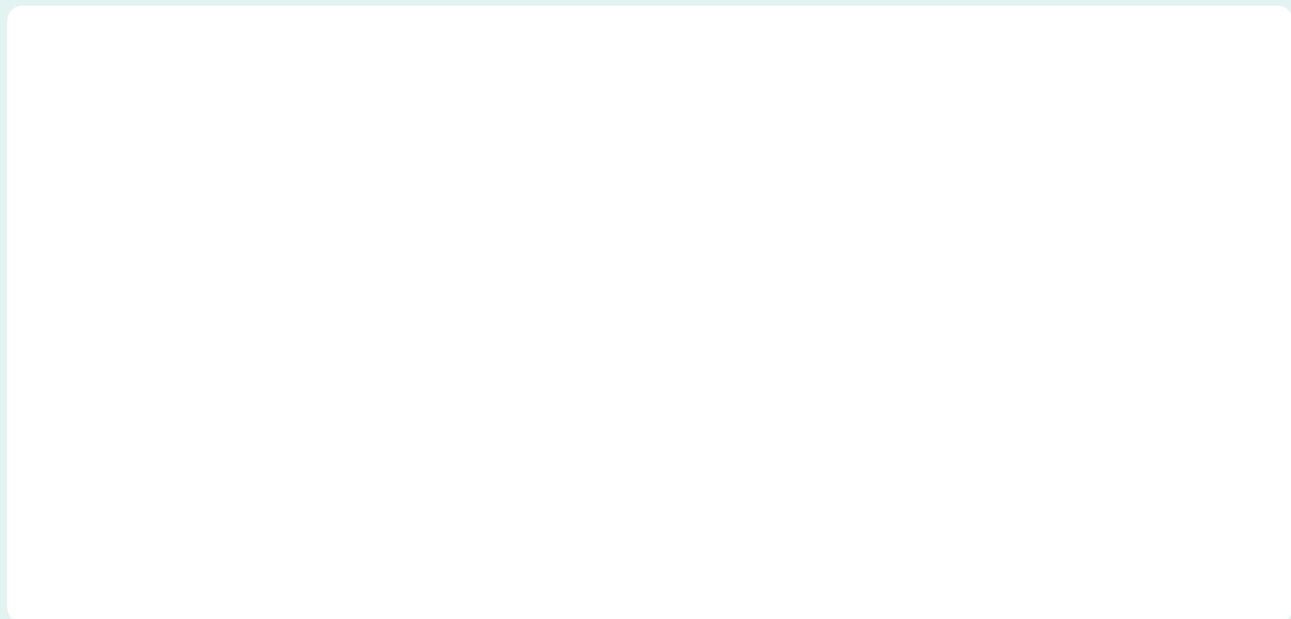
As part of the process to determine asset eligibility, a dedicated team (also generally referred to as “Selection Committee” or “Interministerial Committee” for sovereign bonds) is created within the issuer. The role of the team is to oversee the full implementation of the Framework including the allocation of funds raised to eligible projects and the provision of the investor reports referred to at Section 4.4 (Reporting).

In their Framework, the issuer should provide a brief description of the composition of team and how it operates to ensure the implementation of Framework. For example, for sovereign issuers, the Ministry of Finance has ultimate responsibility for

drafting the final list of Eligible Projects and Assets, but other ministries (Environment, Infrastructure, Transport, Energy, etc) should actively support the selection process by promptly responding to requests for information and data to verify eligibility or by providing a provisional list of Eligible Projects and Assets directly.

Eligible Green Projects and Assets should be evaluated and selected based on the criteria listed in Section 4.3 below (Management of Proceeds).

The issuer will insert below diagram of how projects will be selected (governance):



#### 4.3. Management of Proceeds

An amount equal to the net proceeds of any issuance complying with the Framework will be allocated to finance or refinance eligible new projects, or to refinance eligible existing projects. The proceeds of the bond should be allocated to the eligible projects and assets within the 24-month period after the issue date of the bond.

A description of how the proceeds will be managed (most commonly, either through ring-fencing or earmarking) should be included below. It has also become best practice in the market for the issuer to clarify in the Green Bond Framework how the unallocated proceeds will be managed or replaced, if necessary. The tracking of green eligible expenditures will be done by the Treasury of the issuing entity ensuring that the allocation of proceeds will be done accordingly.


**4.4. Reporting**

All issuers are required to report annually until the allocation of the proceeds, if following the Green Bond Principles, or until the maturity if the bond is certified. Additionally, the issuer will also report on a timely basis in case of material changes to the nominated projects and assets. The report must be publicly available (in the local Ministry of Finance’s online platform, in case of a sovereign issuance, or in the issuer’s website, if a corporate issuance), and the exact nature of the reporting is dependent on the range of underlying projects and assets, and on the issuer’s choices.

In this section, the issuer will underline the reporting measures and content, usually including the following reports, presented annually, separately or jointly:<sup>132</sup>

- On-going eligibility of projects and assets
- Balance of unallocated proceeds
- Key Impact Indicators (KPIs) - Optional

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**5. External Review**

The issuer will seek an external review, such as a second party opinion (SPO) or third-party certification, and describe the chosen option below, which should also be made publicly available for consultation:

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## 6. Amendments to this Framework

In this section, the issuer can insert a disclaimer regarding potential modifications of this framework according to international best practices or in accordance to local or international commitments. It can also highlight governance processes for such amendments, transparency and disclosure measures, as well as corresponding reporting and external review processes.


## 7. Annex

In this section the issuer can include any extra documentation it considers necessary, such as local legislation, list of project categories, etc.


### Other templates:

- **Green Bond Framework template - Green Bond Principles (ICMA)**  
[https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Resource-Centre/Market-Information-Template\\_Green-Bonds-071117.docx](https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Resource-Centre/Market-Information-Template_Green-Bonds-071117.docx)
- **Social Bond Framework template - Social Bond Principles (ICMA)**  
[https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Resource-Centre/Market-Information-Template\\_Social-Bonds-071117.docx](https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Resource-Centre/Market-Information-Template_Social-Bonds-071117.docx)
- **Sustainability Bond Framework template - Sustainability Bond Guidelines (ICMA)**  
[https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Resource-Centre/Market-Information-Template\\_Sustainability-Bonds-071117.docx](https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Resource-Centre/Market-Information-Template_Sustainability-Bonds-071117.docx)

# Appendix 4 - Documents required for Certification under the Climate Bonds Standards

See the documents required and the process for verification here:

[https://www.climatebonds.net/files/files/CBI\\_Certification\\_Brochure\\_September\\_2020.pdf](https://www.climatebonds.net/files/files/CBI_Certification_Brochure_September_2020.pdf)

## Annual report Climate Bond Template

Ongoing Reporting: All issuers are required to report annually for the tenor of the bond to maintain the Certification. The exact nature of the reporting is dependent on the Use of Proceeds and it may be included in your regular financial or sustainability reporting. Issuers are provided with a template & guidance on what is required in the report & with continued support to make the process as smooth as possible.

<https://www.climatebonds.net/files/files/cbs-v3-update-report-template-%20051219.docx>

## ENDNOTES

(links below are hyperlinked in the digital version)

- [https://reliefweb.int/sites/reliefweb.int/files/resources/Global%20Climate%20Risk%20Index%202019\\_2.pdf](https://reliefweb.int/sites/reliefweb.int/files/resources/Global%20Climate%20Risk%20Index%202019_2.pdf)
- <https://www.worldbank.org/en/country/vietnam/overview#:~:text=In%202019%2C%20Vietnam's%20economy%20continued,growth%20rates%20in%20the%20region.>
- IMF (2017). Vietnam selected issues. Retrieved from <https://www.imf.org/en/Publications/CR/Issues/2017/07/05/Vietnam-Selected-Issues-45046>
- Directive No.03/CT-NHNN on promoting green credit growth and environmental – social risks management in credit granting activities. Retrieved from: <https://vanbanphapluat.co/directive-no-03-ct-nhnn-2015-green-creditgrowth-environmental-social-risks-credit-granting>
- <https://www.vir.com.vn/banks-spur-green-credit-for-sustainable-development-72059.html>
- Ibid.
- The risk of thematic bonds not being used to finance the activities they set out to finance.
- <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Green-Bonds-Principles-June-2018-270520.pdf>
- Climate Bonds Initiative's full profile available at Appendix 2.
- A sub-two degree world is one where the increase in global average temperature by the end of the century is kept below 2°C above pre-industrial levels. The limit of 2°C global warming by 2100 is a threshold identified by scientists to limit the most severe impacts of climate change.
- <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Social-Bond-PrinciplesJune-2020-090620.pdf>
- <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Sustainability-Bonds-Guidelines-June-2018-270520.pdf>
- <https://www.climatebonds.net/system/tdf/reports/cbi-fin-cred-transitions-092020-report-page.pdf?file=1&type=node&id=54300&force=0>
- <https://www.climatebonds.net/system/tdf/reports/cbi-sustainable-debt-global-sotm-h12020.pdf?file=1&type=node&id=54589&force=0>
- [https://www.climatebonds.net/files/files/GB\\_Investor\\_Survey-final.pdf](https://www.climatebonds.net/files/files/GB_Investor_Survey-final.pdf)
- <https://www.sc.com.my/api/documentms/download.ashx?id=75136194-3ce3-43a2-b562-3952b04b93f4>
- <https://www.sc.com.my/api/documentms/download.ashx?id=27ab0a48-b429-4874-93ae-35248eb3e36>
- <https://www.sc.com.my/api/documentms/download.ashx?id=3c4f768f-a290-4722-b9d1-ef5942bfde>
- <http://vbpl.vn/botachinh/Pages/vbqp-van-ban-goc.aspx?temID=132333>
- [http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class\\_id=1&mode=detail&document\\_id=202224](http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=1&mode=detail&document_id=202224)
- A classification system to guide issuers and investors in relation to climate aligned projects and assets, as further explained in this guide.
- <http://documents1.worldbank.org/curated/en/953011593410423487/pdf/Developing-a-National-Green-Taxonomy-A-World-Bank-Guide.pdf>
- Including Bangladesh; China; Mongolia; Climate Bonds Initiative and European Union.
- To better understand the governance structure of the Climate Bonds Standards and Certification Scheme please refer to Appendix 2.
- <https://www.climatebonds.net/standard/taxonomy>
- [https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities\\_en](https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en)
- <https://vanbanphapluat.co/decision-no-432-qq-ttg-approval-of-sustainable-development-strategy-of-vietnam>
- You can find more information about Vietnam Green Bond Market at Climate Bonds Initiative's Green Infrastructure Investment Opportunities (GIIO) Report: [https://www.climatebonds.net/system/tdf/reports/final\\_english\\_giio\\_vietnam\\_report.pdf?file=1&type=node&id=47122&force=0](https://www.climatebonds.net/system/tdf/reports/final_english_giio_vietnam_report.pdf?file=1&type=node&id=47122&force=0)
- Vietnam Energy Partnership Group. PM Decision 403/QĐ-TTg on the Approval of the national Action Plan on Green Growth in Viet Nam for the period of 2014-2020. Retrieved from: [https://vepg.vn/legal\\_doc/decision-403-qq-ttg-on-approval-of-the-national-action-plan-on-green-growth-in-viet-nam-for-the-period-of-2014-2020/](https://vepg.vn/legal_doc/decision-403-qq-ttg-on-approval-of-the-national-action-plan-on-green-growth-in-viet-nam-for-the-period-of-2014-2020/)
- <https://vanbanphapluat.co/directive-no-03-ct-nhnn-2015-green-credit-growth-environmental-social-risks-credit-granting>
- State Bank of Vietnam 2018. Scheme on green bank development in Vietnam: Directing credit flows into eco-friendly projects. Retrieved from: <https://bit.ly/39DQ0Ij>
- State Bank of Vietnam 2019. Green credit growth in Vietnam: Opportunities, challenges and solutions. Retrieved from: <https://bit.ly/3g86idE>
- <http://qpl.vpubnd.quangnam.vn/QTIUload/VB/2018/7/27072018500710/QD%201085%20-%20huong%20dan%20phan%20loai%20dau%20tu%20cong%20cho%20Bien%20doi%20khi%20hau%20va%20Tang%20truong%20xanh.pdf>
- <https://vanbanphapluat.co/decision-no-1393-qq-ttg-approving-national-strategy-on-green-growth>
- A classification system to guide issuers and investors in relation to climate aligned projects and assets, as further explained in this guide.
- Criteria for evaluating green projects, potential environmental pollution projects, Ministry of Planning and Investment Vietnam
- Green loans are any type of loan instrument used to finance or refinance projects, assets and activities with environmental benefits. Green loans are based on use of proceeds, with borrowing proceeds transparently earmarked for eligible 'green' assets. It is global best practice for green loans to be arranged in line with the Green Loan Principles, the Climate Bonds Standards (to the extent of available criteria), as well as a number of country- specific guidelines.
- As part of this work, the Climate Bonds Initiative in partnership with the State Securities Commission of Vietnam and the International Finance Corporation (IFC), supported by the government of Switzerland, has conducted a survey with 79 key Vietnamese stakeholders, in which they pointed renewable energy, waste and agriculture as the most interesting sectors for potential green issuance or investment.
- The transport sector is becoming a large and growing contributor of GHG emissions in Vietnam, accounting for 18% of the total CO2 emissions in 2014.
- Norton Rose Fulbright 2019. Renewable energy snapshot: Vietnam. Retrieved from: <https://www.nortonrosefulbright.com/en-it/knowledge/publications/71562ac3/renewableenergy-snapshot-vietnam>
- British Business Group Vietnam 2019. Vietnam 2019 - Renewable energy. Retrieved from: <https://bbvg.org/business-center/knowledge/sector-reports-knowledge/vietnam-2019-renewable-energy/>
- Vietnam Briefing 2019. Renewables in Vietnam: Current Opportunities and Future Outlook. Retrieved from: <https://www.vietnam-briefing.com/news/vietnams-push-for-renewable-energy.html/>
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- Hogan Lovells 2018. Renewable energy in Vietnam. Retrieved from: <https://www.hoganlovells.com/-/media/hogan-lovells--renewable-energy-in-vietnam-jan-2018.pdf>
- VNexpress International. 2020. Solar power production triples. Retrieved from: <https://e.vnexpress.net/news/business/industries/solar-power-production-triples-4159903.html>
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- Vietnam Energy Online 2019. Expectations on renewable energy development. Retrieved from: <http://nangluongvietnam.vn/news/en/nuclearrenewable/expectations-on-renewable-energydevelopment.html>









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