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**Amundi**  
ASSET MANAGEMENT



**IFC**

International  
Finance Corporation  
WORLD BANK GROUP

*Creating Markets, Creating Opportunities*

# Emerging Market Green Bonds Report 2018

A consolidation year paving the way for growth

This document is for the exclusive attention of professional investors,  
investment service providers, and other professionals in the financial industry.



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## EXECUTIVE SUMMARY



### Capital flow from developed markets to emerging markets has a critical role in combating climate change.

- **\$147 trillion** of private capital, much of it in developed markets.
- **\$29 trillion** investment opportunities in emerging market cities alone.
- **Amundi Planet Emerging Green One** aims to bridge these two aspects.



### Green bonds are an effective financing mechanism with benefits to issuers and investors.

- **Investor benefits**
  - Long-term maturities.
  - Stable and predictable returns.
- **Issuer benefits**
  - Stronger corporate brand.
  - Diversification of investor base.



### The green bond market is nascent in emerging countries, with the potential for promising growth.

- Green bond issuances in emerging markets from 2012 to 2018 totaled **\$140 billion** cumulatively or **3 percent of total bond issuances** in emerging markets in 2018
  - Included 28 countries with 235 issuers.
  - 34 percent of the issuances were in U.S. dollars or euros.
- As of the end of 2018, the green bond market in emerging markets was about **\$136 billion**, or about **0.5 percent of outstanding bonds** in emerging markets.
- Outstanding green bonds in emerging markets could increase to between **\$210 billion** and **\$250 billion** by 2021.



### Financial institutions will continue to drive future growth of the green bond market in emerging countries.

- **57 percent** of green bond issuances in emerging markets are from financial institutions.
- Financial institutions that issue cross-border conventional bonds are a likely source of new green bond issuances.
- Conventional cross-border bond issuances by financial institutions in emerging markets reached **\$642 billion** cumulatively from 2014 to 2018
  - Included 291 issuers.
  - Included 8,814 bonds.
- **45 percent** of the bonds have a maturity of three years or five years, indicating the potential for rapid new issuances as these bonds mature.

## FOREWORD



**Yerlan Syzdykov**  
Global Head of Emerging Markets at Amundi

### International Finance Corporation

// The world's financial institutions have a clear moral imperative to support emerging countries as they attempt to put new systems in place to protect their shores, cities, and people from the damaging impacts of climate change. With that sense of corporate social responsibility in mind, International Finance Corporation teamed with Amundi to create the Amundi Planet Emerging Green One, an innovative model that demonstrates the investment potential in green markets and climate finance.

At IFC, we also know that data drives strategic decision making. For that reason, we partnered with Amundi to conduct the first-ever analysis of the global cross-border bonds issued by emerging market financial institutions over a five-year period, from 2014 to 2018. From there, this report describes the potential growth and impact of the green bonds in emerging markets. In sharing our findings, we hope to inspire a greater understanding of the estimated \$29 trillion climate-related investment potential in emerging countries. The clock is ticking. Now is the time to act to reduce the impact of climate change on the planet. //

### Amundi Asset Management

// Amundi is committed to address global challenges through sustainable finance, by providing innovative responsible investment solutions and by being a thought leader to support broad market mobilization. In April 2017, Amundi secured a strategic partnership with IFC. A year later, the partnership led to the creation of Amundi Planet Emerging Green One, an initiative in which Amundi supports the development of green bond markets in emerging economies.

Green bonds are a cornerstone to Amundi's approach to green finance, expanding our unique expertise in the design, management, and monitoring of green investments into emerging markets. With the first green bond market report solely focused on emerging markets, Amundi is honored to share vital information to market participants and strengthen mobilization in this essential asset class. //



**Jean-Marie Masse**  
Chief Investment Officer, Financial Institutions Group  
at International Finance Corporation

## Abbreviations and Acronyms

<b>Amundi:</b>	Amundi Asset Management
<b>AP EGO:</b>	Amundi Planet Emerging Green One
<b>CBI:</b>	Climate Bonds Initiative
<b>CO<sub>2</sub>:</b>	Carbon dioxide
<b>DFI:</b>	Development finance institution
<b>DM:</b>	Developed market
<b>E&amp;S:</b>	Environmental and social
<b>EE:</b>	Energy efficiency
<b>EM:</b>	Emerging markets <sup>1)</sup>
<b>ESG:</b>	Environmental, social and governance
<b>ESMS:</b>	Environmental and social management system
<b>FI:</b>	Financial institution
<b>FRN:</b>	Floating rate note
<b>FXD:</b>	Foreign exchange derivatives
<b>GB:</b>	Green bond
<b>GBP:</b>	Green Bond Principles
<b>GB-TAP:</b>	Green Bond Technical Assistance Program
<b>GCBP:</b>	Green Cornerstone Bond Program
<b>GHG:</b>	Greenhouse gases
<b>IFC:</b>	International Finance Corporation
<b>IPCC:</b>	Intergovernmental Panel on Climate Change
<b>NDC:</b>	Nationally Determined Contributions
<b>OECD:</b>	Organization for Economic Co-operation and Development
<b>RE:</b>	Renewable energy
<b>SBN:</b>	Sustainable Banking Network
<b>SDG:</b>	Sustainable Development Goals
<b>SNAT:</b>	Supranational
<b>TCO<sub>2e</sub>:</b>	Tons of carbon dioxide equivalent
<b>UN:</b>	United Nations

1. The definition of emerging markets/economies/countries is based on Amundi Planet Emerging Green One's investment universe. It consists of the Fund's Target Countries, which are IFC member countries, including countries eligible to receive International Development Association's (IDA) resources and countries eligible to receive Official Development Assistance (ODA) as defined by the Organization of Economic Co-operation and Development's (OECD) Development Assistance Committee (DAC), which qualify as Emerging Markets and not excluded as per the Fund's Investment Guidelines.

## INTRODUCTION

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In October 2018, the Intergovernmental Panel on Climate Change (IPCC) urged the world to intensify its efforts to combat climate change by meeting the goal of the 2016 Paris Agreement to limit global temperature increases to 1.5 degrees Celsius.<sup>(2)</sup> Over the past 35 years, upper middle-income nations have contributed more than 70 percent of the global growth in carbon dioxide emissions.<sup>(3)</sup> However, emerging markets are more vulnerable to the impacts of climate change due to inadequate capacity and adaptation mechanisms to effectively deal with extreme weather changes, such as rises in the sea level, floods, droughts, tropical storms, hurricanes, and heatwaves.

Emerging markets are not only the most exposed economies to climate change risks, but also face an unprecedented challenge to decarbonize their economies, while maintaining a sustainable economic development trajectory. One of the biggest challenges faced by emerging markets is balancing increased infrastructure financing with environmental and social safeguards to ensure that new infrastructure needs meet climate-smart requirements in the quest to build sustainable infrastructure.

There is \$147 trillion<sup>(4)</sup> of private institutional investor capital in the world. Much of this amount is located in developed markets. Organization for Economic Cooperation and Development (OECD) countries alone account for \$84 trillion.<sup>(5)</sup> Institutional investors commonly have little exposure to emerging markets and long-term infrastructure financing projects, possibly due to the scarcity of appropriate investment opportunities. Thus, leveraging this capital remains a challenge. However, addressing this issue has sparked a recent growth in new and innovative financial solutions.

One such solution is green bonds, and its potential continues to increase. In developed and emerging markets, the green bond solution receives significant mobilization from policy makers, issuers, and investors. For example, China issued its Green Bond Guidelines, published by the People's Bank of China in 2015 in a Green Bond Endorsed Project Catalogue for financial institutions. Recently, the European Union (EU) took significant steps through a proposal from its Technical Expert Group for an EU Green Bond Standard.<sup>(6)</sup> However, the mobilization in emerging markets is underemphasized, and investors are not very aware of relevant investment opportunities.

Based on our extensive experience in emerging markets and green bonds, Amundi and IFC found that there is a lack of available public information on green bonds in emerging markets. Improving the availability of quality data and analysis will help to stimulate the interest of issuers and investors in this asset class. In that context, this report is timely and relevant.

Amundi and IFC are addressing the current gaps in the green bond market in specific ways. Firstly, the discourse on green bonds has previously focused more on global and developed markets. This report challenges this discourse by focusing more on emerging markets. Secondly, this report provides growth projections of green bonds in emerging markets. Many experts see the great potential for growth of green bonds in emerging markets based on early examples of success recorded to date. Thirdly, it offers a market outlook focusing on the potential presented by financial institutions.

The report also highlights outstanding climate-related investment opportunities in emerging markets, along with the relevant mobilization efforts of policy makers, and discusses case studies of green bond issuers.

2. Available here: <https://www.ipcc.ch/sr15/>

3. World Bank: Policy Research Working Paper 8477 "Are Driving Forces of CO2 Emissions Different across Countries?"

4. Institutional asset owners include pension funds (\$45 trillion), insurance companies (\$26.8 trillion), sovereign wealth funds (\$8.1 trillion), foundations (\$1.5 trillion), and high-net worth individuals (\$66 trillion). Source: "The Landscape for Institutional Investing in 2018," World Bank Group, 2018.

5. Including OECD asset owners (pension funds, insurance companies, and sovereign wealth funds) as well as asset managers and investment funds. Source: "Update on Approaches on Mobilising Institutional Investment for Sustainable Infrastructure: Background paper to the G20 Sustainable Finance Study Group", OECD, 2018.

6. The TEG proposal is available here: [https://ec.europa.eu/info/sites/info/files/business\\_economy\\_euro/banking\\_and\\_finance/documents/190306-sustainable-finance-teg-interim-report-green-bond-standard\\_en\\_0.pdf](https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/190306-sustainable-finance-teg-interim-report-green-bond-standard_en_0.pdf)

## RATIONALE FOR SUSTAINABLE FINANCE IN EMERGING MARKETS

Emerging markets are the most vulnerable countries to climate change-related impacts. This has placed a high demand on these countries to urgently scale up climate change adaptation and resilience measures. When taking the physical and transitional risks of climate change into account, along with the potential country response to address those risks, emerging markets represent 82 percent of nations most vulnerable to climate change.<sup>(7)</sup> The impact has already started to reveal itself in different forms. The economic cost of climate-related disasters hit \$2.25 trillion over the last two decades, an increase of more than 250 percent, compared to the previous 20 years.<sup>(8)</sup> In 2018, floods in India displaced 1 million people, causing \$2.9 billion in asset impairments and damaging 32 percent of total roadways in the Indian state of Kerala.<sup>(9)</sup>

Meanwhile, most of the growth in global greenhouse gas (GHG) emissions is expected to come from emerging economies. Until 2000, the growth in CO<sub>2</sub> emissions from fuel combustion originated from industrialized market countries. Since 2000, the tides have shifted, as developed markets have seen CO<sub>2</sub> emissions decrease (-10 percent), while emerging markets have seen emissions increase.<sup>(10)</sup> This shift may be partly explained by a potential “decoupling point” of economic growth and emission increases and/or by the globalization practices of cross-border outsourcing of the most emission-intensive part of industrial value chains.

As emerging markets step up efforts to adapt to a changing climate through implementing adaptation and resilience plans, new opportunities for investment will flourish.

### Outstanding Climate Investment Opportunities in Emerging Markets

More than half of the world’s population lives in urban areas, a number that is expected to reach 70 percent by 2050. The success or failure of cities at addressing climate change will be pivotal to efforts to limit global warming to 1.5 degrees Celsius. In a 2018 report, “Climate Investment Opportunities in Cities - An IFC Analysis (2018),”<sup>(11)</sup> IFC estimates a cumulative climate investment opportunity of \$29.4 trillion across six key sectors in emerging market cities through 2030.<sup>(12)</sup>

The largest share of the opportunity is in green buildings (\$24.7 trillion), covering new constructions and retrofits, as cities race to accommodate their growing populations. Other key sectors identified for urban climate-smart investment include electric vehicles (\$1.6 trillion), public transport infrastructure (\$1 trillion), climate-smart water (\$1 trillion), renewable energy (\$0.8 trillion)<sup>(13)</sup>, and municipal solid waste management (\$0.2 trillion).

7. Source: HSBC. Available here: <https://www.sustainablefinance.hsbc.com/reports/fragile-planet>

8. Source: UNISDR, “Economic Losses, Poverty & Disasters 1998-2017”, 2018.

9. Source: HSBC, “Kerala floods highlight vulnerability of development”, 2019.

10. Source: IEA, “CO<sub>2</sub> Emissions from Fuel Consumption 2018 Overview”. Available here: <https://www.iea.org/statistics/co2emissions/>

11. Source: IFC, “Climate Investment Opportunities in Cities - An IFC Analysis”, 2018. Available here: [https://www.ifc.org/wps/wcm/connect/topics\\_ext\\_content/ifc\\_external\\_corporate\\_site/climate+business/resources/cioc-ifc-analysis](https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/climate+business/resources/cioc-ifc-analysis)

12. To estimate investment opportunities, IFC took a sampling approach and studied 15 to 18 benchmark cities across the emerging markets. It then scaled regional estimates by using projected urban populations in 2030 to reach an aggregated global figure.

13. This 2018 report focuses on investment opportunities only in urban areas. Therefore, the estimates of renewable energy projects, which are usually located in non-urban areas, could be underestimated.

### Investment potential in cities by region and sector to 2030

	East Asia Pacific	South Asia	Europe and Central Asia	Middle East and North Africa	Sub-Saharan Africa	Latin America and Caribbean	Total
Waste	\$82 billion	\$22 billion	\$17 billion	\$28 billion	\$13 billion	\$37 billion	\$200 billion
Renewables energy	\$266 billion	\$141 billion	\$88 billion	\$31 billion	\$89 billion	\$226 billion	\$842 billion
Public transportation	\$135 billion	\$217 billion	\$116 billion	\$281 billion	\$159 billion	\$109 billion	\$1 trillion
Climate-smart water	\$461 billion	\$110 billion	\$64 billion	\$79 billion	\$101 billion	\$228 billion	\$1 trillion
Electric vehicles	\$569 billion	\$214 billion	\$46 billion	\$133 billion	\$344 billion	\$285 billion	\$1.6 trillion
Green buildings	\$16 trillion	\$1.8 trillion	\$881 billion	\$1.1 trillion	\$768 billion	\$4.1 trillion	\$24.7 trillion
<b>Total</b>	<b>\$17.5 trillion</b>	<b>\$2.5 trillion</b>	<b>\$1.2 trillion</b>	<b>\$1.7 trillion</b>	<b>\$1.5 trillion</b>	<b>\$5 trillion</b>	<b>\$29.4 trillion</b>

Source: IFC analysis.<sup>(14)</sup>

INCREASING INVESTMENT 

## Green Bonds Are Effective Capital Market Instruments

Green bonds are fixed-income instruments with one key distinguishing feature: proceeds are earmarked exclusively for new and existing projects with environmental benefits. These relate to climate change mitigation or adaptation and resilience and other environmental issues, such as natural resources depletion, including loss of biodiversity, air, water, or soil.

International consensus is emerging on best practice in the issuance of green bonds. Most national frameworks for green bond issuance align with the Green Bond Principles (GBPs), hosted by the International Capital Market Association (ICMA), and/or the Climate Bonds Standard and Certification, offered by the non-profit Climate Bonds Initiative. They are helping to align definitions in a broad universe.

Green taxonomy is a unified classification system and an important resource for common green definitions across global markets. It is expected to encourage investments in sustainable finance by providing certainty for investors as to what is classified as "green". Green taxonomies typically include renewable energy, energy efficiency, adaptation to climate change, waste management, pollution prevention, water management, biodiversity and ecosystem protection, sustainable transport, sustainable agriculture, and green buildings.

Green bond issuances have been growing in frequency as they provide benefits to issuers and investors. Since traditional financial instruments are usually in the form of senior debt with recourse to the balance sheet of the issuer, green bonds fit appropriately into investors' traditional fixed-income allocations. They provide institutional investors relatively long-term maturities, in line with their liabilities, and relatively stable and predictable returns for their given risk exposure. Additionally, they enable institutional investors to direct financial flows to specific projects and assets earmarked as green. Green bonds have two main benefits for issuers: 1) developing corporate branding that sends a strong signal to the market on their commitment to climate change and 2) attracting new investors and tapping a wider investor base.

14. SBN, 2018, "Climate Investment Opportunities in Cities - An IFC Analysis (2018)."

### POTENTIAL BENEFITS FOR INVESTORS

- Offer long-term maturities with stable and predictable returns, with given risk exposure
- Provide environmental benefits
- Satisfy environmental, social, and governance (ESG) requirements for sustainable investment mandates (i.e. when ESG standards, such as IFC Performance Standards,<sup>15</sup> are applied to green projects)
- Enable direct investment in the “greening” of brown sectors and social impact activities
- Provide increased transparency and accountability on the use and management of proceeds

### POTENTIAL BENEFITS FOR ISSUERS

- Provide an additional source of green financing
- Match maturity with project life (in the case of green project bonds)
- Improve investor diversification and attract buy-and-hold investors
- Enhance issuer reputation
- Attract strong investor demand, which can lead to high oversubscription and pricing benefits
- Support issuers with environmental risk management

Source: SBN, “Creating Green Bond Markets - Insights, Innovations, and Tools from Emerging Markets.”, 2018.

Testimonies and growing evidence indicate a “halo effect” from green bonds, resulting in benefits, such as lower long-term financing costs and positive impacts on share prices. The popularity of green bonds – with demand still outstripping supply – indicates that investors prefer to buy bonds issued by companies with strong sustainability credentials. Therefore, these firms gain improved access to debt capital markets.

In turn, green bonds have a marked catalytic and scaling benefit for green and climate-smart finance, including:

- The popularity and robust performance of green bonds help make green and climate finance a mainstream option for investors.
- The principles, processes, and definitions that have emerged to simplify and facilitate green bond issuance make it much easier for responsible investors and green issuers to connect and transact. This also opens dialogue on other types of green investment, including projects or sectors that might otherwise have been less accessible.
- Successful approaches in green finance now also help the growth of social finance.
- Green bonds create market-driven demand for improved environmental, social, and governance (ESG) disclosure by companies and financial institutions. This will have a tangible knock-on benefit in facilitating sustainable finance across a range of asset classes and financial products. It also enhances the ability of regulators to assess ESG risks and green finance flows at market level, enabling them to structure regulation and incentives to drive more capital to sectors with high environmental and social benefits.

These benefits reveal the importance of quality information disclosure from issuers to investors in order to reap the benefits of issuing green bonds. This disclosure, particularly regarding the use of proceeds, is one of the key differentiating features between conventional bonds and green bonds.

15. Available here: [https://www.ifc.org/wps/wcm/connect/Topics\\_Ext\\_Content/IFC\\_External\\_Corporate\\_Site/Sustainability-At-IFC/Policies-Standards/Performance-Standards](https://www.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/Sustainability-At-IFC/Policies-Standards/Performance-Standards)

## Green Bond Case Study - Davivienda

From its inception in 1972, Davivienda has grown from a savings and loan corporation to becoming the third-largest bank in Colombia, in terms of assets and profits. Largely inspired by its parent company, Bolivar Group, Davivienda also strives to increase its environmental and social commitments and focuses on improving its energy efficiency in its offices and operations nationwide. To achieve this, in April 2017, Davivienda issued \$150 million in green bonds, the largest green-bond issuance by a private financial institution in Latin America.

Davivienda uses the funds from the green bonds to finance the construction of three types of green buildings – housing, offices, and hotels – with the aim of reducing resource consumption. For example, one building will consume about 35 percent less water, compared to benchmark buildings, and its energy consumption will be reduced by about 46 percent.

IFC's Excellence in Design for Greater Efficiencies (the EDGE initiative) made the planning of resource-efficient designs possible. Beyond the environmental impact of the new building codes, they inspire innovation in building design by encouraging the use of renewable energy, new material types, and clean technologies.

<b>Issuer Rating</b>	BBB (Fitch)
<b>Issue Rating</b>	N/A
<b>Issue Date</b>	April 25, 2017
<b>Tranche</b>	10 years
<b>Size</b>	\$150 million
<b>Second Opinion Provider</b>	E&Y
<b>Certification</b>	N/A
<b>Listing Venue</b>	Colombian Stock Exchange

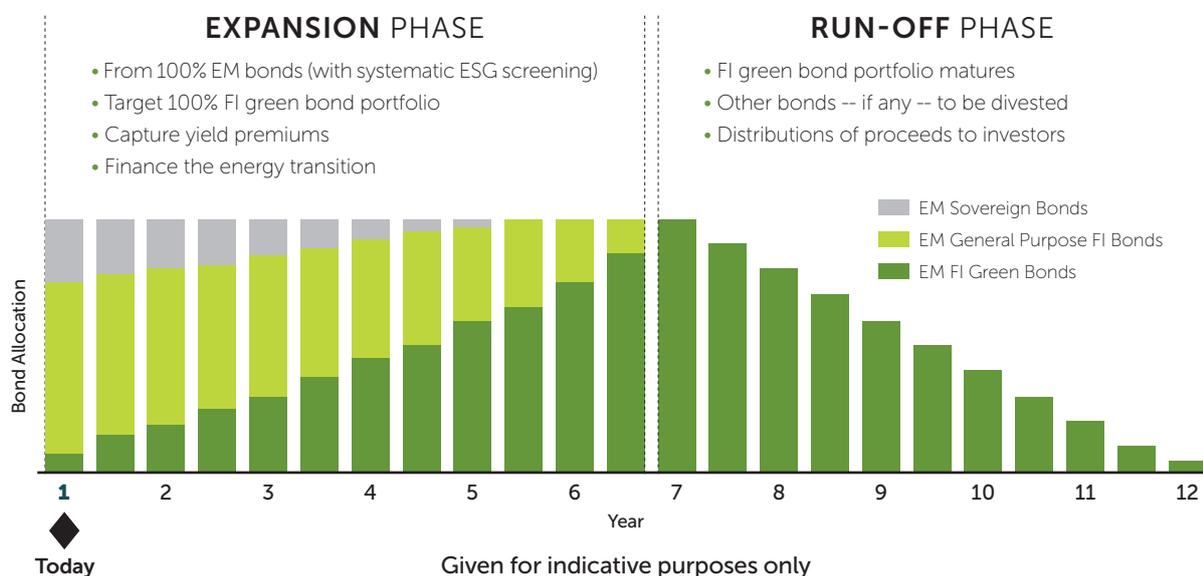
## Amundi Planet Emerging Green One

In April 2017, IFC partnered with Amundi to bridge the gap between institutional investor capital from developed markets and financing needs for climate-smart projects in emerging markets.

Amundi Planet Emerging Green One was launched in March 2018, with additional support from the Green Bond Technical Assistance Program ("GB-TAP" or "the Program") managed and administered by IFC. The Program is funded by the Swiss State Secretariat for Economic Affairs (SECO), the Swedish International Development Cooperation Agency (Sida), and the Luxembourg Ministry of Finance. The Program aims to enhance the supply of green bonds issued by financial institutions in emerging markets. It offers a wide range of support to potential issuances, including executive trainings on green bond issuances, support to enhance reporting by issuers, and knowledge sharing through research papers, case studies, and conference presentations.

The Fund allows investors to access climate-smart investment opportunities to support the global transition to a low-carbon economy. However, the Fund faced a particular challenge: investors perceive emerging markets and long-term infrastructure financing to be high-risk. To ease investor concern on investments in emerging markets, the Fund introduced a credit enhancement mechanism, with IFC taking first losses for credit-risk events. In addition, the Fund focuses on green bonds issued by financial institutions, which means it carries a risk exposure to the financial institution bond issuers, but not directly to the projects financed with proceeds of the green bonds. In terms of limited green bond issuance in emerging markets, the Fund introduced an innovative portfolio rotation strategy. During a seven-year investment period, the Fund intends to transition to a 100 percent green bond portfolio.

### AP EGO's Portfolio Rotation Strategy



The Fund aims to only hold primary market green bonds to maximize the growth of the green bond asset class in emerging economies. However, during the portfolio construction phase, allocations would include secondary market green bonds. This allows the Fund to create additional liquidity for green bonds in the secondary market, and this extra liquidity would potentially attract more investors into the market. Lastly, it allows the Fund to gather a broader understanding on the state of green bond practices, such as disclosure practice, fostering a more informed decision-making process to select best practice green bonds on the primary market.

## Alignment with Sustainable Development Goals



Given for indicative purposes only, may change without prior notice.

AP EGO is also aligned with the United Nations (UN) Sustainable Development Goals (SDGs), a set of 17 goals for sustainable development adopted by the UN in 2015. SDG 17 (Partnerships for the Goals) and SDG 13 (Climate Action) are the most relevant to the Fund's activities.

**SDG 17 (Partnerships for the Goals):** AP EGO mobilized additional financial resources for developing countries by originating most of the capital deployed from private sector sources in developed countries.

**SDG 13 (Climate Action):** AP EGO contributes to global climate action through investments in green bonds that support the development of infrastructure, across sectors related to SDG 6 (Clean Water and Sanitation), SDG 7 (Affordable and Clean Energy), SDG 8 (Decent Work and Economic Growth), and SDG 11 (Sustainable Cities and Communities).

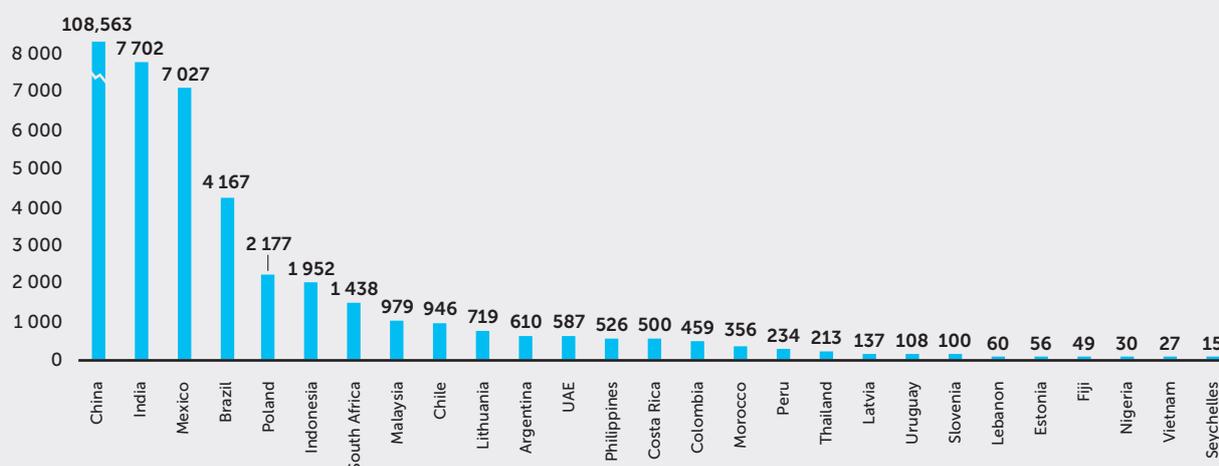
## CURRENT STATE AND OUTLOOK OF THE GREEN BOND MARKET

### Current Status of Emerging Market Green Bonds<sup>(16)</sup>

Emerging markets have been issuing green bonds since 2012, when South Africa made two debut issuances, followed by issuances from Brazil, China, and Peru in 2014. After the People's Bank of China announced guidelines for green bond issuances in late 2015, China's green bond market quickly grew to \$108.6 billion in cumulative issuances between 2012 and 2018, or about 78 percent of the cumulative total of \$140 billion in issuances from emerging markets during that period. The next largest issuers were India (\$7.7 billion), Mexico (\$7 billion), and Brazil (\$4 billion) (Figure 2.1), followed by Poland, Indonesia, and South Africa, with each country issuing over \$1 billion of green bonds.<sup>(17)</sup>

On a regional basis, East Asia and the Pacific had the largest volume of green bond issuances cumulatively (81 percent), while Latin America and the Caribbean (10 percent) and South Asia (5 percent) had the next highest levels (Figure 2.2). Despite the impact of market conditions in 2018, which saw an overall downturn in global bond issuance compared to the year earlier, emerging market green bond issuance kept a robust pace with \$43 billion and over 90 new issuers. In addition, debut issuances in Indonesia, Lebanon, Namibia, the Seychelles, Thailand, and Uruguay brought the number of emerging countries with green bond issuances to 28 countries from 22 countries.

Figure 2.1 - Emerging Market Green Bond Issuance, 2012-2018 (\$ million)

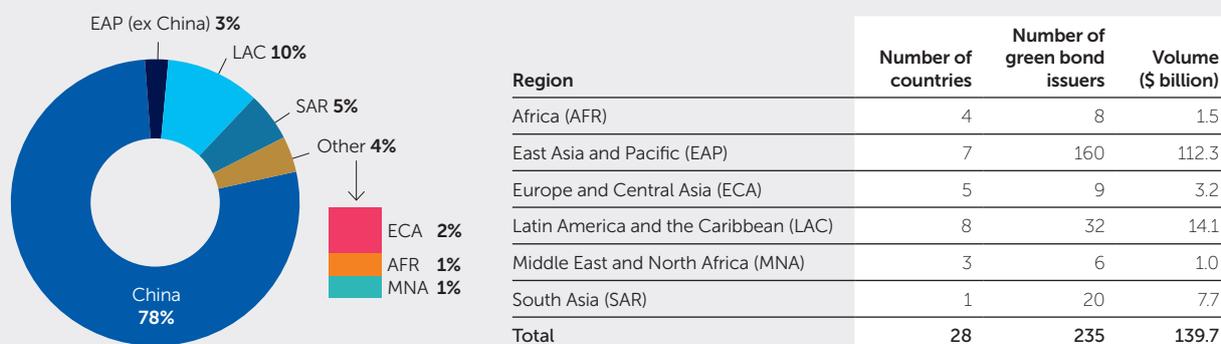


Source: IFC analysis, Bloomberg, Environmental Finance, Climate Bonds Initiative.

16. This section uses cumulative amount of green bond issuances from 2012 to 2018 in emerging markets.

17. This section is based on IFC analysis of information in databases operated by Bloomberg, Environmental Finance, Climate Bonds Initiative, and Dealogic.

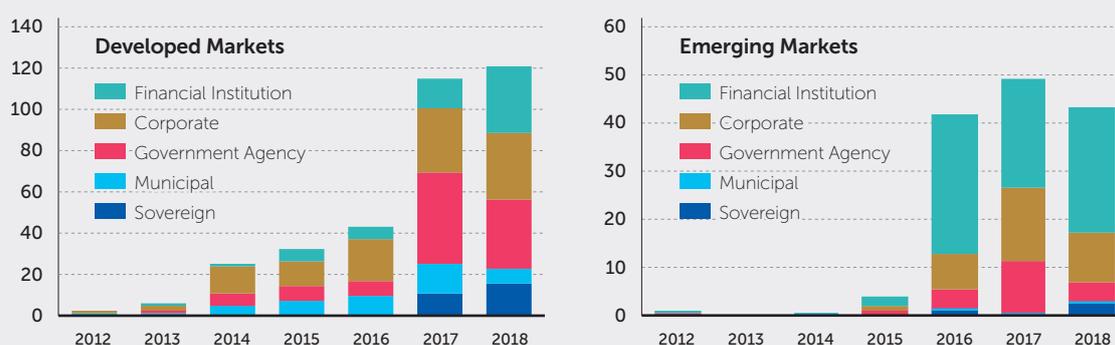
Figure 2.2 - Emerging Market Green Bond Issuance, by Region, 2012-2018



Source: IFC analysis, Bloomberg, Environmental Finance, Climate Bonds Initiative.<sup>(18)</sup>

While financial institutions in developed markets accounted for some 18 percent of total green bond issuances, they were the largest-issuing sector in emerging markets, making up 57 percent of cumulative green bond issuance, followed by non-financial corporates (25 percent), government agencies (14 percent), sovereigns (2 percent), and municipals (1 percent) (Figure 2.3). Recently, from 2016 to 2018, new EM sovereign issuers entered the market. These sovereign green bonds, which could serve as benchmarks for future issuances, were issued by Poland (2016, 2018), Nigeria (2017), Fiji (2017), Indonesia (2018), and Lithuania (2018).

Figure 2.3 - Emerging Market Green Bonds, by Issuer Sector, 2012-2018 (\$ billion)

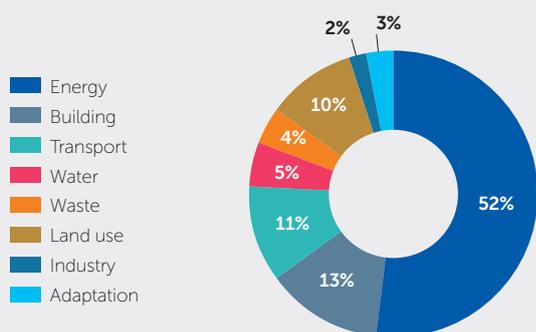


Source: IFC analysis, Bloomberg, Environmental Finance, Climate Bonds Initiative.

18. AFR: Sub-Saharan Africa Region (Namibia, Nigeria, Seychelles, South Africa) - EAP: East Asia and Pacific Region (China, Fiji, Indonesia, Malaysia, Philippines, Thailand, Vietnam) - ECA: Europe and Central Asia Region (Estonia, Latvia, Lithuania, Poland, Slovenia) - LAC: Latin America and the Caribbean Region (Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Peru, Uruguay) - MNA: Middle East and North Africa (Lebanon, Morocco, UAE) - SAR: South Asia Region (India).

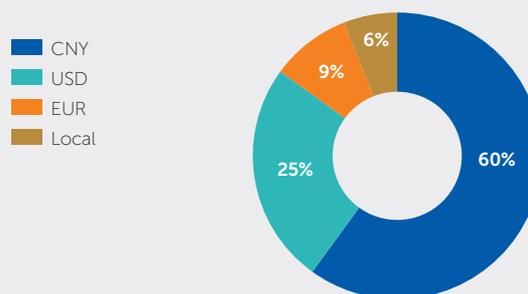
For most green bonds, proceeds were earmarked for projects that addressed environmental concerns. In emerging markets, renewable energy made up the largest sector for use of proceeds, while low-carbon transport, water, green buildings, and waste were the next largest sectors (Figure 2.4).

**Figure 2.4 - Emerging Market Green Bonds Issuance, by Use of Proceeds, 2012-2018**



Source: Climate Bonds Initiative, 2018, "Green Bonds: The State of the Market 2018" - Note: CBI reflects specific allocations when reported and otherwise splits the proceeds equally among the relevant sectors. Post-issuance reporting is also included in the calculations.

**Figure 2.5 - Emerging Market Green Bond Issuance, by Currency, 2012-2018**



Source: IFC analysis, Bloomberg, Environmental Finance, Climate Bonds Initiative. Note: CNY (Chinese Yuan).

Green bond issuances in emerging markets ranged from \$1.5 million to \$4.4 billion, with an average issuance of \$385 million. Some 34 percent of emerging market green bond issuances were in hard currency (Figure 2.5). Excluding China, local currency bond issuances made up 6 percent of cumulative emerging market green bond issuances. About half of the bonds had a credit rating, and 90 percent of those bonds were investment grade. As detailed in the interview with Amundi, "Emerging Market Issuers Catching Up with Developed Market Counterparts" many green bonds adhered to the Green Bond Principles or local green bond guidelines and had external reviews and/or second-party opinions.

## Growth Forecasting

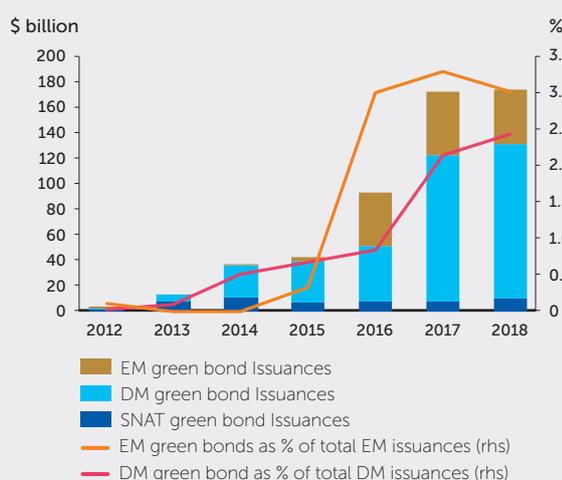
By the end of 2018, the green bond market in emerging economies totaled about \$136 billion, or about 0.5 percent of outstanding bonds in emerging markets.

While green bond markets in emerging countries initially grew at a slower pace than similar markets in developed countries, they have had a noticeable “catch-up” in their share of issuances. Green bond issuances in emerging markets represented 3 percent of overall bond issuances in emerging markets in 2018, a similar level (2.4 percent) to developed markets (Figure 2.6).

The forecast for the size of the green bond market in emerging markets has been calculated based on two assumptions: 1) the annual bond issuance will remain stable at the 2018 level of \$1.4 trillion<sup>(19)</sup> and 2) the share of green bonds in emerging markets will range from 1.5 percent to 3 percent over the next three years.

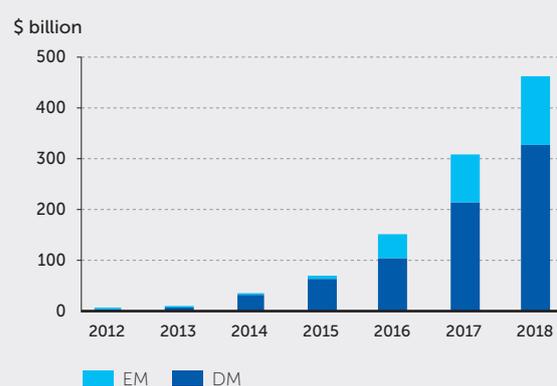
As green bonds continue to replace maturing conventional bonds, their market size could likely reach between \$210 billion to \$250 billion by 2021 (Figure 2.7).<sup>(20)</sup> Increased commitments to funding green infrastructure and climate change mitigation, as well as decreases to the cost of green technology, could accelerate the pace of green bond issuances.

**Figure 2.6 - Green Bond Issuances, 2012-2018**



Source: IFC analysis, Bloomberg, Environmental finance, Dealogic, Climate Bonds Initiative. Note: SNAT (Supranational).

**Figure 2.7 - Green Bond Market Size, 2012-2018**



Source: IFC analysis, Bloomberg, Environmental finance, Dealogic, Climate Bonds Initiative.

19. Based on data from Dealogic.

20. This estimate is based on an annual bond issuance in emerging markets of around \$1.4 trillion per year and a green bond percentage of overall bond issuance ranging from 1.5 percent to 3 percent over the next three years.

## Amundi's Perspective as an Investor

**Sergei Strigo**  
Co-Head of Emerging Markets  
Fixed Income  
Amundi London



**Maxim Vydrine**  
Co-Head of Emerging Markets  
Corporate and High Yield  
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Amundi London

### ***What is your view of the green bond market in emerging economies today?***

With 2018 generally difficult for EM, the pipeline of primary issuances was largely slower than anticipated. Many EM issuers postponed their plans to come to the market, because they were unwilling to lock in high spreads that affected green bond issuance. As sentiment improves, we expect a higher supply of green bonds in 2019. As more sovereign entities issue green bonds, we anticipate more issuances from the private sector.

### ***What are the main strengths and weaknesses of the market today?***

Firstly, the number of green bond issuances we have realized has met the expectations of managers. For example, Amundi Planet Emerging Green One has already switched at least 16 percent of its positions to green bonds.

Second, diversification has been vital. The green bond market has grown stronger in some countries, compared to others, and we believe that it is crucial to keep an adequate geographical diversification. In markets such as India or China, green bonds have become more popular recently, as they represent an opportunity for issuers to access a diversified pool of capital. We also see a trend in increasing numbers of sustainability bonds,<sup>21</sup> compared to pure green bonds. That might be attractive for smaller issuers, who do not have enough environmental projects to support a benchmark-size green bond but mixing their investment with social projects gets them enough scale.

### ***Going forward, what is on your wish list for the emerging economy green bond market? What would you like to see?***

Going forward we would like to see issuances from a wider range of countries and private institutions. We now see quite a few governments or quasi-sovereign issuers being the debut green bond issuers. We expect these placements to "open the doors" for private companies to start issuing green bonds as well. Finally, as the market deepens, we would also like – and expect – to see more issuances in local currencies.

21. As defined by the Sustainability Bond Guidelines issued by the International Capital Market Association. Available here: <https://www.icmagroup.org/green-social-and-sustainability-bonds/sustainability-bond-guidelines-sbg/>

## Emerging Market Issuers Catching Up with Developed Market Counterparts

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Head of SRI Fixed Income Processes  
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### ***What are the differences in best practices between issuances in developed and emerging markets?***

Green Bond Principles are the global guidance standards for developed and emerging markets. Even if standards and practices were quite heterogeneous between emerging and developed countries during the first stages of the green bond market, the recognition of the ICMA Green Bond Principles and the Harmonized Framework for Impact Reporting, founded by development finance institutions, helped to harmonize the market on a common understanding of “green.” Today, almost all the issuers, from either emerging markets or developed markets, issue green bonds following the same guidelines.

### ***Are there differences in the availability and quality of information for issuances in developed and emerging markets?***

The common lack of transparency associated with investing in emerging markets is generally not the case for green bond issuances. Firstly, most issuances have at least one external review and/or second-party opinion. Secondly, most emerging market green bond deals have post-issuance reporting in place, with the majority providing impact reporting and a lesser majority also providing use-of-proceeds reporting. Even issuers who initially had no commitment to post-issuance reporting provide reporting today.

### ***What are the common projects found in emerging market green bonds?***

Green projects (green buildings, transports, power generation, etc.) in developed markets have been in place for years now. Thus, the use of proceeds in green bonds are mainly for refinancing existing projects. These projects focus on enhancing energy efficiency, research and development of new technologies to reduce the environmental impact of company activities, and housing infrastructure.

On the other hand, the use of proceeds in emerging market green bonds reflect the delay in technological advancement, compared to their developed market counterparts. The projects often focus on replacing the carbon-intensive energy mix of emerging markets, which calls for huge financing needs, especially for the implementation of new green-power generation assets, such as solar, wind, hydro or biomass.

### ***How mature are impact indicators in emerging market green bonds?***

As with the global green bond market, there is little consistency in the metrics and methodologies used in green bond impact reporting. The level of detail of reporting differs widely, such as the description of the “use of proceeds” or the methodology used to assess the environmental impact of funded projects, such as avoided GHG emissions. At the same time, emerging market issuers have yet to report more precisely on the social impacts of the green bonds issued, a current trend in some developed markets.

## Policymaker Mobilization

A growing number of emerging markets now take steps to create enabling regulatory environments to promote issuance of green, social, and sustainability bonds.

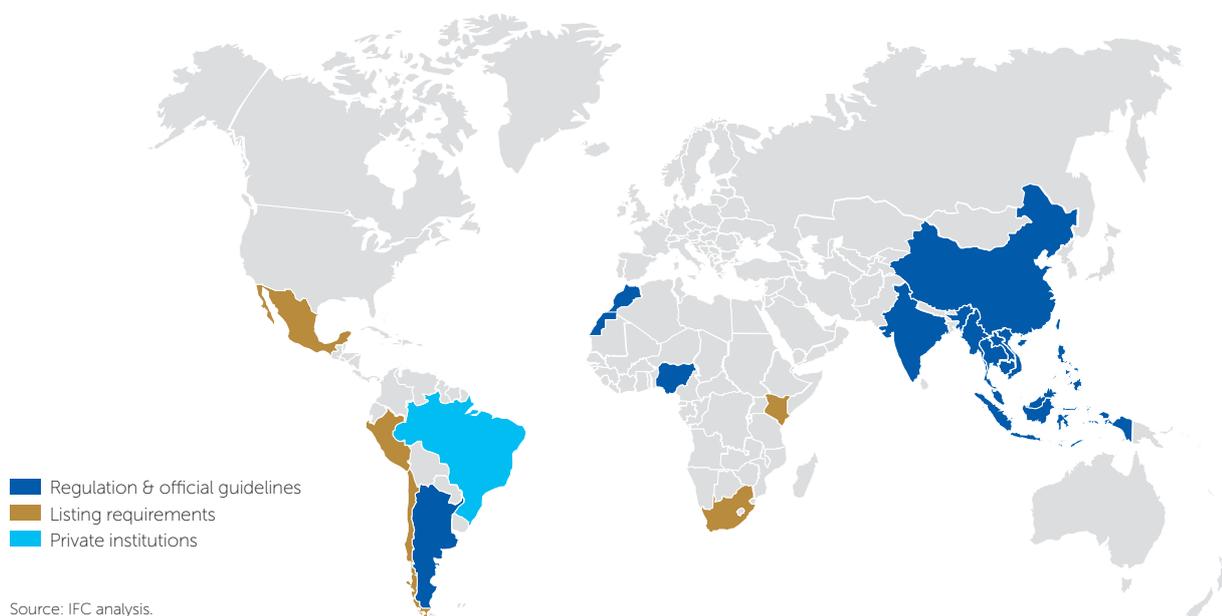
The 2018 report, "Creating Green Bond Markets – Insights, Innovations, and Tools from Emerging Markets," found that new regulations and market-level guidance enable rapid growth and innovation in green bond issuance in emerging markets. The report by the Sustainable Banking Network,<sup>(22)</sup> an IFC initiative, draws on surveys and interviews with regulators, banking associations, central banks, and capital market authorities from over 22 emerging markets. The work was guided by a Working Group comprised of financial sector regulators and international experts from 30 organizations and 21 member countries of the Sustainable Banking Network. The work was initiated by IFC and Climate Bonds Initiative.

The report reviewed 13 national or regional green bond frameworks<sup>(23)</sup> and found all of them were substantially aligned with international standards or directly referenced international standards, including the Green Bond Principles and the Climate Bonds Standards Board.

Guidance by policy makers varies in several ways:

- Use of proceeds: most indicate broad categories,
- Reporting requirements: most require annual reporting at least,
- Mandatory external review: most require a mandatory external review,
- Selection of external review providers: a mix of requirements for reviewers to be independent and/or approved by a third party.

**Figure 2.8 - Green Bond Guidance in Emerging Markets**



22. Sustainable Banking Network (SBN) is a voluntary community of financial sector regulators, banking associations, and environmental regulators from emerging markets committed to advancing sustainable finance, in line with international best practice and national priorities. Facilitated and supported by IFC, SBN now represents 36 countries and \$43 trillion, or 85 percent, of total banking assets in emerging markets.

23. ASEAN region, Brazil, Chile, China, India, Indonesia, Kenya, Malaysia, Mexico, Morocco, Nigeria, Peru, and South Africa.

## Case Study - Indonesia's Comprehensive Green Bond Strategy

### INDONESIA

<b>Type of guidance</b>	The Indonesia Financial Services Authority (OJK) issued, "Requirements for Green Bonds," in December 2017.
<b>Alignment</b>	Green Bond Principles (GBP) and ASEAN Green Bond Standards.
<b>Key driver</b>	Need for long-term financing for climate-related projects.
<b>Policy context</b>	<ul style="list-style-type: none"> <li>• OJK Roadmap for Sustainable Finance 2015-2019.</li> <li>• 2017 OJK regulation on Sustainable Finance for Financial Services Institutions, Issuers and Public Companies.</li> <li>• Financing guidelines for renewable energy, energy efficiency, green buildings, organic farming, and palm oil.</li> <li>• Launch of the Bali Center for Sustainable Finance.</li> </ul>
<b>Highlights</b>	<ul style="list-style-type: none"> <li>• Identifies 11 green sectors.</li> <li>• Includes a mandatory expert review.</li> <li>• Requires annual report after bond issuance and until full allocation of proceeds.</li> <li>• Requires mandatory correction action.</li> </ul>
<b>Development Process</b>	<ul style="list-style-type: none"> <li>• OJK conducted an analysis of green bonds in Indonesia in 2016.</li> <li>• Held public and stakeholder consultations and workshops as part of the policy draft developments.</li> <li>• Technical experts from international organisations, such as IFC, the World Bank, and others, provided guidance with respect to international best practices and lessons learned from other countries.</li> <li>• Policy issued in December 2017.</li> </ul>
<b>Market impacts</b>	<ul style="list-style-type: none"> <li>• The first sovereign green sukuk, known as the Islamic green bond, was issued by the Government of Indonesia in February 2018 for \$1.25 billion.</li> <li>• The first Asian corporate sustainability bond was issued in February 2018 for sustainable rubber plantations in Indonesia.</li> <li>• Star Energy Partners issued a \$580 million corporate bond, financing geothermal energy in April 2018.</li> <li>• PT Sarana Multi Infrastruktur (PT SMI), a state-owned non-bank financial institution, issued a green bond with support from the World Bank in July 2018 for IDR 3 trillion (\$200 million) with a maximum emission value of IDR 1 trillion (\$60 million) in the first phase of 2018.</li> <li>• Bank OCBC NISP, an Indonesian banking and financial services company, issued a \$150 million green bond to IFC as sole investor in August 2018.</li> </ul>
<b>Future expectations</b>	<ul style="list-style-type: none"> <li>• More Indonesian financial institutions are expected to issue green bonds/sukuk to raise capital to finance more sustainable projects and support the implementation of SDGs and climate change targets.</li> <li>• More technical guidance on definitions of sustainable projects and procedures for third-party verification is needed to scale up issuance.</li> <li>• Development and dissemination of best practices and lessons learned from green bond issuances so far will also support new issuers to come to market.</li> <li>• OJK is committed to developing a monitoring and reporting system on green bonds development in Indonesia to measure and keep track of progress.</li> </ul>

# FINANCIAL INSTITUTIONS AS AN ESSENTIAL SOURCE OF FUTURE GREEN BOND ISSUANCES

## Cross-border Bonds Issued by Financial Institutions in Emerging Markets

This section analyzes cross-border conventional bonds in emerging markets, as issuers of these bonds are considered potential sources of green bond issuances. The diversity of green bond issuers increased in developed markets [Figure 2.3], with financial institutions<sup>(24)</sup> representing less than 18 percent of overall green bond issuances in developed markets. However, in emerging markets, financial institutions accounted for 57 percent of cumulative green bond issuances because many countries rely heavily on bank intermediation to supply debt financing.

Therefore, financial institutions in emerging markets remain a likely source of new green bond issuances from 2019 onwards. With nearly 35 percent of green bond issuances in emerging markets denominated in U.S. dollars or euros, a useful proxy to estimate the potential for green bond market is to analyze the cross-border bond issuances by financial institutions in emerging markets.

Using Bloomberg data, an analysis of 159 emerging countries found that 44 of them had financial institutions that issued cross-border bonds over the past five years (from 2014 to 2018) with a maturity of at least one year.<sup>(25)</sup> The cumulative issuance of cross-border bonds was over \$640 billion (\$147 billion in 2018), with some 291 financial institutions issuing 8,814 bonds (Figure 3.1).

The East Asia and the Pacific region represented some 68 percent of total issuance volume. However, only 3 percent of that amount (\$18 billion) came from outside China (Figure 3.2). Issuances in the Latin America and the Caribbean region had the largest increase in issuances in 2018, propelled by two large issuances in Costa Rica. Turkey, where over half of the issuances from the Europe and Central Asia region originated over the past five years, saw a decrease in issuances in 2018 as a reflection of market conditions. The Middle East and North Africa region saw a steady increase in issuances led by the United Arab Emirates.

### Figure 3.1: Summary of FI Cross-Border Bond Analysis

#### Financial institution (FI) cross-border issuances, 2014-2018: Key Findings

- Number of countries reviewed: **159**
- Number of countries with FI cross-border issuers: **44**
- Number of FIs issuing cross-border bonds: **291**  
*of which 167 FIs issued bonds that are \$300 million and above (57 percent of FIs issuing bonds)*
- Cumulative volume of issuances, 2014-2018: **\$642 billion**  
(average **\$128 billion** per annum)  
*of which issuances that are \$300 million and above: **\$373 billion***

Source: IFC analysis, Bloomberg.

24. Financial institutions include banks, insurance companies, and other financial service providers, including asset management services. Subsidiaries are grouped under the parent company. Cross-border bonds are defined as bonds issued in U.S. dollars or euros with a maturity of at least one year. Perpetual bonds are excluded, and private placements are included.

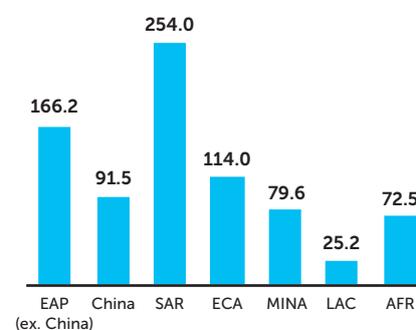
25. Based on Bloomberg data. The 44 countries are: Argentina, Armenia, Azerbaijan, Bahrain, Bolivia, Brazil, Bulgaria, Chile, China, Colombia, Costa Rica, Croatia, Czech Republic, El Salvador, Georgia, Guatemala, Honduras, Hungary, India, Indonesia, Jordan, Kazakhstan, Kuwait, Lebanon, Malaysia, Mexico, Mongolia, Montenegro, Nigeria, Oman, Panama, Paraguay, Peru, Philippines, Poland, Romania, South Africa, Sri Lanka, Thailand, Togo, Turkey, Ukraine, United Arab Emirates, and Zimbabwe.

Figure 3.2 - Cross-Border Bond Issuances by FIs, by Region, 2014-2018

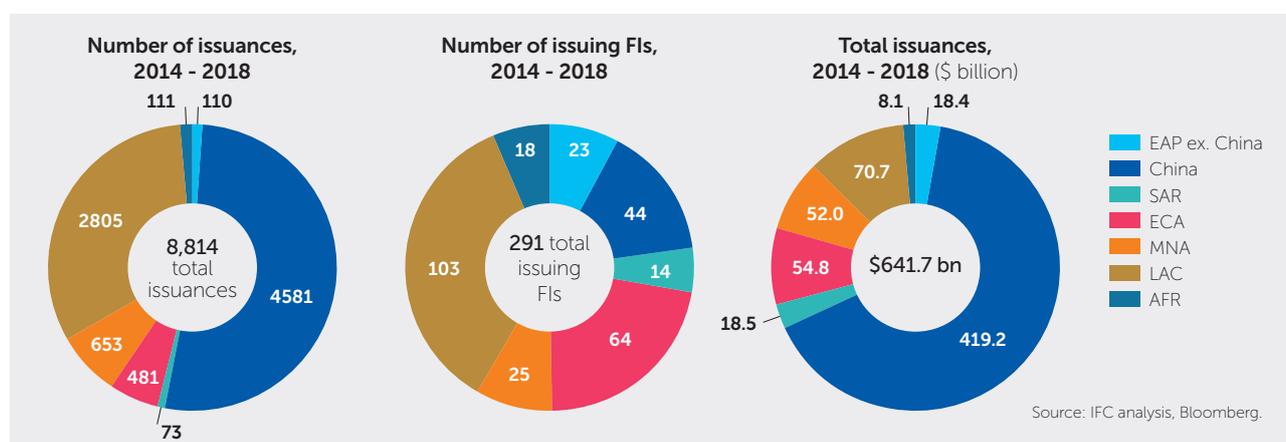
Cross-border issuances by FIs, 2014-2018 (\$ billion)

	2014	2015	2016	2017	2018	Total
East Asia and Pacific (EAP)	74.5	67.4	86.0	115.7	94.1	437.7
of which China	71.3	65.1	83.3	111.7	87.8	419.2
EAP excluding China	3.1	2.3	2.7	4.0	6.3	18.4
South Asia (SAR)	6.0	2.0	1.6	5.3	3.7	18.5
Europe and Central Asia (ECA)	14.8	8.2	8.1	17.3	6.5	54.8
Middle East and North Africa (MNA)	7.0	9.5	10.2	11.4	13.9	52.0
Latin America and the Caribbean (LAN)	14.5	5.2	9.9	14.3	26.8	70.7
Africa Region (AFR)	2.4	0.9	0.9	1.9	1.9	8.1
Total	119.2	93.2	116.6	165.8	146.9	641.7

Average bond size (\$ billion)



Source: IFC analysis, Bloomberg.



China's share of cross-border issuances between 2014 and 2018 exceeded that of any other country (Figure 3.3), with \$419 billion, or 65 percent, of the cross-border bond issuances. United Arab Emirates made up the second-largest share with \$47 billion in issuances, while Panama – a dollarized economy and offshore financial center – had the second-highest number of cross-border bond issuers, with an average bond issue size of \$21 million.

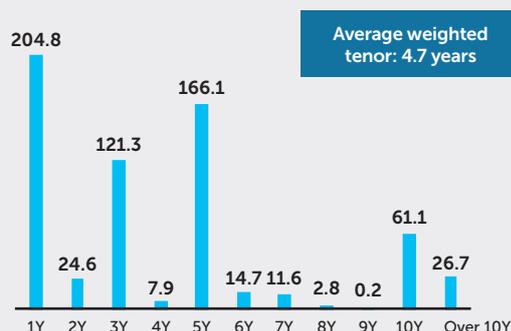
Figure 3.3 - Cross-Border Issuance by FIs, Top 15 Countries, 2014-2018

	Number of issuances (\$ billion)	Number of FIs that Issued Cross-Border Bonds	Number of Cross-Border Bonds, Issued by FIs
China	419.2	44	4 581
United Arab Emirates	46.6	16	637
Turkey	29.4	18	232
India	18.3	13	72
Brazil	17.8	13	2 137
Costa Rica	14.9	11	33
Mexico	11.7	12	26
Czech Republic	8.3	6	34
Panama	8.2	29	383
Poland	8.0	6	40
Malaysia	6.9	6	45
Chile	6.8	7	150
Colombia	5.9	6	20
Thailand	5.5	6	46
South Africa	4.3	8	99

Source: IFC analysis, Bloomberg.

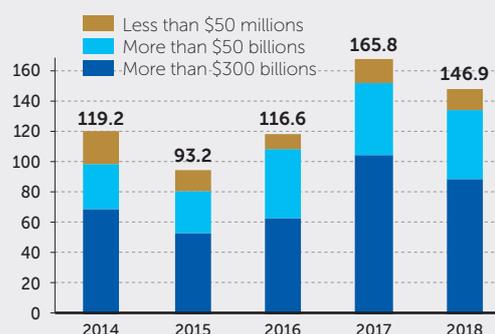
Across emerging market regions, cross-border issuance by financial institutions points to the strong potential for new green bond issuers to come to the market. As 45 percent of the cross-border bonds covered by this analysis is either a three-year or five-year bullet bond (Figure 3.4), there is expectation for rapid new issuances as existing bonds mature, with the possibility that some of these new issuances could be green bonds. With 33 emerging market countries that have at least one financial institution issuing cross-border bonds of greater than \$300 million (Figure 3.5), there are significant opportunities for green bonds to grow.

**Figure 3.4 - Tenor of FI Cross-Border Bonds, 2014-2018 (\$ billion)**



Source: IFC analysis, Bloomberg.

**Figure 3.5 - Volume of FI Cross-Border Bonds Issuances, 2014-2018 (\$ billion)**



Source: IFC analysis, Bloomberg.

## Emerging Market Financial Institutions are Equipped and Ready



**Piotr Mazurkiewicz**  
Principal Environmental and Social Specialist  
International Finance Corporation

### *How do financial institutions in emerging markets and green bonds fit into IFC's climate strategy goals?*

Financial institutions in emerging markets and green bonds constitute critical elements for IFC to reach our climate strategy goals. Financing investments associated with the Paris Agreement (PA) will only be possible by mobilizing the financial sector, including capital markets. Thus, IFC took a conscious decision to scale up our climate-related investments through FIs about three years ago. Our involvement in structuring and investing in Amundi Planet Emerging Green One is an important example of this strategy. GBs are central to the strategy as well. We believe that GBs can provide the means for banks to finance green assets and scale up their balance sheet to finance the low-carbon transition. Lenders need access to debt capital markets to raise longer-dated liabilities to match the tenors usually required for development of green assets. GBs are an effective instrument to achieve this and also help banks diversify their sources of funding by attracting new investors.

### *What are the main drivers encouraging financial institutions in emerging markets to adopt an Environmental and Social Risk Management System (ESMS)? What are the main barriers?*

Most financial institutions are indirectly exposed through their business activities to environmental and social (E&S) risks. The key driver in implementing an ESMS is to allow financial institutions to identify, assess, and manage such risks with the potential to become credit, liability, or reputational risks and with the upside to improve the quality and resilience of their portfolios. However, the concept behind sound E&S risk management is relatively new to many financial institutions. The regulatory environment continues to evolve but there is still an absence of a level playing field. In jurisdictions where E&S risk management is not a common practice, the introduction of such approaches by one or a limited number of financial

institutions may be perceived as negatively impacting their competitive advantage. In many markets, it is not easy to find and retain experienced E&S risk management specialists. Without capacity, sound E&S risk management is just an illusion.

**Do most financial institutions in emerging markets have green loans on their balance sheets?**

Most do, but they often are not labelled as such. In general, country-level data is still scarce but there are some positive examples. In China, the banking regulator collects robust data. On average, green loans have comprised an estimated 10 percent of loans provided by Chinese banks over the last two years to three years. Climate-related loans in many other emerging markets are still well below this percentage. IFC estimates that, in order to meet the Paris Agreement goals, this number should be 30 percent of total bank loans by 2030 for the 21 largest emerging markets.

**What are the key elements of an ESMS, and why are they important in the context of green bonds?**

There is no one commonly accepted blueprint for an ESMS, but common elements of an effective system are recognized. Importantly, an ESMS should be built on existing credit risk management processes to ease implementation, facilitate integration, and minimize costs. Key elements include the following:

- a) E&S policy defining the performance-based standards and practices;
- b) Procedures for E&S assessment and management that provide safeguards that risks are adequately addressed, mitigation measures implemented, and opportunities identified and realized;
- c) Monitoring and reporting processes to help with adequate reporting of E&S performance to management and investors, along with the adoption of good practices and continuous performance improvements; and
- d) Capacity to manage E&S issues.

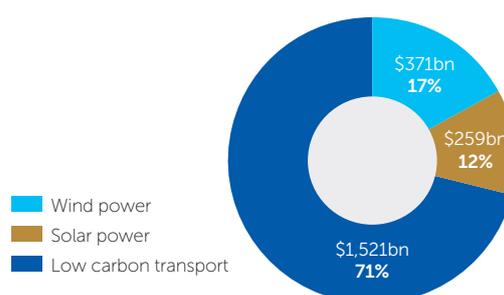
IFC believes E&S risk management should be an integral part of any green bond issuance process. It is important to know how the green bond proceeds were used and also be certain that the assets supported were developed and operated in line with good international industry practices. In addition, the use should not negatively impact local communities or the environment. Implementation of an effective ESMS helps green bond issuers provide assurance to investors and for investors, including asset managers, to verify if this is really the case.

## Green Bond Case Study - Industrial and Commercial Bank of China

The Industrial and Commercial Bank of China Limited (ICBC) is one of the leading institutions championing the growth of green finance in China. ICBC is a Chinese multinational banking company and the largest bank in the world, based on total assets, deposits, loans, number of customers, and number of employees. ICBC has actively put the concepts of “green development” and “green finance” into practice and boosted the green development of the economy and society through green-oriented adjustments to the credit structure. In 2017, ICBC launched the ICBC ESG Green Index, based on the green ratings of 180 companies listed on the Shanghai Stock Exchange, being the first to do so among its domestic peers. AP EGO has invested in ICBC green bonds issued in September 2017. The annual GHG emissions savings from the activities financed by the proceeds of this bond reach more than 4.1 million tCO<sub>2</sub>eq/y.

Issuer Rating	A1/A/A (Moody's/S&P/Fitch)		
Issue Rating	A1 (Moody's)		
Issue Date	September 28, 2017		
Tranche	EUR 3Y FRN	3Y FRN	5Y FXD
Size	EUR 1,1 billion	\$450 million	\$400 million
Second Opinion Provider	"Dark Green" shading from the Center for Climate and Environmental Research (CICERO)		
CBI Certification	Obtained from Climate Bond Initiative on September 26, 2017		
Listing Venue	Luxembourg Stock Exchange "LGX"		
ISIN	XS1691909177		

**Figure 3.6 - Green Bond Use of Proceeds**



Source: IFC.

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