SOVEREIGN GREEN BONDS BRIEFING

Climate Bonds Initiative

Prepared by Climate Bonds Initiative.

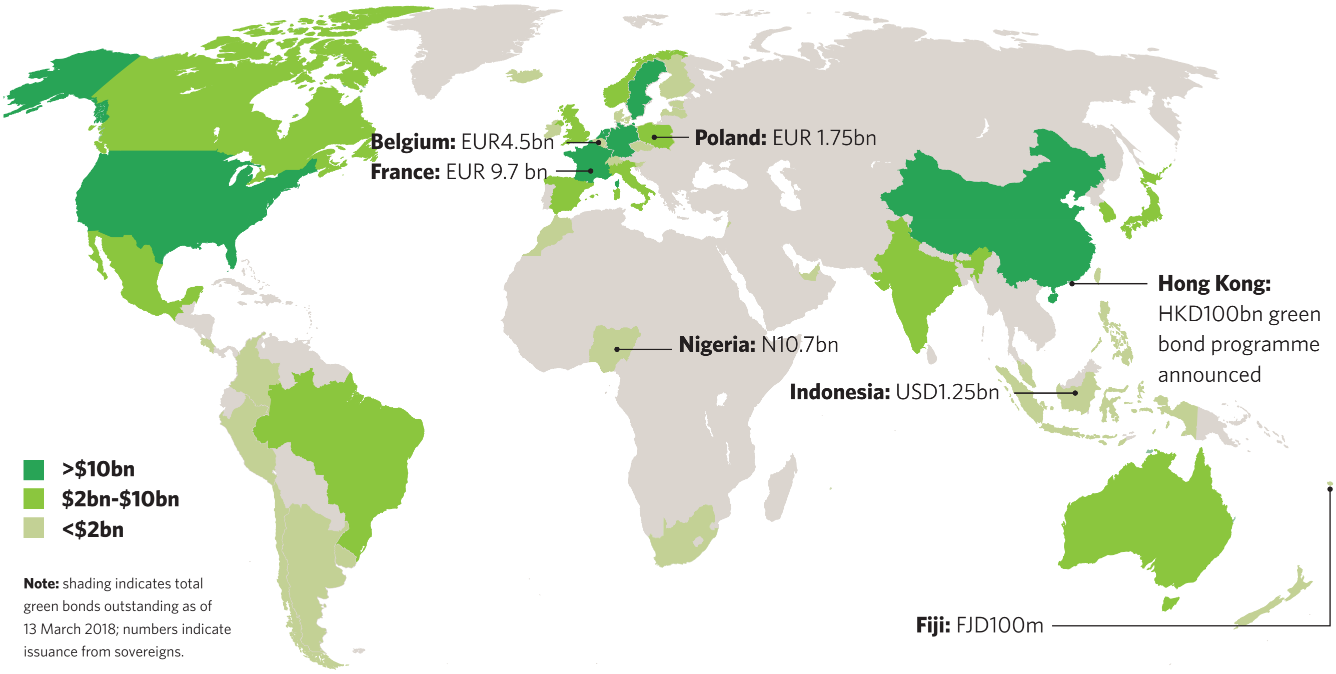
Sovereign Green Bonds

2017 has been marked as 'the year of the sovereign' in the green bond market, with inaugural issuances from Poland and France setting a precedent in late 2016 and early 2017, and Fiji and Nigeria becoming the first issuers amongst developing economies.

Green bonds are a key tool for governments to raise capital to implement infrastructure plans in line with national climate targets, as governments move to achieve their Nationally Determined Contribution (NDC) targets, as set in the Paris Agreement and the international Sustainable Development Goals (SDGs). A sovereign green bond can provide a strong signal of the country's commitment to a low-carbon economy, help bring down the cost of capital for green projects by attracting new investors, and mobilise private capital towards sustainable development.

This briefing covers:

- The benefits of issuing a sovereign green bond
- A simple step-by-step guide on how to issue
- Case studies of sovereign green bonds and examples of sub-sovereign issuances



Note: shading indicates total green bonds outstanding as of 13 March 2018; numbers indicate issuance from sovereigns.

What is a green bond?

Green bonds are regular bonds with one distinguishing feature: proceeds are earmarked for projects with environmental benefits, primarily projects that address climate change mitigation and adaptation, but also natural resources depletion, loss of biodiversity and air and water pollution. Green bonds often carry social co-benefits such as access to clean energy and water, health improvements, and poverty alleviation through better resilience to climate change and development of sustainable infrastructure.

A green label is a discovery mechanism for investors. It enables the identification of environmental investments and reduces market friction, facilitating investments that support green growth.

Why issue a sovereign green bond?

- Strategic coordination
- New and diverse investors
- Pricing advantages
- Visibility
- Green market creation
- Capital mobilisation
- International leadership

1. Strategic coordination

A sovereign green bond can signal the country's commitment to its sustainable, low-carbon growth strategies, which will have a positive impact on the private sector investment case for green sectors.

Internal collaboration between different departments in government (traditionally treasury and sustainability) is one of the positive spill-overs of issuing a green bond; inter-ministerial collaboration can support ongoing efforts to implement a country's long-term low-carbon growth strategy.

Raising a green bond can improve government tracking of climate-related and sustainable expenditure. By going through the exercise of identifying eligible assets and projects to include in a green bond programme, the government can improve its awareness of the alignment between its balance sheets and ambitions.

2. New and diverse investors

Green bond issuers have often reported a diversification of their investor base as one of the benefits of green transactions: the deal attracts new socially responsible investors and asset managers with green investment mandates.

Though sovereigns generally have a consistent domestic investor base, Poland experienced significant investor diversification, with green investors making up 61% of the investor pool, almost none of which had previously invested in sovereign bonds from Poland.[1] For emerging economies, increasing and diversifying the investor base could be a key benefit, especially in the case of offshore sovereign green bond issuances.[2]

3. Pricing advantages

Driven by high demand and increasingly diversified investor base, several treasuries have reported better pricing of their green bonds compared to past issuances. The French sovereign bond is reported to have closed at 13bp over a comparable non-green OAT.[3]

A recent pricing study conducted by the Climate Bonds Initiative in partnership with the IFC, Pax, Obvion and Rabobank, shows that not all green bonds carry new issue premiums, and some are even issued at a discount. When looking at performance over the first week and first 28 days, green bonds issued in USD and EUR tend to perform better than their benchmark index.[4]

4. Visibility

Reputational benefits is one of the gains issuers look for in a green bond issuance. The government can use the green bond issuance as a promotional tool, to reinforce its sustainability agenda, such as the case of France, or signal a policy shift, such as the case of Nigeria, where the government is progressing on the issuance of a sovereign green bond to show its commitment to a more diversified economy and the future development of low-carbon sectors.

5. Green market creation

Given their benchmark role in the in domestic debt markets, sovereign green bonds can support the market's further development. They can provide a nascent green bond market with the scale and liquidity it needs to encourage trading and facilitate price discovery. France's green bond was the largest green bond to date at EUR7bn (USD7.5bn) with a tenor of 22 years.

A sovereign issuance will also automatically raise the profile of green bonds with other potential issuers and indirectly set good practice issuance processes and standards for the whole market. Issuance on behalf of sovereigns also opens the green bond market to a large share of institutional investors' portfolios allocated to sovereign debt.

Sovereign green bond issuance can also help boost national financial centres that are looking to position themselves as 'green hubs'. The French sovereign bond aimed to raise Paris' sustainable finance profile.

6. Capital mobilisation

As well as contributing public funds to low-carbon and resilient infrastructure projects, supporting the wider growth of the green bond market is one way for governments to catalyse private sector investments into low-carbon and climate resilient infrastructure.

It has been made clear that public funds will not be enough to cover the challenges posed by climate change and infrastructure demand over the next 15 years.[5] Mobilising private capital towards the "right" investments will be paramount.

Growing green bond markets can contribute to mobilising private capital towards infrastructure investments, connecting green projects with investor demand, and raising awareness around green project pipelines.

Further, sovereign green bond programmes can include financial incentives such as tax reliefs and subsidies for the development of low-carbon assets to crowd-in private investments in priority sectors.

7. International leadership

Sovereign green bonds provide a unique way for governments to take action on green finance and engage in cross-border collaborations. The G20 Green Finance Study Group, the Financial Stability Board's task force on Climate-Related financial disclosures and the European Commission's High-Level Expert Group on Sustainable Finance are a few examples of the green finance initiatives in the international arena.

Sharing experiences between developed and developing countries on sovereign issuances and encouraging cross-border capital flows are part of growing and connecting green bond markets. Green bond markets in developing countries can facilitate, where permitted, foreign investments into the development of local low-carbon industries by attracting the demand for green and yield from institutional investors in Europe, the United States and Japan.

In countries with underdeveloped capital markets, a green bond market agenda can put pressure on driving broader bond market reform. An active bond market can help reduce the cost of debt by enabling the refinancing of bank loans for infrastructure projects once the projects enter the operational phase and become less risky. Recycling debt to the capital markets also enables banks to generate fresh loan portfolios, allowing them to continue lending within their capital constraints.

Sovereign green bonds and wider climate and infrastructure policies

The aim of the green bond market is to facilitate investments in assets that support a rapid transition to a low-carbon and climate resilient economy – one that is in line with the global climate target of limiting warming to 2 degrees Celsius, as subscribed in the Paris Agreement.

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 bond issuance should be a complement to other government action on climate change and infrastructure, not an alternative. 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.

Sub-sovereign issuance

States and cities have been pioneering green bond issuance in the public domain. Some states, such as California, have gone as far as developing green bond strategies, 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 USD18.5 billion worth of green bonds as of August 30th 2017, accounting for xx% of the country's total issuance and 60% of sub-sovereign issuance globally. European sub-sovereigns are responsible for 30% of the global sub-sovereign market (USD8.8bn issued as of August 30th 2017), followed by Canada (USD2.1bn) and Australia (USD962m). See Section 3 for more details.

Seven steps to issue a sovereign green bond

The process of issuing a sovereign green bond is similar to that of issuing a standard green bond. 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.

1. Engage governmental stakeholders

Cross-collaboration between ministries is a central part of the sovereign green bond issuance process.

a. Setting goals for the green bond issue is the first step; this may come from the Ministry of Finance or other relevant ministries, such as the Ministry for Environment or Development.

b. Early engagement with the Ministry of Finance is essential given their budgetary and debt management responsibilities.

c. 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[6] is one way of organising the stakeholder engagement. Engagement can also include roundtables and bilateral dialogues.

Establish a green bond framework

A standard step for green bond issuers, this can also serve as a basis for national green bond guidelines. The purpose is to determine eligible sectors and establish a monitoring and reporting practice.

a. Determine eligible sectors

- In determining eligible green sectors, it is helpful to refer to existing science-based categorisations such as the Paris-compliant Climate Bonds Taxonomy and Standard (see Appendix A).
- It is recommended to consider how the selected sectors align with the country's wider climate policies, in particular Nationally Determined Contributions (NDCs).

b. Determine eligible types of expenditures in budget

- These could include 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

c. 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.[7]

d. Amend existing legislation if needed. 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.

3. Identify eligible green budget items

Key ministries (including energy, transport, water, agriculture, environment, development, etc.) identify eligible assets from their budgets.

a. 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.

b. Green assets and projects financed by green bonds can occur also outside the country of issuance,[8] to include cooperation and development projects overseas.

4. Arrange independent review

A credible independent review and verification provides investors with assurance of the green credentials of the bond. An external advisor can also support the identification of the green portfolio.

a. Options include a third-party certification against the science-based Climate Bonds Standard or a bespoke second-party opinion. The review/verification is carried out by a reputable science organisation/qualified consultancy firm.

5. Issue the green bond

The usual steps for a conventional sovereign bond issuance will apply here.

a. Supporting materials to promote the transaction can include a green bond prospectus, an investor presentation and an FAQ on green bonds.

b. 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.

c. Following the issuance, invest!

6. Monitor and report

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.

a. 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 bond market.

b. In nascent markets, the sovereign can set a precedent on good reporting practices through its framework.

7. Repeat

Not all eligible expenditures may be included in a first green bond. Once a green bond framework is set up, most issuers return to market, revealing the benefits of labelling the issuance as 'green'.

a. Some issuers opt for a programmatic approach, i.e. issue green bonds on an ongoing basis. The Climate Bonds Standard & Certification Scheme provides for programmatic certification, requiring one pre-issuance review and one yearly post-issuance review for all bonds issued during one year.

Innovation in the eligible portfolio of assets

Any bond-issuing entity with a portfolio of eligible green projects can issue a labelled green bond – green bonds are about green assets, not green entities.

The green bond market to date has largely focused on financing tangible green assets, such as wind farms, low-carbon buildings and railways through direct expenditures.

Sovereign green bonds have introduced indirect expenditures, such as subsidies and operational expenditures, into the mix. Poland's green bond framework includes expenditures in the form of "budget allocation" (for example for excise tax exemption for renewable energy) and subsidies for all eligible sectors. The French bond has for the large part gone to financing operational and subsidy and tax-related expenditures connected to the six eligible categories identified (see the next section for more details).

The inclusion of indirect expenditures in sovereign green bonds can be explained as a natural consequence of the role of central governments to create market-enabling conditions and catalyse private markets rather than only providing direct finance to projects.

Intangible assets, such as research and innovation, also appear more clearly in the sovereign bonds issued so far. These may be areas of investment that the private sector is less willing to undertake or they may include public goods, such as research and data collection. These can also have the effect of attracting private sector issuers to the market.[9]

Sovereign green bonds bring further innovation to the green bond market, which investors have final call on. The investor appetite for the sovereign green bonds from Poland and France suggest that investors were comfortable with this direction. The 2017 update of the Green Bond Principles – the industry process guidance on green bond issuance – now includes the related expenditures, such as R&D of green projects under its broad definition for green bonds use of proceeds.[10]

Avoiding double counting

Some market players are concerned that including indirect expenditures will lead to double counting of investments in green projects since these expenditures are not project-linked. This is not a practical issue of concern yet given the small size of the market. In the future, it could potentially be remedied by disclosure by green bond issuing entities that have received subsidies or tax credits (that have been marked as eligible in sovereign green bond issuances). Sovereign issuers can start taking some precautions to address this issue. Already for example, the French and Belgian sovereigns do not include expenditures that state-owned enterprises plan to include in their own green bonds. It is also good practice for corporate issuers to exclude portions of eligible projects that are receiving partial funding through other channels.

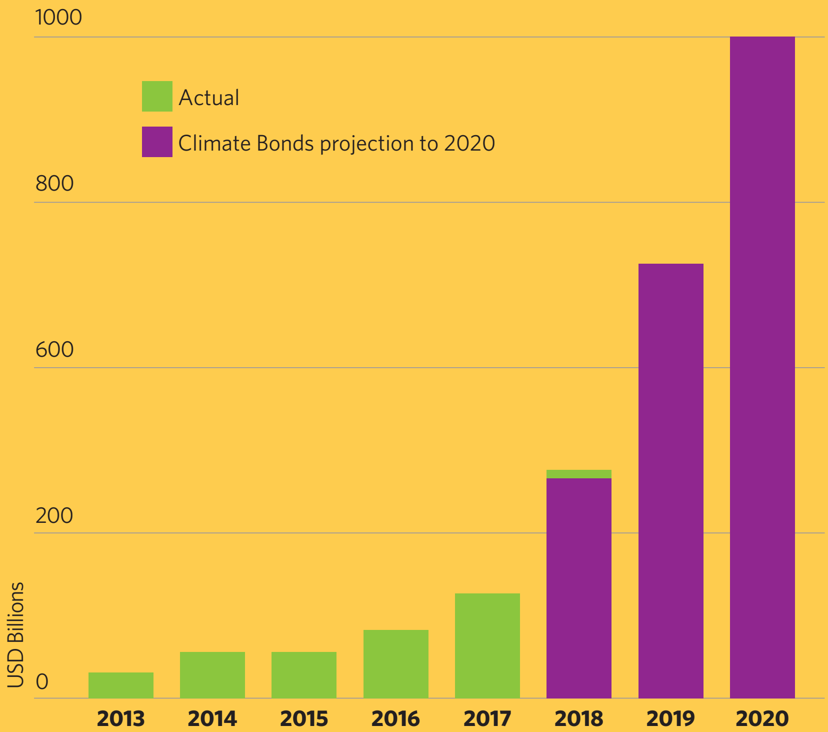
Scaling up the market to deliver impact

We expect to see more sovereign green bond issuances in the coming years, as an increasing number of countries has either expressed interest or started inquiries into a green sovereign issuance.

Sovereign green bonds will be an important component of achieving NDCs, along with the development of capital raising plans to achieve targets.

Accounting for a large share of the bond market, sovereign green bonds also have the potential to scale up the market to achieve meaningful issuance. Global climate leaders have recently set a milestone of USD1tn in green bonds by 2020 as one of the six urgent steps needed for a low-carbon transition and climate-resilient world to avoid the most immediate threats and severe consequences of climate change.

$ 1trillion a year of green bond issuance by 2020



Case studies Sovereign and Sub-sovereign issuers

Poland

Size: EUR750m (USD850m)
Date of issuance: December 2016
Tenor: 5 years
Proceeds: Mixed (33% energy, 33% en.eff., 33% sustainable land use)
External review: Sustainalytics

Key benefits

Strategic: Investments deriving from Poland's green bond are to help achieve Poland's National Renewable Energy Action Plan, targeting 15% renewable energy consumption by 2020, and the creation of carbon sinks through its National Programme for the Augmentation of Forest Cover.

Investor demand: The team behind the issuance from the Ministry of Finance reported that one of the main benefits from the issuance was investor diversification. The transaction attracted many new investors with green mandates that had not previously bought a Polish sovereign bond.

A strong orderbook encouraged the Ministry of Finance to increase the transaction to EUR 750m from 500m.

Mobilising capital: The sovereign green bond includes expenditures such as subsidise which support further investment from the private sector.

Steps to issuance

Preparation of relevant documentation, the independent verification and even changing the law to allow the 'earmarking' of funds to specific projects only took approximately one month – a short time for a debut issuance.

Engagement of government stakeholders: The green bond issuance was led by the Public Debt Department, with the collaboration of multiple departments in the Ministry of Finance, responsible for processing data from other Ministries and other Government Agencies.

Green Bond Framework:

- Six eligible sectors were identified: renewable energy, clean transportation, sustainable agriculture operations, afforestation, national parks, reclamation of heaps. The sectors are aligned with the broad categories included in the Green Bond Principles.
- Projects relating with the following sectors are excluded: fossil fuel for power generation and transportation, rail dedicated to transportation of fossil fuels, nuclear power generation, palm oil operations, production or provision of weapons/alcohol/gambling/adult entertainment, large scale hydro projects (>20MW), transmission systems where >25% of electricity transmitted is fossil-fuel generated, use of biomass in cogeneration coal plants.
- Eligible expenditures include budget allocations (including excise tax exemptions), subsidies and projects.
- The Polish Public Finance Act dated 27 August 2009 was amended to enable earmarking of funds to specific projects and proceeds to be credited to a separate 'Green Cash Account' and be disbursed to eligible projects over time.
- Unallocated proceeds will be held in accordance with the Treasury's normal liquidity management policy (cash, short term deposits, etc.).
- Payment of principal and interest are made from general funds, and are therefore not linked to the performance of the green projects.

Identification of eligible projects:

- Eligible expenditures will be approved by the State Treasury, represented by the Minister of Development and Finance and will depend on the alignment with eligible sectors, investment horizon, availability of information for reporting, other ESG/ external factors related to the agencies.
- Financing and re-financing of eligible projects is allowed.

Independent review:

- The State Treasury of Poland represented by the Minister of Development and Finance engaged Sustainalytics to provide a second-party opinion on its Green Bond Framework.
- According to Sustainalytics, Poland's green bond framework is a step towards achieving its objective of transitioning to a low-emissions economy. The proceeds of the bond will have clear positive environmental impacts and the framework report to be robust, credible and transparent. The crediting of proceeds to a separate account allows for clear segregation and tracking of green bond proceeds.

Bond issuance: The bond was issued in December 2016. A EUR 500m issuance was targeted, and finally upsized to EUR750m.

Monitoring and reporting:

- Annual reporting is provided to investors until full allocation of the bond on the amount allocated to various sectors, unallocated funds and examples of projects from each sector.
- Where possible, reporting on environmental and social impacts will also be included.

Repeat: The Government has raised a second bond for EUR1bn, with a tenor of 8.5 years and a coupon 1.125.

Mr. Piotr Nowak, Undersecretary of State, Ministry of Finance:

"It is always difficult to be the first and set a precedent. Poland decided to take a responsibility and did its very best to a close successful transaction. Now it can serve as an example to other Sovereigns that Governments can efficiently finance their environmental projects on green bond market."

France

Size: EUR7.5bn (USD7.6bn)

Date of issuance: January 2017

Tenor: 22 years

Proceeds: 14% energy, 33% energy efficiency, 20% transport, 3%waste, 23% sustainable land use, 8% adaptation

External review: Vigeo-Eiris

Key benefits

Strategic: The French Government issued the largest green bond issuance so far, marking its role as leader in the sustainable finance realm. France was the host and convenor of the historic 2015 Paris Climate Agreement and has been implementing several policies to support investment in its Energy and Ecological Transition for Climate (TEEC), creating a TEEC label for investment funds and mandating disclosure from investors to report on their exposure and management of ESG-related risks

Investor demand: Demand for the bond was high, with order books closing at above 23.5bn, leading the bond to be upsized from 3bn up to 7bn.

Pricing: According to media reports, the green OAT due in June 2039 priced at 13bp over the 1.25% May 2036 OAT.

Market creation: The French sovereign is the largest green bond issued globally, as well as the largest of the French market to date. The tenor is also above average.

Mobilising capital: The green OAT includes tax and intervention expenditures to mobilise private capital in green investments as well as direct investments

International: Following a successful issuance and to show continuance of France's ambitions to lead in sustainable finance, newly elected President Macron is holding a Climate Summit to mark the 2-year anniversary of the Paris Climate Agreement.

Steps to issuance:

Engagement of governmental stakeholders: the French sovereign green bond was an initiative of the Ministère d'Écologie and soon became a joint venture with the Trésor, with the involvement of the Environment, Agriculture, Research and Investment Ministries, alongside the support of President Hollande.

Green Bond Framework

- Proceeds will be allocated to projects that target climate change mitigation, biodiversity protection, climate change adaptation and pollution control. Six eligible sectors have been identified, compliant with the TEEC label[11]: energy, transport, buildings, natural resources, adaptation, pollution control.
- Six eligible asset types within the sectors have also been identified, which include tangible assets (real estate, land, infrastructure) and intangible assets (systems and organisation, applied research and innovation, scientific knowledge).
- Eligible expenditure types include operating (33%), tax (33%), intervention[12](27%) and investment (7%) expenditures.
- Investments that other French agencies could refinance by Green Bond issues (e.g. SNCF issues its own bonds) and State investments that are already financed by a dedicated source (e.g. subsidies to renewable energy) are excluded.
- Tracking of allocation is carried out by the Ministry of Finance.
- Expenditures from the previous year, current year and potentially future years are included; the percentage of allocation is disclosed.[13]

Identification of eligible projects

- An inter-ministerial group with representatives from the Ministries of Finance, Environment, Agriculture, Research and Investment undertakes the Eligible Green Expenditure selection. The group is coordinated by the Ministries of Finance and Environment, under the supervision of the Prime Minister.
- Each ministry is responsible for identifying eligible assets within its programmes, leveraging existing budgetary processes.
- All expenses related to nuclear, military or fossil fuels are excluded.

Independent review

- The French Treasury commissioned Vigeo Eiris to provide an independent opinion on the sustainability credentials and management of the Green OAT.[14]
- Vigeo Eiris attributed the highest level of assurance on the sustainability of the OAT.

Bond issuance: The bond was issued as a regular French Treasury bond (OAT). A 3bn issuance was targeted and was upsized to 7bn due to high investor demand.

Monitoring and reporting: The Government committed to three types of reporting:

- Annual reporting to investors on allocation of proceeds, until the complete allocation of bond proceeds. This is reviewed by an audit firm.
- Annual reporting on the performance of the green expenditures based on the current performance assessment of public expenditures (e.g. numbers of households benefitting from tax credits for retrofitting).
- Ex-post impact reporting on environmental impact of green bond, prepared by a Green Bond Evaluation Council (e.g. avoided GHG emissions, improvement of air quality, etc.)

Repeat: The bond was tapped twice in 2017 to reach EUR9.7bn (USD10.7bn).

Jean Boissinot, Direction Générale du Trésor, French Treasury:

"The green bond market from our perspective is more a means to an end than an end in itself, and actually there are two ends, the first one is that we are bringing in the fixed income market a very powerful tool to raise new questions and raise the level of engagement around climate change, and the second one is about financing the low-carbon transition which is what it is all about."

Belgium

Size: EUR4.5bn
Date of issuance: February 2018
Tenor: 15 years
Proceeds: Low-carbon transport, energy efficiency renewable energy, circular economy, and living resources and land use.
External review: Sustainalytics

Key benefits

Strategic: The sovereign green bond has two primary strategic aims for Belgium: raise capital for implementing its climate and environmental policies, and supporting the development of the green bond market, especially in Belgium. Other strategic benefits cited by the Belgian government include supporting economic growth and employment in strategic green sectors and investor base diversification.

Investor demand: Investor demand was strong with an order book of EUR12.7bn that included 150 investors.

The majority of investors were in the Eurozone (53%) followed by non-Eurozone EU countries, in particular Scandinavia and the UK (23%). Asia accounted for 12%, other Europe 9%, the US 3% and Middle East less than 1%.

Pricing: On the back of the strong order book, Belgium's green bond achieved a 2.5bp discount compared to a regular OLO with the same maturity. The Finance Minister declared the competitive pricing result in annual savings of 1.125 million euros.

> **Johan Van Overtveldt,** finance minister**:**
> *"We were confronted with investors showing an overwhelming interest in our green bond… The Agency obtained a competitive pricing for this green OLO…the green bond results in an annual savings in interest expenses of 1.123 million euro"*

International collaboration: Belgium's proposed expenditures include support for international environmental cooperation through the Green Climate Fund and similar programmes to support credible climate change adaptation and mitigation efforts.

Steps to issuance

Engagement of government stakeholders:

The interest of raising a green bond came from several departments in the Government. The deal had the explicit support of prime minister Charles Michel and finance minister Johan Van Overtveldt, and was formally announced by the prime minister at the One Planet Summit in December 2017.

Green Bond Framework

- Belgium's Green Bond Framework aligns with its environmental commitments and policies by focusing on climate change mitigation and adaptation (96% of available eligible green expenditures), natural resource protection (3%) and biodiversity (1%).
- Five eligible green sectors are included in the framework: Energy Efficiency; Clean Transportation; Renewable Energy (excluding large hydro projects that exceed 25MW); Circular Economy; and Living Resources and Land Use.
- The Framework excludes nuclear, armament and any expenditure mainly related to fossil fuel.
- Eligible Green Expenditures include investment expenditures (66% of available eligible green expenditures), operating expenditures (26%) and tax expenditures (8%).
- Eligible Green Expenditures can be directed towards state agencies, regions and communities, companies and households. 88% of identified eligible expenditures are operated by public agencies, with corporates accounting for the remaining 12%. To avoid double counting, Eligible Green Expenditures will exclude any expenditure to a Belgian agency or a local authority planning to use it for issuing its own green bonds.
- Proceeds can be used for expenditures in the current budget, expenditures from the budget the year preceding the green bond issuance/tap date, and investments in green investment funds made maximum 2 years before the issuance/tap date.

Identification of eligible projects

- An Inter-Ministerial Working Group, coordinated by the Ministry of Finance, the Belgian Debt Agency, the Minister of the Environment and the Prime Minister, will annually select Eligible Green Expenditures by screening the budget.
- The Inter-Ministerial Working Group will request each relevant ministry to confirm the eligibility of selected projects.

Independent review

- A second opinion on the Green Bond Framework was commissioned from Sustainalytics and is publically available on the Belgian Debt Agency's website.
- Sustainalytics views the framework positively and in line with international best practices for use of proceeds and disclosure and with the issuer's strong sustainable development strategy.

Bond issuance: Belgium's sovereign green bond was issued in February 2018 after a two-week pan-European roadshow.

Monitoring and reporting:

- The Ministry of Finance and the Belgian Debt Agency will coordinate and publish an annual report online. The report will cover allocation of proceeds, broken down by eligible green sector and type of expenditure.
- An independent audit firm will annually review the allocation of the proceeds report.
- Separately, an environmental impact report will be coordinated and published by the Minister of the Environment the year after issuance.

Repeat: FThe Belgian Debt Agency declared the EUR4.5bn sovereign green bond is expected to grow to EUR10bn within four years.

Nigeria

Size: NGN10.69bn (USD29.7m)

Date of issuance: December 2017

Tenor: 5 years

Proceeds: Renewable energy (solar) (81%) and afforestation (19%). 100% of proceeds allocated to new projects. External review: Climate Bonds Certified. DNV GL verified against the Climate Bonds Standard.

Key benefits

Strategic: The green bond commits to the deployment of federal funds for new projects that help Nigeria meet its climate commitments and start diversifying its economy from oil-based revenues.

Market expansion: Nigeria is the first African nation to issue a sovereign green bond. It is also the first Climate Bonds Certified sovereign bond.

Visibility: The green sovereign issuance gives a strong signal to local market players and international ones that Nigeria is committed to diversifying its economy and green projects will be developed.

Steps to issuance:

Engagement of governmental stakeholders:

- Ministry of Environment Amina Mohammed initiated the green bond process in 2016; in September 2016, Nigeria's president formally announced the issuance plans during the signing of Nigeria's official climate targets (NDC).
- A Green Bond Advisory Group was established by the Ministry of Environment and the Ministry of Finance to ensure access to a broad range of relevant expertise from the public and the private sector, and local and international markets participants, including the Climate Bonds initiative.

Green Bond Framework

- Proceeds of green bond issuance will be allocated to eligible projects, defined as projects that promote the transition to low-emission economy and climate resilient growth.
- Eligible projects categories include: Mitigation – energy efficiency, resource efficiency, improved electricity grid, renewable energy and clean technology. Adaptation – sustainable forest management.
- Within each of these categories, the projects have to be in line with Nigeria's NDC targets.
- The share of proceeds used for refinancing and new projects will be disclosed.
- Proceeds will be credited to the Green Bond Proceeds Account at the Central Bank of Nigeria (CBN). For each projects, amounts will be transferred to project-specific sub-accounts.

Identification of eligible projects

- The Nigeria government budget is screened for eligible projects based on budget documents and Ministry of Environment Green Bond Guidelines.
- The Green Bond Program Technical Advisory Team and an Inter-Ministerial Committee on Climate Change, made up of representatives from the Ministry of Power and the Ministry of Environment, assess the proposed eligible projects.
- The Green Bond Advisory Group assesses the potential Eligible Green Expenditures.
- The Ministry of Finance makes a final selection of eligible expenditures based on the following criteria: Alignment with Eligible Sectors, investment horizon, alignment with the disclosed development plan at the time, economic impact (e.g Economic Rate of Return, jobs created), GHG emissions reduction, information ability to facilitate reporting, other ESG/external factors related to the agencies/organizations.

Independent review

- DNV GL verified certification against the Climate Bonds Standard.
- Moody's Investors Service has assigned a Green Bond Assessment of GB1 (Excellent) to the issuance.

Bond issuance: Nigeria's sovereign green bond was issued in December 2017 following road shows in Abuja and Lagos. The bond is listed on the Nigerian Stock Exchange (NSE).

Monitoring and reporting:

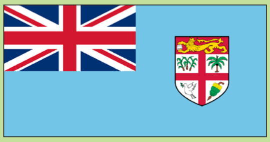
- The Ministry of Environment, supported by the Ministry of Finance, will report bi-annually on their website.
- Reporting will include: Aggregate amount allocated to the various Eligible Sectors, remaining balance of funds, which have not yet been utilized, examples of projects from each Eligible Sector, subject to confidentiality disclosures, and environmental impact of the projects. Social impact will also be disclosed where appropriate.
- Details of investments in specific projects will be included in the reporting.
- The Central Bank of Nigeria will also provide periodic report on the green bond account and the use of proceeds.

Repeat: Following the success of their first issuance, Nigeria aims to issue N150bn (US$420m) of green bonds in 2018. This is the full size of the green bond programme approved in the country's budget plans.

The Honourable Minister for State for Environment, **Ibrahim Usman Jibril:**

"Climate Change is real, and business, government and the capital market need to work together to slow its effects. This pilot green bond, which we expect to be the first of many more, has developed the platform to address the nation's target of reducing its emissions by 20% unconditionally and 45% conditionally by 2030."

Fiji



Size: FJD100m (USD50m)

Date of issuance: October 2017

Tenor: 5 years and 13 years (two tranches)

Proceeds: Renewable energy, low-carbon transport, sustainable water supply

External review: Sustainalytics

Key benefits

Strategic: Green bond issuance is part of Fiji's strategy to transition to a low carbon and climate-resilient economy, in line with its Green Growth Framework and 5-Year and 20-Year National Development Plan.

Mobilising capital: The sovereign green bond includes expenditures such as tax exemptions and tax credits and subsidies which support further mobilisation of private sector capital for green investments.

International: Fiji is the first developing country to issue a sovereign green bond and also the first amongst the island states, which are most vulnerable to extreme weather events caused by climate change. The Fijian bond was issued during the country's presidency of COP23.

Steps to issuance

Engagement with government stakeholders: The process is being led by the Ministry of Economy and Reserve Bank of Fiji, with the involvement of other ministries as relevant, and with strong support from the Prime Minister and President of COP23 Frank Bainimarama.

Green Bond Framework:

- Eligible projects include: renewable energy and energy efficiency, resilience to climate change, clean and resilient transport, pollution reduction, water efficiency and wastewater management, sustainable management of natural resources and eco-efficiency
- Eligible expenditures include investments, operational expenditures, tax exemptions and tax credits, guarantee schemes and subsidies. To avoid double counting they may not finance a project that already has a dedicated source of funding.
- Eligible expenditures can relate to tangible assets such as land, power plants and other infrastructure, as well as supporting related expenditures such as research and innovation.
- A Green Bond Steering Committee, consisting of regulators and representation from the Ministry of Economy, the Office of the Attorney-General and environmental experts will oversee the Green Bond implementation and allocation process as set out in the Framework.
- The Ministry of Economy will open a separate, 'ring-fenced' sub-account to receive proceeds from the green bond issuances and will be responsible for tracking eligible expenditures.

Identification of eligible projects:

- The project identification process is managed by the Director of Climate Change, Ministry of Economy, who is responsible for coordinating with other ministries to verify eligibility of projects.

Independent review:

- The Republic of Fiji engaged Sustainalytics to provide a second opinion on its Green Bond Framework. Sustainalytics found the Framework to be credible and transparent and aligned with the four pillars of the 2017 Green Bond Principles.
- Sustainalytics recommends a minimum performance improvement threshold for certain projects such as for energy efficiency (e.g. 30%) and also recommends more granular impact reporting through selected impact indicators.

Bond issuance: The bond was issued with the assistance of the World Bank and IFC as part of a broader Capital Markets Development Project.

Monitoring and Reporting:

- A webpage will be created on the Reserve Bank of Fiji website for investors to be up to date on Fiji's Green Bond Programme and Framework and access status reports on the selection and implementation of the projects
- Annual reporting on the use of proceeds allocation and output of the selected projects will be carried out until all bond proceeds have been allocated. An annual assurance report from a third party auditor will confirm that proceeds allocation.
- Impact reporting will be carried out annually, by using metrics such as avoided GHG emissions, improvements in air quality, recycling efficiency, etc. and be overseen by the Green Bond Steering Committee.

Frank Bainimarama, Fijian Prime Minister and President of COP23:

"The Fijian people, along with every Pacific Islander, live on the front lines of climate change and we are proud to set an example to other climate-vulnerable nations by issuing this green bond to fund our work to boost climate resilience across Fiji. By issuing the first emerging country green bond, we are also sending a clear signal to other nations that we can be creative and innovative in mobilizing funds and create win-win outcomes for countries and investors in adapting to the serious effects of climate change."

Indonesia (green sukuk)

Size: USD1.25bn

Date of issuance: February 2018

Tenor: 5 years

Proceeds: Renewable Energy, Energy Efficiency, Resilience To Climate Change/Disaster Risk Reduction, Sustainable Transport, Waste To and Waste Management, Sustainable Management of Natural Resources, Green Tourism, Green Buildings, Sustainable Agriculture.

External review: CICERO

Key benefits

Strategic: The green sukuk issuance supports Indonesia in implementing its climate change mitigation targets, as set out in its Nationally Determined Contributions (NDCs), as well as its climate adaptation plan, which is integrated in the National Development Plan. The green sukuk utilizes a budget tagging process, which identifies climate change mitigation expenditures under six ministries. The process is being expanded to cover both climate change mitigation and adaptation expenditures under 17 ministries.

Investor demand: Green sukuk tap into dual investor bases, Islamic investors and green investors. According to media reports, the green sovereign sukuk saw extraordinary demand. Islamic investors received a 32% allocation, and 33% went to U.S. and European investors.

Pricing: The strong demand led to pricing being tightened by 30bps, reducing the yield to 3.75 per cent.

Market expansion: Indonesia's sukuk issuance is the first green sovereign sukuk globally. It's the second country to issue green sukuk following several green sukuk issuances in Malaysia in 2017.

International: The green sovereign sukuk establishes Indonesia as a leading player in South-East Asia on green finance and helps build the green sukuk market in the region. Attracting international investment will help Indonesia implement their infrastructure expansion plans and climate targets.

Steps to issuance

Engagement with government stakeholders: The Finance Ministry led the process and tested the idea with investors in January 2018. The budget tagging process in place since 2015 facilitated the involvement of other ministries.

Green Bond and Green Sukuk Framework:

- Eligible projects are projects that promote the transition to a low-emission economy and climate-resilient growth, including climate mitigation, adaptation, and biodiversity.
- These will fall into the following sectors: Renewable Energy, Energy Efficiency, Resilience To Climate Change/Disaster Risk Reduction, Sustainable Transport, Waste To and Waste Management, Sustainable Management of Natural Resources, Green Tourism, Green Buildings, Sustainable Agriculture.
- Eligible green projects exclude fossil fuel-based electric power generation, large scale (>30MW capacity) hydropower plants and nuclear assets.
- The proceeds of the Green Sukuk can be used both for the financing and/or refinancing of eligible green projects. If part of the proceeds is used for refinancing the share of proceeds used for refinancing and new financing will be disclosed.
- The proceeds will be managed within the Government's general account until proceeds are transferred to one of the relevant ministries, into a account of the relevant ministries for funding exclusively eligible projects.
- Unallocated proceeds will be held in cash.
- The Framework can be used for both green bond and green sukuk issuance. A register will be established to record the allocation of each Green Bond or Green Sukuk proceeds.
- The framework aligns with the Green Bond Principles, the ASEAN Green Bond Standards, and Indonesia's Financial Services Authority's green bond regulations.

Identification of eligible projects:

- Eligible green sukuk projects are selected from expenditures in ministry budgets that are tagged to have climate change benefits in line with Indonesia's climate objectives.
- The budget tagging process starts with the environmental benefits of each project being assessed by the individual ministries together with the Climate Change Secretariat of the National Development Planning Agency. The Ministry of Environment and Forestry confirms that the expenditure is consistent with Indonesia's NDC, and then endorsed by the Ministry of Finance as tagged for budget allocation.
- From the tagged expenditures, the Ministry of Finance will select items that are covered by the Eligible Sectors set out in the Green Bond and Sukuk Framework, and that have a project development timeline consistent with the tenor of the green sukuk.

Independent review:

- The Framework was reviewed by CICERO.
- The Framework received a Medium Green shading, as it includes a broad range of projects to support its NDC, allowing for light, medium and dark green project types.

Bond issuance: The green sukuk was issued in February 2018 reaching a size of USD1.25bn.

Monitoring and Reporting:

- Tracking and monitoring of the environmental benefits of the green projects will be done by the respective ministries and reported to the Ministry of Finance.
- The Ministry of Finance will prepare and publish an annual report on their website. The report will contain at minimum a list and brief description of projects financed by the green sukuk, the amount allocated to each project and an estimation of the beneficial impacts of the projects, such as emissions reductions.
- An independent third party will provide assurance on the annual report.

Examples of sub-sovereign issuances

Victoria, Australia

Size: AUD300m (USD225m)

Date of issuance: July 2016

Tenor: 5 years

Proceeds: Mixed (7% renewable energy, 13% en.eff., 80% low carbon transport, 0.5% water)

External review: Climate bond certified; verification carried out by DNV GL

Treasury Corporation Victoria worked with DNV GL has established a green bond framework compliant with the Climate Bonds Standard. The framework includes 5 project categories

- Renewable energy (e.g. solar and wind generation plants)
- Low carbon buildings (e.g. energy efficiency improvements)
- Low carbon transport (e.g. new metro tunnel)
- Water (e.g. wastewater biogas recovery)
- Hydropower

Issuance fully subscribed in a little over 24 hours (is this unusual??)

First state or federal government-issued bonds anywhere in the world to receive international Climate Bond Certification

California, United States

Size: USD300m

Date of issuance: October 2014

Tenor: 23 years

Proceeds: Mixed (97% air pollution reduction, 1.2% water, 1.8% biodiversity and conservation)

External review: Climate Bond Certified; verification carried out by DNV GL

The State Treasurer's Office worked with the Department of Finance to define projects categories eligible for financing.

- Air Pollution Reduction (E.g.: Air pollution control for heavy duty trucks)
- Clean Water and Drinking Water (E.g.: Water treatment plant)
- Energy Efficiency and Conservation Projects in Public Buildings
- Protection of Rivers, Lakes, and Streams. (E.g.: Tidal restoration project)
- Protection of Beaches, Bays, and Coastal Waterways
- Forest and Wildlife Conservation, and Open Space Protection
- Flood Prevention
- Sustainable Communities and Climate Change Reduction

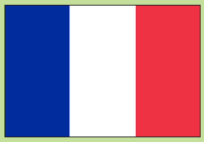
The Climate Bonds Initiative reviewed the State's expenditure plans to identify green expenditure for the green bond issuance.

North-Rhine Westphalia, Germany

The State of North-Rhine Westphalia has issued 3 sustainability bonds, increasing the deal size with every issuance: EUR750m bond was issued in March 2015, followed by a EUR1.6bn transaction one year later and finally a EUR1.825bn in February 2017. All bonds were externally reviewed by Oekom Research.

- The proceeds of the bond are invested in:
- Education and sustainability research
- Inclusion and social coherence
- Public transport and local mobility
- Protection of natural resources
- Sustainable urban development
- Modernisation of educational and public health facilities

Île-de-France, France



Île-de-France issued 4 bonds, the first one a EUR350m bond, in 2012. The subsequent three bonds have been between EUR50mm and EUR650m, with second opinions from CICERO and Vigeo Eiris with a 12-year tenor on average.

Île-de-France has established a project framework for green and sustainability bonds, which defines seven Sustainability Projects categories. This framework was implemented for all four issuances (2012, 2014, 2015, 2016).

- Buildings and facilities (e.g. Construction and renovation of schools and sports complex)
- Public transport and sustainable transportation (e.g. Public transport and infrastructure)
- Renewable energy and energy-efficiency (e.g. Geothermal energy policy)
- Biodiversity (e.g. Green space development)
- Social initiatives aimed at helping vulnerable population groups (e.g. Medical centres)
- Social housing (e.g. Construction of housing units and thermal rehabilitation)
- Economic and socially inclusive development (e.g. Creation of incentive programme for sustainable development)

Appendix A: Climate Bonds Taxonomy

Climate Bond Certified

- Certification Criteria approved
- Criteria under development
- Due to commence

ENERGY	TRANSPORT	WATER	LOW CARBON BUILDINGS	INFORMATION TECHNOLOGY & COMMUNICA-TIONS	WASTE & POLLUTION CONTROL	NATURE BASED ASSETS	INDUSTRY & ENERGY-INTENSIVE COMMERCIAL
Solar	Rail	Built (grey) infrastructure	Residential	Power management	Recycling facilities	Agricultural land	Manufacturing
Wind	Vehicles	Green and hybrid infrastructure	Commercial	Broadband	Recycled products & circular economy	Forests (managed and unmanaged)	Energy efficiency processes
Geothermal	Mass transit		Retrofit	Resource efficiency	Waste to energy	Wetlands	Energy efficiency products
Marine Renewable Energy	Bus rapid transport		Products for building carbon efficiency	Teleconferencing	Methane management	Degraded Lands	Retail and wholesale
Hydropower	Water-bourne transport				Geosequestration	Other land uses (managed and unmanaged)	Data centres
Bioenergy	Alternative fuel Infrastructure					Fisheries and aquaculture	Process & fugitive emissions
Energy distribution & management						Coastal infrastructure	Energy efficient appliances
Dedicated transmission							Combined heat & power

Appendix B: Climate Bonds Certification

1 Issuer begins by preparing the bond

- Identify assets that meet the relevant sector criteria and compile supporting information
- Create Green Bond Framework setting out how proceeds of the bond will be used

2 Engage a verifier

- Engage an Approved Verifier for pre- and post-issuance Certification
- Provide them with relievant information
- Receive a Verifier's Report giving assurance that Climate Bonds Standard requirements are met

3 Get Certified & issue a Certified Climate Bond

- Submit the Verifier's Report and Information Form to the Climate Bonds Initiative
- Receive a decision on pre-issuance Certification
- Issue your bond, using the Certified Climate Bond mark

4 Confirm the Certification post-issuance

- Within 12 months of issuance, submit the Verifiers post-issuance report
- Receive notification of post-issuance certification

5 Report annually

- Prepare a simple report each year for term of the bond
- Provide it to bond holders and Climate Bonds Initiative

1. "A greener hue to European sovereigns", Institutional Investor, April 2017.
2. There is evidence of unmet demand for green bonds in the EUR and USD markets.
3. http://in.reuters.com/article/france-bonds/france-launches-7bn-debut-green-bond-idINL5N1FE351
4. https://www.climatebonds.net/files/files/Greenbond_Pricing_Jan_16-March_17.pdf
5. [REFERENCE] http://www.mckinsey.com/industries/capital-projects-and-infrastructure/our-insights/bridging-global-infrastructure-gaps; http://newclimateeconomy.report/2014/
6. This was the case in Nigeria where the Green Bond Private-Public Sector Advisory Group was set up by a joint initiative of the Ministry of Environment and Ministry of Finance to advice and guide the first tranche of sovereign green bonds.
7. Climate Bonds Initiative, 2017: Post-issuance reporting in the green bond market
8. For example, the first French sovereign green bond includes some projects located in Europe, outside of France.
9. Some supranationals, given their role as development agents to catalyse markets, have already been including similar assets in their green bond definitions. The Common Principles for Climate Mitigation Finance Tracking for example, developed by a group of multilateral development banks and the International Development Finance Club, include indirect expenditures such as technical assistance and support for policy development leading to climate change mitigation, education, training and capacity building around climate change and intangible assets such as R&D in low-carbon technologies.
10. The international voluntary guidelines that have emerged since the market's inception- the Green Bond Principles and the Climate Bonds Standard- are reviewed and updated every year as the market evolves.
11. The TEEC label was created in 2015 for mutual funds and aims to screen climate-friendly investment funds. This label guarantees that investments are going to activities in line with the green economy and that the environmental information supplied is being transparent and of quality. The Climate Bonds Taxonomy and Green Bond Principles were both used as references for the label.
12. These include payments to households (e.g. children benefits, etc.), enterprises (e.g. subsidies for employment) and other subsidies to special entities.
13. The first French green sovereign allocated more than 50% of the proceeds to current and future investments
14. For further detail see https://www.icmagroup.org/Regulatory-Policy-and-Market-Practice/green-social-and-sustainability-bonds/green-bond-principles-gbp/

This report was prepared by the Climate Bonds Initiative.

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The Climate Bonds Initiative would also like to thank the Polish Ministry of Finance, the French Treasury, the Nigerian Ministry of Environment and Mr Nick Robins for their input to the publication.

"The priority is to accelerate green finance and climate investment between now and 2020 at a scale never seen before. Funding clean energy and green infrastructure to meet NDC goals is the objective. $1tr in green finance by 2020 is the performance measure."

Christiana Figueres,
Former UN Climate Chief

Climate Bonds Initiative

Prepared by Climate Bonds Initiative.