



Green Bond Impact Report

Fiscal Year 2015

Green Bond Impact Report (2015)



FY15 Highlights

In the fiscal year 2015 (“FY15”), IFC issued 18 Green Bonds in the cumulative amount of \$352 million. IFC’s Green Bond program was launched in April 2010 and has raised about \$3.8 billion to date.

During the year, IFC committed to a total amount of \$1.15 billion across 38 new projects as well as an additional commitment to a project from the previous year.

Green bond disbursements during the fiscal year amounted to \$956 million, of which \$572.7 million was disbursed to the newly committed 38 projects and \$383.3 million to prior commitments.

Launched 2010

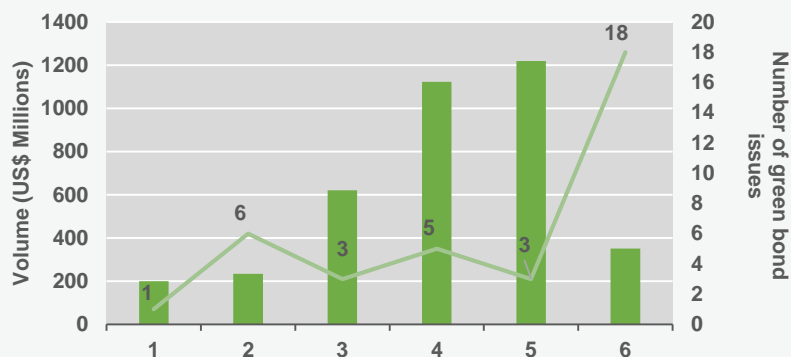
Raised \$3.8 billion to date

FY15: 18 Green Bonds issued raising \$352 million

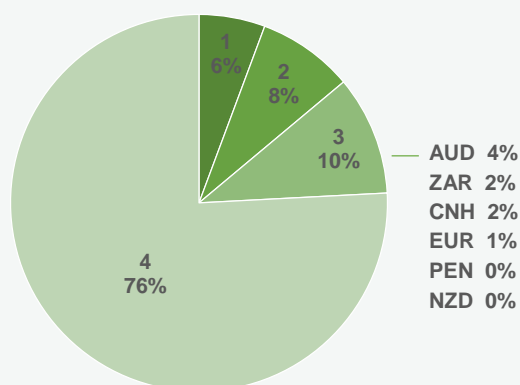
FY15: 38 newly committed projects

Program to Date (FY10-FY15)

IFC Green Bond Issuance by Fiscal Year



IFC Green Bond Issuance by Currency



FY15 Green Bond Program

IFC Green Bond Issuance in FY15

Volume*	\$352 million
Number of issues*	18
Weighted average life	5.74

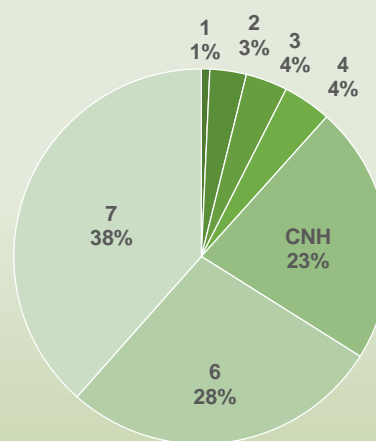
Outstanding volume

The total outstanding Green Bond volume was approx. \$1,760 million as of June 30, 2015.

Currencies of issuance

Major currencies of issuance were US dollars and Brazilian real. For the first time, IFC issued Green Bonds denominated in Chinese renminbi, Peruvian soles, and New Zealand dollars.

IFC Green Bond Issuance by Currency in FY15



Green Bond eligible projects: evaluation and selection

Eligible Projects are selected from all Climate Projects funded, in whole or in part, by IFC which comprises projects that meet IFC Definitions and Metrics for Climate-Related Activities¹. Only loan portions of the projects are eligible for funding via Green Bond proceeds (equity investments and guarantees are ineligible).

Proceeds from IFC's Green Bonds are allocated to a special sub-portfolio that is linked to lending operations for Climate-Related Projects ("Eligible Projects"). As long as there is a positive balance in the sub-portfolio, it is reduced by amounts matching disbursements made in respect of Eligible Projects.

As with all IFC projects, Green Bond financed projects comply with IFC's Performance Standards for environmental and social issues and IFC's Corporate Governance Framework. Projects eligible for Green Bond financing include the following investments²:

- **Energy efficiency (EE)**
investments in equipment, systems and services which result in a reduced use of energy per unit of product or service generated, such as waste heat recovery, cogeneration, building insulation, energy loss reduction in transmission and distribution;
- **Renewable energy (RE)**
investments in equipment, systems and services which enable the productive use of energy from renewable resources such as wind, hydro, solar and geothermal production;
- **Resource efficiency**
investments to improve industrial processes, services and products that enhance the conversion efficiency of manufacturing inputs (energy, water, raw materials) to saleable outputs, including reduction of impact at source;
- **Cleaner technology production**
investments in manufacturing of components used in energy efficiency, renewable energy or cleaner production, such as solar photovoltaics, manufacture of turbines, building insulation materials; and
- **Sustainable forestry**

Management of proceeds

All proceeds from IFC Green Bonds are set aside in a designated Green Cash Account and are invested in accordance with IFC's conservative liquidity policy until disbursement to Eligible Projects. Disbursement requests for Eligible Projects take place in accordance with IFC's established policies and procedures and are often made over a period of time depending on project milestones etc.

In some cases, the climate-related component of a project supported by Green Bonds may be a part of a larger investment. In such cases, the Green Bond portfolio only finances the eligible portion of the project.

Monitoring of the projects comprises regular reports by the investee company on project activities and performance throughout the lifetime of investment.

¹ Please see ifc.org/climatemetrics for more information.

Reporting

IFC has been actively participating in publishing Green Bond Principles, a voluntary set of transparency and disclosure guidelines, and IFC is a member of a working group of multilateral development banks designing a harmonized reporting framework on projects to which green bond proceeds are allocated. This report follows the guidelines of the harmonized reporting framework which aims at ensuring integrity of the market through increased transparency.

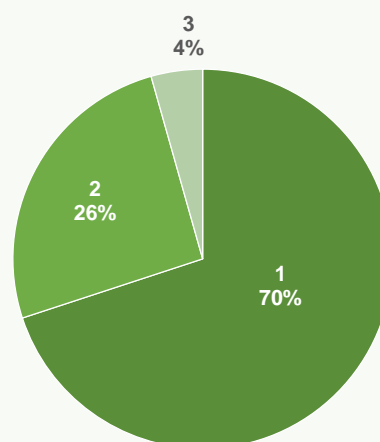
The report covers commitments and disbursements under Eligible Projects. Note that this analysis does not cover the entire IFC climate business portfolio, but only projects eligible for Green Bond financing. For more on IFC's overall climate business investments and the sectors we support, please see ifc.org/climatebusiness.

For comparison purposes, data for FY14 was included as well. Charts are for FY15 only.

A. Commitments by Sector

	FY14	FY15
	<i>US\$ million</i>	
RE	756	808
EE	94	296
Other	86	51
Total	936	1,155

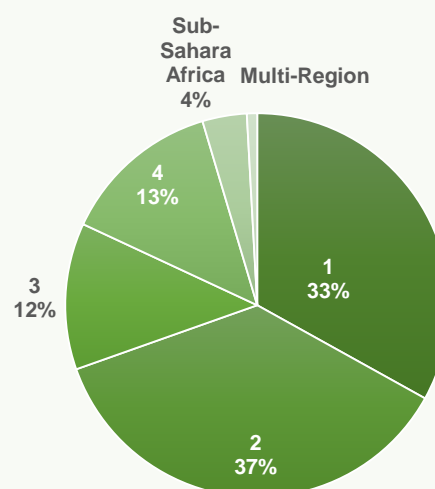
FY15 Commitments by Sector



B. Commitments by Region

	FY14	FY15
	<i>US\$ million</i>	
Europe and Central Asia	178	382
Latin America and the Caribbean	618	422
Middle East and North Africa	55	143
South Asia	62	155
Sub-Saharan Africa	23	43
Multi-Region		10
Total	936	1,155

FY15 Commitments by Region



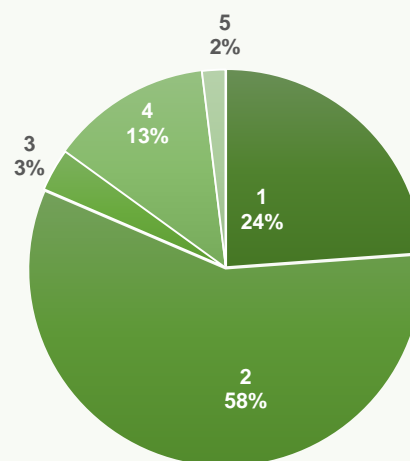
Reporting

C. Disbursements

	FY15
US\$ million	
Europe and Central Asia	228
Latin America and the Caribbean	551
Middle East and North Africa	34
South Asia	125
Sub-Saharan Africa	18
Total	956

Disbursement figures include projects committed in FY14 and FY15.

FY15 Disbursements



D. Impact reporting

The table below illustrates the expected climate results from projects funded, in whole or in part, with Green Bond proceeds in FY15. IFC reports on a number of core indicators for projects included in the Green Bond program in accordance with a harmonized framework for impact reporting developed by a group of multilateral development banks including IFC³. The four core indicators¹ are as follows:

1. Annual energy savings,
2. Annual Greenhouse Gas (GHG) emissions reduced or avoided,
3. Annual renewable energy produced,
4. Capacity of renewable energy plant(s) constructed or rehabilitated.

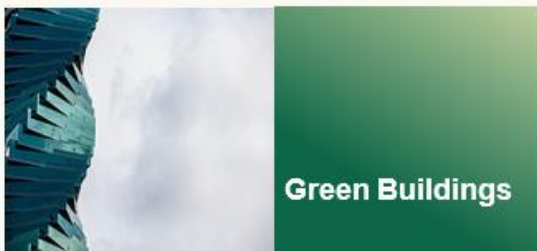
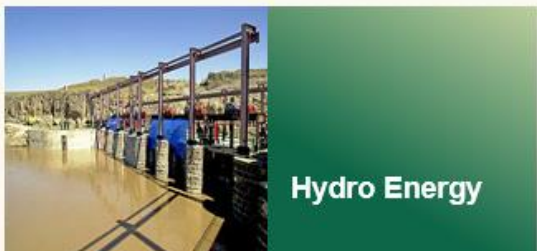
The following section lists 38 Eligible Projects that were committed in FY15. The projects are organized by country and are categorized as renewable energy, energy efficiency and other climate investments (e.g. sustainable forestry).

Note that all impact measures are calculated on ex ante basis. As mentioned earlier, IFC tracks project results throughout the project cycle until project closure.

³ Refer to www.ifc.org/greenbonds for more information on the harmonized impact reporting framework

Impact Assessment: Green Bond eligible projects committed in FY15ⁱⁱ

The following section lists 38 Eligible Projects that were committed in FY15. The projects are organized by country and are categorized as renewable energy, energy efficiency and other climate investments (e.g. sustainable forestry).



Impact Assessment: FY15 Green Bond eligible projects

	Project Name	Project Description	IFC Green Bond Eligible Use of Proceeds			Target Results			
			Type	Climate Loan Committed	Climate Loan Disbursed	Annual energy produced	Annual energy savings	Renewable energy capacity constructed/rehabilitated	Annual GHG emissions reduced/ Avoided**
				\$ million	\$ million	MWh	KWh	MW	Tons of CO2 equivalent

Solar Energy

1	Abengoa CSP Xina	South Africa: construction of a 100 MW concentrated solar power plant to improve energy access.	RE	43.1	-	351,133	n/a	100	294,874
2	Acme Solar NSM 1	India: The funding package aims to increase solar power generation and alleviate India's power gap.	RE	6.4	5.7	38,536	n/a	20	28,516
3	Acme Solar NSM 2		RE	6.4	5.7	38,536	n/a	20	28,516
4	Acme Solar NSM 3		RE	6.4	5.6	38,536	n/a	20	28,516
5	Acme Solar NSM 4		RE	6.4	5.6	38,536	n/a	20	28,516
6	Acme Solar NSM 6		RE	7.1	6.2	38,536	n/a	20	27,398
7	Adenium Jordan 1		Jordan: Construction of five solar plants on a build-own-operate basis to meet the growing demand for electricity and increase energy security in Jordan, while diversifying the fuel mix.	RE	11.3	-	25,663	n/a	10
8	Adenium Jordan 2	RE		11.3	-	25,663	n/a	10	15,573
9	Adenium Jordan 3	RE		11.3	-	25,663	n/a	10	15,573
10	Arabia One Solar	RE		10.5	0.1	21,704	n/a	10	13,171
11	Jordan Solar One	RE		14.4	-	47,000	n/a	20	28,322
12	Aura Solar II	Honduras: Construction of three solar power plants, to demonstrate the bankability of utility-scale solar power, while reducing dependence on imported fuel oil.	RE	24.4	21.2	117,000	n/a	61	53,317
13	SunEdison HON3		RE	41.7	34.3	168,753	n/a	82	74,359
14	Valle Solar PV		RE	30.0	-	125,100	n/a	70	55,124
15	Luz del Norte	Chile: Construction of solar power facility for the mining industry, accounts for 40% of country's electricity consumption.	RE	60	42.2	394,700	n/a	162	170,803

16	Azure Clean	India: Finances the construction of a solar power with an aim to increase private sector investments in low income states.	RE	13.9	12.5	63,350	n/a	40	49,210
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Wind Energy

17	BMR Wind	Jamaica: This project is the first independent privately funded renewable energy project in the country; it is expected to modernize, diversify and improve energy sector competitiveness.	RE	10.0	3.5	104,300	-	34	66,136
18	Dawood TGL	Pakistan: These two wind farms will add much-needed capacity to alleviate a severe power shortfall.	RE	22.0	-	126,300	-	50	55,822
19	Gul Ahmed Wind		RE	11.6	-	151,900	-	50	93,783
20	Green Infra Wind	India: Development and operation of five wind power plants in low-income states to provide secure, affordable, reliable and renewable energy supply.	RE	55.2	23.0	405,716	-	242	285,218
21	Penonome Wind	Panama: Construction of a 215 MW wind power plant to alleviate power shortages and increase energy reliability.	RE	80.0	73.5	512,000	-	215	188,434
22	Rudine WPP	Croatia: This wind farm will meet growing demand for energy, diversify the country's energy mix, and reduce reliance on imported energy.	RE	24.9	9.5	75,660	-	34	25,836

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Hydro Energy

23	Gulpur Hydro	Pakistan: Funds construction of a run-of-the river hydropower plant under a build-own-operate transfer scheme to reduce power generation costs.	RE	50.0	-	360,000	-	102	170,946
24	Kabeli	Nepal: Increases hydropower supply to improve access to reliable and affordable electricity in the eastern and western regions of Nepal.	RE	19.3	-	205,200	-	38	114,441

Green Buildings

25	Health Adana	Turkey: Enhancing healthcare access via one of the country's first public-private healthcare projects that uses modern, energy efficient technologies and infrastructure.	EE	43.7	1.8	-	14,254,326	-	6,721
26	Kayseri Health		EE	37.6	-	-	18,067,000	-	8,519
27	Etlık Health	Turkey: Refurbishment of existing facilities with energy efficient technologies in a network of hospitals.	EE	82.2	-	-	36,971,000	-	17,432

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Green Banking

28	Itau Clim. Smart	Brazil: Strategic support to a local financial institution to expand its lending portfolio for on-lending to climate-smart projects.	RE EE	100.0	100.0	N/A		122,987
29	EMILIA	Chile: Support to local financial institution to expand its lending portfolio for on-lending to renewable energy projects.	RE	20.0	20.0			-
30	Consortio RE	Chile: Diversification of Chilean energy matrix through funding of renewable energy via a local bank.	RE	30.0	-			34,652
31	Abank EE	Turkey: Support to strategic local financial institution to expand its sustainable energy projects, with a target on SMEs.	RE EE	20.0	20.0			73,350
32	Odeabank GrMortg	Turkey: Support to a local financial institution for green mortgages to improve energy efficiency in the housing sector.	EE	44.5	44.5			5,914
33	PFS II	India: Support to a local financial institution to scale up renewable energy investments in the country.	RE	34.1	33.8			30,500
34	FinansL EE II	Turkey: Supports Turkey's sustainable energy finance to reduce SMEs' energy costs through improved use of efficient equipment.	RE EE	40.0	40.0			77,824
35	YKL Sustainable	Turkey: Supports long-term funding for sustainable energy projects through a local bank partner.	RE EE	64.0	64.0			122,163
36	RA Energy Access	Multi-country: An Energy Access fund provides working capital funding to manufacturers and distributors of energy access products, primarily solar-powered lighting and energy solutions.	RE EE	10.0	-			37,143

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Agribusiness

37	Arla AFISA	Argentina: Improvement of energy efficiency for a dairy producer.	EE	25.6	-	Project contributes to climate mitigation, but no IFC methodology exists for impacts calculation.			
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Transport

38	Izmir Railcars	Turkey: Expansion of Izmir's metro system and improvement of the public transport infrastructure.	EE	24.9	-	Project contributes to climate mitigation, but no IFC methodology exists for impacts calculation.			
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Total (Project 1 – 38)				1,154.5	572.7	3,499,485	69,292,326	1,439	2,465,182
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Total GHG reductions reached almost 2.5 million tons of CO2e that is equivalent of taking around 500,000 cars off the road or carbon sequestered by 2 million acres of U.S. forest in one year.

Annual renewable energy generation of 3.5 million MWh is sufficient to supply over 300,000 U.S. homes with electricity.

Example Green Bond Stories of Impact



A. Penonome Wind, Panama, FY15

Panama is one of the fastest growing economies in Latin America with an increasing demand for energy. The country has been primarily dependent on imported fossil fuels, which represent more than a third of the electricity generated. Another half of the country's electricity is generated from hydropower plants, making the power sector vulnerable during the dry season, which can result in the rationing of power and high electricity cost during droughts.⁴

Climate-smart infrastructure investments in electricity generation are strategic to support Panama's economic growth in the next decade. The Panamanian government estimates that energy demand will increase by close to eight percent annually and will require investments of around US\$3 billion to keep up with demand.⁵ Already the government has made progress in promoting the development of renewable energy to displace oil based generation and diversify its energy generation mix.

Through the Penonome investment, IFC provides long-term financing that goes beyond what can be provided by commercial banks for renewable energy projects in the country. It also sends positive and reassuring signals to the market, particularly given the merchant risk and untested regulatory framework, for this and future renewable energy projects in Panama. Through this project, IFC will also strengthen its relationship with InterEnergy Holdings (IEH), a private company that is a major player in the region and will enter into a new market with a new technology.

Specifically, the project will be the largest wind farm in Central America. Once operational, the 86 wind turbines with an installed capacity of 215 MW are expected to generate roughly the equivalent of 5 percent of Panama's total energy demand. The total project cost is close to \$425 million and financing includes \$99 million senior debt from IFC's own account, \$60 million senior debt from the Managed Co-Lending Portfolio Program, and \$144 million in syndicated senior loans from other investors. The remaining funds are expected to originate from IEH and other private and public banks.

⁴ IEA (2014), *Energy Balances of non-OECD Countries 2014*, IEA, Paris.
DOI: http://dx.doi.org.libproxy-wb.imf.org/10.1787/energy_bal_non-oecd-2014-en.

⁵ Dolezal, Adam, et al. "The way forward for renewable energy in Central America."
Status Assessment, Best Practices, Gap Analysis Worldwatch Institute, Washington DC (2013).

Green Bond Stories of Impact



B. Renewable PV Program, Jordan, FY15

Since 2013 consumption and peak electricity demand in Jordan have grown by six to eight percent and this trend is expected to continue to grow in the medium term.⁶ Currently, the country's energy generation consists of conventional fossil fuel fired thermal generation, and relies on imported diesel and heavy fuel oil. Jordan has an excellent solar resource with all of its territory enjoying high solar irradiation levels and robust capacity factors. However, as of late 2014 the total utility scale photovoltaic (PV) capacity in the region was only 10 MW with no privately financed grid-connected PV projects.

Through the National Renewable Energy Program, the Government of Jordan has set out to increase power generation to ten percent by 2020. Infrastructure investments in renewable power generation are key to support the Government in reaching its national target, ensuring that the country can achieve long-term diversity in its fuel mix and developing a domestic source of power that is clean and more sustainable than its existing thermal and fuel alternatives.

IFC's investment provides long-term financing not currently available in the market and plays a catalytic role in mobilizing the necessary additional long-term financing from other development financial institutions and regional banks. Together, these investments would boost the development of the renewable energy sector as a whole.

Acting as the mandated lead arranger, IFC committed to a \$270 million financing package for the largest private sector-led solar program in the Middle East and North Africa known as "The Seven Sisters." Of these projects five are green bond eligible projects: Arabia One, Adenium Jordan (1-3) and Jordan Solar One. At peak production, the combined capacity for these projects will be 102 megawatts of power. The power generated from these facilities will connect to a newly built substation in the Ma'an Development Area and will be sold to Jordan's National Electric Power Company under a long-term agreement.

⁶ IEA (2014), *Energy Balances of non-OECD Countries 2014*, IEA, Paris.
DOI: http://dx.doi.org.libproxy-wb.imf.org/10.1787/energy_bal_non-oecd-2014-en.

Appendix

Interpreting impact indicators

ⁱ These indicators are tracked on a project-level basis and have not been prorated for the portion of IFC's contribution. Special climate projects are those which contribute to mitigation but which do not have an agreed methodology for impacts calculation. Investments in financial intermediaries ensure that climate finance is available for smaller clients that IFC could not reach directly, such as small and medium enterprises.

IFC's tools help partner financial intermediaries to assess climate impacts of their investment portfolio, as part of our investment agreement (see ifc.org/cafi). IFC's GHG Methodology and Climate Related Definitions and Metrics are available at ifc.org/climatemetrics

ⁱⁱ The Impact Assessment table allows for quantification of a few core indicators, but it is important to appreciate the limitations of data reported. The main considerations to adequately interpret results are:

- **Scope of results**
Reporting is based on "ex-ante" estimates at the time of project appraisal and mostly for direct project effects.
- **Uncertainty**
An important consideration in estimating impact indicators is that they are often based on a number of assumptions. While technical experts aim to make sound and conservative assumptions that are reasonable based on the information available at the time, the actual environmental impact of the projects may diverge from initial projections. In general, behavioral changes or shifts in baseline conditions can cause deviations from projections.
- **Comparability**
Caution should be taken in comparing projects, sectors, or whole portfolios because baselines (and base years) and calculation methods may vary significantly. In addition, the cost structures between countries will also vary, so that developing cost-efficiency calculations (results per unit of amount invested in eligible projects) could place smaller countries with limited economies of scale at a disadvantage and will not take into consideration country specific context.
- **Omissions**
Projects may have impact across a much wider range of indicators than captured in the Impact Assessment table and may have other important development impacts. Furthermore, there may be some projects for which the proposed core indicator is either not applicable or the data is not available. While IFC takes efforts to improve the consistency and availability of reported metrics over time, projects with climate impact can cover a wide diversity of sectors and sub-sectors making complete harmonization of reporting metrics challenging.