



Green Bond

IMPACT REPORT

2017





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**This publication is a product of
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WORLD BANK GREEN BONDS: MORE THAN US\$10 BILLION IN LESS THAN 10 YEARS

It has been almost 10 years since the World Bank issued the market's first labeled green bond. We have since issued more than US\$10 billion in green bonds to investors around the world. And on a global scale, new green bond issuances surpassed US\$120 billion in 2017. The growing diversity of issuers, including sovereigns Fiji and Nigeria, and structures, such as Islamic finance bonds, are a clear indication that green bonds are no longer a niche product.

We are proud to have helped pioneer the green bond market through our contributions as an issuer and standard-setter, and are grateful for the long-standing support and recognition from our peers and counterparts. A particular honor was the 2017 *Joan Bavaria Award for Building Sustainability into the Capital Markets* awarded to Heike Reichelt, World Bank Head of Investor Relations and New Products. The award is presented annually by Ceres and Trillium Asset Management in recognition of leadership in transforming the capital markets into a system that balances economic prosperity with social and environmental concerns.

We are equally proud of the impacts made through our partnership with green bond investors. Since 2008, investors in World Bank Green Bonds now support 91 climate change mitigation and adaptation projects in 28 countries. This report is a review of our activities and their contribution to climate action in developing countries.

Looking forward—and in the spirit of the *Joan Bavaria Award*—we will continue to focus on developing innovative products that offer investors opportunities to support climate and other global development goals. Together, we can leverage the capital markets to create win-win solutions that have positive financial, environmental and social outcomes for people around the world.

“ We are the first generation to feel the impact of climate change, and the last generation that can do something about it. ”

Kristalina Georgieva
Chief Executive Officer, World Bank



“ We are committed to a future where the capital markets play a growing role bringing innovative financial solutions to help tackle critical development issues like climate change, health, infrastructure and other goals to build a more sustainable future. ”

Arunma Oteh
Vice President & Treasurer, World Bank



World Bank Green Bond Milestones

November 2008	First Green Bond
April 2009	First US Dollar Green Bond
February 2010	Green Bond Program Reaches US\$1 Billion
	10 Green Bonds in 10 Different Currencies
October 2012	50th Green Bond
March 2014	First Euro Green Bond
July 2014	First Equity-Index Linked Green Bond
February 2015	Largest Green Bond with the Longest Maturity: US\$600 Million, 10-Year
June 2015	100th Green Bond
April 2017	Green Bond Program Reaches US\$10 Billion



SELECT PROJECT IMPACTS

OF THE **91** WORLD BANK PROJECTS ELIGIBLE FOR GREEN BOND FINANCING, **25** HAVE CLOSED AND THEIR IMPLEMENTATION AND COMPLETION RESULTS REPORTS HAVE BEEN PUBLISHED. HIGHLIGHTED BELOW ARE ACTUAL IMPACTS FROM THESE PROJECTS WITH SELECT RESULTS AGGREGATED TO ILLUSTRATE THE MAGNITUDE OF THEIR IMPACTS.

13 COMPLETED PROJECTS IN RENEWABLE ENERGY & ENERGY EFFICIENCY



67,460 GWh
IN ANNUAL ENERGY SAVINGS

EQUIVALENT TO

THE TOTAL ELECTRICITY CONSUMED IN 2015 IN
NEW ZEALAND & BULGARIA COMBINED
ABOUT 32.4 MILLION TONS OF CO₂ EQUIVALENT AVOIDED



5,980 GWh
ANNUAL ENERGY PRODUCED FROM
RENEWABLE RESOURCES

EQUIVALENT TO

THE TOTAL POWER GENERATED BY 1,126 WIND TURBINES
RUNNING FOR ONE YEAR IN THE US



1,470 MW
RENEWABLE CAPACITY FROM SOLAR,
WIND, AND HYDRO TECHNOLOGIES

EQUIVALENT TO

THE TOTAL INSTALLED ELECTRICITY GENERATION
CAPACITY IN NICARAGUA IN 2016

7 COMPLETED PROJECTS IN WATER, WASTEWATER, & WASTE MANAGEMENT



61,650 HECTARES
WITH IRRIGATION SERVICES
REHABILITATED OR RESTORED IN THE
DOMINICAN REPUBLIC & TUNISIA

28 WASTE DUMPS
IN BRAZIL & MOROCCO
CLOSED OR REHABILITATED

4,800,000 TONS
OF UNTREATED WASTEWATER
PREVENTED FROM FLOWING INTO
RIVERS ANNUALLY IN CHINA

5 COMPLETED PROJECTS IN AGRICULTURE, LAND USE & FORESTRY, RESILIENT INFRASTRUCTURE & BUILT ENVIRONMENT, SUSTAINABLE TRANSPORTATION



774,600 HECTARES
OF FOREST RESTORED OR
REFORESTED IN CHINA & MEXICO

6,000,000 TONS
OF CO₂ EMISSIONS REDUCED DUE TO
REFORESTATION IN MEXICO

EQUIVALENT TO

1,284,797
CARS TAKEN OFF
THE ROAD FOR
ONE YEAR



6,600,000 PEOPLE
BENEFITED FROM FLOOD PROTECTION
IN CHINA

15% INCREASE
IN CATASTROPHE INSURANCE
COVERAGE IN MACEDONIA & SERBIA



25% DECREASE
IN TRAVEL TIME FOR 4 MILLION
PUBLIC TRANSPORT PASSENGERS

+

A FLEET OF
52,000 BICYCLES
IMPLEMENTED IN XI'AN, CHINA

Sources: US Environmental Protection Agency Greenhouse Gas Equivalencies Calculator, CIA World Factbook

PROJECT SUMMARY

The mission of the World Bank (International Bank for Reconstruction and Development, IBRD) is to end extreme poverty and boost shared prosperity in a sustainable manner. Tackling climate change plays a critical role in achieving these goals.

Through World Bank Green Bonds, investors make an impact by supporting the financing of a wide range of projects across many sectors that are addressing climate change around the world.

Green Bond Program

Issuance. In the past 10 years, the World Bank has issued 132 Green Bonds in 18 currencies for a total of US\$10.1 billion in funding to support the transition to low-carbon and climate resilient growth. During FY17 (July 1, 2016 to June 30, 2017), the World Bank issued US\$1.0 billion in Green Bonds. As of June 30, 2017, US\$4.8 billion of Green Bonds were outstanding.

Commitments and Disbursements. At the end of the fiscal year, seven new projects were added to the Green Bond eligible project portfolio bringing the number of eligible projects to 91 and a total of US\$15.4 billion in commitments. Of these commitments, US\$8.3 billion in Green Bond proceeds were allocated and disbursed to support projects in 28 countries and another US\$6.8 billion had yet to be disbursed.

By Region

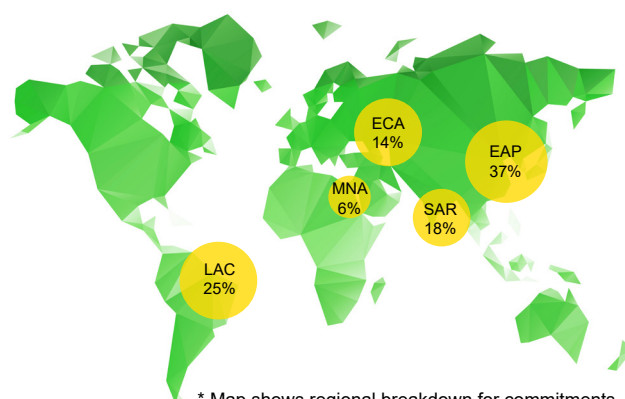
As of June 30, 2017, the East Asia and Pacific Region, at 37%, was the largest regional exposure by share of commitments in the Green Bond eligible project portfolio.

Green Bond Commitments

(As of June 30, 2017)

BY REGION

Amounts in Eq. US\$ billion (may not add up due to rounding)	Committed ^{a/}	Allocated & Outstanding ^{b/}
East Asia & Pacific (EAP)	5.7	2.8
Europe & Central Asia (ECA)	2.1	1.4
Latin America & Caribbean (LAC)	3.9	2.5
Middle East & North Africa (MNA)	0.9	0.3
South Asia (SAR)	2.8	1.3
Total	15.4	8.3



Notes:

a/ Committed amount net of cancellations for eligible projects for which the loans are disbursing.

b/ Green Bond proceeds supporting financing of disbursements to eligible projects net of loan repayments.

Not adjusted for matured bonds that were not replaced with new green bonds.

By Sector

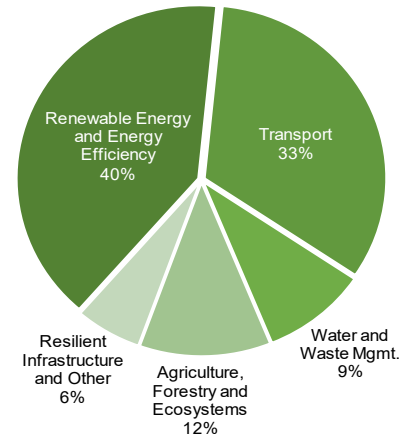
As of June 30, 2017, Renewable Energy and Energy Efficiency and Transport projects represented the largest sectors in the Green Bond eligible project portfolio. Together, these sectors made up approximately 73% of Green Bond commitments.

Green Bond Commitments

(As of June 30, 2017)

BY SECTOR

Amounts in Eq. US\$ billion (may not add up due to rounding)	Committed ^{a/}			Allocated and Outstanding ^{b/}
	Mitigation	Adaptation	Total	
Renewable Energy and Energy Efficiency	6.2	0.0	6.2	3.8
Transport	5.1	0.0	5.1	2.0
Water, Wastewater, and Solid Waste Management	0.1	1.3	1.4	0.9
Agriculture, Land Use and Forestry	0.5	1.3	1.8	0.8
Resilient Infrastructure, Built Environment and Other	0.3	0.7	0.9	0.7
Total	12.1	3.3	15.4	8.3
	79%	21%	100%	



Notes:

a/ Committed amount net of cancellations for eligible projects for which the loans are disbursing.

b/ Green Bond proceeds allocated to support financing of disbursements to eligible projects net of loan repayments.

Not adjusted for matured bonds that were not replaced with new green bonds.

SECTOR DESCRIPTIONS



Renewable energy development amounts to 20% of projects eligible for support from the World Bank's Green Bonds. The energy sector contributes about 40% of global CO₂ emissions. Despite improvements in some countries, the global CO₂ emission factor for energy generation has hardly changed over the last 20 years, making the transition to a more sustainable energy mix critical for climate change mitigation.¹



Energy efficiency is the low cost option to reduce emissions and unnecessary expenditures. At the same time, a projected 2.4 billion people are expected to migrate to urban areas by midcentury and cities already account for two-thirds of global energy demand thus contributing to 70% of GHG emissions.² Harnessing the "hidden fuel" of energy efficiency offers many opportunities to help cities achieve energy security, energy savings, improved municipal services, increased competitiveness, and reduced costs and emissions.³ 20% of World Bank Green Bond eligible projects is dedicated to energy efficiency improvements.



Transport contributes about 23% of global greenhouse gas emissions. With motorization on the rise, that share is expected to grow dramatically, making this a critical sector to reform in order to address climate change.⁴ Transport improvements that shift to low-emission modes also generate "co-benefits" in terms of reducing congestion, local air pollution, oil dependency and transport safety risks.⁵ 33% of World Bank Green Bond eligible projects focuses on transportation efficiency and urban mass transit solutions.



Water stress is an increasing challenge facing the world, driven by population and economic growth, land use changes, increased climate variability and change, and declining groundwater supplies and water quality.⁶ Improved water resources management and climate-smart water infrastructure help countries manage this risk. 9% of World Bank Green Bond eligible projects focuses on water, wastewater and waste management issues.



Agriculture is vulnerable to climate change and it is, with associated deforestation, the largest contributor to greenhouse gases. Climate smart agriculture has the potential to deliver a "triple-win" of increased productivity, enhanced resilience, and carbon sequestration.⁷ 12% of World Bank Green Bond eligible projects illustrate measures in livestock, agriculture, and land, forest and ecosystem management aimed at mitigating and/or adapting to climate change.

1 <https://openknowledge.worldbank.org/handle/10986/17143>

2 <http://www.worldbank.org/en/region/eap/publication/energizing-green-cities-in-southeast-asia>

3 <http://www.worldbank.org/en/news/feature/2014/12/08/building-energy-efficient-cities-new-guidance-notes-for-mayors>

4 <http://www.worldbank.org/en/topic/transport/overview#1>

5 <http://siteresources.worldbank.org/INTTRANSPORT/Resources/336291-1227561426235/5611053-1229359963828/TP40-Final.pdf>

6 <http://www.worldbank.org/en/topic/waterresourcesmanagement>

7 http://www.worldbank.org/content/dam/Worldbank/document/CSA_Brochure_web_WB.pdf

WORLD BANK GREEN BOND PROCESS

Green Bond Eligible Projects

All World Bank bonds support sustainable development because the net proceeds from the sale of the bonds are used by the World Bank (IBRD) to support financing of sustainable development projects and programs in IBRD's member countries. They fit well within all investor mandates, especially investment strategies that incorporate environmental, social and governance factors. The World Bank Green Bonds are a subset of its sustainable investment opportunities. Green Bond eligible projects promote the transition to low-carbon and/or climate resilient growth in World Bank client countries targeting climate change mitigation and adaptation. The World Bank's eligibility criteria were independently reviewed by the Center for International Climate and Environmental Research at the University of Oslo (CICERO).

CLIMATE CHANGE PROJECT EXAMPLES

MITIGATION

SOLAR AND WIND INSTALLATIONS

FUNDING FOR NEW TECHNOLOGIES THAT PERMIT SIGNIFICANT REDUCTIONS IN GREENHOUSE GAS EMISSIONS

REHABILITATION OF POWER PLANTS AND TRANSMISSION FACILITIES TO REDUCE GREENHOUSE GAS EMISSIONS

GREATER EFFICIENCY IN TRANSPORTATION, INCLUDING FUEL SWITCHING AND MASS TRANSPORT

WASTE MANAGEMENT (METHANE EMISSION) AND CONSTRUCTION OF ENERGY-EFFICIENT BUILDINGS

CARBON REDUCTION THROUGH REFORESTATION AND AVOIDED DEFORESTATION

ADAPTATION

PROTECTION AGAINST FLOODING (INCLUDING REFORESTATION AND WATERSHED MANAGEMENT)

FOOD SECURITY IMPROVEMENT AND IMPLEMENTING STRESS-RESILIENT AGRICULTURAL SYSTEMS (WHICH SLOW DOWN DEFORESTATION)

SUSTAINABLE FOREST MANAGEMENT AND AVOIDED DEFORESTATION



Two-Stage Process to Identify Green Bond Eligible Projects

1. All projects supported by the World Bank go through a rigorous review and approval process to ensure that they meet countries' development priorities. The process includes: (i) early screening to identifying potential environmental or social impacts and designing policies and concrete actions to mitigate any such impacts; and (ii) approval by the Board of Executive Directors – a resident board with 25 chairs representing member countries.
2. Environmental specialists then screen approved World Bank projects to identify those that meet the World Bank's Green Bond eligibility criteria.

For more information about the World Bank Green Bond implementation guidelines and the eligibility criteria, see <http://treasury.worldbank.org/cmd/pdf/ImplementationGuidelines.pdf>.

Impact Reporting

The World Bank is committed to transparent reporting of its climate financing including the projects that are part of its Green Bond program. Detailed information for all World Bank financed projects is available on the World Bank website <http://projects.worldbank.org>. Project summaries and impact indicators for Green Bond eligible projects are summarized on the investor website at: <http://treasury.worldbank.org/cmd/htm/MoreGreenProjects.html>.

The following section lists the 91 World Bank eligible projects supported by the financing of World Bank Green Bonds as of June 30, 2017. The projects are organized by sector. Selected results indicators, World Bank loan amount, share of loan amount to total project costs, and the amount of Green Bond proceeds that have been allocated to support disbursements to each project are disclosed. Annex 1 describes the reporting approach and should be read in conjunction with this report.

Interpreting Reported Results

The intention of impact reporting is to help investors develop a more detailed understanding of the climate and environmental impacts that can be expected or projected to result from Green Bond eligible projects. Several key results indicators have been selected and where possible quantified, but it is important to appreciate the inherent limitations of data reported. The main considerations to adequately interpret results are:

- **Scope of results:** Reporting is based on “ex-ante” estimates of climate and environmental impacts at the time of project appraisal and mostly for direct project effects, except as indicated where the results have been updated for actual results at the time of project completion.
- **Uncertainty:** An important consideration in estimating impact indicators and projecting results is that they are based on 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 generally 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 (such as results per dollar invested) could, for example, place smaller countries with limited economies of scale at a disadvantage and will not take into consideration country-specific context.
- **Omissions and qualitative results:** Because the selected projects aim to provide social and developmental benefits as well as climate and environmental ones, they will have impacts across a much wider range of indicators than captured in the next section. Therefore, exclusively focusing on the reported indicators will leave out other important development impacts. Where quantitative data is unavailable, qualitative indicators have been included to illustrate other beneficial impacts.

To better understand the developmental impacts of projects and the broader country context, please view the full project documentation available on the World Bank website at <http://projects.worldbank.org>.

ELIGIBLE PROJECTS BY SECTOR

Target Results and Committed and Allocated Amounts








- A. Renewable Energy and Energy Efficiency**
- B. Transport**
- C. Water, Wastewater, and Waste Management**
- D. Agriculture, Land Use, Forests, and Ecological Resources**
- E. Resilient Infrastructure, Built Environment, and Other**

Results should be read in conjunction with Annex 1 which describes the reporting approach.










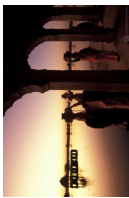




A. Renewable Energy and Energy Efficiency

#	Project Name (Number Year/s Loans Approved) and Description	A/M ^a	Project Life	Annual Energy Savings ^c MWh	Annual Energy Produced MWh	Renewable Capacity Added MW	Annual GHG Emissions Avoided Tons of CO ₂ Eq.	Other results	Committed US\$ mil ^d	IBRD share ^e	Allocated US\$ mil ^f
1	 Belarus - Biomass District Heating (P146194 FY14): increase energy efficiency in district heating systems and replace natural gas with wood biomass as a renewable energy source.	M	20	236,000	1,660,000	106	420,000	Cumulative over 5 years: ● 1,180,000 MWh energy savings from efficiency investments. ● 2,100,000 tons of CO ₂ eq. emissions reduced.	90.0	100%	37.6
2	 China - Beijing Rooftop Solar Photovoltaic Scale-Up (Sunshine Schools) Project (P125022 FY13): promote renewable energy in 1000 schools and other educational institutions.	M	20	na	100,000	100	89,590	● 10 - 15% of schools' annual power use provided by renewable sources. ● 650,000 students in 1,000 schools benefit.	120.0	50%	18.9
3	 China - Eco-Farming Project (P096556 FY09): promote sustainable farming systems and reduce greenhouse gas emissions (from methane and burning coal and firewood) benefiting rural communities with biogas systems.	M	20	na	~	~	900,000	● 400,000 - 500,000 rural households benefit with cleaner biogas-based cooking and heating systems. Updated for actual results at project completion.	119.8	27%	119.8
4	 China - Energy Efficiency Financing (P084874 FY08, FY12): promote energy conservation in China's industrial sector supporting intermediary loans for energy efficiency projects in medium and large-sized manufacturing companies.	M	20	21,807,900	na	na	6,510,000	● 2,666,000 tons of coal eq. (TCE) annual energy savings (assuming 150 subprojects) Updated for actual results at project completion.	300.0	45%	300.0
5	 China - Financing for Air Pollution Control (P154669 FY16): reduce air pollutants and carbon emissions through lending for energy efficiency and clean energy, with a focus on the Jing-Jin-Ji and neighboring regions.	M	20	3,125,000	na	na	2,460,000	● 3,600 tons of particulate emissions (local air pollutant) reduced by renewable energy and energy efficiency and subprojects financed.	512.5	100%	12.8
6	 China - Energy Efficiency Financing II Project (P113766 FY10): promote energy conservation in China's industrial sector through intermediary loans to energy efficiency projects.	M	20	19,637,726	na	na	4,930,000	Project completed.	45.5	30%	45.5
7	 China - Green Energy Schemes for Low-carbon City in Shanghai (P127035 FY13): promote greener city development with energy efficiency and renewable energy installations in commercial and government buildings.	M	20	621,700	~	~	165,000		100.0	41%	65.8



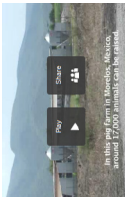



A. Renewable Energy and Energy Efficiency

#	Project Name (Number Year/s Loans Approved) and Description	A/M ^a	Project Life	Target Results ^b						Allocated US\$ mil ^f
				Annual Energy Savings ^c MWh	Annual Energy Produced MWh	Renewable Capacity Added MW	Annual GHG Emissions Avoided Tons of CO ₂ Eq.	Other results	Committed US\$ mil ^d	
8	 <p>China - Jiangxi Shihutang Navigation & Hydropower (P101988 FY09): maximize inland waterway transport capacity as a low-carbon alternative to land transport and generate hydropower.</p>	Both	20	na	472,000	120	450,000	<ul style="list-style-type: none"> 4,400 hectares of crop land protected from flooding. RMB 26.6 million reduction in annual flood losses. Updated for actual results at project completion.	100.0	31%
9	 <p>China - Liaoning Third Medium Cities Infrastructure (P099224 FY08): improve the energy efficiency and environmental performance of heating and gas services.</p>	M	20	2,757,200	na	na	~	<ul style="list-style-type: none"> 8,935 tons of sulphur dioxide avoided per annum. 11,659 tons of total suspended particles (local pollutant) avoided per annum. Updated for actual results at project completion.	165.0	44%
10	 <p>China - Shandong Energy Efficiency (P114069 FY11): improve the energy efficiency and environmental performance of the industrial sector and finance renewable energy production from biomass (corn and wheat stalk).</p>	M	15	3,247,500	165,000	30	~	<ul style="list-style-type: none"> 318,000 TCE energy savings. 	144.7	46%
11	 <p>China - Urumqi District Heating Project (P120664 FY11): promote energy efficiency in district heating by replacing dispersed boilers in urban areas with an integrated district heating network.</p>	M	20	1,229,400	na	na	415,500	<ul style="list-style-type: none"> 1,626 MW of inefficient coal-fired boilers replaced by combined heat and power district heating network. Updated for actual results at project completion.	99.1	29%
12	 <p>India - Grid-Connected Rooftop Solar Program (P155007 FY15): increase solar rooftop capacity to the power grid and incentivize the market for rooftop solar power by way of low cost financing.</p>	M	25		647,200	250 MW	1,200,000	<ul style="list-style-type: none"> The 250 MW capacity of rooftop solar photovoltaics expected to be grid-connected by year 5 with at least another 150 MW to be connected in subsequent years. 13 million tons of CO₂ eq. in cumulative savings over the project's 25 year life. Market development for rooftop photovoltaic systems in different business models. 	500.0	55%



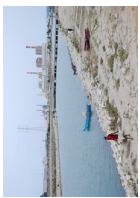

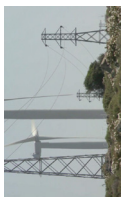

A. Renewable Energy and Energy Efficiency

#	Project Name (Number Year/s Loans Approved) and Description	A/M ^a	Project Life	Annual Energy Savings ^c MWh	Annual Energy Produced MWh	Renewable Capacity Added MW	Annual GHG Emissions Avoided Tons of CO ₂ Eq.	Target Results ^b		Other results	Committed US\$ mil ^d	IBRD share ^e	Allocated US\$ mil ^f
								Annual Energy Savings ^c MWh	Annual Energy Produced MWh				
13	 <p>India - Power System Development Project IV (P101653 FY09): expand transmission infrastructure resulting in decreased CO₂ emissions through efficiency gains and transferring surplus hydro energy to power deficit regions.</p>	M	20	8,699,000	na	na	~	~	<ul style="list-style-type: none"> Reduced transmission losses equivalent to between 526-993 MW. 107,000 circuit km of increased transmission capacity. 68,000 GWh power exchange growth between regions. <p>Updated for actual results at project completion.</p>	400.0	16%	400.0	
14	 <p>India - Rampur Hydropower Project (P095114 FY08): scale-up access to renewable energy through construction of a run-of-the-river hydroelectric scheme.</p>	M	30	na	1,770,000	412	1,407,700	Project completed.	400.0	60%	400.0		
15	 <p>Indonesia - Indonesia Geothermal Energy (P113078 FY12): increase power generation from renewable geothermal resources.</p>	M	30	na	1,210,000	150	1,100,000	<ul style="list-style-type: none"> 33,000,000 tons of CO₂ eq. cumulative emission reductions of over 30 years. 	175.0	30%	122.4		
16	 <p>Jamaica - Energy Security and Efficiency Enhancement Project (P112780 FY11): increase energy efficiency and security by promoting greater participation of renewable energy and gas-based generation in the energy mix.</p>	M	na	na	~	~	~	<ul style="list-style-type: none"> Gas and renewable energy use increased above its baseline of 42 MW of the total energy matrix (at project inception). US\$9/MWh reduction (from US\$21/MWh to US\$12/MWh) in cost of electricity generation. 	15.0	100%	13.7		
17	 <p>Mexico - Efficient Lighting and Appliances Project (P106424 FY11): promote the efficient use of energy and to mitigate climate change by increasing the use of energy efficient technologies in the residential sector.</p>	M	5	2,000,000	na	na	664,000	<ul style="list-style-type: none"> Cumulative over 5 years: Exchange 45.8 million light bulbs and 1.9 million refrigerators and air conditioners. 3.32 million tons of CO₂ eq. emissions reduced. 50-60% electricity saved in residential households. 10,000,000 MWh in cumulative energy savings. <p>Updated for actual results at project completion.</p>	250.6	35%	250.6		


A. Renewable Energy and Energy Efficiency

#	Project Name (Number Year/s Loans Approved) and Description	A/M ^a	Project Life	Annual Energy Savings ^c MWh	Annual Energy Produced MWh	Renewable Capacity Added MW	Annual GHG Emissions Avoided Tons of CO ₂ Eq.	Other results	Committed US\$ mil ^d	IBRD share ^e	Allocated US\$ mil ^f
18	 <p>Mexico - Integrated Energy Services (P088996 FY08): increase energy access for poor communities using renewable energy (mainly solar and some wind generators) and to develop a sustainable market for providing energy services in remote rural areas.</p>	M	20	na	5,800	6.2	241,000	<ul style="list-style-type: none"> 4,400 rural households receive electricity from renewable sources. Larger long-term national impact with replication throughout rural areas. Updated for actual results at project completion. 	12.0	14%	12.0
19	 <p>Mexico - Municipal Energy Efficiency Project (P149872 FY16): promote energy efficiency in street lighting, water use, and buildings in 23 municipalities.</p>	M	8	127,590	5,800	6.2	57,926	<p>Cumulative over 8 years:</p> <ul style="list-style-type: none"> 1,020,714 MWh saved through efficient lighting, buildings, and water equipment. 463,405 tons of CO₂ emissions avoided. 	100.0	64%	0.34
20	 <p>Mexico - Sustainable Rural Development (and Add Financing) (P106261 FY09, FY13): increase the use of energy efficient, waste management and renewable energy technologies in agribusiness.</p>	M	10	20,493	32,130	~	283,900	<p>Cumulative over 7 years:</p> <ul style="list-style-type: none"> 143,450 MWh saved from energy efficiency investments. 224,908 MWh produced by renewable (biomass) energy. 1,987,500 tons of CO₂ eq. emission avoided. 	96.8	47%	75.0
21	 <p>Moldova - District Heating Efficiency Improvement (P132443 FY15): improve quality and reliability of heating services by improving the operational efficiency and viability of a new district heating company.</p>	M	30	96,700	na	na	22,800	<ul style="list-style-type: none"> 34% reduction in heating system breakdowns by year 5. 109,000 people with access to more energy efficient cooking and heating. 	40.5	66%	22.1
22	 <p>Montenegro - Energy Efficiency (and Additional Financing) (P107992 FY09, FY14): improve energy efficiency and environmental quality in 27 buildings used for health and education services.</p>	M	25	30,000	na	na	12,200	<p>Cumulative over 5 years and targeting 27 buildings:</p> <ul style="list-style-type: none"> 150,000 MWh in lifetime energy savings. 60,750 metric tons of CO₂ eq. lifetime emissions reduced. 	12.4	100%	11.9
23	 <p>Morocco - Clean and Efficient Energy Project (P143689 FY15): develop the first utility sized photovoltaic plant to more reliably supply solar power to remote regions.</p>	M	25	na	~	75	78,000	<ul style="list-style-type: none"> 412,000 people benefit from electricity and associated economic opportunities of which 50% are expected to be female. 	125.0	79%	34.2

A. Renewable Energy and Energy Efficiency

#	Project Name (Number Year/s Loans Approved) and Description	A/M ^a	Project Life	Target Results ^b						Committed US\$ mil ^d	IBRD share ^e	Allocated US\$ mil ^f
				Annual Energy Savings ^c MWh	Annual Energy Produced MWh	Renewable Capacity Added MW	Annual GHG Emissions Avoided Tons of CO ₂ Eq.	Other results				
24	Morocco – Noor Ouarzazate Concentrated Solar Power (P131256 FY12, FY15): replace fossil fuel-based electricity with renewable energy using concentrated solar power technology.	M	30	na	1,638,000	410	522,000		341.6	15%	66.3	
												
25	Peru - Second Rural Electrification (P117864 FY11): provide electricity to remote communities by extending the conventional electricity grid and financing solar photovoltaic systems.	M	20	na	~	~	~	<ul style="list-style-type: none"> 42,500 rural households electrified, of which 20,000 served by solar photovoltaic systems from regulated electricity distribution companies. 174,000 people benefited. 	50.0	60%	44.6	
												
26	Tunisia - Energy Efficiency (P104266 FY09): support industrial energy efficiency and co-generation investments by providing financing through intermediaries.	M	20	580,000	na	na	126,000	Project completed.	31.2	74%	31.2	
												
27	Turkey - Private Sector Renewable Energy and Energy Efficiency Project (P112578 FY09, FY12): enhance renewable energy access (small hydroelectric and geothermal) and energy efficiency in industries (iron and steel, cement, ceramics, chemicals and textiles).	M	20	3,023,800	3,728,000	933	3,214,000	<ul style="list-style-type: none"> Reach 31% of country's total generation to be from renewable energy. Project completed and actual results met expected targets. 	899.8	55%	899.8	
												
28	Turkey - Renewable Energy Integration (P144534 FY14): assist in meeting increased power demand by strengthening the transmission system and facilitating large-scale renewable energy generation.	M	20	na	na	na	690,000	<ul style="list-style-type: none"> 1,734,000 MWh per year of wind energy handled by the substations funded under project. 	242.4	63%	61.3	
												
29	Turkey - SME Energy Efficiency (P122178 FY13): improve energy efficiency in small and medium enterprises in energy-intensive industries by scaling-up commercial bank lending for energy efficiency investments.	M	20	61,400	na	na	30,900	<ul style="list-style-type: none"> Cumulative over 5 years: 154,500 tons of CO₂ eq. emissions reduced annually for all SME loans. 300,000 MWh in electricity savings by the end of project implementation. 	201.0	67%	95.1	
												







B. Transport

#		Project Name (Number Year/s Loans Approved) and Description	A/M	Target Results	Committed US\$ mil	IBRD share	Allocated US\$ mil
33		Brazil - Greening Rio de Janeiro Urban Rail Transit – Additional Financing (P111996 FY12): provide a more efficient and cleaner suburban rail system.	M	<ul style="list-style-type: none"> ● 70 new trains and upgraded infrastructure ● Shorter travel and waiting times. ● Bicycle parking facilities in select stations. ● 70,211 additional passengers served per day. ● 34,000 tons of CO₂ eq. reduced annually by project end. 	600.0	73%	359.2
34		Brazil - Sao Paulo State Sustainable Transport (P127723 FY13): improve transport efficiency and safety, increase share of waterway transport, and improve resilience to climate change and natural disasters.	Both	<ul style="list-style-type: none"> ● 50% reduction of road fatalities in the 100 most critical spots. ● Increase waterway transportation. ● Expanded automatic station network to monitor climate risk. ● Increased number of municipalities with disaster risk mapping. 	300.0	70%	200.0
35		China - Changzhi Urban Transport (P124978 FY12): improve transport mobility and accessibility while reducing emissions.	M	<ul style="list-style-type: none"> ● 5% reduction in fuel consumed per passenger-km on project corridors. ● Reduced number of traffic accidents. ● Reduced travel times during peak-hours. 	100.0	50%	44.8
36		China - HaJia Railway (P117341 FY14): provide additional railway capacity and reduce transport time for passengers and freight.	M	<ul style="list-style-type: none"> ● 3 million additional passengers per year. ● Reduced passenger travel time. ● 15 million people benefit including rural poor. ● Reduced pollution from shift to electric railways from road and air transport. 	300.0	5%	54.3
37		China - Heilongjiang Cold Weather Smart Public Transportation System (P133114 FY14): upgrade the quality, safety and efficiency of public transport service.	M	<ul style="list-style-type: none"> ● 38.8 million more bus rides annually due to increased efficiency of bus service. ● 20-30% reduction in fuel use. ● 22-25 km of improved transport corridors developed. 	154.0	46%	23.5
38		China - Hubei Xiangyang Urban Transport (P119071 FY12): improve mobility, safety, and efficiency in urban transportation.	M	<ul style="list-style-type: none"> ● 460,000 beneficiaries of reduced travel times and greater access to the city center. ● 40 new and higher quality buses in operation ● 30% reduction in fatalities and severe accidents. 	100.0	47%	54.2
39		China - Jiaozuo Green Transport and Safety Improvement (P132277 FY14): improve transport safety and efficiency along the selected transport corridors and promote non-motorized trips within the pilot green corridor.	M	<ul style="list-style-type: none"> ● 490,000 beneficiaries. ● Reduced traffic fatalities. ● 17 km in green corridors exclusively dedicated to pedestrians and cyclists. ● 241,500 non-motorized trips per year in the green corridor. ● 32,400 additional bus passengers per year. 	100.0	50%	20.2
40		China - Nanchang Urban Rail (P132154 FY13): provide an effective urban mass rapid transit system for a rapidly expanding city to reduce pollution, traffic congestion, and commuting times.	M	<ul style="list-style-type: none"> ● 506,000 beneficiaries. ● Reduced travel time on public transport by 25 minutes or more. ● Increase ridership by 200,000 people per year. ● 100% of stations to become wheel-chair and sight impaired accessible. 	250.0	10%	96.9

B. Transport

#		Project Name (Number Year/s Loans Approved) and Description	A/M	Target Results	Committed US\$ mil	IBRD share	Allocated US\$ mil
41		China - Qinghai Xining Urban Transport Project (P127867 FY14): provide more efficient, safer and cleaner transportation.	M	<ul style="list-style-type: none"> ● 20% decrease in travel time. ● 264,000 additional passengers daily. ● Improved accessibility to 189,400 jobs. ● Reduced vehicle pollution. 	30.3	48%	5.1
42		China - Tianjin Urban Transport Improvement Project (P148129 FY16): leverage the existing metro system and promote walking and biking in the urban core to make transport greener and safer.	M	<ul style="list-style-type: none"> ● 2.8 million trips benefit from improvements each day. ● 85,000 new metro users. ● 50 km of roads rehabilitated, 111 metro stations improved and 5 new bus terminals completed. ● 6,500 tons of CO₂ emissions reduced annually. 	100.0	45%	11.1
43		China - Urumqi Urban Transport Project II (P148527 FY16): improve mobility in selected transport corridors and reduce pollution from cars with a bus rapid transit (BRT) system.	M	<ul style="list-style-type: none"> ● 645,000 people benefit from direct access to BRT corridors and greener more efficient transportation. ● 51.7 km of BRT routes operated. ● 45% of commuters using smart cards. 	140.0	26%	25.5
44		China - Wuhan Second Urban Transport (P112838 FY10): improve efficiency, coverage and safety of public transport systems in an environmentally-, sustainable, integrated and safe way.	M	<ul style="list-style-type: none"> ● 459,000 tons of CO₂ eq. emissions reduced annually. ● Establish facilities for pedestrians and cyclists. ● Improved air quality. ● 4% increase in share of public transportation on target corridors. 	100.0	16%	83.7
45		China - Xi'an Sustainable Urban Transport (P092631 FY08): improve transport accessibility and mobility and enhance air-quality monitoring of the urban transport system	M	<ul style="list-style-type: none"> ● Doubled area of bus terminals. ● 275% increase in average speed of public transportation from 12 to 45 km/hr. ● 52,000 public bicycles with 70 million users ● Air quality monitoring system/facility implemented. ● 31,000 vehicles with emissions tested. <p>Updated for actual results at project completion</p>	150.0	36%	150.0
46		China - Xinjiang Yining Urban Transport Improvement Project (P126454 FY12): provide improved access, safety, and efficiency in public transportation in an environmentally sustainable manner.	M	<ul style="list-style-type: none"> ● Reduced peak-hour travel times in two integrated corridors. ● 25% increased bus ridership to reach 263,000 passengers per day and 60,000 additional people with access in selected new development areas. ● Reduced traffic accident fatalities. 	100.0	48%	83.8
47		China - Yunnan Honghe Prefecture Diannan Center Urban Transport (P101525 FY14): improve the safety, accessibility, and efficiency of transportation in core urban areas by building new infrastructure, staff training and education campaigns.	M	<ul style="list-style-type: none"> ● Reduced average travel time for public transport users. ● Double access to transport services to reach 742,000 people. ● Increased ridership to 153,400 trips per day. ● Reduced the number of transport related fatalities. 	150.0	43%	9.0
48		Colombia - National Urban Transit Program (P117947 FY10, FY12): reduce carbon emissions and improve public transportation efficiency and safety.	M	<ul style="list-style-type: none"> ● Reduced average travel time for low income riders. ● Reduced accidents and pollution (including greenhouse gases) associated with bus transport services. ● Increased access to the disabled and other commuters with special needs. 	494.0	36%	350.2

B. Transport







#		Project Name (Number Year/s Loans Approved) and Description	A/M	Target Results	Committed US\$ mil	IBRD share	Allocated US\$ mil
49		Ecuador - Manta Public Services Improvement Project (P143996 FY14): improve transport services and the quality and sustainability of water and sanitation.	M	<ul style="list-style-type: none"> 71,000 residents benefit from water investments. Improved mobility and accessibility of street network including pedestrian facilities and cycling paths. 	100.0	87%	32.2
50		Ecuador - Quito Metro Line One (P144489 FY15): improve urban mobility and serve the growing demand for public transport.	M	By 2018: <ul style="list-style-type: none"> 369,000 passengers per day. 47,000 tons of CO₂ emissions reduced per year. \$14 million in annual fuel savings. 40% reduction in average travel time. 1,800 jobs created. 	205.0	12%	147.0
51		India - Eastern Dedicated Freight Corridor - II (P131765 FY14): increase the capacity and quality of freight rail service.	M	<ul style="list-style-type: none"> 1,133 kms of new freight-only rail. Axle-load limit raised from 23 to 25 tons increasing speeds. 13.2 million tons of CO₂ eq. emissions reduced over a 30 year period. 	910.0	55%	123.0
52		India - Sustainable Urban Transport (P110371 FY10): improve government capacity to manage climate friendly urban transport solutions focusing on public and non-motorized transport.	M	<ul style="list-style-type: none"> 128,000 tons of CO₂ eq. emissions reduced annually over 10 years. 	105.2	32%	63.3
53		Mexico - Urban Transport Transformation (P107159 FY10): reduce carbon emissions and transform public transportation efficiency.	M	<ul style="list-style-type: none"> 340,000 tons of CO₂ eq. emissions reduced annually when city subprojects are fully operational. 9.3 integrated mass transit corridors of 15km each. 	150.0	6%	51.8
54		Peru – Lima Metro Line 2 Project (P145610 FY15): Construction of a 35 km subway line and related infrastructure improving transportation in the east-west axis of the Lima-Callao Metropolitan area.		<ul style="list-style-type: none"> Serve 360,000 new passengers/day; 34% reduction in travel time per trip. Benefits 1.6 million people for improved access to jobs. 	300.0	5.1%	40.0
55		Philippines - Cebu Bus Rapid Transit (BRT) Project (P119343 FY15): improve the quality, safety, and environmental performance of urban public transportation.	M	<ul style="list-style-type: none"> 275,000 more commuters using public transportation. 115,000 tons of CO₂ eq. reduced annually by 2020, increasing to 192,000 tons of CO₂ eq. reduced annually by 2025. 	116.0	51%	12.3
Subtotal for Transport					5,054.4		2,040.9
Cumulative Loan Repayments							(26.8)
Total Allocated and Outstanding for Transport							2,014.1

Amounts may not add up due to rounding.

C. Water, Wastewater, and Waste Management


#		Project Name (Number Year/s Loans Approved) and Description	A/M	Target Results	Committed US\$ mil	IBRD share	Allocated US\$ mil
56		Brazil - Federal Integrated Water Sector (P112073 FY12): improve water resource management including assessing how climate change impacts water availability, and improve coordination and capacity of key federal institutions in the water sector.	A	<ul style="list-style-type: none"> • 14 water resources management institutions supported by the project. • Increased water use efficiency and proper management of solid waste. • Improved quality of water service in both urban and rural areas. 	63.8	45%	13.6
57		Brazil - Integrated Solid Waste & Carbon Finance (P106702 FY11): improve treatment and final disposal of municipal solid waste and reduce methane emissions.	M	<ul style="list-style-type: none"> • 3 dumps closed. • 9,000 tons per day of waste disposed in environmentally sustainable sanitary landfills. • 7 municipalities made investments to improve recycling and composting activities. <p>Updated for actual results at project completion.</p>	16.7	31%	16.7
58		Brazil - Espirito Santo Integrated Sustainable Water Management Project (P130682 FY14): improve sustainable water resources management and increase access to sanitation.	Both	<ul style="list-style-type: none"> • 2.6 million people benefit. • 70% of State with disaster warning system. • 1,590 tons of BOD (Biochemical Oxygen Demand) removed a year. • 164,000 people with improved sanitation. • 2,000 hectares reforested. 	81.1	70%	2.4
59		China - Bengbu Integrated Environment Improvement (P096925 FY08): improve effectiveness and resilience of urban water supply, treatment services and flood prevention and control systems through improved infrastructure and watershed management.	A	<ul style="list-style-type: none"> • 85.5% flood protection of Bengbu's city land area. • Pollution reduction reached 13% • 3 months of water supply reserves. <p>Updated for actual results at project completion.</p>	99.9	45%	99.9
60		China - Water Conservation II (P114138 FY12): improve agriculture water management and increase agriculture water productivity.	A	<ul style="list-style-type: none"> • 15% increase in main crop yields. • RMB 200 increase in per capita annual agricultural income. • Reverse the trend of declining water table in groundwater irrigated areas. <p>Updated for actual results at project completion.</p>	80.0	50%	74.7
61		China - Xining Flood and Watershed Mgmt (P101829 FY09): improve sustainable utilization of land and water resources by improved flood control management, wastewater collection and treatment, and watershed management.	A	<ul style="list-style-type: none"> • 4,800,000 tons of untreated wastewater flowing into rivers avoided annually. • 1,100,000 tons of soil loss avoided annually. • 434,440 people benefit from reduced vulnerability to flood events. <p>Updated for actual results at project completion.</p>	100.0	53%	100.0
62		Dominican Republic - Emergency Recovery and Disaster Risk Management (P109932 FY08, FY12): provide infrastructure recovery and strengthen risk management capacity in tropical storm affected areas.	A	<ul style="list-style-type: none"> • 37,218 hectares of damaged irrigation rebuilt. • 152 km transmission lines restored to "disaster-resistant" standards. • Santiago waste water operation restored. • 252 MW of damaged hydropower facilities restored and dam safety standards improved. <p>Updated for actual results at project completion.</p>	99.9	100%	99.9

C. Water, Wastewater, and Waste Management

#		Project Name (Number Year/s Loans Approved) and Description	A/M	Target Results	Committed US\$ mil	IBRD share	Allocated US\$ mil
63		India - Andhra Pradesh Water Sector Improvement (P100954 FY10): improve irrigation services on a sustainable basis and strengthen the State's institutional capacity for multi-sectoral development and of its water resources.	A	<ul style="list-style-type: none"> ● Improved irrigation service delivery on a sustainable basis. ● Increased cropping intensity, crop diversity, and productivity of crops, livestock, and fish. 	450.6	46%	321.5
64		Indonesia - Water Resources and Irrigation Management Program 2 (P114348 FY11): improve infrastructure and government capacity for river basin water resource and irrigation management.	A	<ul style="list-style-type: none"> ● Increased crop productivity by providing more efficient and reliable irrigation water. ● 500,000 farmer households from provinces involving 12 river basins benefited. 	150.0	74%	94.7
65		Lebanon - Lake Qaraoun Pollution Prevention (P147854 FY16): reduce the quantity of untreated municipal sewage discharged into the Litani River and address pollution around Qaraoun Lake.	A	<ul style="list-style-type: none"> ● 50% reduction in pollutant load (nitrogen) to waterways. ● 30,000 (cubic meters) of municipal wastewater collected and treated ● 344,000 of direct beneficiaries. 	55.0	92%	2.2
66		Morocco - Solid Waste Sector DPL (P104937 FY09): enhance the governance of the solid waste sector.	M	<ul style="list-style-type: none"> ● 24,436 hectares rehabilitated with irrigation and drainage systems. ● 21,128 households supplied with new drinking water. <p>Updated for actual results at project completion.</p>	111.4	100%	111.4
67		Tunisia - Second Water Sector Investment (P095847 FY09): promote better water management through efficiency improvements in irrigation and increased capacity for watershed management.	A	<ul style="list-style-type: none"> ● 24,436 hectares rehabilitated with irrigation and drainage systems. ● 21,128 households supplied with new drinking water. <p>Updated for actual results at project completion.</p>	16.2	19%	16.2
68		Vietnam - Can Tho Urban Development and Resilience (P152851 FY16): reduce flood risk in the urban core area, improve its connectivity to new urban growth areas, and improve the city's capacity to manage disaster risk.	A	<ul style="list-style-type: none"> ● 2,675 hectares in urban core land area protected from floods. ● 25-30% reduction in travel time between urban core and Cai Rang center. ● 420,000 people as direct beneficiaries. 	125.0	39%	5.3
Subtotal for Water, Wastewater, and Waste Management					1,449.6		958.6
Cumulative Loan Repayments							(61.3)
Total Allocated and Outstanding for Water, Wastewater, and Waste Management							897.4

Amounts may not add up due to rounding.








D. Agriculture, Land Use, Forests, and Ecological Resources

#		Project Name (Number Year/s Loans Approved) and Description	A/M	Target Results	Committed US\$ mil	IBRD share	Allocated US\$ mil
69		Armenia - Second Community Agriculture Resource Management and Competitiveness Project (P133705 FY14): improve pasture-based livestock management in targeted alpine grasslands areas.	A	<ul style="list-style-type: none"> At least 10,000 pasture users benefit through their membership in Pasture Users' Cooperatives. 110,000 hectares of land managed with sustainable practices. 	23.0	54%	5.0
70		China - Guangdong Agricultural Pollution Control (P127775 FY14): promote waste management in livestock and crop production (including methane capture and use) and improve soil nutrient, fertilizer, and pesticide use.	M	<ul style="list-style-type: none"> 45,000 tons of annual pollution load to waterways reduced. 5,000 tons of annual nutrient load to waterways reduced.¹ 28,000 hectares with improved soil nutrient, fertilizer and pesticide use.² 	100.0	48%	26.7
71		China - Hebei Rural Renewable Energy Development Project (P132873 FY15): demonstrate sustainable biogas production and utilization to reduce environmental pollution and supply clean energy.	M	<p>By 2020:</p> <ul style="list-style-type: none"> 42,000,000 m³ of biogas used annually. 58,780 tons of CO₂ emissions reduced annually. 96,100 rural resident households with access to biogas supply. Additional biogas used as fuel for public transportation. 	71.5	47%	7.6
72		China - Hunan Forest Restoration and Development (P125021 FY13): increase resilience of forests.	Both	<ul style="list-style-type: none"> 58,900 hectares of ecological forest plantation areas reforested and rehabilitated. 26,130 households benefited. 	80.0	69%	76.0
73		China - Integrated Forestry Development (P105872 FY11): increase forest cover to create wind breaks, farmland shelter belts, and conservation schemes, and to train farmers in forest and environmental management.	Both	<ul style="list-style-type: none"> 132,600 hectares of forests restored or re/afforested. 20% increase in vegetative cover plus improved species diversity in degraded forests rehabilitated. 324,000 farmers trained in forest management. <p>Updated for actual results at project completion.</p>	99.1	49.5%	99.1
74		China - Integrated Modern Agriculture Development (P125496 FY14): develop sustainable and climate resilient agricultural production systems by investing in improved irrigation and drainage systems and practices that address climate risk.	A	<ul style="list-style-type: none"> Reduced water use per ton of rice, wheat and maize produced in target regions. 94,000 hectares of farmland served with improved irrigation and drainage services. 38,500 hectares of leveled land and improved soil conditions. 	200.0	64%	90.3
75		China - Ningxia Desertification Control and Ecological Protection (P121289 FY12): control desertification and land degradation by stabilizing moving sands, re-vegetating degraded steppe lands and planting shelter belts.	Both	<ul style="list-style-type: none"> 30,000 hectares restored or re/afforested. 	80.0	70%	27.2


1 Initial target result of 500 tons corrected to reflect 5000 tons by the project's end.

2 Target result updated to reflect loan reallocation to support new counties totaling 9200 additional hectares.

D. Agriculture, Land Use, Forests, and Ecological Resources

#		Project Name (Number Year/s Loans Approved) and Description	A/M	Target Results	Committed US\$ mil	IBRD share	Allocated US\$ mil
76		Indonesia - Coral Reef Rehabilitation and Management Program- Coral Triangle Initiative (P127813 FY14): protect and sustainably manage unique coral ecosystems in selected districts and provinces.	A	<ul style="list-style-type: none"> ● Reduce destructive fishing in selected areas. ● 1,140 direct beneficiaries in fishing communities. ● 1.4 million hectares of marine areas brought under biodiversity protection. 	3.8	89%	1.3
77		Mexico - Forests and Climate Change (P123760 FY12): support rural communities' sustainable management of forests, and generate additional income from forest products and services and to reduce emissions from deforestation and forest degradation.	Both	<ul style="list-style-type: none"> ● 10% increase in areas under improved forest management (equivalent to 1,630,000 additional hectares). ● Support 2 pilot areas to reduce carbon emissions from deforestation and forest degradation. ● 4,000 forest communities benefited. (3,202 by end of 2016 – value is yearly results) 	350.0	45%	270.3
78		Morocco - Large Scale Irrigation Modernization (P150930 FY16): expand agriculture through the adoption of irrigation techniques that make more efficient use of water resources, while building better ties between farmers and markets.	A	<ul style="list-style-type: none"> ● 9,274 farmers benefit. ● 100% of area with access to water on demand in peak period. ● 20,700 hectares with improved irrigation technologies. 	150.0	80%	5.9
79		Peru - Peru National Agriculture Innovation Program (P131013 FY14): strengthen the national agricultural innovation system and integrate climate change criteria into project such as adaptive research, seed improvements and skills development, among others.	A	<ul style="list-style-type: none"> ● 20,000 small and medium farmers adopting new technologies. ● 61 new technologies demonstrated on farms. 	13.0	31%	2.6
80		Philippines - Rural Development (P132317 FY15): improve the resilience of small-scale farmers and fishermen to climate change by helping them recover and increase income-generating activities and strengthening the conservation of coastal and marine resources.	A	<ul style="list-style-type: none"> ● Increase incomes of about 1.9 million farmers and fishermen and the value of their products. 	501.3	75%	148.2
81		Russian Federation - Forest Fire Response (P123923 FY13): improve forest fire prevention and management and to enhance sustainable forest management.	Both	<ul style="list-style-type: none"> ● Improve forest fire detection and suppression systems. ● Improve capabilities of fire brigades. ● Avoid 75,500,000 tons of CO₂ eq. emissions over 25 years. ● Raise public awareness and education standards in forestry issues in general. 	40.0	33%	11.7
82		Tunisia - Fourth Northwest Mountainous and Forested Areas Development (P119140 FY11): better protect and manage natural resources through conservation of soil and water resulting from improved agriculture and pasture practices and to improve access to potable water for rural communities.	A	<ul style="list-style-type: none"> ● Reduce erosion and forest degradation. ● Build climate change awareness and disseminate climate-appropriate practices to reinforce livelihood and agro-system resilience. ● 318,000 people benefit 	33.5	73%	29.3

D. Agriculture, Land Use, Forests, and Ecological Resources

#		Project Name (Number Year/s Loans Approved) and Description	A/M	Target Results	Committed US\$ mil	IBRD share	Allocated US\$ mil
83		Uruguay - Sustainable Management of Natural Resources and Climate Change (P124181 FY12): improve farm environmental management and reduce greenhouse gas emissions by promoting improved agriculture and livestock management.	Both	<ul style="list-style-type: none"> • 2,700 (actual has been higher at 3,029) hectares of agricultural land with reduced methane emissions. • Improve water use in irrigation and livestock production systems. • Improve pasture management and other productivity measures. 	49.0	89%	35.5
Subtotal for Agriculture, Land Use, Forests, and Ecological Resources					1,794.2		836.5
Cumulative Loan Repayments							(1.3)
Total Allocated and Outstanding for Agriculture, Land Use, Forests, and Ecological Resources							835.2

Amounts may not add up due to rounding.

E. Resilient Infrastructure, Built Environment, and Other

#		Project Name (Number Year/s Loans Approved) and Description	A/M	Target Results	Committed US\$ mil	IBRD share	Allocated US\$ mil
84		Belize - Climate Resilient Infrastructure (P127338 FY15): enhance the resilience of road infrastructure against flood risks and the impacts of climate change.	A	<ul style="list-style-type: none"> • 30 km of roads rehabilitated and 12 bridges and culverts improved. • 50% reduction in road interruption due to flooding. • 170,000 people living near the road networks directly benefit. 	30.0	100%	1.5
85		China - Fujian Fishing Ports Project (P129791 FY14): reduce the vulnerability of fishing communities to extreme weather events.	A	<ul style="list-style-type: none"> • 11,000 fishermen and their families (total 64,000 people) benefit. • 3,000 fishing vessels protected in ports. • Improved effectiveness of early warning and emergency systems. 	60.0	58%	4.2
86		China - Huai River Basin Flood Management and Drainage Improvement (P098078 FY11): increase resilience of communities to the impacts of climate change, particularly flooding.	A	<ul style="list-style-type: none"> • 9,500 km² of flood protection (in rural and urban areas). • 6,600,000 people benefited. <p>Updated for actual results at project completion.</p>	200.0	33%	200.0
87		Jamaica – Disaster Vulnerability Reduction (P146965 FY16): enhance the country's resilience to disaster and climate risk.	A	<ul style="list-style-type: none"> • Protection of infrastructure (e.g., bridges, storm drains, roads) from floods directly benefiting about 247,000 people. • Increase the government's capacity to better prepare for and respond to natural disasters. 	30.0	100%	0.2
88		Macedonia & Serbia - South East Europe and Caucasus Catastrophe Risk Insurance Facility (P110910 FY11): increase access to catastrophe risk insurance through facilitating the growth of insurance markets.	A	<ul style="list-style-type: none"> • Increased catastrophe insurance coverage from 2% to 15% for homeowners, farmers, enterprises, and government entities holding catastrophe insurance policies. <p>Updated for actual results at project completion.</p>	10.0	100%	10.0
89		Mexico - Climate Change Development Policy Loan (P110849 FY08): mainstream climate change considerations into public policy.	Both	<p>Climate-informed public policies, including:</p> <ul style="list-style-type: none"> • 642,000 hectares reforested. • 6,000,000 tons of CO₂ eq. emissions reduced annually due to reforestation. • Domestic carbon pricing strategy developed. • City and state climate action plans developed. <p>Updated for actual results at project completion.</p>	501.3	100%	501.3
90		Russian Federation - Hydrometeorological Services Modernization (P127676 FY14): enhance capacity to deliver reliable and timely weather, hydrological and climate information.	A	<ul style="list-style-type: none"> • >70% accuracy of forecasts for the main administrative centers of Russia. • > 85-90% accuracy of seasonal river flow forecasts in Volga river basin reservoirs. • Increased number of sectoral data users data. 	60.0	43%	16.1
91		Timor-Leste - Road Climate Resilience Project (P125032 FY14): rehabilitate and improve the climate resilience of a road corridor.	A	<ul style="list-style-type: none"> • Improved drainage conditions along 110 km road corridor. • 30% reduction in major road damage events. 	15.0	16%	0.4
Subtotal for Resilient Infrastructure, Built Environment, and Other					906.3		733.3
Cumulative Loan Repayments							(0.16)
Total Allocated and Outstanding for Resilient Infrastructure, Built Environment, and Other							733.1

Amounts may not add up due to rounding.



ANNEX

ANNEX 1 IMPACT REPORTING APPROACH

ANNEX 2 WORLD BANK PROJECT CYCLE

ANNEX 3 LIST OF ABBREVIATIONS





IMPACT REPORTING APPROACH

When the World Bank issued its first Green Bond Impact Report in 2015, the initial reporting template and set of indicators presented were the product of engagement with investors, which benefitted from the efforts of multilateral development banks to harmonize metrics for GHG accounting and reporting on climate finance activities. The World Bank led a collaborative initiative with other issuers to create the first harmonized template with core indicators for the Renewable Energy and Energy Efficiency sectors that was published in March 2015. It has since evolved and been adopted by many other issuers. This consultative process of developing harmonized impact reporting templates has advanced under the auspices of the Green Bond Principles and its working groups and continues to evolve to cover other indicators and relevant sectors.

The indicators for this report have been selected among other expected development results and are intended to illustrate the type and scale of expected results in a variety of sectors and country contexts. To better reflect individual country challenges, demands, and resources, the report focuses on presenting a diverse set of countries, projects and sectors rather than cumulative impacts. Because of the limited comparability between projects, sectors and countries (see “Interpreting Reported Results” in “World Bank Green Bond Process” section and “No aggregation of GHG estimates” on the adjacent page), impact results are not aggregated, with the exception of “renewable energy capacity added”, which is deemed to be broadly comparable.

World Bank Green Bond Eligible Projects: Five Sectors

This impact report is organized according to the five sectors represented in the World Bank’s Green Bond eligible projects portfolio. Where projects cover multiple sectors, the project is included in the main sector only, but target results will include all components of the project.

1

Renewable Energy and Energy Efficiency

Many World Bank projects in this category include both a renewable energy and energy efficiency component, so combining the sectors avoids redundancy. The reporting framework adopted identifies four core indicators for energy efficiency and renewable energy projects; where information covering the proposed core indicators is publicly available, it is included.^{a/} However, for some projects quantitative estimates for these indicators are either not available or not applicable. A few other indicators that are considered relevant for Green Bond investors are also provided.

2

Transport

3

Water, Wastewater, and Waste Management

Projects categorized in the remaining sectors are more heterogeneous. The report provides project specific indicators based on available information on the scale of results.^{b/}

4

Agriculture, Land Use, Forests, and Ecological Resources

5

Resilient Infrastructure, Built Environment, and Other

Notes:

a/ This impact report has been prepared following an approach developed in collaboration with 11 other International Finance Institutions (IFIs) to encourage greater harmonization in impact reporting. Core indicators for other sectors were not recommended as part of initial efforts to work towards a harmonized approach for impact reporting. See the 2016 Joint Report on Multilateral Development Banks’ Climate Finance at <http://treasury.worldbank.org/cmd/pdf/InformationonImpactReporting.pdf>.

b/ Additional core indicators included in the reporting framework for other sectors such as Water and Wastewater Management, will be adopted in future impact reports.

Key Assumptions and Approach

The following key assumptions and approach were used in preparing this report.

- **Ex-ante projections:** Quantitative estimates for target results represent ex-ante projections developed during project design mostly for direct project impacts once projects are at normal operating capacity. The target results include expected results for projects still in the preparation, construction and/or implementation phase. The impact report thus serves as an illustration of expected results made possible through Green Bond eligible projects, but it is not intended to and does not provide actual results achieved in a specific year or reporting period. Target results have been updated with actual results at project completion when the final project commitment is materially different to the original authorized amount. Where the amounts are based on actual results this is noted in the preceding tables.
- **Length of time projects are on report:** Impact reporting will be provided for projects for so long as they are part of the World Bank Green Bond program. This means that projects are added to the impact report once Green Bond proceeds have been allocated to support the financing of disbursements to the project, and removed once the client has repaid the respective loan. Projects may also be removed from future reports if the World Bank decides to remove a project from its Green Bond program.¹ If a project is removed from the Green Bond program, any Green Bond proceeds previously allocated to support the financing of disbursements to that project will be credited back to the Special Account for Green Bond proceeds and allocated to support the financing of disbursements to other Green Bond eligible projects as part of the routine allocation process.
- **Reporting for co-financed projects:** The World Bank often co-finances projects with the client country and/or other lenders. The results for the individual project are based on the total project including all financiers. The World Bank's share of the total financing is included for each project.
- **Partial project eligibility:** In cases where a project is only partially Green Bond eligible, the committed amount reported reflects only that portion that is Green Bond eligible. Allocations to support disbursements to such projects are made on a pro rata basis.
- **No aggregation of GHG estimates:** When reported in the "Project Appraisal", "Implementation Status and Results", and/or "Implementation Completion and Results" reports, the GHG emission reductions for projects are reported in tons of CO₂ equivalent. The World Bank is undertaking an effort in conjunction with other International Finance Institutions to harmonize the approaches for GHG accounting.² At the same time, the World Bank is working to develop internally consistent GHG accounting methodologies for investment projects across relevant sectors. Given these on-going developments in GHG accounting, the basis for estimating CO₂ equivalent emission reductions may vary between World Bank projects. Therefore, the World Bank does not recommend aggregating the results of different projects in its portfolio.
- **All reported results are from publicly available sources:** Reporting is based on publicly available impacts for the projects disclosed in "Project Appraisal", "Implementation Status and Results", and "Implementation Completion and Results" reports. To facilitate comparability of the reported results, the reporting units have been converted where such conversion is based on a standard conversion factor.

¹ As part of the World Bank's due diligence in monitoring projects included in its Green Bond program, it may elect to remove a project. Possible reasons for removing a project from a Green Bond program include, but are not limited to, cancellation of the project or significant implementation delays.

² For more information on the harmonization framework, see <http://treasury.worldbank.org/cmd/pdf/InformationonImpactReporting.pdf>

WORLD BANK PROJECT CYCLE

The World Bank project cycle (see diagram 1) consists of six stages: Identification, Preparation, Appraisal, Negotiation/Approval, Implementation/Support, and Completion/Evaluation (see below for the detailed descriptions).

Projects that are reviewed for eligibility under the World Bank Green Bond program are selected from among all projects approved by the World Bank Board of Directors (see diagram 2). They therefore represent a subset of the World Bank's lending portfolio. As of June 30, 2017, there were 91 projects in the Green Bond program.

Project Identification

The World Bank works with a borrowing country's government on a *Country Partnership Framework* that identifies the country's priorities for reducing poverty and improving living standards. Within those priorities, the World Bank and the government agree on a project concept, which is outlined in a *Project Concept Note*. The *Project Information Document* outlines the project's scope, and the *Integrated Safeguards Data Sheet* identifies potential environmental and social issues.

Project Preparation

The borrower leads project preparation, with the World Bank generally taking an advisory role. If necessary, the borrower prepares an *Environmental Assessment Report* that describes the project's likely environmental impact and steps to mitigate possible harm. If there are major issues, the borrower prepares an *Environmental Action Plan*. An analysis of a project's potentially adverse effects on indigenous peoples may also be undertaken, and any issues are addressed in the *Indigenous Peoples Plan*.

Project Appraisal

The government and the World Bank review the identification and preparation documents and confirm the expected project outcomes, intended beneficiaries and evaluation tools, as well as the project's readiness for implementation. The *Project Information Document* is updated and released when the project is approved for funding.

Project Approval

The project team prepares the *Project Appraisal Document* (for investment project financing) or the *Program Document* (for development policy financing), along with other financial and legal documents, for submission to the Bank's Board of Executive Directors for approval. When approval is obtained and the legal documents are signed, the implementation phase begins.

Project Implementation

The borrower implements the project with technical assistance and support from the Bank as needed. Twice a year, the government and the Bank prepare a review of project progress, the *Implementation Status and Results Report*.

Project Completion

When a project is completed and closed, a World Bank operations team prepares an *Implementation Completion and Results Report*. The final outcomes are compared to expected results. The team also assesses how well the project complied with the Bank's operations policies, and accounts for the use of Bank resources.

Evaluation

The Bank's Independent Evaluation Group (IEG) assesses the performance of roughly one project out of four projects a year, measuring outcomes against the original objectives, sustainability of results and institutional development impact. IEG may produce *Impact Evaluation Reports* to assess the economic worth of projects and the long-term effects on people and the environment.

Diagram 1: World Bank Project Cycle

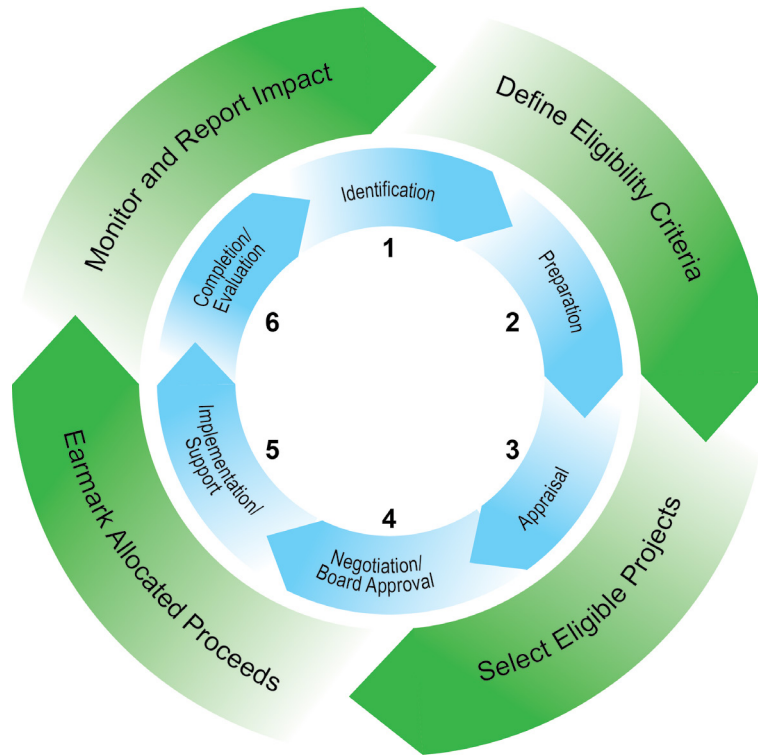
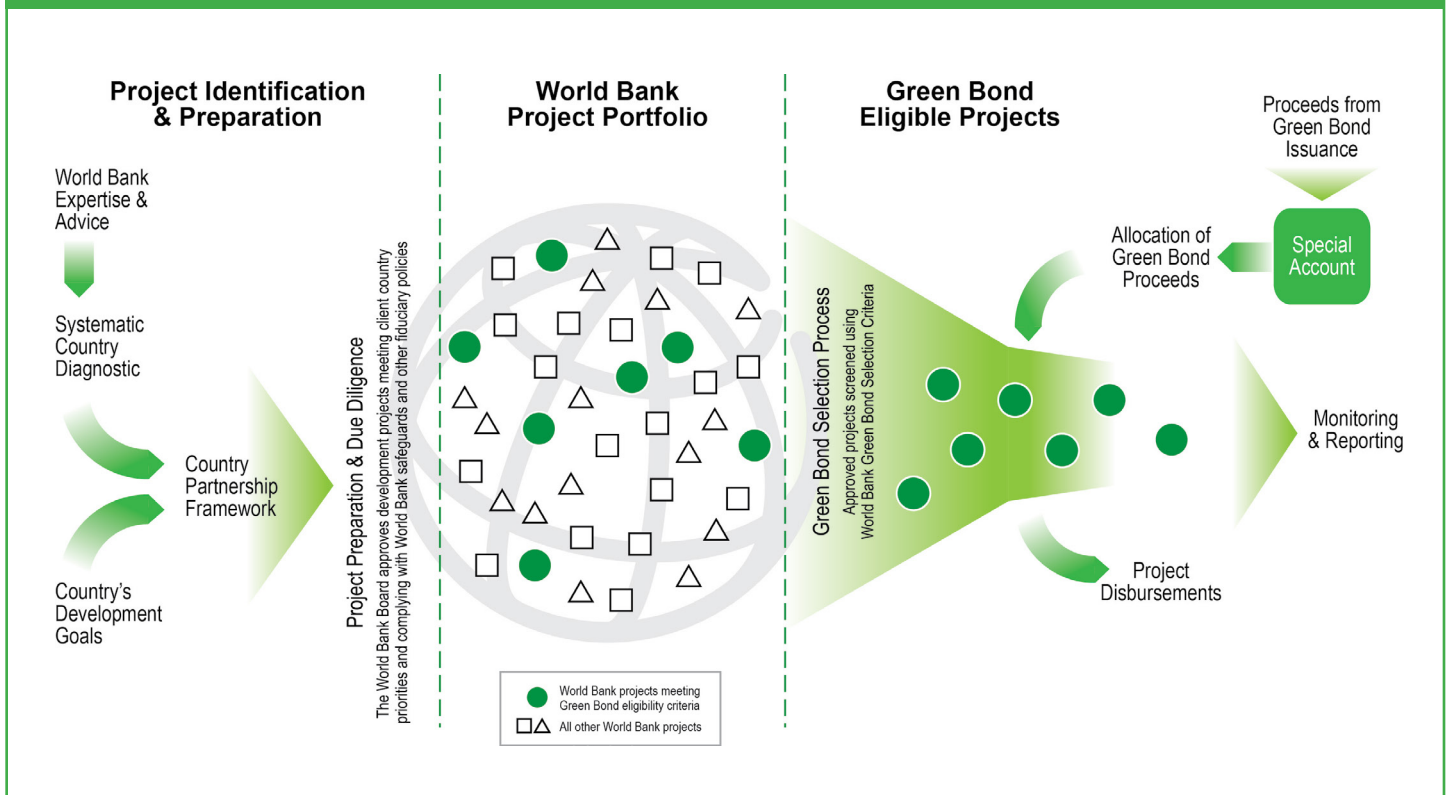


Diagram 2: World Bank Green Bond Selection Process



LIST OF ABBREVIATIONS

CO ₂	Carbon dioxide
eq.	Equivalent
GHG	Greenhouse gas
GWh	Gigawatt hours (equal to 1,000 MWh or 1,000,000 KWh)
IBRD	World Bank (International Bank for Reconstruction and Development)
Km	Kilometers
Km ²	Square kilometers
KWh	Kilowatt hours
m ³	Cubic meters
MW	Megawatts
MWh	Megawatt hours
RMB	Chinese renminbi
SME	Small and medium sized enterprises
TCE	Tons of coal equivalent

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