MOODY'S
INVESTORS SERVICE

ASSESSMENT
1 June 2018

Rate this Research

TABLE OF CONTENTS

Analyst Contacts

Rahul Ghosh +44.20.7772.1059
SVP - ESG
rahul.ghosh@moodys.com

Matthew Kuchtyak +1.212.553.6930
Analyst
matthew.kuchtyak@moodys.com

Heiko Peters +49.69.70730.799
AVP-Analyst
heiko.peters@moodys.com

Ram Sri-Saravanapavaan +44.20.7772.5492
Associate Analyst
ram.saravanapavaan@moodys.com

Anna Zubets-Anderson +1.212.553.4617
VP-Senior Analyst
anna.zubets-anderson@moodys.com

Jim Hempstead +1.212.553.4318
MD-Utilities
james.hempstead@moodys.com

Poland, Government of

Green Bond Assessment – December 2016 issuance

Summary analysis

Summary opinion

A GB2 (Very Good) Green Bond Assessment (GBA) assigned to the €750 million of senior unsecured fixed-rate notes issued by the Government of Poland (A2 stable) in December 2016 is based on the following considerations:

» Exclusive allocation of net proceeds for the refinancing and financing of expenditures within six eligible sectors – renewable energy, clean transportation, sustainable agricultural operations, afforestation, national parks and reclamation of heaps.

» The adoption of a green bond framework with clear guidelines for project eligibility aligned with the Green Bond Principles (GBP), as well as explicit exclusion criteria.

» The implementation of a newly-established process to manage the segregation of green bond proceeds and formal guidelines for the liquidity management of unallocated funds; however, the absence of a standalone independent audit constitutes a slight weakness.

» A lack of detailed processes for determining project evaluation, including measurable impact results, limiting the rigour of project selection.

» Post-issuance reporting published on a one-off basis only, with environmental performance indicators typically provided on total government expenditure at a programme level rather than on projects specific to the green bond.

Factor	Factor Weights	Score	Weighted Score
Organization	15%	2	0.30
Use of Proceeds	40%	1	0.40
Disclosure on the Use of Proceeds	10%	2	0.20
Management of Proceeds	15%	2	0.30
Ongoing Reporting and Disclosure	20%	4	0.80
Weighted Score			2.00

The transaction's weighted score, based on our GBA methodology scorecard, is 2.00. This, in turn, corresponds to a composite grade of GB2.

Profile

Poland is the ninth largest economy in the European Union (EU), with a nominal gross domestic product (GDP) of €465.6 billion in 2017 (or 3% of total EU GDP).[1] The country is also one of Europe's most populous, with a total population of approximately 38 million (7.4% of the EU total).[2]

As stated in our most recent credit opinion, the government of Poland's (A2 stable) credit profile is supported by a large economy that has shown robust growth over a number of years and a sound macroeconomic framework. The main credit challenges include the elevated public debt ratio compared to its peers, high external debt, domestic political risks and demographic challenges.

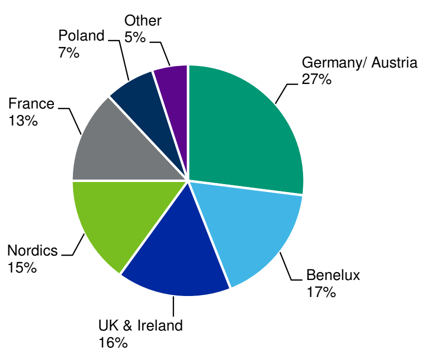
As a member of the EU, Poland is a signatory to the Paris Agreement on climate change. As such, the country is committed to the EU's nationally determined contribution (NDC) that sets out a collective binding target of at least a 40% domestic reduction in greenhouse gas emissions by 2030 compared to 1990 levels.[3]

Transaction summary

The Government of Poland raised a total of €750 million in its inaugural green bond issuance in December 2016. The bond, which is listed on the Luxembourg Stock Exchange, carried a maturity of five years, with the proceeds used for spending on budget allocation, subsidies and projects for new or existing eligible green projects. The offering marked the first sovereign green bond issuance on record.

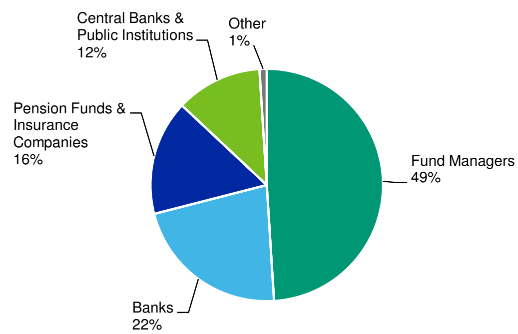
As a result of strong appetite from investors (with orders of around €1.5 billion), the transaction size was raised from an initial planned amount of €500 million to €750 million. Exhibits 1 and 2 illustrate the diversification of investors subscribing to the offering, both geographically and by type of institution. According to the issuer, green investors accounted for 61% of the final allocation.

Exhibit 1
Green bond investor distribution by location, % share



Source: Poland Ministry of Finance

Exhibit 2
Green bond investor distribution by type of institution, % share



Source: Poland Ministry of Finance

Strengths and weaknesses

Strengths	Weaknesses
Full allocation of net proceeds for the refinancing and financing of projects aligned with the Green Bond Principles	Lack of documented internal or external processes for determining project evaluation, limiting the rigour of project selection
Adoption of a green bond framework with clear guidelines for project eligibility and explicit exclusion criteria	Post-issuance reporting provided onlt until full allocation of proceeds, with limited granular detail on the nature of the investments and expected environmental impact
General alignment of green bond programme with the country's energy and climate policy objectives	Absence of a standalone independent audit on the use of proceeds
Newly-established process for green bond proceeds management and formal guidelines for the liquidity management of unallocated funds	

Organization

The Government of Poland's green bond programme provides financing for approved budgetary expenditures that exhibit environmental benefits. Such expenditures are typically indirect or intangible (such as in the form of subsidies), and may relate to either new budgetary commitments or the refinancing of outlays from budgets from previous years. As such, the programme reflects the sovereign's principal role in stimulating market conditions for green finance, rather than just providing direct financing for environmental projects.

To facilitate decision-making and ensure oversight of its programme, the issuer has established an organisational structure that exhibits effective inter-ministerial collaboration and engagement. In particular, we note the central functions of the following institutions:

» The **State Treasury of Poland**, represented by the Minister of Development and Finance, is responsible for signing the issuer's Green Bond Framework, as well as the approval of budget allocation for eligible projects.

» The **Public Debt Department**, which resides in the Ministry of Finance, is tasked with the issuance process (including documentation, pricing and settlement), the overall management of allocated and unallocated proceeds, coordination of ex-post reporting and engagement with external stakeholders.

» The **Economic Policy Support Department**, which resides in the Ministry of Finance, performs a coordination function with the aim of selecting relevant projects and expenditures for green financing. To this end, the department gathers expenditure data from the relevant ministries and collaborates with the Public Debt Department on ongoing reporting and disclosure.

» Other ministries and government agencies – for example, the **Ministry of Agriculture and Rural Development** and the **Ministry of Environment** – provide information related to relevant budget expenditures.

The adoption of an explicit framework that establishes clear guidelines for use of proceeds, project evaluation and selection, management of proceeds and reporting reinforces the programme's governance structure.

Eligible projects are defined as budgetary funding that promote Poland's transition to a low-emission economy and climate resilient growth, including both climate mitigation and adaptation. The six eligible sectors are renewable energy, clean transportation, sustainable agricultural operations, afforestation, national parks and reclamation of heaps. For each sector classification, the framework provides a further breakdown of eligible projects, illustrative examples and alignment with the Green Bond Principles (GBP).

The issuer also details explicit exclusion criteria, as listed below, enhancing the transparency of the use of proceeds. For example, no rail infrastructure built or developed financed with green bond proceeds will be dedicated to the transportation of fossil fuels.

» Burning of fossil fuel for power generation and transportation (in the form of rolling stock)

» Rail infrastructure dedicated for transportation of fossil fuels

» Nuclear power generation

» Palm oil operations

» Production or provision of weapons / alcohol / gambling / adult entertainment

» Large scale hydro projects–including technology and equipment (i.e. projects that generate greater than 20 MW of electricity)

» Transmission infrastructure and systems where 25% or more of electricity transmitted to the grid is fossil-fuel-generated

» Use of biomass for cogeneration in coal plants

The issuer's green bond programme is generally supportive of the country's broader energy and climate policies and objectives. Investments in renewable energy, for example, will support the implementation of the country's National Renewable Energy Action Plan (NREAP), which targets an increase in the share of renewable energy sources used in final energy consumption to at least 15% by 2020 (see Box).

The lack of a detailed process for determining project evaluation is a weakness in the issuer's organisation approach, however, limiting the rigour of project selection. According to the issuer's framework, underlying projects are "tested for eligibility", which we understand to constitute a broad assessment of alignment with the identified eligible categories. However, more explicit criteria for investment selection, including the evaluation of measurable impact results (such as the potential greenhouse gas reduction associated with projects), have not been provided.

Factor 1: Organization (15%)	Yes	No
Environmental governance and organization structure appear to be effective	●	
Policies and procedures enable rigorous review and decision making process	●	
Qualified and experienced personnel and/or reliance on qualified third parties	●	
Explicit and comprehensive criteria for investment selection, including measurable impact results		●
External evaluations for decision making in line with project characteristics	●	
Factor Score	2	

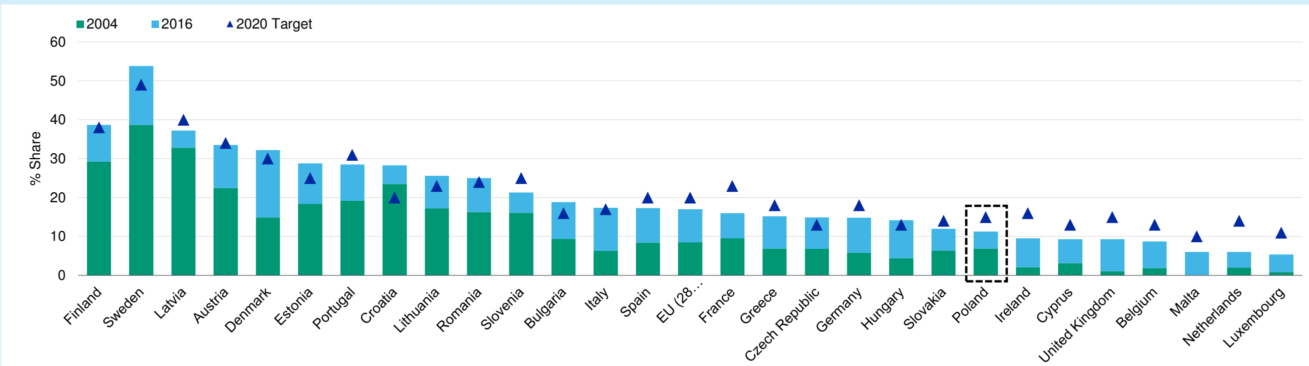
Box: Green bonds in the context of Poland's energy and climate policies

In order to meet its NDC, an EU directive calls for all member states to promote the use of energy from renewable sources. In support of this commitment, Poland launched its National Renewable Energy Action Plan (NREAP) in 2010.[4] Its main goal is to increase the share of renewable energy sources used in final energy consumption to at least 15% by 2020. The country is making progress in this area, with the share of energy from renewable sources rising to 11.3% in 2016 from 6.9% in 2004 (Exhibit 3). However, further investment will be required in the next two years, and we note that 11 member EU states have already surpassed their (largely more ambitious) 2020 commitments.

Exhibit 3

Further investment required to meet renewable energy target

Share of energy from renewable sources 2004-2016, % of total



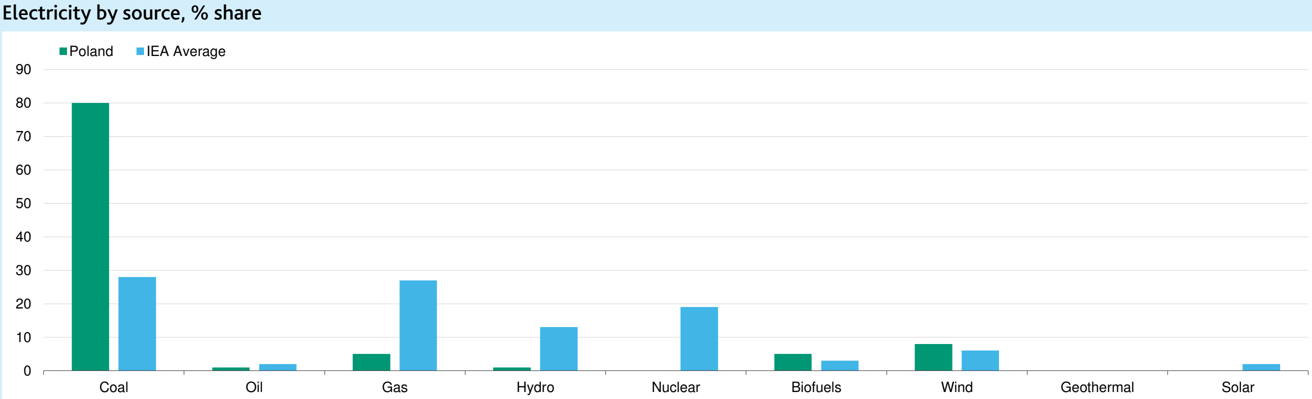
Sources: Moody's Investors Service, Eurostat

The government's green bond programme will therefore support its NREAP objectives by providing financial incentives for renewable energy projects. This is particularly important in the context of the carbon intensity of energy and electricity generation in Poland, and in particular the prominent use of coal. According to the International Energy Agency (IEA), coal accounts for 80% of Poland's electricity mix, compared to an IEA average of 28% (Exhibit 4). A rapid build-out of renewable energy will therefore be required for the country to support the EU's collective Paris Agreement goals.

Exhibit 4

Coal is the dominant source Poland's electricity mix

Electricity by source, % share



Note: IEA average refers to 29 countries monitored by the International Energy Agency.
Sources: International Energy Agency, Moody's Investors Service

The financing of other environmental expenditure via green bond proceeds is also in line with Poland's climate objectives. The NREAP includes an additional target to build a 10% share of biofuels in the market for transport fuels by 2020 by maximising the use of waste biomass in a sustainable manner. Furthermore, afforestation will play a significant role in Poland's decarbonisation efforts. In 2002, Poland's National Programme for the Augmentation of Forest Cover set a target of increasing forest cover to 30% by 2020 and 33% by 2050.[5] The country is well on course to surpass this objective, with forest cover estimated at 30.8% in 2015.

Use of proceeds

The net proceeds from the 2016 issuance were allocated exclusively for spending on new or existing eligible projects that qualify under the issuer's green bond framework and are aligned with the GBP.

Exhibit 5 provides an ex-post breakdown of the use of proceeds by eligible project category and funding mechanism.[6] Using definitions outlined in the GBP, €155.2 million (21% of total net proceeds) was allocated to renewable energy expenditure, €241.3 million (32%) to clean transportation projects, and €348.5 million (47%) to a variety of subsidies related to sustainable management of living natural resources.

Exhibit 5
Allocation of proceeds by eligible sector

Eligible Sector	Specific Expenditure	Alignment with Green Bond Principles*	Sectoral distribution, €mn	Funding Mechanism
Renewable energy	Generation of energy from renewable sources	Renewable energy	155.2	Budget allocation, including excise tax exemptions
	Manufacture of components of renewable energy technology	Renewable energy		
	Wholly dedicated transmission infrastructure linking energy from renewable sources to users	Renewable energy		
Clean transportation	Investments in rail infrastructure	Clean transportation	241.3	Subsidies
	Investments related to associated rail infrastructure	Clean transportation		
Sustainable agricultural operations	Sustainable agricultural operations	Sustainable management of living natural resources	292.1	Subsidies
Afforestation	Sustainable forest management.	Sustainable management of living natural resources	21	Subsidies
National parks	National park management	Sustainable management of living natural resources	35.4	Subsidies
Reclamation of heaps	Reclamation and remediation of contaminated land	Sustainable management of living natural resources	0.02	Subsidies

Note: Alignment with Green Bond Principles 2016.
Source: Poland Ministry of Finance

Payment of principal and interest of the green notes will be made from general funds and will not be directly linked to the performance of the eligible projects, in accordance with industry norms.

Factor 2: Use of Proceeds	Yes	No
>95% - 100% of proceeds allocated to eligible project categories that are determined based on the issuer's adopted policies and the categories established under the Green Bond Principles that will be further informed by one or more robust and widely recognized green bond frameworks or taxonomies that qualify eligible projects, including any applicable regulatory guidelines.	•	
Factor Score	1	

Disclosure on use of proceeds

1	2	3	4	5
Excellent	**Very Good**	Good	Fair	Poor

At the time of issuance, the disclosure on the use of green bond proceeds was reasonably limited. While each eligible project category was listed alongside a brief description of specific funding mechanisms (such as the use of excise tax exemptions for renewable energy expenditure), the documentation contained no additional information – either in summary or by way of breakdown – on the specific locations, euro amounts, timeframe for allocation, and expected environmental benefits of the planned expenditure. According to the issuer, the allocation of proceeds to specific expenditures only occurred after issuance, limiting the ability to provide more robust disclosure. We note that a more detailed breakdown on the use of proceeds was provided in subsequent reporting.

The issuer's green bond framework contains illustrative examples of relevant metrics to evaluate the environmental (and, where possible, social) impacts resulting from the green bond. For example, indicative metrics for renewable energy projects include total capacity of clean energy produced (MW/GW), the number of wind turbines or solar panels installed, and the location of production. Performance metrics cited for clean transportation, meanwhile, include the location and miles of track supported, the number of passengers transferred to train from cars and lorries, and the total greenhouse gas emissions avoided in tonnes of CO_2 equivalent.

However, there were no additional details on the methodologies, calculations and assumptions applied (or intended) to calculate quantitative benefits, which represents a weakness in the overall disclosure practices.

Finally, the government received a second party opinion from an external provider (Sustainalytics) that provides confirmation that the green bond framework is aligned with the GBP and that eligible project categories financed by the green bond proceeds will have a positive environmental impact.

Factor 3: Disclosure on the Use of Proceeds	Yes	No
Description of green projects, including portfolio level descriptions, actual or intended	●	
Adequacy of funding and/or strategies to complete projects	●	
Quantitative and/or qualitative descriptions for targeted environmental results	●	
Methods and criteria, both quantitative and qualitative, for calculating performance against targeted environmental results		●
Issuer relies on external assurances: Second Party reviews, audits and/or third party certfications	●	
Factor Score	2	

Management of proceeds

1	2	3	4	5
Excellent	**Very Good**	Good	Fair	Poor

The authorities have implemented new processes in order to manage the segregation of green bond proceeds, which we view as positive. Specifically, the Polish Public Finance Act was amended to enable the ring-fencing of proceeds to a separate "Green Cash Account" for disbursement to specific eligible projects over time.[7]

The transfer of funds from the Green Cash Account occurred after initial disbursements from the budget, with corresponding amounts adjusted from the account on a regular basis. Such retrospective adjustments raise the risk of double counting of projects, especially as additional green bonds are issued. In order to mitigate double counting challenges, however, the State Treasury has committed to reconcile the allocation of green bond proceeds within its annual budget review and has provide assurance that the budget will not allow for the listing of the same allocation/subsidy or project more than once.

Any unallocated funds residing with the Green Cash Account will be held in accordance with the State Treasury's normal liquidity management policy. This is comprised of investments in cash, short-term deposits and other short-term liquidity instruments – in line with typical market practices.

One slight weakness is the lack of a dedicated audit on the Green Cash Account, either by an external auditor or independent internal unit. However, the use of green bond proceeds was part of a general audit and budgetary analysis conducted by Poland's Supreme Audit Office. Furthermore, the issuer received an annual compliance review from an external organisation (Sustainalytics) to confirm that the use of proceeds met the project eligibility categories outlined in the green bond framework.

Factor 4: Management of Proceeds	Yes	No
Bond proceeds are segregated and separately tracked on an accounting basis or via a method by which proceeds are earmarked	●	
Application of proceeds is tracked by environmental category and project type	●	
Robust process for reconciling planned investments against actual allocations	●	
Clear eligibility rules for investment of cash balances	●	
Audit by external organization or independent internal audit unit		●
Factor Score	2	

Ongoing reporting and disclosure

A post-issuance green bond report on the use of proceeds was published in December 2017, in accordance with the one-year timeframe stated within the issuer's green bond framework. The report is publically available on the Ministry of Finance website.

Disclosure on the allocation of proceeds is reasonably robust. The report confirms that the entire bond proceeds from the December 2016 issuance had been allocated by October 17, 2017, with 80.6% of funds spent on refinancing projects initiated between 2014 and 2016, and the remaining 19.4% allocated towards new projects launched in the first quarter of 2017. Furthermore, the report provides a distribution of proceeds by eligible sector and annual budgetary allocation.

The report also provides a selection of quantitative and qualitative environmental indicators related to the green bond. Metrics include total megawatt capacity of clean energy produced, location and miles of railway track, the number and area of farms supported, and the area of forest planted and preserved (Exhibit 6).

Exhibit 6

Selection of impact reporting metrics provided

Project category	Performance Indicator	Metric	Period	Unit	Specific to 2016 issuance
Renewable Energy	Amount of excise duty refund	155.2	2014-Q1 2017	EUR mn	No
	Electricity with return	34338420	2014-Q1 2017	MWh	No
	Production of electricity from renewable energy	40558	2014-Q1 2017	GWh	No
	Power capacity in renewable energy installations	8440	Q1 2017	MW	No
Clean Transportation	Railway lines created	2900	2014-2015	km	No
Sustainable agricultural	Sustainable farming	57010	2014-2015	hectares	No
	Organic farming	2577	2014-2015	# of farms	No
	Protection of endangered bird species and natural	76,674	2014-2015	hectares	No
	Protection of soli and water	73522	2014-2015	hectares	No
Afforestation	Afforestation of agricultural & non-agricultural land	4546	2014-2015	hectares	No
	Subsidies commissioned to state forests	1.3	2014-2015	EUR mn	Yes
National parks	Grants awarded to national parks	35.4	2014-2015	EUR mn	Yes
Reclamation of heaps	Cleaning drainage ditch and drain discharging	457.7	2014-2016	metres	Yes

Note: Data taken from Green Bond Report on the Use of Proceeds, Ministry of Finance, December 2017.
Source: Poland Ministry of Finance

Nevertheless, the large majority of performance metrics cited in the report reflect aggregate government expenditure for eligible project categories, rather than for projects financed by the green bond proceeds in insolation. The lack of granular reporting on environmental results – while indicative of the challenges of providing impact reporting on intangible expenditures – constitutes a weakness in the disclosure.

In addition, the report does not include quantitative data related to greenhouse gas emissions reduced or avoided as a result of the projects. We note that the issuer is exploring the possibility of providing additional information in the future. At the time of writing, however, there were no confirmed plans for additional impact reporting over the life of the bond.

Factor 5: Ongoing Reporting and Disclosure	Yes	No
Reporting and disclosure post issuance provides/to be provided detailed and timely status updates on projects	●	
Ongoing annual reporting is expected over the life of the bond		●
Disclosures provide granular detail on the nature of the investments and their expected environmental impacts		●
Reporting provides/to be provided a quantiative and/or qualitative assessment of the environmental impacts actually realized to-date	●	
Reporting includes/to include quantitative and/or qualitative explanation of how the realized environmental impacts compare to projections at the time the bonds were sold		●
Factor Score	4	

Moody's Green Bond Assessment (GBA)

Moody's GBA represents a forward-looking, transaction-oriented opinion on the relative effectiveness of the issuer's approach to managing, administering, allocating proceeds to and reporting on environmental projects financed with green bond proceeds. GBAs are expressed using a five-point relative scale, ranging from GB1 (Excellent) to GB5 (Poor). A GBA does not constitute a credit rating.

Moody's related publications

Methodology:

» Green Bonds Assessment (GBA), March 30, 2016

Credit analysis:

» Government of Poland – A2 stable: Annual credit analysis, April 3, 2018

» Government of Poland – A2 Stable: Regular update, March 27, 2018

Green Bond Assessments:

» Gothenburg, City of: Update to Green Bond Assessment - Euro Medium Term Note Programme, June 2016 issuance, January 18, 2018

» Nigeria, Government of: Green Bond Assessment - Series 1 Green Notes, December 13, 2017

» Cape Town, City of: Green Bond Assessment, June 30, 2017

Sector In-Depth:

» Green Bonds – Global: Modest Q1 2018 issuance a speed bump on the road to market growth, April 20, 2018

» Green Bonds - Global: Global municipal green bond issuance will continue to rise, March 19, 2018

» Green Bonds - Global: Global green bond issuance set to eclipse $250 billion in 2018, January 31, 2018

» Cross-sector - Global: FAQ: The green bond market and Moody's Green Bonds Assessment, November 29, 2017

» Green Bond Assessments - Global: Issuers exhibit strong organizational frameworks but differ on disclosure, September 19, 2017

Endnotes

1 See http://ec.europa.eu/eurostat/web/national-accounts/data/main-tables.

2 See http://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Demographic_balance,_2016_(thousands).png.

3 See Intended Nationally Determined Contribution of the EU and its Member States, United Nations Convention on Climate Change (UNFCCC), March 2015.

4 See http://www.iea.org/policiesandmeasures/pams/poland/name-25100-en.php.

5 See Forests in Poland 2016, Lasów Państwowe.

6 To our knowledge, the full breakdown of Use of Proceeds was first disclosed in the Green Bond Report on the Use of Proceeds, Ministry of Finance, December 2017.

7 See Sovereign Green Bond Briefing, Climate Bonds Initiative, March 2018.

REPORT NUMBER 1115849

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454

MOODY'S INVESTORS SERVICE