



Verification of the Sustainability Quality of the Green Bond 2016 issued by NRW.BANK

21 October 2016

Aim and Scope of this Second Party

NRW.BANK has commissioned oekom research to assist with the issuance of its Green Bond by verifying and confirming the sustainable added value of this bond using the criteria and indicators of a sustainability framework concept. The aim of this green bond issuance is to refinance loans disbursed during the calendar year 2016.

oekom research's mandate included the following services:

- Definition of a verification framework concept containing a clear description of eligible project categories and the social and environmental criteria assigned to each category for evaluating the sustainability-related performance of the projects financed through the proceeds of the bond.
- Verification of compliance of the refinanced projects with the verification framework criteria.
- Verification of the alignment of the refinanced projects with the Green Bond Principles.
- Review and classification of NRW.BANK's sustainability performance on the basis of the oekom Corporate Rating.

Overall Evaluation of the Green Bond

oekom's overall evaluation of the fourth Green Bond issued by NRW.BANK is positive:

- The Green Bond's formal concept, defined processes and (announced) disclosures are aligned with the Green Bond Principles (Part I of this Second Party Opinion).
- The overall sustainability quality of the bond and the sustainability performance of each of the funded assets in terms of sustainability benefits and risk avoidance and minimisation is good (Part II of this Second Party Opinion).
- The issuer itself shows a good sustainability performance (Part III of this Second Party Opinion).

There are some aspects for which more specific selection or performance criteria would be recommended as it could still add to the overall quality of the Green Bond: For energy efficient residential buildings maximum annual primary energy consumption for space heating and domestic water could be set. For wind power plants, the provision of life-cycle-assessments for all windmills would be an important additional step. Regarding solar power plants and low carbon transport, further environmental standards could be asked for.

Part I – Green Bond Principles

1) Use of Proceeds

The proceeds of this Green Bond will be used exclusively to refinance loans which have already been granted and whose intended purposes are clearly defined and limited by the project categories and criteria specified below.

The following categories have been chosen for allocating the proceeds of this issuance:

	Project Area	Financed Projects	Percentage of Bond Issuance
Climate protection through energy efficiency and a transition towards a low carbon economy			
A	Wind power (on- and offshore)	€ 366.400.000 29 projects: 2 offshore and 27 onshore	70%
B	Mortgage loans for energy efficient residential buildings	€ 25.800.000 Several energy efficiency renovations of residential buildings	5%
C	Public transport vehicles	€ 10.000.000 1 project	2%
D	Solar power	€ 5.700.000 2 projects	1%
E	Energy and resource efficiency in small and medium-sized enterprises	€ 2.000.000 2 projects: 1 energy efficiency and 1 resource efficiency	1%
Biodiversity and environmental quality of habitats			
F	Renaturation of watercourses and separate wastewater drainage and treatment	€ 113.400.000 1 project: Emschergenossenschaft	21%
Total		€ 523.300.000	100%

All project categories are positive from a sustainability perspective. The projects in categories A to E contribute to climate protection and foster the transition towards a low carbon economy, by limiting greenhouse gas emissions and/or bolstering renewable energy. The project in category F facilitates adaptation to climate change but also enable the conservation/restoration of the environment.

Additionally, all projects meet specific environmental and social standards (see part II of this document). These criteria are clearly defined and verifiable using quantitative indicators. The criteria are designed to ensure a positive impact of the projects that is not impaired by adverse impacts and effects in other areas (e.g. environmental impacts, impacts on local communities).

2) Process for Project Evaluation and Selection

The selection of assets for inclusion in the Green Bond is carried out internally by NRW.BANK. The department Capital Market, more precisely NRW.BANK's Green Bond Committee carries out this selection.

The selection is based on a set of eligibility criteria defined by NRW.BANK. These criteria are the following:

- Contribution to the sustainability strategy of the German State of North Rhine-Westphalia as well as the United Nations' Sustainable Development Goals.
- Contribution to the fight against climate change
 - Mitigation: limiting greenhouse gas emissions in contribution to the goal of limiting temperature rises to two degrees Celsius above pre-industrial levels.
 - Adaptation: foster projects that help protect against the inevitable effect of already on-going climate change in North Rhine-Westphalia (heavy rainfalls and floods).

3) Management of Proceeds

The proceeds of this Green Bond will be exclusively used to refinance loans disbursed in 2016 and which correspond to the above eligibility criteria. The chosen projects are thus internally earmarked and will be exclusively refinanced via this Green Bond. The proceeds are immediately allocated to the refinancing of the loans, which spares the issuer a specific ring-fencing.

According to the issuer, the term of the bond corresponds to the shortest single repayment term. Thus, no reinvestment of funds – topping up – will take place during the duration of the bond, rendering an assessment of additional loans and projects unnecessary.

4) Reporting

NRW.BANK commits to a regular reporting towards the Green Bond's investors via its dedicated web page (www.nrwbank.de/greenbond) and the 2016 Sustainability Report, which will be published in mid-2017.

The reporting includes an impact assessment in line with the recommendations of the Harmonized Framework for Impact Reporting¹ on the following indicators relating to this Green Bond. The impact assessment is executed and verified by the Wuppertal Institut:

Category A: Wind power

- Annual energy production of windmills financed through the loans (in MWh).
- Annual avoidance of CO₂ emissions (in t) related to these loans (based on the average carbon intensity of the North Rhine-Westphalian energy mix).

Category B: Mortgage loans for energy efficient residential buildings

- Average energy consumption of buildings (in kWh/m²) financed through the loans compared to the average energy consumption of comparable buildings in North Rhine-Westphalia, Germany.
- Average CO₂ emissions of buildings (in kg/m²) financed through the loans compared to the average CO₂ emissions of comparable buildings in North Rhine-Westphalia, Germany (based on the carbon intensity of the North Rhine-Westphalian energy mix).

Category C: Public transport vehicles

- Average energy consumption of public transport vehicles (in kWh/kilometre) financed through the loans compared to the average energy consumption of previous vehicle fleet.
- Annual avoidance of CO₂ emissions (in t) related to these loans (based on the average carbon intensity of the North Rhine-Westphalian energy mix).

Category D: Solar power

- Annual energy production of solar power plants (in MWh) financed through the loans.
- Annual avoidance of CO₂ emissions (in t) related to these loans (based on the average carbon intensity of the North Rhine-Westphalian energy mix).

Category E: Energy and resource efficiency in small and medium-sized enterprises

- Average energy consumption of projects (in kWh/product unit) financed through the loans compared to the average energy consumption prior to efficiency measures.
- Average CO₂ emissions of projects (in kg/product unit) financed through the loans compared to the average CO₂ emissions prior to efficiency measures.

Category F: Restoration of watercourses and separate wastewater drainage and treatment

- Watercourses restored during the last year (in km).
- Additional environmental benefits (e.g. increase in biodiversity).

¹ <http://treasury.worldbank.org/cmd/pdf/InformationonImpactReporting.pdf>

Part II – Sustainability Quality of the Green Bond

1) oekom Green Bond Verification Framework

The oekom Green Bond Verification Framework helps to illustrate the sustainability quality and thus the social and environmental added value of NRW.BANK's Green Bond issuances. The verification framework clearly defines the eligible categories and encloses specific sustainability criteria in order to verify the sustainability performance of the Green Bond. Using quantitative indicators allows to measure the sustainability performance of the bonds, to set ambitious targets and to report on progress.

Details on the individual criteria and indicators for the project categories can be found in Annex 1 „oekom Green Bond Verification Framework“.

2) Verification of the Projects Refinanced by the Green Bond

Methods

oekom research has verified whether the projects to be funded through the bonds match the project categories and criteria listed in the oekom Green Bond Verification Framework. The verification was carried out using information and documents provided to oekom research, partly on a confidential basis, by NRW.BANK (e.g. management decisions, certifications of loan recipients/project implementers, local public procurement laws, federal German laws, regulations and standards, land use plans, environmental declarations, etc.). Further national legislation and standards, depending on the project location, and information from oekom Corporate Ratings were drawn on to complement the information provided by NRW.BANK.

Findings

A. Wind power (on- and offshore)

Share in use of proceeds: Approx. €366.4m (70% of the total credit amount)

Project types: Construction and operation of wind power plants

Loan recipients: Public and private wind park operators and cooperatives

Sustainability Risks and Benefits of the Project Category

The environmental benefits of wind power generation projects comprise the contribution to climate protection and to the transition towards a low-carbon economy. Further benefits are less environmental degradation and pollution (e.g. through resource extraction, releases of waste streams to water or soil) in comparison to fossil fuel or nuclear power plants. From a social perspective, the transition from fossil fuels to wind power lowers negative human rights impacts of oil, gas and coal production (e.g. land-use conflicts, resettlement). In addition – different from fossil fuels combustion - wind power does not negatively impact air quality.

However, the construction and operation of wind power plants can result in negative environmental impacts (e.g. noise and other negative impacts on biodiversity) and impacts on local communities. Further risks include potentially poor working conditions during construction and maintenance of power plants (especially with respect to worker safety) as well as in the production processes of wind power equipment. As the construction of these plants requires large amounts of raw materials and equipment, life cycle aspects are an important factor when assessing the overall environmental footprint of related projects.

All wind power projects selected for the Green Bond are located in highly-regulated and developed countries.

- 1. Consideration of environmental aspects during planning and operation
 - ✓ For 100% of refinanced projects, the regulatory act on planning and permission of wind power plants („Windenergieerlass“) of North Rhine-Westphalia applies. This law includes requirements regarding no-go areas, height restriction, land-use plans, environmental assessments, noise, conservation of nature and biodiversity.
 - ✓ 100% of refinanced projects comply with the German Federal Immission Control Act (Bundes-Immissionsschutzgesetz/ BImSchG), which provides for minimum standards regarding the assessment of possible environmental impacts of wind power plants (i.e. basic environmental screening).

- ✓ 25 projects, accounting for 96% of the loans' volume, are not located in key biodiversity areas such as Ramsar sites and UNESCO Natural World Heritage sites. For 9 out of these 25 projects, accounting for 58% of the loans' volume, locations in IUCN protected areas I-IV can also be excluded. As the exact locations of the remaining 4 projects was not provided to oekom research, no statement can be made on whether they are located in key biodiversity areas.
- 2. Environmental aspects of wind power plants
 - For 4 projects, accounting for 28% of the loans' volume, wind power plant manufacturers carried out life-cycle assessments of the wind power plants and/or its components. No information is available on the remaining 25 projects, accounting for 72% of the loans' volume.
- 3. Community dialogue
 - ✓ All onshore wind power plants comply with the regulations of the German Building Code (Baugesetzbuch/ BauGB). The regulations provide for the consideration of local residents' interests during the development of land-use plans and zoning maps (e.g. through public display of development plans, possibility to voice concerns, case-dependent compensation measures).
- 4. Working conditions during construction and maintenance work
 - ✓ 100% of refinanced projects are located in countries where high labour standards are in place for both employees and contractors (i.e. regarding discrimination, working time, wages, freedom of association and collective bargaining).
 - ✓ For 100% of refinanced projects, high standards regarding health and safety for both own employees and contractors are in place (provided for by national legislation).
- 5. Social standards in the supply chain of wind power plants
 - ✓ For 22 refinanced projects, accounting for 72% of the loans' volume, the equipment is manufactured by companies that either show a good performance regarding working conditions (according to their oekom Corporate Rating) or that primarily produce (i.e. have more than 50% of production sites) in countries with high labour standards (e.g. European Union, United States). For 7 projects, accounting for 28% of the loans' volume, the companies show poor performance or produce in countries with low labour standards.
 - Only for 6 projects, accounting for 38% of the loans' volume, wind power plant manufacturers require high social standards from their suppliers (e.g. regarding the prohibition of forced labour, wages, working time, health and safety). For 23 projects, accounting for 62% of the loans' volume, the manufacturers either do not require or it remains unclear whether manufacturers require high social standards from their suppliers.

Controversy assessment

- A controversy assessment could only be conducted for 25 of the 29 included projects, accounting for 92% of the loans' volume. This assessment did not reveal any controversial activities or practices that could be attributed to NRW.BANK.

B. Mortgage loans for energy efficient residential buildings

Share in use of proceeds: Approx. €25.8m (5% of the total credit amount)

Project types: Energy efficiency renovations of residential buildings

Loan recipient: Private borrower

Sustainability Risks and Benefits of the Project Category

Private mortgages for energy efficient buildings are beneficial from an environmental point of view as they contribute to climate protection through optimised energy use. Due to the small scale of work and resources involved in building private homes as well as due to the fact that the buildings are in Germany, environmental and social impacts from the construction of private homes are comparably low.

However, fair banking practices need to be in place in the retail client business in order to mitigate potential social risks, e.g. over-indebtedness or foreclosure.

- 1. Achieved energy efficiency of buildings
 - No information is available on the annual primary energy consumption for space heating and domestic water of financed buildings. Therefore no statement on the share of loans allocated to residential buildings for which the annual primary energy consumption for space heating and domestic water is below 70 kWh/m² can be made.
 - ✓ For 100% of loans allocated to residential buildings, the credit terms require that building regulations of the Energy Saving Ordinance (Energieeinsparverordnung / EnEV) must always be observed in the version applicable at the time of credit application.
- 2. Responsible treatment of customers with debt repayment problems
 - NRW.BANK has preventive measures and sustainable solutions for customers with debt repayment problems in place (e.g. pro-actively approaching customers potentially at risk, internal debt counselling and support for external debt counselling and foreclosure as a last resort). However, these loans are granted by the client's principle bank and not NRW.BANK directly. Therefore NRW.BANK's measures do not apply and statement on the share of loans ensuring preventive measures and sustainable solutions for customers with debt repayment problems can be made.

C. Public transport vehicles

Share in use of proceeds: Approx. €10m (2% of the total credit amount)

Project types: Acquisition and restoration of electric trams

Loan recipients: Public transport company

Sustainability Risks and Benefits of the Project Category

The acquisition of electric trains is positive from an environmental point of view as electric trains help foster climate protection through lower carbon emissions. From a social point of view, passenger train transport helps to reduce injuries and fatalities caused by car accidents.

At the same time, when evaluating the production of electric trains, certain risks have to be taken into account. Major risks from an environmental point of view stem from the negligence of environmental impacts throughout the whole life-cycle (i.e. all impacts from cradle to grave). Social risks stem from safety of both workers at production sites and potential train operators and passengers.

All public transport vehicle projects selected for the Green Bond are in highly-regulated and developed countries.

- 1. Consideration of environmental aspects at manufacturing sites
 - No information is available on environmental management systems at manufacturing sites. Therefore no statement on the share of loans allocated to public transport vehicles produced at manufacturing sites that have a comprehensive environmental management system in place can be made.
 - There is also no information on management of direct and indirect carbon emissions (through e.g. inventories, targets and action plans) as well as management of substances of concern at manufacturing sites.
- 2. Working conditions at manufacturing sites (only applicable for newly produced vehicles)
 - ✓ 100% of refinanced electric trains are manufactured in countries where high labour standards are in place for both employees and contractors (i.e. regarding discrimination, working time, wages, freedom of association and collective bargaining).
 - ✓ 100% of refinanced electric trains are manufactured in countries where high standards regarding health and safety for both own employees and contractors are in place (provided for by national legislation).

- 3. Environmental aspects of vehicles
 - No information is available on comprehensive life-cycle assessments, material efficiency and the use of recycled materials.
 - Furthermore, no information is available on whether recyclability at end-of-life stage has been considered during design and construction of vehicles.
 - ✓ 100% of refinanced public transport vehicles use braking current for heating cabins. Additionally, vehicles are constructed to save energy by being ready for immediate use even after seven days without power supply.
 - No information is available on further energy efficiency measures during operation (e.g. through energy recovery systems).
- 4. Social aspects of vehicles
 - ✓ 100% of refinanced public transport vehicles are 100% low floor trams ensuring easy access for people with impaired mobility.
 - No information is available on further health and safety aspects for both passengers and operators (e.g. vigilance control, minimisation of noise exposure).
- 5. Social standards in the supply chain
 - ✓ 80% of train components are sourced in Germany where high labour standards are in place for both employees and contractors (i.e. regarding discrimination, working time, wages, freedom of association and collective bargaining).
 - ✓ 80% of train components are sourced in Germany where high standards regarding health and safety for both own employees and contractors are in place (provided for by national legislation).

Controversy assessment

- A controversy assessment on the included project did not reveal any controversial activities or practices that could be attributed to NRW.BANK.

D. Solar power

Share in use of proceeds: Approx. €5.7m (1% of total credit amount)

Project types: Construction and operation of solar power plants

Loan recipients: Public and private solar park operators and cooperatives

Sustainability Risks and Benefits of the Project Category

The environmental benefits of solar power generation projects comprise the contribution to climate protection and to the transition towards a low-carbon economy. Further benefits are less environmental degradation and pollution (e.g. resource extraction, releases of waste streams to water or soil) in comparison to fossil fuel or nuclear power plants. From a social perspective, the transition from fossil fuels to solar power reduces negative human rights impacts of oil, gas and coal production (e.g. land-use conflicts, resettlement). In addition – different from fossil fuels combustion - solar power does not negatively impact air quality.

With respect to potential risks, the manufacturing of solar panels in developing countries such as China can have negative social and environmental impacts. As the production of solar panels requires scarce raw materials and as the panels contain hazardous substances, aspects such as recyclability, management of hazardous substances and conversion efficiency are relevant to evaluate the overall environmental performance of related projects. However, in comparison with other renewable energy sources, social and environmental risks related to solar power are deemed to be low.

All solar power projects selected for the Green Bond are located in highly-regulated and developed countries.

- 1. Consideration of environmental aspects during planning and construction
 - ✓ 100% of newly constructed solar projects underwent environmental impact assessments at the planning stage.
 - ✓ 1 project, accounting for 65% of the loans' volume, is not located in key biodiversity areas such as Ramsar sites, UNESCO Natural World Heritage, IUCN protected areas I-IV. As the exact location of the second project was not provided to oekom research, no statement can be made on whether it is located in key biodiversity areas.
 - No information is available on environmental standards and requirements during the construction phase (e.g. noise mitigation, minimisation of environmental impact during construction work).

- 2. Environmental aspects of solar power plants
 - ✓ For 1 project, accounting for 65% of the loans' volume, the constructing firm guarantees a performance ratio of solar power plants of up to 84%. No information is available on the performance ratio of the remaining project, accounting for 35% of the loans' volume.
 - No information is available on the conversion efficiency of refinanced solar power plants. Therefore no statement on the share of loans allocated to solar power plants for which the conversion efficiency is at least 15%.
 - ✓ For 100% of the projects, take-back options for used solar panels are available (in accordance with European WEEE-legislation).
 - No information is available on the percentage of loans allocated to projects that voluntarily fulfil the requirements of the European Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS Directive).
- 3. Community dialogue (new builds only)
 - ✓ 100% of newly built projects comply with the regulations of the German Building Code (Baugesetzbuch/ BauGB). The regulations provide for the consideration of local residents' interests during the development of land-use plans and zoning maps (e.g. through public display of development plans, possibility to voice concerns, case-dependent compensation measures).
- 4. Working conditions during construction and maintenance work
 - ✓ 100% of refinanced projects are located in countries where high labour standards are in place for both employees and contractors (i.e. regarding discrimination, working time, wages, freedom of association and collective bargaining).
 - ✓ For 100% of refinanced projects, high standards regarding health and safety for both own employees and contractors are in place (provided for by national legislation).
- 5. Social standards in the supply chain of solar modules
 - Like the majority of solar panel manufacturers, the suppliers selected for the projects do not show a good performance regarding working conditions (according to their oekom Corporate Rating) or do not report on their labour standards at all (e.g. regarding health and safety, freedom of association, working hours, minimum wages).
 - It is unclear whether the projects' solar module manufacturers require high social standards from their suppliers (e.g. regarding the prohibition of forced and child labour, minimum wages, working hours, health and safety).

Controversy assessment

- A controversy assessment could only be conducted for one of the two included projects, accounting for 65% of the loans' volume. This assessment did not reveal any controversial activities or practices that could be attributed to NRW.BANK.

E. Energy and resource efficiency in small and medium-sized enterprises

Share in use of proceeds: Approx. €2.0m (1% of the total credit amount)

Project types: Energy and resource efficiency improvements of e.g. machinery, vehicles and/or processes

Loan recipients: Small and medium-sized companies, e.g. a hot-dip galvanisation shop and a furniture store

Sustainability Risks and Benefits of the Project Category

The main environmental benefit of energy and resource efficiency projects comprises climate protection through the long-term reduction of energy consumption and therefore a transition towards a low carbon economy.

Negative impacts with respect to energy and resource efficiency measures in small and medium-sized enterprises are comparatively minor. However, a relevant social impact can be the financing of certain controversial business areas.

All energy and resource efficiency projects selected for the Green Bond are located in highly-regulated and developed countries.

- 1. Percentage improvement of energy and resource efficiency
 - ✓ For 100% of refinanced projects, the credit terms require efficiency improvements to reach or exceed 20% for energy efficiency and/or 10% for resource efficiency.
 - ✓ For 100% of financed projects, NRW.BANK received proof of use from the debtors' principle bank, confirming that energy/ resource savings have been accomplished.
- 2. Exclusion of controversial business areas
 - ✓ For 100% of refinanced projects, NRW.BANK has ruled out projects and borrowers active in the following controversial business areas: Arms manufacture and trade, extraction of oil or coal, nuclear power generation and production of pesticides or tobacco. NRW.BANK provided written confirmation.
- 3. Working conditions during construction and operation
 - ✓ 100% of refinanced projects are located in countries where high labour standards are in place for both employees and contractors (i.e. regarding discrimination, working time, wages, freedom of association and collective bargaining).
 - ✓ For 100% of refinanced projects, high standards regarding health and safety for both own employees and contractors are in place (provided for by national legislation).

- 4. Social standards in the supply chain
 - No information is available on suppliers used. Therefore no statement can be made on the share of loans allocated to projects for which high labour and health and safety standards are applied in the supply chain (e.g. ILO core conventions).

F. Restoration of watercourses and separate wastewater drainage and treatment

Share in use of proceeds: Approx. €113.4m (21% of the total credit amount)

Project types: Restoration of the original natural state of watercourses, construction of modern wastewater system infrastructure

Loan recipients: Local Water Cooperative of North Rhine-Westphalia (Emschergenossenschaft)

Sustainability Risks and Benefits of the Project Category

Environmental benefits of this category include the restoration of natural habitats thus strengthening biodiversity as well as a reduction of the risk of flooding.

However, the restoration of watercourses can result in negative environmental and social impacts at construction sites. Specifically, risks include potentially poor working conditions as well as environmental impairments during construction and maintenance.

All watercourse restoration projects selected for the Green Bond are in highly-regulated and developed countries.

- 1. Consideration of environmental aspects during planning and construction
 - ✓ For 100% of refinanced projects, the Collective Bargaining and Public Procurement Act of North Rhine-Westphalia (TVgG-NRW) additionally requires that sustainability criteria such as energy and resource efficiency have to be taken into consideration in all public procurement contracts.
- 2. Working conditions during construction and operation
 - ✓ 100% of refinanced projects are located in countries where high labour standards are in place for both employees and contractors (i.e. regarding discrimination, working time, wages, freedom of association and collective bargaining).
 - ✓ For 100% of refinanced projects, high standards regarding health and safety for both own employees and contractors are in place (provided for by national legislation).

- 3. Modelling on natural state of water bodies, scientific monitoring, structural quality mapping
 - ✓ For 100% of refinanced projects, appropriate planning, implementation and subsequent monitoring for ten years are based on the European Water Framework Directive (WFD) and thus modelled on the natural state of watercourses.
- 4. Sustainability standards for the wastewater system
 - ✓ For 100% of relevant projects, the wastewater network is – based on the wastewater ingredients present – constructed so that it is corrosion-resistant for its intended service life.
 - ✓ For 100% of relevant projects, 90% of the generated sewage sludge is used as biomass and as a source of biogas for generating energy and 10% is re-used as a raw material in the cement industry.

Controversy assessment

- A controversy assessment on the included project did not reveal any controversial activities or practices that could be attributed to NRW.BANK.

Climate Bond Initiative Standard

All of the wind and solar power projects as well as the public transport vehicle projects that received loans to be refinanced by NRW.BANK's Green Bond 2016 meet the eligibility criteria of the Climate Bonds Standard for Wind Energy Generation², Solar Energy Generation³ and Low Carbon Transport⁴ respectively:

Eligible projects and assets relating to wind energy generation are projects and assets that operate or are under construction to operate in one or more of the following activities:

- The development, construction and operation of wind farms
- Operational production or manufacturing facilities wholly dedicated to wind energy development
- Wholly dedicated transmission infrastructure for wind farms

Eligible projects and assets relating to solar energy generation are projects and assets that operate or are under construction to operate in one or more of the following activities:

- Solar electricity generation facilities
- Wholly dedicated transmission infrastructure and other supporting infrastructure for solar electricity generation facilities including inverters, transformers, energy storage systems and control systems
- Solar thermal facilities such as solar hot water systems

One eligible project and asset category relating to low carbon transport are projects and assets that operate or are under construction to operate in one or more of the following activities:

All infrastructure, infrastructure upgrades, rolling stock and vehicles for electrified public transport, including electrified rail, trams, trolleybuses and cable cars as well as buses with no direct emissions (electric and hydrogen).

2 http://www.climatebonds.net/files/files/Sector%20Criteria%20-%20Wind%20v1_0.pdf

3 http://www.climatebonds.net/files/files/Sector%20Criteria%20-%20Solar%20v2_0.pdf

4

[http://www.climatebonds.net/files/files/Low%20Carbon%20Transport%20Background%20Paper%20Redraft%20Final%20Feb%202016%20\(1\).pdf](http://www.climatebonds.net/files/files/Low%20Carbon%20Transport%20Background%20Paper%20Redraft%20Final%20Feb%202016%20(1).pdf)

Part III – Assessment of NRW.BANK's Sustainability Performance

In the oekom Corporate Rating with a rating scale from A+ (excellent) to D- (poor), NRW.BANK was awarded a score of C and classified as "Prime". This means that the company performed well in terms of sustainability, both compared against others in the industry and in terms of the industry-specific requirements defined by oekom research. In oekom research's view, the securities issued by the company thus all meet the basic requirements for sustainable investments.



As at 21.10.2016, this rating puts NRW.BANK in place 15 out of 27 companies rated by oekom research in the Financials/Development Banks sector.

In this sector, oekom research has identified the following issues as the key challenges facing companies in term of sustainability management:

- Sustainability standards for the lending business
- Goal-oriented promotion of sustainability issues
- Climate change and related risks
- Employment conditions and employee wellbeing

In two of these four key issues, NRW.BANK achieved a rating that was above the average for the sector.

The company holds a stake in casinos and lotteries on behalf of the German State of North Rhine-Westphalia, accounting for less than 2% of net sales. Other than this, the company is not involved in any controversial areas of business or business practices and does not breach any of the other exclusion criteria frequently applied by sustainability-oriented investors.

More details on the rating of the issuer can be found in Annex 2 "oekom Corporate Rating NRW.BANK".

A handwritten signature in blue ink, appearing to be "J. Geyer", is written over a faint, circular stamp.

oekom research AG

Munich, 21 October 2016

Disclaimer

1. oekom research AG uses a scientifically based rating concept to analyse and evaluate the environmental and social performance of companies and countries. In doing so, we adhere to the highest quality standards which are customary in responsibility research worldwide. In addition we create a Second

Party Opinion (SPO) on bonds based on data from the issuer.

2. We would, however, point out that we do not warrant that the information presented in this SPO is complete, accurate or up to date. Any liability on the part of oekom research AG in connection with the use of these SPO, the information provided in them and the use thereof shall be excluded. In particular, we point out that the verification of the compliance with the selection criteria is based solely on random samples and documents submitted by the issuer.

3. All statements of opinion and value judgements given by us do not in any way constitute purchase or investment recommendations. In particular, the SPO is no assessment of the economic profitability and credit worthiness of a bond, but refers exclusively to the social and environmental criteria mentioned above.

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About oekom research

oekom research is one of the world's leading rating agencies in the field of sustainable investment. The agency analyses companies and countries with regard to their environmental and social performance. oekom research has extensive experience as a partner to institutional investors and financial service providers, identifying issuers of securities and bonds which are distinguished by their responsible management of social and environmental issues. More than 100 asset managers and asset owners routinely draw on the rating agency's research in their investment decisionmaking. oekom research's analyses therefore currently influence the management of assets valued at over 600 billion euros.

As part of our Green Bond Services, we provide support for companies and institutions issuing sustainable bonds, advise them on the selection of categories of projects to be financed and help them to define ambitious criteria. We verify the compliance with the criteria in the selection of projects and draw up an independent second party opinion so that investors are as well informed as possible about the quality of the loan from a sustainability point of view.

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Annexes

- Annex 1: oekom Green Bond Verification Framework
- Annex 2: oekom Corporate Rating NRW.BANK

Annex 1: oekom Green Bond Verification Framework

oekom Green Bond Verification Framework

The oekom Green Bond Verification Framework helps to illustrate the sustainability quality and thus the social and environmental added value of NRW.BANK's Green Bond issuances. The verification framework clearly defines the eligible categories and encloses specific sustainability criteria in order to verify the sustainability performance of the Green Bonds. With the use of quantitative indicators the sustainability performance of the bonds can be measured, ambitious targets set and progress reported. In addition, impact indicators provide investors with concrete information on environmental added value.

Use of Proceeds

The proceeds of this Green Bond issued by NRW.BANK will be exclusively used for the following project categories:

Climate protection through energy efficiency and a transition towards a low carbon economy

- A. Wind power
- B. Mortgage loans for energy efficient residential buildings
- C. Public transport vehicles
- D. Solar power
- E. Energy and resource efficiency in small and medium-sized enterprises

Biodiversity and environmental quality of habitats

- F. Renaturation of watercourses and separate wastewater drainage and treatment

Sustainability Criteria and Quantitative Indicators for Use of Proceeds

In order to ensure that the environmental and social risks linked to the financed projects are prevented and the opportunities clearly fostered, a set of sustainability criteria has been established for each project category. Possible quantitative indicators, allowing for measurement of progress and regular reporting, complete each criterion.

Project category A: Wind power

1. Consideration of environmental aspects during planning and operation

- Percentage of loans allocated to projects that underwent environmental impact assessments at the planning stage.
- Percentage of loans allocated to projects for which the location in key biodiversity areas can be excluded (e.g. exclusion of Ramsar sites, UNESCO Natural World Heritage, IUCN protected areas I-IV).
- Percentage of loans allocated to projects that meet high environmental standards and requirements during the construction phase (e.g. noise mitigation, minimisation of environmental impact during construction work).
- Percentage of loans allocated to projects for which measures to protect habitat and wildlife are in place (e.g. measures to protect birds and bats during operation of the power plant, environmentally friendly anti-rust protection).

2. Environmental aspects of wind power plants

- Percentage of loans allocated to projects for which life-cycle assessments of the wind power plants have been carried out.

3. Community dialogue

- Percentage of loans allocated to projects that feature community dialogue as an integral part of the planning process and the operational phase (e.g. sound information of communities, community advisory panels and committees, surveys and dialogue platforms, grievance mechanisms and compensation schemes).

4. Working conditions during construction and maintenance work

- Percentage of loans allocated to projects with high labour and health and safety standards for construction work conducted by own employees and contractors (e.g. ILO core conventions).
- Percentage of loans allocated to projects with high labour and health and safety standards for operational tasks conducted by own employees and contractors (e.g. ILO core conventions).

5. Social standards in the supply chain

- Percentage of loans allocated to projects for which high labour and health and safety standards are applied in the supply chain (e.g. ILO core conventions).

Controversy assessment

- Controversy screening and description of controversial projects (e.g. due to labour rights violations, environmental accidents, adverse biodiversity impacts).

Project category B: Mortgage loans for energy efficient residential buildings

1. Achieved energy efficiency of buildings

- Percentage of loans allocated to residential buildings for which the annual primary energy consumption for space heating and domestic water is below 70 kWh/m².
- Percentage of loans allocated to residential buildings that comply with and/or exceed the requirements of the latest German building decree (Energieeinsparverordnung / EnEV).

2. Responsible treatment of customers with debt repayment problems

- Percentage of loans for which preventive measures and sustainable solutions for customers with debt repayment problems are in place.

Project category C: Public transport vehicles

1. Consideration of environmental aspects at manufacturing sites (only applicable for newly produced vehicles)

- Percentage of loans allocated to vehicles produced at manufacturing sites that have a comprehensive environmental management system in place.
- Percentage of loans allocated to vehicles produced at manufacturing sites that properly manage direct and indirect carbon emissions (through e.g. inventories, targets and action plans).
- Percentage of loans allocated to vehicles produced at manufacturing sites where substances of concern are strictly limited in production processes.

2. Working conditions at manufacturing sites (only applicable for newly produced vehicles)

- Percentage of loans allocated to vehicles produced at manufacturing sites that have a comprehensive health and safety management system in place.
- Percentage of loans allocated to vehicles produced at manufacturing sites where high labour standards are guaranteed (e.g. ILO core conventions).

3. Environmental aspects of vehicles

- Percentage of loans allocated to vehicles for which comprehensive life-cycle-assessments have been conducted.
- Percentage of loans allocated to vehicles for which material efficiency and the use of recycled materials is considered during product design.
- Percentage of loans allocated to vehicles for which recyclability at end-of-life stage has been considered during design and construction.

- Percentage of loans allocated to vehicles for which energy efficiency during operation is optimised (e.g. through energy recovery systems).

4. Social aspects of vehicles

- Percentage of loans allocated to vehicles which ensure health and safety for both passengers and operators (e.g. vigilance control, minimisation of noise exposure).

5. Social standards in the supply chain (only applicable for newly produced vehicles)

- Percentage of loans allocated to vehicle manufacturers that require high labour and health and safety standards in their supply chain (e.g. ILO core conventions).

Controversy assessment

- Controversy screening and description of controversial projects (e.g. due to labour rights violations, environmental accidents, adverse biodiversity impacts).

Project category D: Solar power

1. Consideration of environmental aspects during planning and construction

- Percentage of loans allocated to projects that underwent environmental impact assessments at the planning stage.
- Percentage of loans allocated to projects for which the location in key biodiversity areas can be excluded (e.g. exclusion of Ramsar sites, UNESCO Natural World Heritage, IUCN protected areas I-IV).
- Percentage of loans allocated to projects that meet high environmental standards and requirements during the construction phase (e.g. noise mitigation, minimisation of environmental impact during construction work).

2. Environmental aspects of solar power plants

- Percentage of loans allocated to projects for which the performance ratio of solar power plants is at least 80%.
- Percentage of loans allocated to projects for which conversion efficiency is at least 15%.
- Percentage loans allocated to projects that meet high environmental standards regarding take-back and recycling of solar modules at end-of-life stage.
- Percentage of loans allocated to projects for which the thresholds defined by the European Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS Directive) are voluntarily fulfilled.

3. Community dialogue

- Percentage of loans allocated to projects that feature community dialogue as an integral part of the planning process and construction phase (e.g. sound information of communities, community advisory panels and committees, surveys and dialogue platforms, grievance mechanisms and compensation schemes).

4. Working conditions during construction and maintenance work

- Percentage of loans allocated to projects with high labour and health and safety standards for construction work conducted by own employees and contractors (e.g. ILO core conventions).
- Percentage of loans allocated to projects with high labour and health and safety standards for operational tasks conducted by own employees and contractors (e.g. ILO core conventions).

5. Social standards in the supply chain

- Percentage of loans allocated to projects for which high labour and health and safety standards are applied in the supply chain (e.g. ILO core conventions).

Controversy assessment

- Description of controversial projects (e.g. due to labour rights violations, environmental accidents, adverse biodiversity impacts).

Project category E: Energy and resource efficiency in small and medium-sized enterprises

1. Percentage improvement of energy and resource efficiency

- Percentage of loans allocated to projects for which the percentage improvement reaches or exceeds 20% for energy efficiency and / or 10% for resource efficiency.

2. Exclusion of controversial business areas

- Percentage of loans allocated to projects which are not involved in any controversial business areas, such as for example armaments, crude oil, coal, nuclear power, pesticides and / or tobacco.

3. Working conditions during construction and operation

- Percentage of loans allocated to projects with high labour and health and safety standards for construction work conducted by own employees and contractors (e.g. ILO core conventions).
- Percentage of loans allocated to projects with high labour and health and safety standards for operational tasks conducted by own employees and contractors (e.g. ILO core conventions).

4. Social standards in the supply chain

- Percentage of loans allocated to projects for which high labour and health and safety standards are applied in the supply chain (e.g. ILO core conventions).

Project category F: Restoration of watercourses and separate wastewater drainage and treatment

1. Consideration of environmental aspects during planning and construction

- Percentage of loans allocated to projects that underwent environmental impact assessments at the planning stage.
- Percentage of loans allocated to projects that meet high environmental standards and requirements during the construction phase (e.g. noise mitigation, minimisation of environmental impact during construction work).

2. Working conditions during construction and operation

- Percentage of loans allocated to projects with high labour and health and safety standards for construction work conducted by own employees and contractors (e.g. ILO core conventions).
- Percentage of loans allocated to projects with high labour and health and safety standards for operational tasks conducted by own employees and contractors (e.g. ILO core conventions).

3. Modelling on natural state of water bodies, scientific monitoring, structural quality mapping

- Percentage of loans allocated to projects for which the relevant plans are scientifically monitored and are modelled on the natural state of the water body.

4. Sustainability standards for the wastewater system

- Percentage of funds allocated to projects for which the wastewater network is planned and implemented so as to resist corrosion.
- Percentage of funds allocated to projects for which the sludge generated from the wastewater treatment is used and/or disposed of responsibly.

Controversy assessment

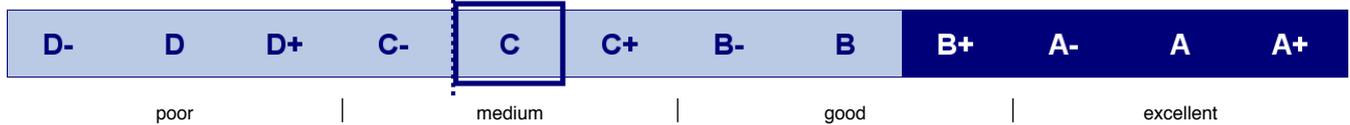
- Controversy screening and description of controversial projects (e.g. due to labour rights violations, environmental accidents, adverse biodiversity impacts).

oekom Corporate Rating

NRW.BANK

Industry: Financials/Development Banks
 Country: Germany
 ISIN: DE000NWB1939

Status: **Prime**
 Rating: **C**
 Prime Threshold: **C**



Competitive Position

Industry Leaders

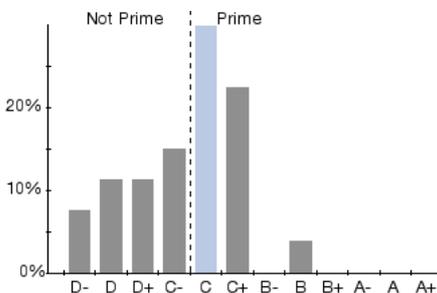
(in alphabetical order)

- Asian Development Bank (PH)
- Council Of Europe Development Bank (FR)
- European Bank for Reconstruction & Development (GB)

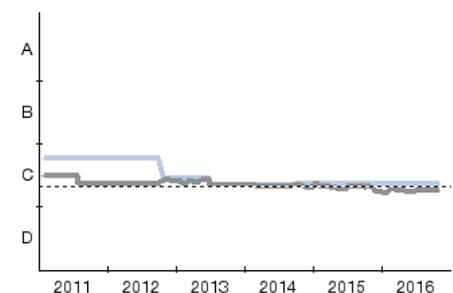
Company Industry

Distribution of Ratings

(27 companies in the industry)



Rating History



Key Issues

Key Issue Performance



Strengths and Weaknesses

- + reasonable programmes with high social benefit
- + group-wide implementation of a strategy for addressing climate change and some related sector-specific risks
- + reasonable integration of environmental and social aspects into lending to private customers
- + transparency regarding forms of non-regular employment
- no environmental and social lending guidelines for corporate and public sector customers
- insufficient measures to ensure goal-oriented financial services

Controversy Monitor

Company

Controversy Score: -2
 Controversy Level: Minor



Industry

Maximum Controversy Score: -22
 Controversy Risk: Minor



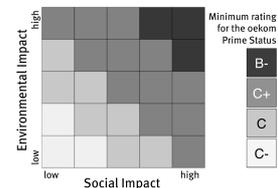
Disclaimer

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Methodology - Overview

oekom Corporate Rating	<p>The oekom Universe comprises more than 3,800 companies (mostly companies in important national and international indices, but also small & mid caps drawn from sectors with links to sustainability as well as significant non-listed bond issuers).</p> <p>The assessment of the social and environmental performance of a company is generally carried out with the aid of approx. 100 social and environmental criteria, selected specifically for each industry. All criteria are individually weighted, evaluated and aggregated to yield an overall score (Rating). In case there is no relevant or up-to-date company information available on a certain criterion, it is graded with a D-.</p> <p>In order to generate a comprehensive picture of each company, our analysts collect information relevant to the rating both from the company itself and from independent sources. During the rating process, considerable importance is attached to cooperating extensively with the company under evaluation. Companies are regularly given the opportunity to comment on the results and provide additional information.</p> <p>An external rating committee assists the analysts at oekom research with the content-related design of industry-specific criteria and carries out a final plausibility check of the rating results at the end of the rating process.</p>
Controversy Monitor	<p>The oekom Controversy Monitor is a tool for assessing and managing reputational and financial risks associated with companies' negative environmental and social impacts.</p> <p>The controversy score is a measure of the number and extent of the controversies in which a company is currently involved: all controversial business areas and business practices are assigned a negative score, which varies depending on the significance and severity of the controversy. Both the score of the portrayed company and the maximum score obtained in the industry are displayed.</p> <p>For better classification, the scores are assigned to different levels: minor, moderate, significant and severe. The industry level relates to the average controversy score.</p> <p>Only controversies, for which reliable information from trustworthy sources is available, are recorded. It should be noted that large international companies are more often the focus of public and media attention and available information is often more comprehensive than for less prominent companies.</p>
Distribution of Ratings	<p>Overview of the distribution of all company ratings of an industry from the oekom Universe (company portrayed in this report: light blue). The industry-specific Prime threshold (vertical dotted line) is also shown.</p>
Industry Classification	<p>The social and environmental impacts of industries differ. Therefore, subject to its relevance, each industry analysed is classified in a Sustainability Matrix.</p> <p>Depending on this classification, the two dimensions of the oekom Corporate Rating, i.e. the Social Rating and the Environmental Rating, are weighted and the sector-specific minimum requirements for the oekom Prime Status (Prime threshold) are defined (absolute best-in-class approach).</p>
Industry Leaders	<p>List (in alphabetical order) of the top three companies in an industry from the oekom Universe at the time of generation of this report.</p>
Key Issue Performance	<p>Overview of the company's performance with regard to important social and environmental issues that are key to the industry, compared to the industry average.</p>
Rating History	<p>Trend in the company's rating over time and comparison to the average rating in the industry.</p>
Rating Scale	<p>Companies are rated on a twelve-point scale from A+ to D-:</p> <ul style="list-style-type: none"> A+: the company shows excellent performance. D-: the company shows poor performance. <p>Overview of the range of scores achieved in the industry (light blue) and display of the industry-specific Prime threshold (vertical dotted line).</p>
Status & Prime Threshold	<p>Companies are categorised as Prime if they achieve/exceed the minimum sustainability performance requirements (Prime threshold) defined by oekom for a specific industry (absolute best-in-class approach) in the oekom Corporate Rating. Prime companies rank among the leaders in that industry.</p>
Strengths & Weaknesses	<p>Overview of selected strengths and weaknesses of a company with regard to relevant social and environmental criteria.</p>



Please note that all data in this report relates to the point in time at which the report was generated.