

**Second
Party
Opinion**

**Assessment of the Sustainability Quality of the
Sustainability Bond
issued by the German State of North Rhine-Westphalia**

15 February 2018

Aim and Scope of this Second Party Opinion

The German State of North Rhine-Westphalia (NRW) commissioned oekom research to assist with the issuance of its Sustainability Bond by confirming the sustainable added value of this bond. The assessment of the Sustainability Bond was conducted using the criteria and indicators of a Sustainability Bond Analysis Framework developed by oekom research. The aim of this Sustainability Bond issuance is to promote and illustrate NRW's sustainability policy as well as its sustainability strategy and at the same time to finance projects and initiatives with clear environmental and social benefits in NRW.

oekom research's mandate included the following services:

- Definition of a Sustainability Bond Analysis Framework ("oekom Sustainability Bond Analysis Framework") containing a clear description of the eligible asset category and the social and environmental criteria assigned to this category for evaluating the sustainability-related performance of the assets (re-)financed through the proceeds of the bond.
- Analysis of the alignment of the Sustainability Bond to be issued against the ICMA's Green and Social Bond Principles.
- Evaluation of compliance of the eligible projects with the oekom Sustainability Bond Analysis Framework criteria.
- Review and classification of Federal Republic of Germany's sustainability performance on the basis of the oekom Country Rating.

Overall Evaluation of the Sustainability Bond Programme

oekom's overall evaluation of the Sustainability Bond to be issued by the State of North Rhine-Westphalia is positive:

- The State of North Rhine-Westphalia has defined a formal concept for its Sustainability Bond regarding use of proceeds, processes for project evaluation and selection, management of proceeds and reporting. This concept is in line with the Green and Social Bond Principles (Part I of this Second Party Opinion).

- The overall sustainability quality of the eligible projects in terms of sustainability benefits and risk avoidance and minimisation is good (Part II of this Second Party Opinion).
- The country, which the issuer forms part of, shows a good sustainability performance (Part III of this Second Party Opinion).

There are some aspects that could add to the overall quality of future Sustainability Bond issuances:

- Quantitative targets or requirements concerning energy efficiency improvements for projects in categories *F. Sustainable urban development* and *G. Modernisation of educational and public health facilities* (e.g. required efficiency improvement of 20%).
- Comprehensive environmental standards for projects in categories *C. Public transportation and local mobility*, *F. Sustainable urban development* and *G. Modernisation of educational and public health facilities* (e.g. noise mitigation, minimisation of environmental impact during construction work).

Part I – Green and Social Bond Principles

1) Use of Proceeds

The proceeds of this Sustainability Bond will be used to finance selected eligible projects belonging to the 2017 budget of the State of North Rhine-Westphalia, which closes on or about the end of the first quarter of 2018. An amount equivalent to the net proceeds will be used to refinance projects and initiatives of the State of North Rhine-Westphalia with clear environmental and/or social benefits, in accordance with NRW's sustainability policy.

The following categories have been chosen for allocating the proceeds of this issuance (the percentages relate to a tentative maximum € 2,026.9m issuance financing all eligible projects):

| Project Category | | Percentage |
|------------------|---|-------------|
| A | Education and sustainability research | 40% |
| B | Inclusion and social coherence | 10% |
| C | Public transportation and local mobility | 9% |
| D | Climate protection and energy transition | 4% |
| E | Protection of natural resources | 6% |
| F | Sustainable urban development | 12% |
| G | Modernisation of educational and public health facilities | 19% |
| Total | | 100% |

The use of proceeds may include operating or capital expenditures of projects (excluding personnel costs of the State of NRW).

In addition to belonging to one of the above categories, which are generally positive from a sustainability perspective, all projects meet specific environmental and social standards (see part II of this document). These criteria are clearly defined and verifiable using qualitative criteria and 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. supply chain, environmental impacts, impacts on local communities, etc.).

2) Process for Project Evaluation and Selection

The project selection for inclusion in the Sustainability Bond is carried out by the Treasury Department of North Rhine-Westphalia in cooperation with other NRW ministries. The selection is based on eligibility criteria defined by NRW. Main criterion is a clear environmental and/or social benefit as set out in NRW's sustainability policy. The NRW Sustainability Strategy, which has been approved by the State government on 14 June 2016, serves as the political reference for the bond. The strategy is meant to implement the new global Sustainable Development Goals (SDGs) on state level. The selected projects are part of the State's discretionary spending. Projects prescribed by federal law are excluded.

3) Management of Proceeds

Consequently to the issuance of the Sustainability Bond, 100% of the net proceeds will be used to finance selected eligible projects belonging to the 2017 budget.

Details are listed in the following table (figures in millions of euros):

| Project Category | | Budget Plan 2017 | Budget Results 2017 ¹ | Eligible for Sust. Bond |
|------------------|--|------------------|----------------------------------|-------------------------|
| A | Education and sustainability research | 874.1 | 856.3 | 856.3 |
| | Enlargement of universities, additional training facilities | 773.6 | 769.8 | 769.8 |
| | Support for best in class universities | 28.5 | 23.5 | 23.5 |
| | Innovation and sustainable development | 54.6 | 47.7 | 47.7 |
| | Consumer protection | 17.5 | 15.5 | 15.5 |
| B | Inclusion and social coherence | 211.1 | 188.3 | 188.3 |
| | Inclusion, integration and qualification | 104.4 | 83.3 | 83.3 |
| | Promotion of language skills in early childhood education, support and advice for families | 58.9 | 58.1 | 58.1 |
| | School social work | 47.7 | 47.0 | 47.0 |

¹ Budget results may exceed budget plan due to specific permission (as provided for the specific budget item).

| Project Category | | Budget Plan 2017 | Budget Results 2017 | Eligible for Sust. Bond |
|------------------|--|------------------|---------------------|-------------------------|
| C | Public transportation and local mobility | 198.7 | 190.2 | 190.2 |
| | Public transportation for low-income citizens | 40.0 | 40.0 | 40.0 |
| | Public transportation for pupils and students | 130.0 | 130.0 | 130.0 |
| | Transportation infrastructure for cyclists and pedestrians | 28.7 | 20.2 | 20.2 |
| D | Climate protection and energy transition | 85.7 | 35.7 | 35.7 |
| | Climate protection and renewable energies | 81.3 | 30.5 | 30.5 |
| | Enhancement of resource efficiency | 4.4 | 5.2 | 5.2 |
| E | Protection of natural resources | 140.6 | 90.4 | 81.4 |
| | Protection of nature, landscape and biodiversity | 39.6 | 38.3 | 34.8 |
| | Flood protection and river restoration | 49.9 | 24.6 | 24.6 |
| | Responsible agriculture and rural development | 51.1 | 27.4 | 21.9 |
| F | Sustainable urban development | 265.6 | 254.1 | 254.1 |
| | Urban reconstruction in the west | 41.3 | 43.4 | 43.4 |
| | Social city | 42.9 | 36.3 | 36.3 |
| | Geriatric care and demographic change | 19.0 | 11.9 | 11.9 |
| | Broadband expansion | 162.5 | 162.5 | 162.5 |
| G | Modernisation of educational and public health facilities | 409.5 | 420.8 | 420.8 |
| | University buildings | 80.9 | 67.0 | 67.0 |
| | University medical clinics | 328.6 | 353.8 | 353.8 |
| Total | | 2,185.4 | 2,035.9 | 2,026.9 |

4) Reporting

NRW will publish relevant information and links to public project information on its website². The issuer will decide whether the recommended quantitative indicators set out in the oekom Sustainability Bond Analysis Framework will be used for reporting.

In addition, the Statistical Office of NRW (IT.NRW) will publish bi-annual reports on the state of sustainable development in NRW based on a system of about 60 indicators as part of the sustainability strategy process. The first report has been published in 2016³.

² <http://www.sustainability-bond.nrw.de>

³ <http://www.nachhaltigkeitsindikatoren.nrw.de>

Part II – Sustainability Quality of the Eligible Projects

1) oekom Sustainability Bond Analysis Framework

The oekom Sustainability Bond Analysis Framework serves as a structure for evaluating the sustainability quality – i.e. the social and environmental added value – of the projects to be financed through the Sustainability Bond issuance. It comprises firstly the definition of use of proceeds categories offering added social and/or environmental value and secondly the specific sustainability criteria by means of which this added value and therefore the sustainability performance of the assets can be clearly identified and described. The sustainability criteria are complemented by specific indicators, which enable quantitative measurement of the sustainability performance of the assets and which can be used for reporting.

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

2) Evaluation of the Eligible Projects

Method

oekom research has evaluated whether the eligible projects match the eligible project categories and criteria listed in the oekom Sustainability Bond Analysis Framework. The evaluation was carried out using publicly available information as well as information and documents provided to oekom research, in part on a confidential basis, by the State of North Rhine-Westphalia (strategy papers, explanatory information concerning budgetary items, federal German and NRW laws, regulations and standards, etc.). Further, national legislation and standards were drawn on to complement the information provided by the State of North Rhine-Westphalia.

Findings

A. Education and sustainability research

Sustainability Benefits and Risks of the Asset Category

This category encompasses projects by the State of NRW financing the enlargement of universities and the creation of additional training facilities at public universities, universities of applied science and professional schools. Additionally, consumer protection measures as well as research into sustainable development are funded.

From a sustainability point of view, providing access to education is a prerequisite for successful integration into the work environment and economic independence. Furthermore, high-quality public tertiary education and the promotion of research into sustainability-related contents among other factors enable society to tackle major social and environmental challenges such as climate change, demographic change and resource scarcity.

At the same time, these projects come with some social and environmental risks. Access to education might not be granted in a non-discriminatory way. Employees at research facilities, universities and schools could face precarious employment situations. Also, research funding can go to technologies with negative sustainability impact such as armaments, crude oil and coal as fossil resources, nuclear power and tobacco.

All assets selected for the Sustainability Bond are located in Germany, a highly regulated country.

| Project Type | Percentage of volume in this project category |
|---|---|
| Enlargement of universities, additional training facilities | 89% |
| Support for best in class universities | 3% |
| Innovation and sustainable development | 6% |
| Consumer protection | 2% |

- 1. Non-discriminatory access to education
 - ✓ For 100% of projects, high social standards regarding non-discrimination are in place (in accordance with national legislation).

- ✓ 100% of projects addressing the enlargement of universities or the creation of additional training facilities are directed at public universities and colleges that currently do not charge any study fees or at professional schools with programmes heavily subsidised for participants.
- ✓ A system of subsidised loans governed by the German Act on Support for Education (Bundesausbildungsförderungsgesetz/BAföG) assists socially disadvantaged students in covering their living expenses.
- 2. Working conditions of teaching and research staff
 - ✓ 100% of projects are located in countries where high labour standards are in place for both teaching and research staff (e.g. ILO core conventions).
- 3. Exclusion of research into controversial technologies
 - ✓ For 100% of projects, research into controversial technologies (armaments, crude oil, coal, nuclear power and tobacco) is excluded from funding.

B. Inclusion and social coherence

Sustainability Benefits and Risks of the Asset Category

Activities grouped into this category support the inclusion of immigrants and people with disabilities. Additionally, projects addressing early childhood development are funded.

The inclusion of people with disabilities entails social benefits such as the enhancement of the quality of life of people with disabilities. Furthermore, inclusion of immigrants and people with disabilities contributes to a diverse, fair, peaceful and just society with equal opportunities for all. It also enables society to better benefit from the human capital of its population. The value of equal opportunities is further supported by pre-school language training.

Potential social risks include discriminatory access to programmes and services and exclusion through high fees. Moreover, a further social risk is precarious employment situations for teaching and office staff.

All assets selected for the Sustainability Bond are located in Germany, a highly regulated country.

| Project Type | Percentage of volume in this project category |
|--|---|
| Inclusion, integration and qualification | 49% |
| Promotion of language skills in early childhood education, support and advice for families | 28% |
| School social work | 23% |

- 1. Non-discriminatory access to programmes/offers/services
 - ✓ For 100% of projects, high social standards regarding non-discrimination are in place (in accordance with national legislation).
- 2. Free, fairly priced and/or subsidised participation in programmes/initiatives
 - ✓ For 100% of projects, programmes/initiatives are either free of charge or heavily subsidised for participants.
- 3. Working conditions of teaching and office staff
 - ✓ 100% of projects are located in countries where high labour standards are in place for both teaching and office staff (e.g. ILO core conventions).

C. Public transportation and local mobility

Sustainability Benefits and Risks of the Asset Category

Financed activities include reimbursements of municipal and regional spending for offering subsidised public transportation for low-income citizens as well as pupils, students and trainees. Furthermore, costs are covered for the improvement of supply and quality in educational traffic ("Ausbildungsverkehr"). The second part of this category encompasses projects to improve conditions for cyclists and pedestrians, particularly on short-haul routes (local mobility) and to build new cycling paths along state roads and disused railway lines.

From a sustainability point of view, providing subsidised public transportation enhances the participation of all social classes in a society which is increasingly characterised by mobility. At the same time, the system of public transport is strengthened. Furthermore, additional cycling paths enhance safety of transportation for cyclists, can entail health benefits by encouraging more cycling and improves local air quality by reducing the need for private cars in cities.

None the less, these projects do imply some social and environmental risks. Access to subsidised public transport might not be granted in a non-discriminatory way and subsidies might not lead to fairly priced fares. Regarding the construction of cycling paths, risks are construction workers' health and safety as well as overall working conditions and environmental hazards caused by the construction.

All assets selected for the Sustainability Bond are located in Germany, a highly regulated country.

| Project Type | Percentage of volume in this project category |
|--|---|
| Public transportation for low-income citizens | 20% |
| Public transportation for pupils and students | 65% |
| Transportation infrastructure for cyclists and pedestrians | 15% |

1. Public transportation

- 1.1. Non-discriminatory access to subsidised public transportation
 - ✓ For 100% of projects, high social standards regarding non-discrimination are in place (in accordance with national legislation).
- 1.2. Fairly priced subsidised public transportation
 - ✓ For 100% of projects, subsidised public transportation is offered at reduced fares for eligible persons.

2. Local mobility

- 2.1. Working conditions during construction
 - ✓ 100% of projects are located in countries where high labour standards are in place for both own employees and contractors (e.g. ILO core conventions).
- 2.2. Consideration of environmental aspects during planning and construction
 - ✓ For 100% of projects, the Collective Bargaining and Public Procurement Act of North Rhine-Westphalia (Tariftreue- und Vergabegesetz NRW/TVgG-NRW) requires that sustainability criteria such as energy and resource efficiency have to be taken into consideration in all public procurement contracts.
 - No information is available on the number of projects for which comprehensive and specific environmental standards (regarding e.g. noise mitigation, minimisation of environmental impact during construction work) are applied.

D. Climate protection and energy transition

Sustainability Benefits and Risks of the Asset Category

Funding clustered into this category partially goes to the Efficiency Agency North Rhine-Westphalia (EFA NRW). EFA NRW advises municipalities as well as small and medium-sized enterprises on policies and strategies to enhance their resource and energy efficiency. The remaining funds are used to support projects of research and development into climate protection and energy transition.

The main sustainability benefit of these activities comprises climate and environmental protection through the long-term reduction of energy and resource consumption. This again, reinforces a transition towards a low carbon economy.

However, risks arise as funding can go to technologies with negative sustainability impact such as armaments, crude oil, coal, nuclear power and tobacco. Additionally, subsidised advisory services provided by the EFA NRW might not be offered free of charge, fairly priced and/or at subsidised rates. Additionally, employees at funded companies could face precarious employment situations.

All assets selected for the Sustainability Bond are located in Germany, a highly regulated country.

| Project Type | Percentage of volume in this project category |
|---|---|
| Climate protection and renewable energies | 95% |
| Enhancement of resource efficiency | 5% |

- 1. Exclusion of controversial business areas
 - ✓ For 100% of projects, funding to controversial business areas (armaments, crude oil, coal, nuclear power, fracking and tobacco) is excluded.
- 2. Free, fairly priced and/or subsidised participation in programmes/initiatives
 - ✓ For 100% of projects, general advisory services are offered free of charge and workshops as well as company-specific consulting services are heavily subsidised.
- 3. Working conditions of employees at funded companies
 - ✓ 100% of projects are located in countries where high labour standards are in place (e.g. ILO core conventions).

E. Protection of natural resources

Sustainability Benefits and Risks of the Asset Category

Activities pooled into this category fund either measures to avoid loss of biodiversity and to increase population of endangered species or provide financial support for flood protection projects and the restoration of the original natural state of watercourses.

Sustainability benefits include the restoration of natural habitats, which fulfil important ecosystem functions and provide the basis for life, prosperity and health. Additionally, biodiversity is strengthened and the risk of flooding reduced.

Potential negative impacts can, however, arise at construction sites. Specifically, measures may impact the ecological quality of natural resources if they are not carried out in accordance with best (ecological) practice. Furthermore, a social risk is poor working conditions of construction workers.

All assets selected for the Sustainability Bond are located in Germany, a highly regulated country.

| Project Type | Percentage of volume in this project category |
|--|---|
| Protection of nature, landscape and biodiversity | 28% |
| Flood protection and river restoration | 36% |
| Responsible agriculture and rural development | 36% |

- 1. Consideration of environmental aspects during planning and construction
 - ✓ For 100% of projects, the Collective Bargaining and Public Procurement Act of North Rhine-Westphalia (Tariftreue- und Vergabegesetz NRW/TVgG-NRW) requires that sustainability criteria such as energy and resource efficiency have to be taken into consideration in all public procurement contracts.
 - No information is available on the number of projects for which comprehensive and specific environmental standards (regarding e.g. noise mitigation, minimisation of environmental impact during construction work) are applied.
- 2. Modelling on natural state of water bodies, scientific monitoring, structural quality mapping
 - ✓ For 100% of relevant projects, scientifically based ecological flood protection measures modelled on the natural state of the water body are carried out and exclude conventional flood protection (technical regulation of rivers).

- ✓ For 100% of relevant projects, high standards regarding subsequent monitoring (in accordance with e.g. the European Water Framework Directive/WFD) are in place.
- 3. Working conditions during construction work
 - ✓ 100% of projects are located in countries where high labour and health and safety standards are in place for both own employees and contractors (e.g. ILO core conventions).
 - ✓ For 100% of projects, no fatal accidents have occurred during construction at the project sites.

F. Sustainable urban development

Sustainability Benefits and Risks of the Asset Category

Through these activities the State of NRW tackles several challenges faced by local communities such as the effects of a shrinking population and a stagnating economic development. Funds are directed at issues such as urban renewal, labour market development, economic structure and growth, housing, social and cultural infrastructure, integration and inclusion, schools, promotion of health, prevention of crime and public relations. Additionally, funding goes to broadband expansion.

The financing of such activities bears social benefits by promoting social cohesion, cultural diversity and by improving the quality of life in cities. Additionally, the needs of various demographic and societal groups are integrated. By renewing urban infrastructure, promoting new forms of mobility and environment-friendly reconstruction of buildings and neighbourhoods these projects moreover entail environmental benefits such as reduced energy consumption.

On the other hand, these projects also encompass social and environmental risks. When modernising facilities minimum energy efficiency improvements should be achieved to reduce the impact of those facilities on the environment. Additionally, improper disposal of hazardous substances can lead to negative environmental impacts. Social and environmental risks that can arise from all projects are: construction workers' health and safety as well as overall working conditions and environmental hazards caused during construction. Regarding new builds, social and environmental impacts in the supply chain need to be considered and affected communities involved in the planning process to ensure all stakeholders are heard.

All assets selected for the Sustainability Bond are located in Germany, a highly regulated country.

| Project Type | Percentage of volume in this project category |
|---------------------------------------|---|
| Urban reconstruction in the west | 16% |
| Social city | 16% |
| Geriatric care and demographic change | 7% |
| Broadband expansion | 61% |

- 1. Achieved energy efficiency (modernisations only)
 - ✓ 100% of the relevant projects must observe the requirements of the Energy Saving Ordinance (Energieeinsparverordnung / EnEV) in the version applicable at the time of application for planning consent.
 - No information is available on whether improvement projects reach or exceed a 20% energy efficiency improvement.
- 2. Safe disposal of removed construction materials that are harmful to health (modernisations only)
 - ✓ For 100% of projects, the implementing construction companies and subcontractors have to isolate and remove waste and pollutants (in accordance with national legislation).
- 3. Working conditions during construction work
 - ✓ 100% of projects are located in countries where high labour and health and safety standards are in place for both own employees and contractors (e.g. ILO core conventions).
 - ✓ For 100% of projects, no fatal accidents have occurred during construction at the project sites.
- 4. Consideration of environmental aspects during planning and construction (new builds only)
 - ✓ For 100% of relevant projects, the Collective Bargaining and Public Procurement Act of North Rhine-Westphalia (Tariftreue- und Vergabegesetz NRW/TVgG-NRW) bindingly requires consideration of energy efficiency and other environmental aspects.
 - No information is available on the number of projects for which comprehensive and specific environmental standards (regarding e.g. noise mitigation, minimisation of environmental impact during construction work) are applied.
- 5. Social and environmental standards in the supply chain (new builds only)
 - ✓ For 100% of projects, the Collective Bargaining and Public Procurement Act of North Rhine-Westphalia (Tariftreue- und Vergabegesetz NRW/TVgG-NRW) applies. It requires compliance with the ILO core conventions in the supply chain.
 - ✓ For 100% of projects, the Collective Bargaining and Public Procurement Act of North Rhine-Westphalia (Tariftreue- und Vergabegesetz NRW/TVgG-NRW) requires that sustainability criteria such as energy and resource efficiency have to be taken into consideration in all public procurement contracts.
 - No information is available on the number of projects for which comprehensive and specific environmental supply chain standards are applied.

- 6. Community dialogue (new builds only)
 - ✓ 100% of 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).

G. Modernisation of educational and public health facilities

Sustainability Benefits and Risks of the Asset Category

This category bundles activities by the State of NRW to modernise educational and public health facilities. Especially the modernisation and extension of university medical clinics is funded but also the modernisation of general university buildings.

Sustainability benefits encompass enhanced provision of public health services and the establishment of additional university training facilities. Furthermore, energy efficiency improvements in existing buildings help reduce energy consumption in the long-run and therefore reinforce the transition towards a low carbon economy.

Projects in this category bear similar social and environmental risks as those in the previous category. When modernising facilities minimum energy efficiency improvements should be achieved to reduce the impact of those facilities on the environment. Additionally, improper disposal of hazardous substances can lead to negative environmental impacts. Social and environmental risks that can arise from all projects are: construction workers' health and safety as well as overall working conditions and environmental hazards caused during construction. Regarding new builds, social and environmental impacts in the supply chain need to be considered and affected communities involved in the planning process to ensure all stakeholders are heard.

All assets selected for the Sustainability Bond are located in Germany, a highly regulated country.

| Project Type | Percentage of volume in this project category |
|----------------------------|---|
| University buildings | 20% |
| University medical clinics | 80% |

- 1. Achieved energy efficiency (modernisations only)
 - ✓ 100% of the projects must observe the requirements of the Energy Saving Ordinance (Energieeinsparverordnung / EnEV) in the version applicable at the time of application for planning consent.
 - No information is available on whether improvement projects reach or exceed a 20% energy efficiency improvement.
- 2. Safe disposal of removed construction materials that are harmful to health (modernisations only)
 - ✓ For 100% of projects, the implementing construction companies and subcontractors have to isolate and remove waste and pollutants (in accordance with national legislation).
- 3. Working conditions during construction work
 - ✓ 100% of projects are located in countries where high labour and health and safety standards are in place for both own employees and contractors (e.g. ILO core conventions).
 - In two projects a fatal accident leading to the death of one worker at each site occurred during the construction phase. No details on the accident and the liability in the cases are available.
- 4. Consideration of environmental aspects during planning and construction (new builds only)
 - ✓ For 100% of relevant projects, the Collective Bargaining and Public Procurement Act of North Rhine-Westphalia (Tariftreue- und Vergabegesetz NRW/TVgG-NRW) bindingly requires consideration of energy efficiency and other environmental aspects.
 - No information is available on the number of projects for which comprehensive and specific environmental standards (regarding e.g. noise mitigation, minimisation of environmental impact during construction work) are applied.
- 5. Social and environmental standards in the supply chain (new builds only)
 - ✓ For 100% of projects, the Collective Bargaining and Public Procurement Act of North Rhine-Westphalia (Tariftreue- und Vergabegesetz NRW/TVgG-NRW) applies. It requires compliance with the ILO core conventions in the supply chain.
 - ✓ For 100% of projects, the Collective Bargaining and Public Procurement Act of North Rhine-Westphalia (Tariftreue- und Vergabegesetz NRW/TVgG-NRW) requires that sustainability criteria such as energy and resource efficiency have to be taken into consideration in all public procurement contracts.
 - No information is available on the number of projects for which comprehensive and specific environmental supply chain standards are applied.
- 6. Community dialogue (new builds only)
 - ✓ 100% of 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).

Controversy assessment

- A controversy assessment on the underlying assets did not reveal any controversial activities or practices that could be attributed to the State of North Rhine-Westphalia apart from the before mentioned fatal accidents at two construction sites.

Part III – Assessment of NRW's Sustainability Performance

In order to evaluate the sustainability performance of public authority bond issuers, oekom research applies the rating of the country which these form part of. In the oekom Country Rating with a rating scale from A+ (excellent) to D- (poor), the Federal Republic of Germany was awarded a score of B- and rated "Prime".



As at 16 January 2018, this rating puts the Federal Republic of Germany in place 22 out of 57 countries rated by oekom research.

The oekom Country Rating evaluates the following six areas in order to determine the sustainability performance of a country:

Social Rating

- Political System and Governance
- Human Rights and Fundamental Freedoms
- Social Conditions

Environmental Rating

- Natural Resources
- Climate Change and Energy
- Production and Consumption

The Federal Republic of Germany achieved a rating that was significantly above the average of all countries in the social part of the rating. In the environmental part, the country shows an average or slightly above or below average performance of all rated countries.

The Federal Republic of Germany violates none of the exclusion criteria screened by oekom research.

Details on the rating of the issuer can be found in Annex 2 "oekom Country Rating of the Federal Republic of Germany".

A handwritten signature in blue ink, appearing to read "Robert Haßler", is written over a faint, circular official stamp.

Robert Haßler, CEO

oekom research AG

Munich, 15 February 2018

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.
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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 decision making. 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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Annex

- Annex 1: oekom Sustainability Bond Analysis Framework
- Annex 2: oekom Country Rating of the Federal Republic of Germany

Annex 1: oekom Sustainability Bond Analysis Framework

oekom Sustainability Bond Analysis Framework

The oekom Sustainability Bond Analysis Framework serves as a structure for evaluating the sustainability quality – i.e. the social and environmental added value – of the projects to be financed through the Sustainability Bond issuance. It comprises firstly the definition of use of proceeds categories offering added social and/or environmental value and secondly the specific sustainability criteria by means of which this added value and therefore the sustainability performance of the assets can be clearly identified and described. The sustainability criteria are complemented by specific indicators, which enable quantitative measurement of the sustainability performance of the assets and which can be used for reporting.

Use of Proceeds

The proceeds of this forth Sustainability Bond issued by the State of North Rhine-Westphalia will be exclusively used for the following seven project categories:

- A. Education and sustainability research
- B. Inclusion and social coherence
- C. Public transportation and local mobility
- D. Climate protection and energy transition
- E. Protection of natural resources
- F. Sustainable urban development
- G. Modernisation of educational and public health facilities

The use of proceeds may include operating or capital expenditures (excluding personnel costs) of projects as well as indirect investments in projects such as grants for private and public companies and for special purposes.

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. A possible quantitative indicator, allowing for measurement of progress and regular reporting, completes each criterion.

A. Education and sustainability research

1. Non-discriminatory access to education

- Percentage of assets for which financed institutions guarantee non-discriminatory access to education.

2. Working conditions of teaching and research staff

- Percentage of assets that provide for high labour standards (e.g. ILO core conventions) for both teaching and research staff.

3. Exclusion of research into controversial technologies

- Percentage of assets for which the projects do not involve the financing of research into any controversial business areas, such as armaments, crude oil, coal, nuclear power or tobacco.

B. Inclusion and social coherence

1. Non-discriminatory access to programmes/offers/services

- Percentage of assets for which financed institutions are required to guarantee non-discriminatory access to programmes/offers/services.

2. Free, fairly priced and/or subsidised participation in programmes/initiatives

- Percentage of assets for which financed institutions offer participation free of charge, fairly priced and/or subsidised for socially disadvantaged participants.

3. Working conditions of teaching and office staff

- Percentage of assets that provide for high labour standards (e.g. ILO core conventions) for both teaching and office staff.

C. Public transportation and local mobility

1. Public transportation

1.1. Non-discriminatory access to subsidised public transportation

- Percentage of assets for which financed institutions are required to guarantee non-discriminatory access to offers/services.

1.2. Fairly priced subsidised public transportation

- Percentage of assets for which financed institutions offer services fairly priced.

2. Local mobility

2.1. Working conditions during construction

- Percentage of assets that provide for high labour and health and safety standards (e.g. ILO core conventions) for both own employees and contractors.

2.2. Consideration of environmental aspects during planning and construction

- Percentage of assets that meet high environmental standards and requirements during the construction phase (e.g. noise mitigation, minimisation of environmental impact during construction work).

D. Climate protection and energy transition

1. Exclusion of controversial business areas

- Percentage of assets for which the projects do not involve any funding to controversial business areas, such as armaments, crude oil, coal, nuclear power or tobacco.

2. Free, fairly priced and/or subsidised participation in programmes/initiatives

- Percentage of assets for which financed institutions offer participation free of charge, fairly priced and/or subsidised for socially disadvantaged participants.

3. Working conditions of employees at funded companies

- Percentage of assets that provide for high labour and health and safety standards (e.g. ILO core conventions) for employees at funded companies.

E. Protection of natural resources

1. Consideration of environmental aspects during planning and construction

- Percentage of assets for which adequate environmental purchasing standards are in place.

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

- Percentage of assets for which the relevant plans are scientifically monitored and are modelled on the natural state of the water body.

3. Working conditions during construction work

- Percentage of assets that provide for high labour and health and safety standards (e.g. ILO core conventions) for both own employees and contractors.
- Occurrence of fatal accidents related to construction work at project sites.

F. Sustainable urban development

1. Achieved energy efficiency (modernisations only)

- Percentage of assets for which energy efficiency improved by 20% or more.

2. Safe disposal of removed construction materials that are harmful to health (modernisations only)

- Percentage of assets for which the implementing construction companies and subcontractors and suppliers are required to comply with appropriate standards.

3. Working conditions during construction work

- Percentage of assets that provide for high labour and health and safety standards (e.g. ILO core conventions) for both own employees and contractors.
- Occurrence of fatal accidents related to construction work at project sites.

4. Consideration of environmental aspects during planning and construction (new builds only)

- Percentage of assets for which adequate environmental purchasing standards are in place.

5. Social and environmental standards in the supply chain (new builds only)

- Percentage of assets for which the implementing construction companies and subcontractors and suppliers are required to comply with appropriate standards.

6. Community dialogue (new builds only)

- Percentage of assets 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).

G. Modernisation of educational and public health facilities

1. Achieved energy efficiency (modernisations only)

- Percentage of assets for which energy efficiency improved by 20% or more.

2. Safe disposal of removed construction materials that are harmful to health (modernisations only)

- Percentage of assets for which the implementing construction companies and subcontractors and suppliers are required to comply with appropriate standards.

3. Working conditions during construction work

- Percentage of assets that provide for high labour and health and safety standards (e.g. ILO core conventions) for both own employees and contractors.
- Occurrence of fatal accidents related to construction work at project sites.

4. Consideration of environmental aspects during planning and construction (new builds only)

- Percentage of assets for which adequate environmental purchasing standards are in place.

5. Social and environmental standards in the supply chain (new builds only)

- Percentage of assets for which the implementing construction companies and subcontractors and suppliers are required to comply with appropriate standards.

6. Community dialogue (new builds only)

- Percentage of assets 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).

Controversies

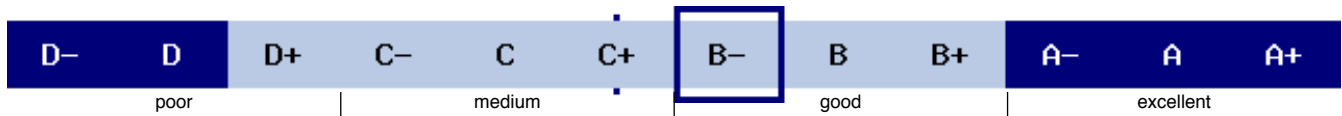
- Description of controversial projects (e.g. due to labour rights violations, environmental accidents, adverse biodiversity impacts).

oekom Country Rating

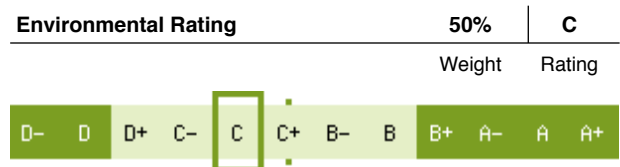
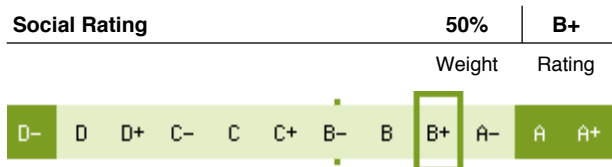
Germany

Score **53.60%**
Rank **22 out of 57**

Status **Prime**
Rating **B-**



- A country is being classified as Prime if it ranks among the world's best countries and fulfills the minimum requirements defined by oekom research (best in class).
- The highlighted sections on the rating scales indicate the range of ratings achieved. The average rating is marked with a vertical line.
- If relevant information is not made available, it may result in a poorer rating of the country within the applied rating method.



Strengths and Weaknesses

Social Rating

Political System and Governance
+ relatively high level of government effectiveness
+ high political stability
- high share of global weapons exports

Human Rights and Fundamental Freedoms
+ human rights generally respected
- insufficient gender equality

Social Conditions
+ high employment rate
+ low youth unemployment rate
- relatively high at-risk of poverty rate

Environmental Rating

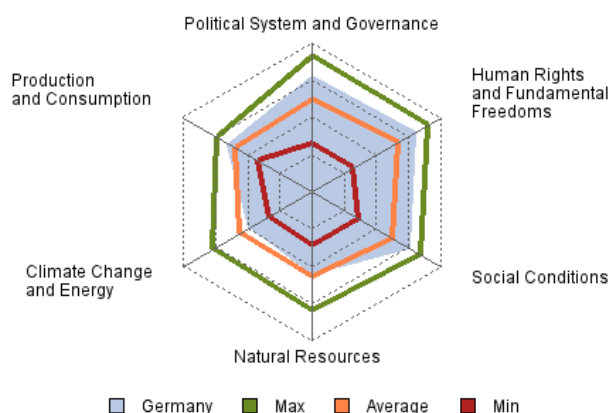
Natural Resources
+ high share of protected areas
- high number of threatened animal species
- high share of sealed area

Climate Change and Energy
+ low energy consumption relative to GDP
- no comprehensive national and international climate policy
- coal and gas constitute high level of energy mix

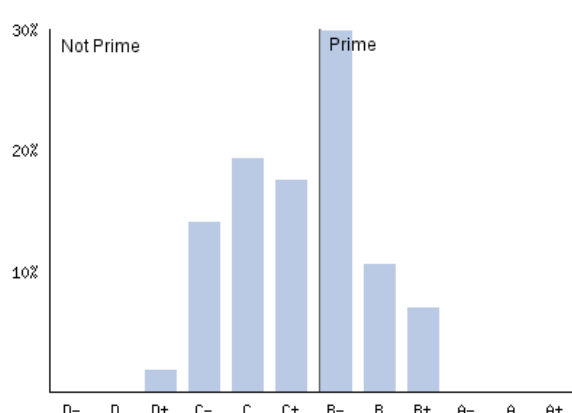
Production and Consumption
+ above average level of corporate social responsibility
+ high level of resource productivity
- high private consumption levels

Benchmark Results

Rating Categories



Breakdown of Ratings



Germany

Country Profile

| | | |
|--|------------|-------------------------------|
| National territory (2017): | 357,380.00 | [in km ²] |
| National territory II (2017): | 35,738.00 | [in 1,000 ha] |
| National population (2017): | 80,594.00 | [in 1,000] |
| Population density (2017): | 225.51 | [persons / km ²] |
| Average annual population change (2016): | 1.19 | [as % of national population] |
| Human Development Index (2015): | 4.00 | [Rank] |
| Unemployment rate (2016): | 4.20 | [as % of labour force] |
| GDP per Capita (2016): | 48,240.00 | [in USD (PPP) per capita] |
| Real GDP growth (2016): | 1.90 | [in %] |
| Consumer prices (2016): | 1.70 | [in %] |
| Budget deficit (2016): | 0.80 | [as % of GDP] |
| General government gross debt (2016): | 68.10 | [as % of GDP] |
| Current account balance (2016): | 8.30 | [as % of GDP] |

Exclusion Criteria

| | Yes | No | | Yes | No |
|------------------------|--------------------------|-------------------------------------|-----------------------------|--------------------------|-------------------------------------|
| Authoritarian Regime | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Freedom of Speech and Press | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Child Labour | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Human Rights | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Climate Protection | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Labour Rights | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Corruption | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Military Budget | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Death Penalty | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Money Laundering | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Discrimination | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Nuclear Power | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Euthanasia | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Nuclear Weapons | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Freedom of Association | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Whaling | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Comments

An overview of the way in which the individual exclusion criteria are applied in practice can be found at www.oekom-research.com.

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