Providing for the Future

Act Today.
Together for Sustainable Development in North Rhine-Westphalia.

Sustainability Bond #5 State of North Rhine-Westphalia
NRW Sustainability Strategy
Implementing the 2030 Agenda at the regional level

• Sustainable Development is a central guiding principle for the State of NRW.

• Sustainable development means integrated environmental, social and economic development. The concept is closely related to the principles of prevention and inclusion.

• The NRW Sustainability Strategy has been approved by the State Government in 2016. It comprises 19 fields of action and seven focal areas.

• The Strategy is meant to implement the global Sustainable Development Goals (SDGs) at the State level. It also serves as the political reference for the bond.

7 Focal Areas
- Access to education and science
- Environmental responsibility
- Local sustainability agenda
- Engaged citizens
- Gender mainstreaming
- Regional, European and international dimension
- Inclusion and social coherence
• Progress in the implementation of the State's Sustainability Strategy is measured against 60 specific indicators which relate to the 19 fields of action and to the 17 SDGs. The first Sustainability Indicator Report was published in 2016. Additional results are published on a dedicated website with regular update (www.nachhaltigkeitsindikatoren.nrw.de/sdgs).

• The State's Sustainability Strategy is currently under revision in order to improve the interaction with the new German Sustainability Strategy of 2017. A new indicator report will be published in 2019.
2030 Agenda for Sustainable Development

Sustainable Development Goals (SDG)

https://sustainabledevelopment.un.org/sdgs
Use of Proceeds of Sustainability Bonds NRW

Project categories mainly relate to 10 out of 17 SDGs (+ 1 affected secondarily)

A. Education and Sustainability Research
B. Inclusion and Social Coherence
C. Public Transport 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
Green Bond and Social Bond Principles
ICMA, June 2018

1. Use of Proceeds
2. Process for Project Evaluation and Selection
3. Management of Proceeds
4. Reporting
## Sustainability Quality of the Bond

**Verification and Evaluation**

### Framework

- Use of proceeds categories offering added social or environmental value
- Sustainability criteria for each project category

### Second Party Opinion

- Evaluation of sustainability performance of financed projects
- Verification of alignment with Green Bond / Social Bond Principles

### Impact Assessment

- Annual reporting, prepared by Wuppertal Institut gGmbH
- Analysis of both environmental as well as social impact
- Environmental focus on avoided greenhouse gas emissions
- Social focus on effects of education and broadband expansion
Process for Project Selection and Evaluation
Comprehensive Pre-Issuance Disclosure

• Projects are selected in accordance with the categories and criteria set out in the "Sustainability Bond Framework", based on ICMA Green/Social Bond Principles and Sustainability Bond Guidelines.

• The sustainability performance of all projects has been verified by ISS-oekom. Second Party Opinion (of February 13, 2019) and Sustainability Bond Framework are available at www.sustainability-bond.nrw.de.

• All projects are part of the State's discretionary spending of the fiscal year 2018 and can be traced to the NRW 2018 Budget (Haushaltsplan 2018). Only the State's own expenditures (net of EU grants, federal grants or other revenues earmarked for specific purposes) are taken into account. The State's personnel costs as well as projects prescribed by federal law are excluded.

• Full allocation of net proceeds is disclosed pre-issuance. A detailed list of projects is available at www.sustainability-bond.nrw.de.
Management of Proceeds
Funding the public sector

- An amount equivalent to the net issue proceeds of the State Treasury Notes will be used to cover expenditures of the fiscal year 2018 and will thereby substitute money market positions.

- The fiscal year 2018 closes on or about the end of the first quarter 2019.
Impact reporting on the projects included in the Sustainability Bond is published on a regular basis and covers both environmental and social impact. The environmental focus is on avoided greenhouse gas emissions. The reports cover also among others the effects of the education and broadband expansion.

- The third investor briefing, prepared by Wuppertal Institut für Klima, Umwelt, Energie gGmbH, will be available in February 2019.

- An extended impact report including an outline of the sustainability focus of the State's budget in general will be available later in March 2019.
## Sustainability Bond # 5 NRW

### Allocation of proceeds

<table>
<thead>
<tr>
<th>Project Category</th>
<th>Budget Result [EUR m]</th>
<th>Eligible for Bond [EUR m]</th>
<th>Use of Proceeds &quot;social&quot;</th>
<th>&quot;green&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Education and Sustainability Research</td>
<td>686.3</td>
<td>686.0</td>
<td>686.0</td>
<td></td>
</tr>
<tr>
<td>B. Inclusion and Social Coherence</td>
<td>379.3</td>
<td>379.3</td>
<td>379.3</td>
<td></td>
</tr>
<tr>
<td>C. Public Transport and Local Mobility</td>
<td>192.0</td>
<td>192.0</td>
<td>40.0</td>
<td>152.0</td>
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<tr>
<td>D. Climate Protection and Energy Transition</td>
<td>55.9</td>
<td>55.9</td>
<td>55.9</td>
<td></td>
</tr>
<tr>
<td>E. Protection of Natural Resources</td>
<td>133.2</td>
<td>133.2</td>
<td>133.2</td>
<td></td>
</tr>
<tr>
<td>F. Sustainable Urban Development</td>
<td>323.5</td>
<td>323.5</td>
<td>161.7</td>
<td>161.7</td>
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<tr>
<td>G. Modernisation of educational and public health buildings</td>
<td>487.7</td>
<td>487.7</td>
<td>487.7</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,257.9</strong></td>
<td><strong>2,257.6</strong></td>
<td><strong>1,267.1</strong></td>
<td><strong>990.5</strong></td>
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<tr>
<td><strong>Proportions</strong></td>
<td></td>
<td></td>
<td><strong>100%</strong></td>
<td><strong>56%</strong></td>
</tr>
</tbody>
</table>
A. Education and Sustainability Research EUR 686.0m

Category A comprises projects financing the enlargement and improvement 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 foundational research are funded.

- Enlargement of Universities, Additional Training Facilities 607.3m
- Support for Best-in-Class-Universities 24.9m
- Innovation and Sustainable Development 38.0m
- Consumer Protection 15.9m
Growing Demand for Education
Bund-Länder Covenant for the Expansion of Universities

www.hochschule-rhein-waal.de
Activities grouped into Category B support the inclusion of immigrants and people with disabilities. Additionally, projects addressing early childhood development and successful school careers are funded.

- **Inclusion, Integration and Qualification** 89.2m
- **Language Skills in Early Childhood, Family Centres and Non-contributory Day Care** 242.9m
- **School Social Work** 47.2m
Working towards an Inclusive Society
Prevention of Unemployment and Homelessness

Action Plan NRW – One society for all
Projects in Category C include subsidised public transport for pupils, students and low-income citizens. Other projects strive to improve the infrastructure for cyclists and pedestrians, particularly on short-haul routes (local mobility).

- Public Transportation for Low-Income Citizens 40.0m
- Public Transportation for Pupils and Students 129.8m
- Transportation Infrastructure for Cyclists and Pedestrians 22.2m
Local Mobility in North Rhine-Westphalia
Finding New Ways for Mobility

Action Plan Local Mobility
Projects in category D support research and development related to climate protection and energy transition, including funding for the State's Efficiency Agency (EFA), which gives advice to municipalities and companies on how to enhance their resource efficiency and energy efficiency.

- **Climate Protection and Renewable Energies**: 50.4m
- **Resource Efficiency**: 5.6m
From Grey to Blue Skies
Climate Protection in an Industrial State

Action Plan Climate Protection NRW
Projects in category E 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 state of watercourses.

- Protection of Nature, Landscape and Biodiversity 28.3m
- Flood Protection and River Restoration 64.7m
- Responsible Agriculture and Rural Development 40.2m
Protecting Endangered Species
Wildlife in an Industrial State

Biodiversity Strategy NRW
Projects in Category F focus on urban and rural areas with significant structural difficulties such as a shrinking population and a stagnating economy. The State also sponsors the development of a fibre optic-based telecommunications infrastructure.

- Urban Reconstruction in the West: 47.0m
- Social City: 48.8m
- Geriatric Care and Demographic Change: 9.2m
- Broadband Expansion: 218.5m
Living with an Industrial Heritage
Urban Development in North Rhine-Westphalia

Urban Reconstruction
Category G encompasses projects to modernise educational and public health facilities. A focus is on the modernisation and extension of university medical clinics. Additional funds are targeted at the modernisation of general university buildings.

- Modernisation of University Buildings 127.0m
- Modernisation of University Medical Clinics 360.7m
Caring for Society
Modernisation of University Buildings

Programme for the Modernisation of University Buildings
Overall evaluation of Sustainability Bond #5

- The issuer 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 [ICMA’s] Sustainability Bond Guidelines.

- The overall sustainability quality of the asset pool in terms of sustainability benefits, risk avoidance and minimisation is good [...].

- Germany, the country in which NRW is located in, shows a good sustainability performance and has been classified as ‘Prime’ [...].

- ISS-oekom finds that Management of Proceeds proposed by NRW is well aligned with the Sustainability Bond Guidelines, as all the proceeds are to be directly allocated to the 2018 budget.

- ISS-oekom finds that the reporting proposed by NRW is in line with industry best practices.
State of North Rhine-Westphalia
Capital Markets Presentation

February 2019
Federal System
Germany is a Federal Republic, with two concurrent levels of government: Federation ("Bund") and States ("Länder").

Responsibilities of the Länder
The Länder have their own legislative, judicial and executive powers. They are independent with regard to their budgets and play an active role in the federal legislative process.

Zero Borrowing Rule ("Debt Brake")
The German Constitution sets out that the Länder must eliminate structural budget deficits by 2020. Since 2016, the Bund must limit structural budget deficits to 0.35% of GDP.

Federal Equalisation System
Federal law provides that tax revenues must be shared between Bund and Länder in an equitable fashion in order to provide equal standards of living throughout the country.

Allegiance to the Federation ("Bundestreue")
Bund and Länder are under an obligation to share the administrative tasks and provide mutual assistance, including financial assistance in cases of extreme budgetary hardship.
Länder budgets reflect their responsibilities for education, law enforcement and infrastructure. The federal budget is dominated by expenditures for social security – health, unemployment and retirement insurance.
One of the Top 20 Economies worldwide
GDP 2017 [EUR bn]

*USA, China, Japan, United Kingdom, India, France

Sources: IMF April 2018, Statistical Office NRW
State of North Rhine-Westphalia
Largest German State in Terms of Population and GDP

**NRW 2017**

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>34,110 km²</td>
</tr>
<tr>
<td>Population</td>
<td>17.9mn</td>
</tr>
<tr>
<td>Unemployment Rate</td>
<td>6.7% (Jan. 19)</td>
</tr>
<tr>
<td>GDP</td>
<td>EUR 691.5bn</td>
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<tr>
<td>GDP per capita</td>
<td>EUR 38,645</td>
</tr>
<tr>
<td>Real Growth</td>
<td>+1.7%</td>
</tr>
</tbody>
</table>

20 of the largest 50 German companies are headquartered in NRW. The regional economy has a focus on technology and services, media and health care. It features more than 750,000 small and medium-sized companies.
Taxation in Germany is based on federal law. Administration is carried out by the States through their regional tax offices.

Revenues from Value Added Tax, Income Tax and Corporate Tax (together, joint taxes) are split between Bund, Länder and municipalities (e.g. Income Tax: Bund 42.5%, Länder 42.5%, municipalities 15%).

Bund, Länder and municipalities also have exclusive revenue claims in specific areas (e.g. Bund: energy tax, Länder: inheritance tax, municipalities: commercial tax).
Assignment of Joint Taxes between Bund and Länder

Article 106 (3) Basic Law

The Federation and the Länder shall share equally the revenues from income taxes and corporation taxes.

The respective shares of the Federation and the Länder in the revenue from the turnover tax shall be determined by a federal law requiring the consent of the Bundesrat. Such determination shall be based on the following principles:

1. The Federation and the Länder shall have an equal claim against current revenues to cover their necessary expenditures. The extent of such expenditures shall be determined with due regard to multi-year financial planning.

2. The financial requirements of the Federation and of the Länder shall be coordinated in such a way as to establish a fair balance, avoid excessive burdens on taxpayers, and ensure uniformity of living standards throughout the federal territory.

Distribution of VAT 2018: Federation approx. 50.6%, Länder 46.7%, Municipalities 2.7% (according to Financial Equalisation Act)
Federal Equalisation System
Horizontal equalisation worth EUR 20.5bn in 2018

Constitutional Law demands equal standards of living for all citizens in Germany. In a four-step process, the federal equalisation scheme provides the necessary adjustments with regard to the financial capability of the states.

As a starting point, tax revenues accrue to the Länder who collect them (local revenue). VAT revenues are distributed on a per capita basis.

Before horizontal equalisation, relative financial capacity of the states ranges from 54.3% to 157.2% of average (2018).

After horizontal equalisation, relative financial capacity ranges from 90.9% to 106.7% of average (in 2018).
Federal Equalisation System
2018 - Equalisation via Value Added Tax [EUR bn]
Federal Equalisation System
2018 - Inter-State Equalisation [EUR bn]
Federal Equalisation System
2018 - Aggregation of Horizontal Equalisation [EUR bn]
Federal Equalisation System
Federal Grants worth EUR 8.7bn in 2018

In addition to horizontal equalisation, federal grants provide additional financial support to create a level playing field among all States.

Special purpose federal grants are not related to financial capacity and will be phased out by 2020.

States with a financial capacity of less than 99.5% of average after horizontal equalisation are entitled to supplementary federal grants. Relative financial capacity of all States falls within a range of 97.6% to 106.7% of average afterwards.
Key Aspects of the New Federal Equalisation System
Effective from 1 January, 2020

• Horizontal Equalisation
  – Top-ups of tax revenue for Länder whose revenue falls short of average
  – Contributions from Länder with surpluses to finance top-ups
  – Share of municipal tax capacity included in the calculation of States' financial capacity increases from 64% to 75%
  – Equalisation rate set at 63% of shortfalls
  – Top-ups and contributions are carried out through restatement of VAT (no longer capped at 25% of revenue)
  – No direct payments between the Länder

• Vertical Equalisation
  – Federal grants for States whose financial capacity (after restatement of VAT) is lower than 99.75% of average (equalisation rate 80%)
  – Supplementary grants for States with special needs

Keeping with the constitutional goal of equal standards of living, the system maintains a high level of equalisation, but the technical approach is different.

Under the new rules, horizontal equalisation will be carried out by a restatement of revenues according to the relative financial strengths of Länder and their respective municipalities on a per capita basis.

Due to additional federal grants of around 10.2bn, all States stand to benefit (see chart). Bremen and Saarland will receive extraordinary financial support of EUR 400m each (included in figures shown).
Providing for the future

Pension Fund NRW

With a growing number of retired civil servants, pension expenditures will continue to rise. A pension fund has been set up to mitigate the fiscal impact. As of 31 December 2018, the Fund had a size of around EUR 12.0bn.
Strong Budgetary Performance
Results and Medium Term Planning* [EUR bn]

Budget Size 2019  EUR  77.9bn

* without provisions for the restructuring of WestLB / Portigon and related liability risks
Debt Portfolio
Focus on duration

Debt Outstanding 31.12.2018: 136.3bn
Weighted Average Maturity: 9.7 years
Median Maturity (fixed/floating): 6.5y/1.8y

Funding Programme 2019: 14-16bn
Funded as of 31.01.2019: 4.6bn

Redemption profile:
- Bonds
- Certificates of Indebtedness (Schuldscheine)
Debt Issuance Programme
Active in 18 different currencies

DIP issuances (since October 2002)
• 527 trades
• EUR (equivalent) 81.3bn raised

Debt outstanding (as of 31.12.2018)
• EUR (equivalent) 42.6bn with DIP documentation, including all foreign currency transactions (EUR equivalent 11.1bn)
• EUR 93.7bn with stand alone documentation (thereof certificates of indebtedness: EUR 36.9bn)

Others: GBP, CAD, NOK, AUD, TRL, HUF, MXN, SEK, PLN, ZAR, ISK, HKD, BRL, NZD
## Recent Benchmark Issues

### USD

<table>
<thead>
<tr>
<th>Emittent</th>
<th>State of North Rhine-Westphalia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issue Rating</td>
<td>Aa1 by Moody’s, AA- by S&amp;P, AAA by Fitch, all stable outlook</td>
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<tr>
<td>Issue Size</td>
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<td>Status and Format</td>
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<td>Settlement Date</td>
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<td>Coupon</td>
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<td>Reoffer Spread</td>
<td>+30 bps vs. US Treasury</td>
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<td>Lead Managers</td>
<td>Daiwa, HSBC, Scotia Bank, Société Générale</td>
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### Geographical Distribution

- Asia: 24%
- Americas: 30%
- EMEA: 46%

### Investor Distribution

- Central Banks/OI: 67%
- Banks: 32%
- Asset Managers: 1%
### Recent Benchmark Issues

**USD**

<table>
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<tr>
<th>Emittent</th>
<th>State of North Rhine-Westphalia</th>
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<tr>
<td>Issue Rating</td>
<td>Aa1 by Moody’s (stable), AA- by S&amp;P (positive), AAA by Fitch (stable)</td>
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<td>Issue Size</td>
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<td>Maturity Date</td>
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<td>Settlement Date</td>
<td>29 January 2019</td>
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<td>Coupon</td>
<td>3M USD LIBOR + 0.05%, 30/360</td>
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<td>Reoffer Spread</td>
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<td>ISIN</td>
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<td>Lead Managers</td>
<td>Bank of America Merrill Lynch, Barclays, Credit Agricole, Deutsche Bank</td>
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</table>

**Geographical Distribution**
- EMEA: 45%
- UK: 37%
- Americas: 14%
- Asia: 4%

**Investor Distribution**
- Central Banks/OI: 60%
- Banks: 32%
- Asset Managers: 8%

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**Recent Benchmark Issues**

USD
Recent Benchmark Issues
EUR

<table>
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<td>Issue Rating</td>
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<td>Issue Size</td>
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<td>Lead Managers</td>
<td>Bank of America Merrill Lynch, BNP Paribas, J.P. Morgan, TD Securities, UniCredit</td>
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Geographical Distribution
- Germany: 28%
- France: 27%
- Asia: 11%
- other Europe: 6%
- others: 6%

Investor Distribution
- Banks: 44%
- CB/OI: 29%
- Asset Manager: 24%
- Others: 3%
Recent Benchmark Issues
Sustainability Bond #4

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<th>Emittent</th>
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<td>Issue Rating</td>
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<td>Lead Managers</td>
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</tbody>
</table>

Geographical Distribution:
- Germany: 31%
- France: 13%
- UK: 19%
- BeNeLux: 18%
- Nordics: 13%
- Asia: 7%
- Others: 13%

Investor Distribution:
- Banks: 53%
- Funds: 35%
- CB & OI: 1%
- Insurances: 11%
Stability During the Crisis
Swap Spreads of European Sovereigns vs. German Federal States

Source: iBoxx indices + Commerzbank Research calculation, based on iBoxx data
State of North Rhine-Westphalia

Key Investment Considerations

- Part of a well-positioned and strong economy
- Effective fiscal framework
- Excellent alternative to Bunds
  - comparable credit risk
  - attractive yield pick-up
  - more flexibility in terms of products
- Strong credit ratings
  - Fitch: AAA (stable)
  - Moody's: Aa1 (stable)
  - S & P: AA- (positive)
- Sustainability rating (vigeo Eiris)
  - In the past 4 years NRW reached the highest score of all German Länder
  - Score "robust" in 2017
- 0% risk weighting in most countries
- German Federal States issuances qualify as level 1 assets under the EU Commission's Delegate Regulation on the liquidity coverage ratio (LCR)
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