



Federal Ministry
of Finance

Green bond allocation report 2020

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Green bond allocation report 2020

Federal Republic of Germany
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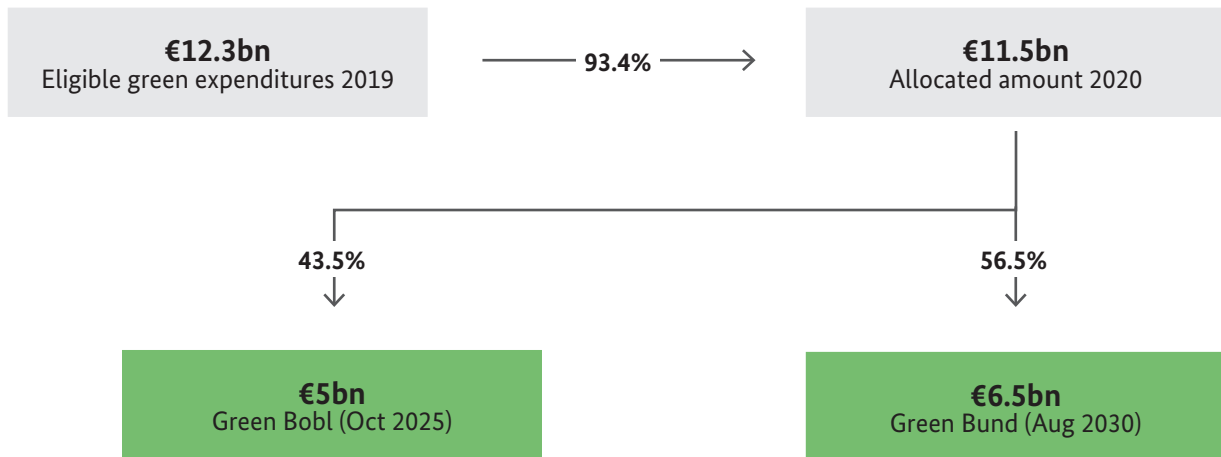
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Executive summary – green bond allocation report for 2020 issuances

The use of proceeds from Green German Federal Securities always corresponds to federal expenditure of the previous year. Therefore, the basis for this allocation report and the green bonds issued in 2020 is the **2019 federal budget**, which provides for eligible green expenditures of €12.3 billion. Of this, €11.5 billion were taken into account for the federal government's green issuances in 2020, proportionally allocated to two securities, the 10-year Green German Federal Bond (Green Bund) maturing in August 2030 and the five-year Green German Federal Note (Green Bobl) maturing in October 2025.

Table 1: Overview of allocations in 2020

Sector (as listed in the Green Bond Framework)	Eligible expenditures (2019)	Allocated amount (93.4% of eligible expenditures)	Green Bund	Green Bobl
in € million				
Transport	7,125.3	6,655.3	3,761.7	2,893.6
International cooperation	2,981.7	2,785.0	1,574.1	1,210.9
Research, innovation and awareness raising	625.1	583.9	330.0	253.9
Energy and industry	1,198.5	1,119.4	632.7	486.7
Agriculture, forestry, natural landscapes and biodiversity	381.5	356.3	201.4	154.9
Total	12,312.1	11,500.0	6,500.0	5,000.0



58%	More than half of the 2020’s green issuance volume is earmarked for the maintenance and development of Germany’s transport sector and, in particular, its high-quality rail network . The federal government is thus underlining its efforts to make passenger and freight transport in Germany more climate- and environmentally friendly.
24%	Germany is committed to supporting developing countries and emerging economies in their transitions to more environmentally sustainable economies. This is reflected in the large allocation to international cooperation .
5%	In a society making a transition towards a sustainable economy, strong government commitment is essential. Thus, the federal budget contains considerable green expenditures on research, innovation and awareness raising . Including green expenditure on research and innovation in the other sectors, spending in this area accounts for 12% (€1.5 billion) of overall green expenditure.
10%	To achieve the goals of the 2050 Climate Action Plan, Germany is steadily and reliably expanding renewable energy and increasing energy efficiency in the energy industry itself and in energy-intensive industries.
3%	The federal government supports sustainable agriculture , coastal protection and flood prevention as well as the protection of habitats and biodiversity.

1. Overview of 2020 issuances

In 2020, the federal government issued two Green German Federal Securities with a total volume of €11.5 billion.¹

10-year Green Federal Bond, matures due on 15 August 2030

The first 10-year Green Federal Bond (Green Bund) was issued successfully on 2 September 2020 with a volume of €6.5 billion, of which the federal government retained an amount of €0.5 billion for secondary market activities. The bond was issued by syndication and met with exceptionally high demand from national and international investors; the final order book exceeded €33 billion.

The Green Bund was allocated to a very broad and diversified spectrum of 185 investors. It was issued at a yield of -0.463%, one basis point below the yield of the conventional twin bond.

Five-year Green Federal Note, matures due on 10 October 2025

On 4 November 2020, the federal government issued a five-year Green Federal Note (Green Bobl) with a volume of €5 billion, of which the federal government retained an amount of €379.25 million for secondary market activities. The Green Bobl was issued via the usual auction procedure. Twenty-six members of the Bund Issues Auction Group participated in the auction with a total volume of bids of almost €6 billion.

The Green Bobl was allotted at an average price of 104.27%, corresponding to a yield of -0.85%. As with the 10-year Green Bund in September, the price of the new Green Bobl was slightly above the secondary market price of the conventional twin.

¹ Green Bund website with investor presentation, transaction review and more: <https://www.deutsche-finanzagentur.de/en/institutional-investors/federal-securities/green-federal-securities/>

2. Green expenditures

The innovative model for Green German Federal Securities includes unique features that optimise the market development of green bonds and transparency about green expenditure in equal measure. The model is described in detail in the German Green Bond Framework published in 2020.²

2.1 Certainty and regularity

Our approach stipulates that the green bond proceeds are allocated exclusively to expenditures that have already been made, specifically expenditures in the federal budget of the year preceding the issuance. The proceeds of the two Green German Federal Securities, issued in 2020, were fully allocated to eligible green expenditures from the 2019 federal budget.

Germany's approach of post-financing the previous year's green budget items ensures that the budgetary autonomy of parliament is fully respected and results in transparency at an early stage regarding the use of proceeds.

The independent Bundesrechnungshof³ audited the 2019 federal budget. It did not find any material differences between the revenues and expenditures stated in the accounts and those in the underlying records. To verify the extent to which revenues and expenditures in the federal budget have been properly addressed by vouchers and receipts, it used a mathematical-statistical procedure. Green bonds

and the "greenness" of expenditures have not been addressed by the Bundesrechnungshof in its 2020 annual report.⁴

2.2 Selection of eligible green expenditures

Eligible green expenditures can include any eligible type of federal expenditure that supports Germany's overall climate and sustainability goals, in particular those related to tangible assets such as infrastructure, buildings, landscapes and forests, but also intangible assets such as talent and organisations, research, innovation and scientific knowledge. In cases where the federal government supports green *Länder* and local authority programmes (co-financing), only the federal government's share is used and allocated to the proceeds of the Green German Federal Securities.

The selection of green expenditures takes into account the main objectives of the German Climate Action Programme. The eligible expenditures were also mapped to the six European Environmental Objectives and the 17 United Nations Sustainable Development Goals. In addition, the German Green Bond Framework was validated by a Second Party Opinion,⁵ validating the alignment with market best practices and the significant contribution being made to the relevant UN Sustainable Development Goals.

2 https://www.deutsche-finanzagentur.de/fileadmin/user_upload/institutionelle-investoren/pdf/GreenBondFramework.pdf

3 The Bundesrechnungshof is the supreme federal authority for federal audit matters in Germany. The Bundesrechnungshof is an independent judicial body and is not subordinate to the federal government.

4 Cf. findings on the federal annual accounts for the 2019 fiscal year, 8 December 2020: <https://www.bundesrechnungshof.de/en/veroeffentlichungen/products/annual-reports/2020/general-part/01-findings-on-the-federal-annual-accounts-for-fy-2019>

5 https://www.deutsche-finanzagentur.de/fileadmin/user_upload/institutionelle-investoren/pdf/SPO.pdf

The eligible green expenditures were selected from the federal budget by the Core Green Bond Team, chaired by the Federal Ministry of Finance (BMF), in cooperation with each responsible ministry. The eligibility of the selected expenditures was assessed in line with the Green Bond Principles,⁶ which are published by the International Capital Market Association (ICMA) and are based on best market practices.

The selected expenditures were also mapped to the six European environmental objectives set out in the EU Sustainable Finance Taxonomy.⁷ Furthermore, documentation on every federal expenditure is publicly available.⁸

Governance safeguards and processes are in place for every type of expenditure to prevent corruption and money laundering in line with European and national legislation and standards, e.g. the Federal Government Directive Concerning the Prevention of Corruption in the Federal Administration.⁹ In the area of economic cooperation and development policy, these safeguards are complemented by the Federal Ministry for Economic Cooperation and Development's binding strategy paper on Anti-Corruption and Integrity in German Development Policy.¹⁰ Social safeguards and processes are in place for every type of expenditure to reduce the risk of forced labour and child labour and to promote and strengthen human rights in developing countries in accordance with European and national legislation and standards. See for example

the Federal Ministry for Economic Cooperation and Development's Guidelines on Incorporating Human Rights Standards and Principles, including Gender, in Programme Proposals for Bilateral German Technical and Financial Cooperation.¹¹

The Core Green Bond Team identified a total of around €12.3 billion of eligible green expenditures in the 2019 federal budget. The expenditures were examined in detail within the remits of the following federal ministries:

- the Federal Ministry for Economic Affairs and Energy (BMWi),
- the Federal Ministry of Food and Agriculture (BMEL),
- the Federal Ministry of Transport and Digital Infrastructure (BMVI),
- the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU),
- the Federal Ministry of Education and Research (BMBF) and
- the Federal Ministry for Economic Cooperation and Development (BMZ).

An interministerial working group chaired by the Federal Ministry of Finance approved this selection.

The eligible green expenditures can also include measures that are financed by the Energy and Climate Fund (*Energie-und Klimafonds*, EKF). This special fund makes a significant contribution to the implementation of Germany's energy transition. A large part of the Climate Action Programme 2030 is anchored in the Energy and Climate Fund with measures by various ministries.

6 <https://www.icmagroup.org/green-social-and-sustainability-bonds/green-bond-principles-gbp/>

7 Cf. Regulation (EU) 2020/852 of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088. The specification of the technical screening criteria of the EU Taxonomy (TSC, level 2) for each environmental objective is still ongoing.

8 <https://www.bundeshaushalt.de>

9 Richtlinie der Bundesregierung zur Korruptionsprävention in der Bundesverwaltung, http://www.verwaltungsvorschriften-im-internet.de/bsvwbund_30072004_O4634140151.htm

10 <https://www.bmz.de/resource/blob/23714/1a753885143c47998751f02d702e188c/strategiepapier323-04-2012-data.pdf>

11 <https://www.bmz.de/resource/blob/70448/14b3b6b3fe59eab4dcc05efe266e57b4/guidelines-human-rights-bilateral-cooperation>

3. Allocation of the 2020 proceeds

The eligible green expenditures of €12.3 billion are split among five sectors and mapped to the six European environmental objectives set out in the EU Sustainable Finance Taxonomy¹²:

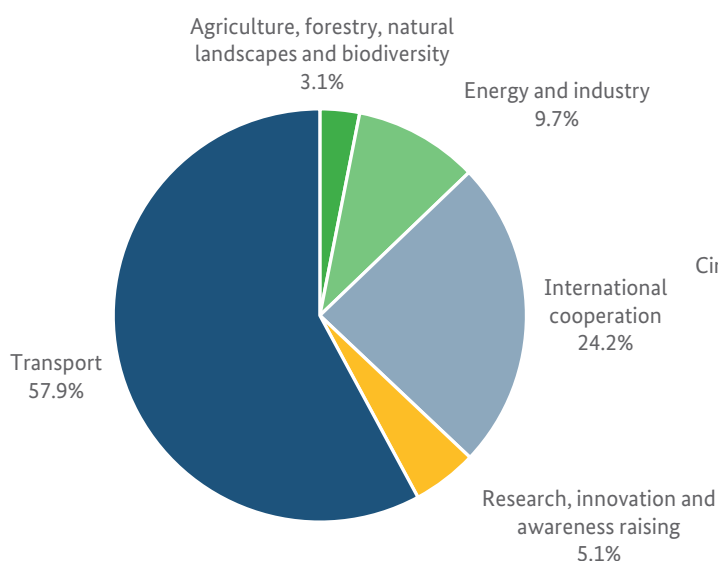


Figure 1: Breakdown by sector

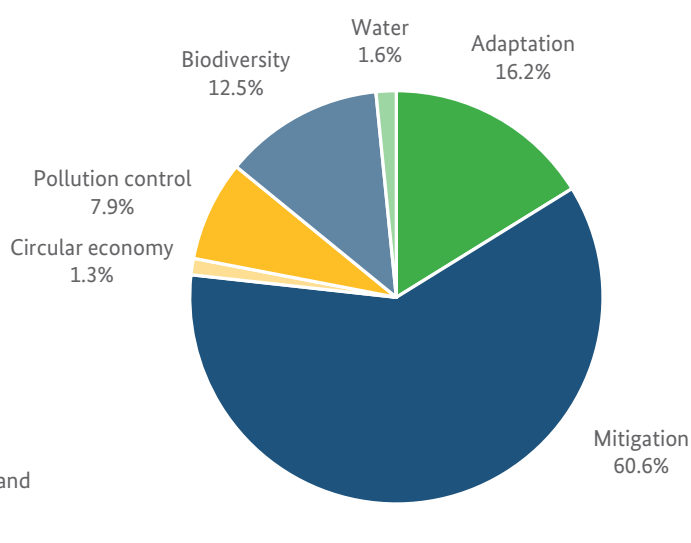


Figure 2: Breakdown by EU environmental objective

Table 2: Breakdown of 2019 eligible green expenditures by sector

Sectors	Eligible expenditures	Allocated amount	Number of budget items
	in € million		
Transport	7,125.3	6,655.3	19
International cooperation	2,981.7	2,785.0	12
Research, innovation and awareness raising	625.1	583.9	11
Energy and industry	1,198.5	1,119.4	9
Agriculture, forestry, natural landscapes and biodiversity	381.5	356.3	14
Total	12,312.1	11,500.0	65

The allocated proceeds of the Green German Federal Securities issued in 2020 relate to about 93.4% of the eligible green expenditures from 2019 (both overall and relative to each budget item), whereby the two securities each receive a proportional allocation of 2020's total green issuance volume or eligible green expenditures. Sixty-five budget items in the 2019 federal budget contributed to the green expenditures.

Note: This report focuses on the allocation of the proceeds to green expenditures. Impact reporting will be published at a later date.

¹² See footnote 7.

3.1 Transport

The transport sector needs to make a contribution to achieving the German government's climate action targets. The federal government is implementing comprehensive measures to decarbonise

the transport sector (passenger and freight transport) and to make it more environmentally friendly. The proceeds from the Green German Federal Securities issued in 2020 have been allocated to expenditures from the 2019 federal budget in the following areas:

Table 3: Breakdown of 2019 eligible green expenditures in the transport sector by category

Transport Categories	Eligible expenditures in € million	Allocated amount	Share of allocation	Number of budget items
Rail transport	6,210.9	5,801.2	87.2%	5
Alternative drive systems and fuels	396.4	370.3	5.6%	4
Public transport	247.9	231.6	3.5%	3
Waterways	182.0	170.0	2.6%	2
Cycling infrastructure	88.1	82.3	1.2%	5
Total	7,125.3	6,655.3	100.0%	19

■ Rail transport

Rail transport and rail infrastructure have a crucial part to play in achieving Germany's climate action targets. This includes further shifting passenger and freight transport to railways and expanding the electrification of drive systems and railway lines to achieve decarbonisation.

The federal government is providing subsidies for investments in rail construction and expansion projects throughout the country, as well as for maintaining a high quality of rail infrastructure. In 2019, federal financial assistance for the federal rail infrastructure amounted to around €5.7 billion (cf. the first two budget items in table 4). As an example, a project in Baden-Württemberg, launched in 2015 and due for completion in 2021, is upgrading and electrifying an important rail route for commuters and leisure travellers.¹³

The federal government is also reducing track access charges to encourage freight transport by rail. It also intends to make rail freight transport more attractive by promoting combined transport. The objective of the funding measures is to improve efficiency and reduce costs for freight services (e.g. by reducing process and waiting times and optimising resource utilisation).

■ Alternative drive systems and fuels

The electrification of road transport, in particular, is essential for reaching the climate action targets. The German government also wants to make Germany a leading provider of electric mobility. The aim is to create a system of electric mobility based on battery and fuel cell technology that is widely accepted in society and reliably meets the mobility needs of individuals and businesses.

Besides specific market-launch programmes, funding is focused on market-oriented research and development, the objective of which is to gain insights into e.g. the integration of electric mobility into energy systems, energy consumption, the effects on the climate and the environment, and

¹³ Case Study 1 in the Green Bond Investor Presentation 2020, slide 35: https://www.deutsche-finanzagentur.de/fileadmin/user_upload/institutionelle-investoren/pdf/Green_Bond_Investor_Presentation_2020.pdf

the incorporation of electric vehicles into mobility strategies. Electrical energy storage and hence research into battery technology is of strategic importance for the future of electric mobility and for implementing the energy transition. The federal government is supporting the development of battery materials and battery production processes through a range of funding programmes.

It is also encouraging people to buy electric vehicles and is actively involved in expanding publicly operated charging infrastructure. A further focus of funding programmes in the transport sector is the development of innovative hydrogen and fuel-cell technology.

■ Public transport

The shift from private motorised transport to public transport is aimed not only at reducing greenhouse gas emissions, but also has an important role to play in making cities and local authorities more environmentally friendly. The use of alternative drive systems in public transport will also accelerate decarbonisation. Since regional and local public transport is the responsibility of the *Länder* and local authorities, it is funded indirectly by the federal government via financial assistance.

■ Waterways

By funding replacement, construction and expansion projects on Germany's waterways as well as measures to maintain their transport infrastructure, the federal government is laying the foundation for the use of waterways for transportation and supporting sustainable inland navigation.

■ Cycling

The federal government is funding cycling with non-investment measures to implement the 2020 National Cycling Plan and subsidies to implement the German Unity Cycle Route. The federal government also finances the construction and maintenance of cycle paths along federal highways.

Table 4: Breakdown of eligible green expenditures in the transport sector by category and budget item and by allocation of expenditures to proceeds of the Green German Federal Securities

Responsible ministry	Budget chapter	Budget item	Title of the budget item	Eligible expenditures	Allocated to DE0001030708 Bund 0% 8/30	Allocated to DE0001030716 Bobl 0% 10/25
in € million						
1. Rail transport						
BMVI	1202	891 11	Subsidies towards construction costs for maintaining the federal rail infrastructure	4,150.0	2,190.9	1,685.3
BMVI	1202	891 01	Construction subsidies towards investments in the federal rail infrastructure	1,529.0	807.2	620.9
BMVI	1210	682 05	Reduction in track access charges for rail freight	340.0	179.5	138.1
BMVI	1202	891 05	Measures to reduce noise pollution from existing federal railways	148.9	78.6	60.5
BMVI	1210	892 41	Subsidies to private companies for investing in combined transport	43.0	22.7	17.5
				6,210.9	3,279.0	2,522.3
2. Alternative drive systems and fuels						
BMBF (EKF)	6092	683 04	Measures for the expansion of electric mobility	75.0	39.6	30.4
BMWi (EKF)				60.0	31.7	24.4
BMU (EKF)				54.2	28.6	22.0
BMVI (EKF)				37.1	19.6	15.1
BMWi (EKF)	6092	893 01	Subsidies for the purchase of electric vehicles	98.0	51.8	39.8
BMVI	1210	892 03	National Hydrogen and Fuel Cell Technology Innovation Programme 2016–2026	60.5	32.0	24.6
BMVI (EKF)	6092	893 02	Subsidies for the construction of charging infrastructure for electric vehicles	11.6	6.1	4.7
				396.4	209.3	161.0
3. Public transport						
BMVI	1206	882 02	Financial assistance to the <i>Länder</i> for regional and local public-transport rail infrastructure projects with eligible costs of more than €50 million each	104.0	54.9	42.2
BMVI	1206	891 01	Investment subsidies for regional and local public transport projects over €50m to Deutsche Bahn AG and companies majority-owned by the federal government	100.9	53.3	41.0
BMVI	1210	633 81	Local-authority public transport pilot projects from 2018 to 2020 to complement the Immediate Action Programme for Clean Air	43.0	22.7	17.5
				247.9	130.9	100.7
4. Waterways						
BMVI	1203	780 02	Replacement, expansion and construction projects relating to federal waterways	122.0	64.4	49.5
BMVI	1203	780 01	Maintenance of transport infrastructure	60.0	31.7	24.4
				182.0	96.1	73.9

Table 4: continued

Responsible ministry	Budget chapter	Budget item	Title of the budget item	Eligible expenditures	Allocated to	Allocated to
					DE0001030708 Bund 0% 8/30	DE0001030716 Bobl 0% 10/25
in € million						
5. Cycling						
BMVI	1201	746 22	Construction of bike lanes including maintenance (federal highways)	85.0	44.9	34.5
BMVI	1210	632 01	Implementation of the National Cycling Plan – grants to <i>Länder</i> and other public-law entities	3.1	1.6	1.2
		686 01	Implementation of the National Cycling Plan – subsidies to companies under private law			
		882 02	Grants to <i>Länder</i> for the construction of cycle super-highways			
		891 02	Subsidies for the implementation of the German Unity Cycle Route			
				88.1	46.5	35.8
Total				7,125.3	3,761.7	2,893.6

3.2 International cooperation for environmentally sustainable economies

Germany is highly committed to supporting international cooperation and thereby assisting emerging-market and developing economies in their transition towards greater environmental sustainability. This can include mitigating and adapting to climate change, transitioning towards sustainable energy systems based primarily on renewable energy sources, improving energy efficiency, protecting habitats and biodiversity, and sustainable use of natural resources and energy, including developing renewable energy generation facilities and sustainable agriculture. Germany also cooperates with other industrialised countries to jointly accelerate the pace of the energy transition and realise its potential as a driver of innovation and sustainable growth.

The Federal Ministry for Economic Cooperation and Development engages in official (i.e. governmental) bilateral development cooperation with a predefined list of partner countries. As part of the BMZ 2030 Reform Strategy, the number of partner countries is being reduced from 85 to 60.¹⁴ The process of selecting partner countries for future bilateral cooperation drew on global indicators on issues such as good governance, anti-corruption and level of need (see also section 2.2). The selection and approval of specific projects is subject to compliance with German law, the Guidelines for bilateral Financial and Technical Cooperation,¹⁵ relevant international agreements and treaties signed by Germany.

International support is reported in accordance with internationally agreed guidelines, criteria and reporting cycles, either as official development assistance (ODA) to the OECD Development Assistance Committee (DAC) and/or as climate finance to the EU and United Nations Framework Convention on Climate Change (UNFCCC).

Table 5: Breakdown of 2019 eligible green expenditures in the international cooperation sector by category

International cooperation	Eligible expenditures	Allocated amount	Share of allocation	Number of budget items
Categories	in € million			
Bilateral financial cooperation	1,099.9	1,027.4	36.9%	3
Bilateral technical cooperation	723.7	676.0	24.3%	1
International climate and environmental protection	541.0	505.3	18.1%	2
Multilateral cooperation	392.9	367.0	13.2%	2
Specific funding	224.1	209.3	7.5%	4
Total	2,981.7	2,785.0	100.0%	12

¹⁴ The BMZ 2030 Reform Strategy was unveiled in April 2020 and is available at https://www.bmz.de/en/countries_regions/laenderkonzentration/index.html. The list of the 60 cooperation partner countries is included on page 7. The countries where official bilateral development cooperation is currently being phased out can be found on page 8.

¹⁵ The Guidelines for bilateral Financial and Technical Cooperation with cooperation partners of German development cooperation are available at https://www.bmz.de/resource/blob/70442/35e6f85d0f28c0d128d0a8e2ea203bfc/190221_Guidelines_Financial_and_Technical_Cooperation.pdf.

■ Bilateral financial cooperation

The main task of financial cooperation is to support the financing of measures that are important for development projects in partner countries with which Germany has a development cooperation. The majority of projects and programmes promoted through bilateral financial cooperation are based on agreements between the federal government and partner countries and then implemented by KfW.

Bilateral financial cooperation projects are categorised as green expenditures if they contribute to climate change adaptation, climate change mitigation, aid to environment and/or supporting biodiversity. The methodology used to qualify these projects is based on the methodology agreed on by the OECD's DAC. Supported projects include renewable energy plants, energy efficient buildings and clean urban infrastructure.

■ Bilateral technical cooperation

Through bilateral technical cooperation, Germany helps improve the technical, economic and organisational knowledge and skills of people and organisations in partner countries. Technical cooperation consists mainly of advisory services and the supply of materials and equipment. The government-owned Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) is generally contracted by the federal government to implement projects relating to cooperation measures agreed at the government level with the partner countries.

In some cases, technical cooperation support can also be provided directly by the federal government or its specialist agencies, such as the Federal Institute for Geosciences and Natural Resources or the National Metrology Institute.

Projects in this area are categorised as green expenditures if they contribute to climate change adaptation, climate change mitigation, aid to environment, and/or supporting biodiversity. They are identified by the OECD DAC markers as described above. Supported projects include the provision of technical assistance for climate adaptation in rural areas, support for sustainable water management infrastructures, and supporting frameworks for renewable energy development. For example, the GIZ-implemented project Energising Development (EnDev) promotes local access to energy in Africa, Asia and Latin America and has already supported more than 23 million people in gaining access to electricity or improved cooking technologies.¹⁶

■ International climate and environmental protection

The International Climate Initiative is the most important instrument of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety for the international financing of climate protection and biodiversity. The Initiative finances projects that help developing countries and countries with economies in transition in all sectors to reduce greenhouse gas emissions and to adapt to the consequences of climate change, as well as to preserve natural carbon sinks such as forests, moors and grasslands and protect biodiversity. It also supports green recovery measures in the partner countries.¹⁷ Important cross-cutting issues of the International Climate Initiative are the climate protection contributions of the individual member states to fulfil the Paris Agreement, and increasing the ambition of the Nationally Determined Contributions (NDCs).

¹⁶ Case Study 6 in the Green Bond Investor Presentation 2020, slide 51: https://www.deutsche-finanzagentur.de/fileadmin/user_upload/institutionelle-investoren/pdf/Green_Bond_Investor_Presentation_2020.pdf

¹⁷ More information on the projects, funds and facilities supported by the International Climate Initiative can be found at www.international-climate-initiative.com.

The Federal Ministry for Economic Cooperation and Development's International Climate and Environmental Protection budget is used to fund projects and programmes that contribute to the adaptation to climate change, to the reduction of greenhouse gases as well as to supporting forests and other ecosystems.

■ Multilateral cooperation

Multilateral organisations are important partners in upscaling change: they implement programmes of significant scale and reach in developing countries and emerging economies, and can coordinate inputs from different donors. Germany makes significant monetary contributions to multilateral climate and environmental funds. The majority of funds in this category were allocated to the Green Climate Fund (€140 million), the Global Environmental Facility (about €69 million), the Global Risk Financing Facility (€60 million), and the Forest Carbon Partnership Facility (€50 million).

■ Specific funding

The budget items selected here have a specific focus on an area which has been identified as entirely green (e.g. international cooperation) or partially green (e.g. the special initiative ONE WORLD – No Hunger).

The special initiative ONE WORLD – No Hunger funds projects which contribute to reducing hunger and malnutrition or support rural development as an important precondition for food security. Projects included as green expenditures are those related to environmentally sustainable management of living natural resources and land usage.

The activities funded as part of international energy cooperation include German involvement in multilateral efforts as well as more than 20 bilateral energy partnerships between Germany and countries around the world which combine regular high-level political dialogue with ongoing technical cooperation in order to jointly accelerate the transition to sustainable, decarbonised energy systems.¹⁸

Since 2016, the Environment Ministry's Environmental Technologies Export Initiative has been supporting projects of German companies and institutions that promote environmental awareness and share environmental knowledge and technical know-how, particularly in emerging and developing countries. Support is given in particular to small and medium-sized enterprises in the field of public services (especially in the areas of recycling management, water and sewage treatment).¹⁹

18 Further information on international energy cooperations can be found online at <https://www.bmwi.de/Redaktion/EN/Publikationen/Energie/annualreport-energy-partnerships-2019.html>.

19 Further information on the Environmental Technologies Export Initiative can be found online at www.exportinitiative-umweltschutz.de.

Table 6: Breakdown of eligible green expenditures in the international cooperation sector by category and budget item and by allocation of expenditures to proceeds of the Green German Federal Securities

Responsible ministry	Budget chapter	Budget item	Title of budget item	Eligible expenditures	Allocated to	Allocated to
					DE0001030708 Bund 0% 8/30	DE0001030716 Bobl 0% 10/25
in € million						
1. Bilateral financial cooperation						
BMZ	2301	896 11	Bilateral financial cooperation – grants	658.5	347.6	267.4
BMZ	2301	896 01	Financial cooperation with regions	242.7	128.1	98.5
BMZ	2301	866 11	Bilateral financial cooperation – loans	198.8	105.0	80.7
				1,099.9	580.7	446.7
2. Bilateral technical cooperation						
BMZ	2301	896 03	Bilateral technical cooperation	723.7	382.1	293.9
				723.7	382.1	293.9
3. International climate and environmental protection						
BMU	1602	896 05	Investments to protect the climate and biodiversity abroad	453.0	239.2	184.0
BMZ	2310	687 01	International climate and environmental protection	88.0	46.5	35.7
				541.0	285.6	219.7
4. Multilateral cooperation						
BMZ	2303	896 09	Developmentally important multilateral aid for global environmental protection, biodiversity conservation and climate protection	370.6	195.7	150.5
BMU	1601	687 01	Membership fees to international organisations	22.3	11.8	9.0
				392.9	207.4	159.6
5. Specific funding						
BMZ	2310	896 31	Special initiative ONE WORLD – No Hunger	184.0	97.1	74.7
BMWi (EKF)	6092	687 02	International energy cooperation, commodity partnerships and technology cooperation	20.1	10.6	8.2
BMU	1602	532 05	International cooperation	15.8	8.4	6.4
BMU	1601	687 04	Export of green and sustainable (environmental) infrastructure	4.2	2.2	1.7
				224.1	118.3	91.0
Total				2,981.7	1,574.1	1,210.9

3.3 Research, innovation and awareness raising

This sector encompasses federal spending on basic and applied research and on promoting innovation in the area of environmental and climate action primarily under the remit of the Federal Ministry of Education and Research. Green expenditures on research and innovation in all sectors amount to €1.5 billion and account for 12% of eligible expenditures overall. This sector's eligible expenditures of €625.1 million are used in particular to develop solutions for combating climate change, for the preservation of ecosystems and biodiversity, and for compensating for fluctuations in power grids due to the increasing use of renewable energy sources to generate electricity – for example in the Kopernikus project SnyErgie.²⁰ Strong government involvement is essential when it comes to these kinds of fundamental developments in particular.

Due to the diversity of the individual spending programmes, this sector has not been broken down into categories. Key areas of research include the energy transition, energy efficiency and storage, climate change, the bioeconomy, material efficiency and the circular economy. Other research approaches (e.g. socio-environmental) are also taken into account.

In the area of marine, coastal and polar research, funding is provided for research activities carried out from a number of German research vessels, among other things into the effects of climate change on ocean currents. In the area of bioeconomic research, funding is provided for a variety of projects dealing with e.g. sustainable agricultural systems of the future, innovative plant cultivation systems, and the transition to a circular economy. And finally, funding is provided for research into the efficient use of raw materials and the circular economy, as well as sustainable water management and geothermal energy.

Table 7: 2019 eligible green expenditures in the research, innovation and awareness raising sector

Research, innovation and awareness raising	Eligible expenditures	Allocated amount	Share of allocation	Number of budget items
	in € million			
Total	625.1	583.9	100.0%	11

Broad-based knowledge- and technology transfer is the objective. Funding for research comes mainly from the framework programme FONA (Research for Sustainability),²¹ with which the Federal Ministry of Education and Research is funding over 5,000 individual projects conducting research into climate change, the energy transition, water scarcity, loss of biodiversity, soil degradation, raw-material shortages, and understanding the Earth system.

The Environmental Innovation Programme²² funds pilot projects focused on technologies and processes for preventing and mitigating pollution, and on the production and application of environmentally friendly products and substitute materials. Initiatives and organisations focusing on environmental protection and nature conservation are also supported with subsidies from the federal budget, which leads to higher levels of awareness and greater transparency regarding a variety of sustainability issues.

²⁰ Case Study 9 in the Green Bond Investor Presentation 2020, slide 54: https://www.deutsche-finanzagentur.de/fileadmin/user_upload/institutionelle-investoren/pdf/Green_Bond_Investor_Presentation_2020.pdf

²¹ <https://www.fona.de/en/about-fona/research-for-sustainable-development.php>

²² <https://www.umweltinnovationsprogramm.de>

Table 8: Breakdown of eligible green expenditures in the research, innovation and awareness raising sector by budget item and by allocation of expenditures to proceeds of the Green German Federal Securities

Responsible ministry	Budget chapter	Budget item	Title of the budget item	Eligible expenditures	Allocated to	Allocated to
					DE0001030708 Bund 0% 8/30	DE0001030716 Bobl 0% 10/25
in € million						
BMBF	3004	683 30	Bioeconomy	132.3	69.9	53.7
BMBF	3004	685 41	Energy technologies and efficient use of energy – R&D projects	112.1	59.2	45.5
BMBF	3004	685 42	Environmental technologies and resources	108.8	57.4	44.2
BMBF	3004	685 40	Climate research, biodiversity and globalised habitats – R&D projects	91.6	48.3	37.2
BMBF	3004	685 44	Coastal, marine and polar research, geoscience research – R&D projects	55.7	29.4	22.6
BMU	1601	544 01	Research, studies, etc.	50.1	26.4	20.3
BMBF	3004	685 43	Social sciences for sustainability	33.5	17.7	13.6
BMU	1601	892 01	Investments to mitigate pollution (Environmental Innovation Programme pilot projects)	14.8	7.8	6.0
BMU	1604	544 01	Research, studies, etc.	13.4	7.1	5.4
BMU	1601	685 04	Subsidies for organisations in the areas of environmental protection and nature conservation	10.1	5.3	4.1
BMBF	3004	683 10	Knowledge- and technology transfer tools as part of the High-Tech Strategy	2.8	1.5	1.1
Total				625.1	330.0	253.9

3.4 Energy and industry (including the National Climate Initiative)

To achieve its climate action targets Germany is changing its energy system. Renewable energy is being constantly and reliably expanded, and energy efficiency is being improved in the energy industry itself as well as in the energy-intensive industries. The use of nuclear power and fossil fuels to generate electricity is being phased out in Germany.

The federal government's main funding instrument in this sector is the Energy and Climate Fund (EKF). The programmes funded by the Energy and Climate Fund play a central role in implementing the energy transition and in achieving national and international climate action targets.

■ Renewable energy

As part of the Market Incentive Programme to promote the use of renewable energy, investment incentives are being provided in the heating market to support the market penetration of renewable heating technologies and to increase their market share. These include solar thermal collectors, systems for the combustion of solid biomass, efficient heat pumps, geothermal systems, heat networks, and particularly innovative forms of the technologies described above for heating and cooling residential and non-residential buildings.

Funding programmes for the implementation of the energy transition include SINTEG (Smart Energy Showcases – Digital Agenda for the Energy Transition), which aims to develop model solutions for smart interplay in the production of renewable energy, the use of existing grids, energy consumption and energy storage.

Table 9: Breakdown of 2019 eligible green expenditures in the energy and industry sector by category

Energy and industry	Eligible expenditures	Allocated amount	Share of allocation	Number of budget items
Categories	in € million			
Energy research	512.0	478.2	42.7%	1
Renewable energy	292.6	273.3	24.4%	2
Energy efficiency	236.7	221.1	19.7%	4
National Climate Initiative	157.2	146.8	13.1%	2
Total	1,198.5	1,119.4	100.0%	9

■ Energy research

Energy research plays a strategic role in energy and economic policies for shaping the energy transition. Funding is focused on technologies and approaches that can significantly improve efficiency, integrate renewable energy sources into the energy system and guarantee the security of supply. Research and development into individual technologies is being expanded to include systemic and cross-system aspects (digitalisation of the energy transition, sector coupling).

■ Energy efficiency

The Federal Programme for the Promotion of Energy Efficiency in Industry (“Bundesförderung für Energieeffizienz in der Wirtschaft”) funds measures to increase energy efficiency and promote climate action in industry and businesses. This includes investments for utilising waste heat from industrial production. For example, waste heat from copper production by Aurubis is used to heat Hamburg’s HafenCity district, among other things.²³

Furthermore, the federal government supports the provision of advice on energy use and appropriate measures for all end-user groups such as private consumers, SMEs and local authorities, including on issues such as increasing energy efficiency and the use of renewable energy sources (e.g. saving electricity, insulation, modern heating technologies) or optimising existing heating systems.

■ National Climate Initiative

The National Climate Initiative was launched in 2008 with the aim of developing and actively implementing innovative approaches together with citizens and stakeholders from society, business and the scientific community. The projects cover a broad spectrum of climate action activities, from the development of long-term strategies through to concrete assistance and funding measures in the energy, transport and business/industry sectors, and are proven to contribute to a reduction in greenhouse gases.

²³ Case Study 11 in the Green Bond Investor Presentation 2020, slide 56: https://www.deutsche-finanzagentur.de/fileadmin/user_upload/institutionelle-investoren/pdf/Green_Bond_Investor_Presentation_2020.pdf

Table 10: Breakdown of eligible green expenditures in the energy and industry sector by category and budget item and by allocation of expenditures to proceeds of the Green German Federal Securities

Responsible ministry	Budget chapter	Budget item	Title of the budget item	Eligible expenditures	Allocated to	Allocated to
					DE0001030708 Bund 0% 8/30	DE0001030716 Bobl 0% 10/25
in € million						
1. Energy research						
BMWi	0903	683 01	Energy research	512.0	270.3	207.9
				512.0	270.3	207.9
2. Renewable energy						
BMWi (EKF)	6092	686 04	Market Incentive Programme for the Use of Renewable Energy in the Heat Market	245.4	129.5	99.7
BMWi (EKF)	6092	686 13	Energy transition programmes and measures in the areas of renewable energy sources, electricity and power grids, digitalisation and energy infrastructure	47.3	25.0	19.2
				292.6	154.5	118.8
3. Energy efficiency						
BMWi (EKF)	6092	686 08	Energy efficiency in industry and businesses	133.2	70.3	54.1
BMWi (EKF)	6092	686 14	Providing advice on energy efficiency	54.3	28.7	22.0
BMWi (EKF)	6092	686 10	Heating Optimisation Programme	32.9	17.4	13.4
BMWi (EKF)	6092	686 11	Energy efficiency incentive programme	16.2	8.6	6.6
				236.7	125.0	96.1
4. National Climate Initiative						
BMU (EKF)	6092	686 05	National Climate Initiative	119.6	63.2	48.6
BMU	1602	686 05	National Climate Initiative	37.5	19.8	15.2
				157.2	83.0	63.8
Total				1,198.5	632.7	486.7

3.5 Agriculture, forestry, natural landscapes and biodiversity

Protecting natural resources and ecosystems is particularly important for agriculture and forestry. Agriculture and forestry also need to adapt to the impacts of climate change, and they have an important role to play in achieving Germany's sustainability and climate action targets.

The federal government and the *Länder* support the development of sustainable forestry, for example in tackling extreme weather events caused by climate change and in establishing appropriate preventive measures. The Forest Climate Fund supports the implementation of measures that help to adapt forests to climate change and that safeguard the vital contribution made by near-natural, richly layered and species-rich forests to the long-term preservation of natural resources and ecosystems. This increases the potential of forests and wood to reduce CO₂ emissions and as sources of energy.

Table 11: Breakdown of 2019 eligible green expenditures in the agriculture, forestry, natural landscapes and biodiversity sector

Agriculture, forestry, natural landscapes and biodiversity	Eligible expenditures	Allocated amount	Share of allocation	Number of budget items
Categories		in € million		
Sustainable agriculture and forestry	129.7	121.1	34.0%	9
Coastal defences and flood protection	240.7	224.8	63.1%	4
Protection of ecosystems	11.1	10.4	2.9%	1
Total	381.5	356.3	100.0%	14

■ Sustainable agriculture and forestry

The federal government's funding programmes as well as the Joint Task for the Improvement of Agricultural Structures and Coastal Protection, a federal-*Länder* funding instrument, are intended to further support sustainable and resource-conserving forms of forestry that incorporate environmental and climate action needs and the conservation of natural habitats to an even greater extent.

The Federal Ministry of Food and Agriculture's Renewable Resources funding programme supports research, development and demonstration projects in the area of producing and using renewable natural resources. The objectives of the programme include the efficient and environmentally friendly use of resources including emissions avoidance or sequestration of greenhouse gases and the conservation of natural resources (biodiversity).

A further example of the funding of sustainable agriculture and forestry can be found in the investor presentation: the InsHabNet project contributes to the development of strategies to protect endangered insect populations against the fragmentation of their habitats.²⁴

²⁴ Case Study 12 in the Green Bond Investor Presentation 2020, slide 57: https://www.deutsche-finanzagentur.de/fileadmin/user_upload/institutionelle-investoren/pdf/Green_Bond_Investor_Presentation_2020.pdf

Coastal defences and flood protection

According to the IPCC Special Report on the Ocean and Cryosphere in a Changing Climate (SROCC), higher wind speeds and an increase in extreme waves, combined with the rise in relative sea levels, are exacerbating extreme weather conditions and dangers in coastal regions. Besides being a threat to humans, extreme floods cause the destruction of natural landscapes, agricultural land and wildlife. Coastal defence and flood protection funding is aimed primarily at protecting the general population. The Joint Task for the Improvement of Agricultural Structures and Coastal Protection therefore encompasses numerous funding opportunities, as joint initiatives by the Federation and *Länder*, for implementing a wide variety of coastal defence and flood protection measures. These will help to reduce or completely prevent large-scale flooding incidents in the future. The funding measures are implemented by the respective *Länder*. The federal government provides 70% of the funding for coastal defence measures and 60% of the funding for flood protection measures.

Protection of ecosystems

The federal government is involved in various programmes that promote biodiversity and the protection of endangered species. The programme *chance.natur* funds the establishment and long-term protection of areas of nature and landscapes of national importance, and makes a significant contribution to protecting Germany's biodiversity and natural heritage.

Table 12: Breakdown of eligible green expenditures in the agriculture, forestry, natural landscapes and biodiversity sector by category and budget item and by allocation of expenditures to proceeds of the Green German Federal Securities

Responsible ministry	Budget chapter	Budget item	Title of the budget item	Eligible expenditures	Allocated to	Allocated to
					DE0001030708 Bund 0% 8/30B	DE0001030716 Bobl 0% 10/25
in € million						
1. Sustainable agriculture and forestry						
BMEL	1005	686 31 893 31	Funding of innovation in the area of food, agriculture and health-related consumer protection	45.4	24.0	18.4
BMEL	1005	686 11 893 11	Subsidies to fund research, development and demonstration projects in the area of renewable resources and to fund national sustainable forestry projects	43.8	23.1	17.8
BMEL	1003	632 41 882 41 632 42 882 42	Grants to fund forestry measures (excluding investments) Grants to fund forestry measures (investments) Grants to combat the consequences of extreme weather events in forests (excluding investments) Grants to combat the consequences of extreme weather events in forests (investments)	28.4	15.0	11.5
BMEL (EKF) BMU (EKF)	6092	686 06	Forest Climate Fund	12.1	6.4	4.9
				129.7	68.5	52.7
2. Coastal defences and flood protection						
BMEL	1003	882 15	Grants to fund flood protection facilities, the renaturation of dykes, torrent control and the renaturation of water bodies	90.9	48.0	36.9
BMEL	1003	882 61	Grants for funding coastal defence measures	81.2	42.9	33.0
BMEL	1003	882 82	Grants for funding preventative flood protection measures	50.4	26.6	20.5
BMEL	1003	882 81	Grants to fund coastal defence measures against the effects of climate change	18.2	9.6	7.4
				240.7	127.1	97.8
3. Protection of ecosystems						
BMU	1604	882 01	Grants for the establishment and long-term protection of areas of nature and landscapes of national importance (chance.natur)	11.1	5.9	4.5
				11.1	5.9	4.5
Total				381.5	201.4	154.9

Annex

Third-party verification

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INDEPENDENT PRACTITIONER'S REPORT ON A LIMITED ASSURANCE ENGAGEMENT REGARDING GERMANY'S GREEN BOND ALLOCATION REPORT 2020

To the Federal Ministry of Finance (Bundesministerium der Finanzen), Berlin/Germany, representing the Federal Government of Germany

Engagement

We have performed a limited assurance engagement on the Green Bond Allocation Report 2020 (hereinafter: "Green Bond Allocation Report") for Germany's 10-year Green German Federal Bond (hereinafter "Green Bund"), issued on September 2, 2020, and Germany's five-year Green German Federal Note (hereinafter „Green Bobl“), issued on November 4, 2020.

The Green Bond Allocation Report was prepared on the basis of the Federal budget of the fiscal year 2019 and a list of hereof positions of Eligible Green Expenditures as defined in Germany's Green Bond Framework and validated by the Inter-Ministerial Working Group for the period from January 1, 2019 to December 31, 2019. Our assurance engagement was limited to assessing the accuracy of the Green Bond Allocation Report with regard to the proportional allocation of the proceeds from the Green Bund and the Green Bobl to the Eligible Green Expenditures from the previous year in accordance with the process for expenditure evaluation and selection as well as requirements for allocation reporting set out in Germany's Green Bond Framework.

Our engagement has not covered whether Germany's Green Bond Framework has met the criteria of the Green Bond Principles as issued by the International Capital Markets Association (ICMA). Moreover, our engagement did not include any checks of compliance of Germany's Green Bond Framework with important elements of the draft EU Green Bond Standard. We did not validate whether the expenditures used for the allocation of proceeds in the Green Bond Allocation Report are Eligible Green Expenditures, either. Our Engagement did not cover any other aspect than the proportional allocation and whether the Eligible Green Expenditures selected by the Core Green Bond Team were listed in the Federal budget of the fiscal year 2019.

Specific purpose

The Green Bond Allocation Report was prepared to report on the allocation of Eligible Green Expenditures to the Green Bund, issued on September 2, 2020, and the Green Bobl, issued on November 4, 2020. Therefore, the Green Bond Allocation Report may not be suitable for another purpose.



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Responsibilities of the Federal Republic of Germany

The Federal Ministry of Finance, Division VII C 2, is responsible for preparing the Green Bond Allocation Report in accordance with the Federal budget of the fiscal year 2019 and a list of hereof positions of Eligible Green Expenditures for the period from January 1, 2019 to December 31, 2019 and in accordance with Germany's Green Bond Framework. The report was compiled by the Federal Government's Core Green Bond Team, comprising the Federal Ministry of Finance (lead), the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and the Bundesrepublik Deutschland - Finanzagentur GmbH ("German Finance Agency"), on the basis of information provided and validated by the Inter-Ministerial Working Group.

The responsibilities of the Core Green Bond Team include the selection and application of appropriate methods for preparing the Green Bond Allocation Report as well as making assumptions and estimates related to individual disclosures, which are reasonable in the circumstances. In addition, the Core Green Bond Team is responsible for such arrangement and measures determined necessary to enable the preparation of the Green Bond Allocation Report that is free from material misstatement, whether due to fraud or error.

The Core Green Bond Team and the Inter-Ministerial Working Group act on behalf of the Federal Government of Germany and were set up by the Federal Minister of Finance based on the Cabinet decision to adopt the Climate Protection Program 2030.

Responsibilities of the Independent Practitioner

Our responsibility is to express a conclusion on the Green Bond Allocation Report, based on our work performed within our limited assurance engagement.

Our audit firm applies the Quality Assurance Standard: Quality Assurance Requirements in Audit Practices (IDW QS 1) promulgated by the Institut der Wirtschaftsprüfer (IDW). We have fulfilled the professional responsibilities in accordance with the German Public Auditor Act (WPO) and the Professional Code of Conduct for German Public Auditors and Sworn Auditors (BS WP/vBP) including the requirements on independence.

We are independent of the Federal Government of Germany in accordance with the provisions under German commercial law and professional requirements, and we have fulfilled our other ethical responsibilities in accordance with the relevant provisions within these requirements.

We conducted our work in accordance with the International Standard on Assurance Engagements (ISAE) 3000 (Revised): "Assurance Engagements other than Audits or Reviews of Historical Financial Information" developed and approved by the IAASB. This standard requires that we plan and perform the assurance engagement so that we can conclude with limited assurance whether matters have come to our attention to cause us to believe that the Green Bond Allocation Report as a whole has not been prepared, in all material respects, in accordance with the Federal budget of the fiscal year 2019 and a list of hereof positions of Eligible Green Expenditures as well as that the allocation has not been done on a proportional basis or that it has not been done in accordance with the



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process for expenditure evaluation and selection as well as the requirements on allocation reporting set out in Germany's Green Bond Framework.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement; consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. The choice of assurance work is subject to the practitioner's professional judgment.

Within the scope of our limited assurance engagement, we notably performed the following work:

- Interviews of relevant responsible members of the Core Green Bond Team, notably staff of the BMF and the German Finance Agency
- Reconciliation of the allocated amounts and the Eligible Green Expenditures of the Federal budget 2019 for each category and each budget item prepared in the Green Bond Allocation Report
- Plausibility and consistency checks on quantitative information on allocated amounts for each category and each budget item of the Federal budget 2019 prepared in the Green Bond Allocation Report
- Assessing whether the Green Bund and the Green Bobl received proportional allocation of the 2019 final Eligible Green Expenditures in accordance with the Federal budget of the fiscal year 2019 and a list of hereof positions of Eligible Green Expenditures.

Practitioner's conclusion

Based on the work performed and evidence obtained, nothing has come to our attention that causes us to believe that the Green Bond Allocation Report 2020, for the Green Bond and the Green Bobl as a whole is not in accordance, in all material respects, with the Federal budget of the fiscal year 2019 and a list of hereof positions of Eligible Green Expenditures as well as that the allocation has not been done on a proportional basis or that it has not been done in accordance with the process for expenditure evaluation and selection as well as the requirements for allocation reporting set out in Germany's Green Bond Framework.

Our opinion does not include the aspects excluded in the second paragraph in section "Engagement".



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This report is addressed to the Federal Ministry of Finance representing the Federal Government of Germany, only. This report is not intended to be used by third parties as a basis for making (financial) decisions. We issue this report based on the terms and conditions of the framework agreement agreed with the Federal Government, represented by the BMF, on 18 March 2021, wherein the liability is limited. We are liable solely to the Federal Government of Germany. We assume no responsibility with regard to any third parties.

Düsseldorf/Germany, April 13, 2021

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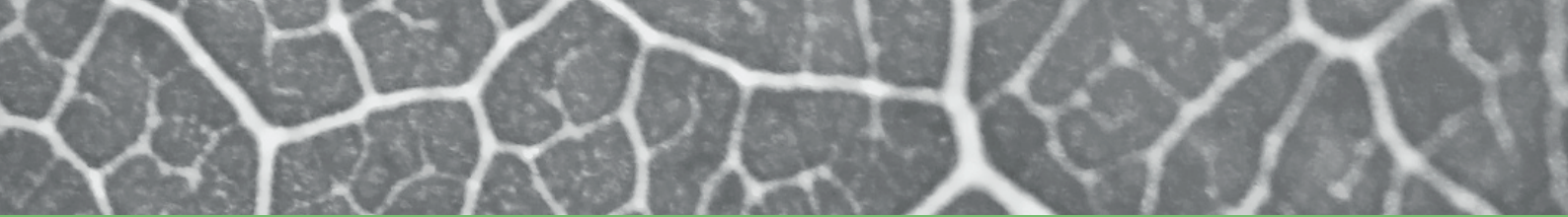
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