



Green Bond Report

1 Introduction

Vodafone Group is one of the world's leading technology communications providers, connecting people and organisations of all sizes to the digital society. We have extensive experience in connectivity, convergence and the Internet of Things, as well as championing mobile financial services and digital transformation in emerging markets. Vodafone has mobile operations in 22 countries, partners with mobile networks in 42 more, and fixed broadband operations in 17 markets. As of 31st March 2020, Vodafone Group had 362 million customers, including 115 million mobile customers, 25 million broadband customers and 22 million TV customers in Europe and 168 million mobile customers in Africa.

Vodafone is optimistic about how technology and connectivity can enhance the future and improve people's lives. Through our business, we aim to build a connected society that enhances socio-economic progress, embraces everyone and does not come at a cost to our planet. This is why we have committed to improve one billion lives and halve our environmental impact by 2025, by taking concrete action in three areas: Digital society, Inclusion for All, and Planet.

To assist in achieving our 2025 Planet objectives of purchasing 100% of electricity from renewable sources and a 50% reduction in Greenhouse Gas (GHG) emissions, Vodafone released its Green Bond Framework in 2018 raising €750m in 2019 with its first Green Bond. Proceeds of which financed or refinanced projects that will help Vodafone achieve these objectives.

2 Project evaluation

Vodafone's Green Bond Committee includes representatives from Treasury, Sustainable Business, Energy Performance, Investor Relations and other parties nominated as subject matter experts. Following the steps laid out in the Vodafone Green Bond Framework, the committee evaluated projects put forward by teams across Vodafone for their eligibility, ensuring that they help in achieving environmental targets detailed in Vodafone's sustainability reporting. Proceeds from the issuance were maintained separately in the Treasury Management System and released once projects gained approval.







3 Allocation report

Vodafone's energy consumption is split between multiple sites that consume relatively small amounts of energy. Consequently, optimising energy consumption is a complex challenge. When Vodafone issued its first Green Bond in 2019 our networks comprised more than: 164,000 mobile base station sites; 89,000 servers; and 3,200 buildings (including 400 technology centres) which accounted for 94% of energy demand. Our networks, though complex, are therefore a significant focus of the Green Bond programme.

Eligible Green Project Portfolio		Green Funding			
	<u>Amount</u>	<u>Instrument (ISIN)</u>	<u>Issuance date</u>	<u>Due Date</u>	<u>Amount</u>
Energy efficiency	€1,281.44m	XS2002017361	May 2019	Nov 2026	€750m
Renewable energy	€2.89m				
Green buildings	€61.33m				
Total	€1,345.66m	Total		€750m	

Percentage of eligible green project portfolio currently financed through green funding (Usage)	55.7%
Percentage of green funds - allocated	100%
Eligible green project portfolio - unallocated	€595.66m
Oldest project refinanced	FY17
Eligible projects started in FY20	€337.10m (25%)

4 Impact report

Green Bond Principles	Investment	Impact	UN SDGs
Energy efficiency	Network € 950.90m Energy Optimisation & Other Projects € 119.60m IoT € 210.94m	Network 568,000 Tonnes CO ₂ e abatement pa (direct) Energy Optimisation & Other Projects 145,000 Tonnes CO ₂ e abatement pa (direct) IoT 6,900,000 Tonnes CO ₂ e abatement pa (indirect)	   
Renewable energy	€ 2.89m	2,000 Tonnes CO ₂ e abatement pa (direct)	
Green buildings	€61.33m	57,000 m ² LEED certified floor space & 34,000 Tonnes CO ₂ e abatement (direct)	
Total	€1,345.66m	749,000 Tonnes CO₂e abatement pa (direct) 6,900,000 Tonnes CO₂e abatement pa (indirect) 57,000 m² LEED certified floor space	

5 Project examples

5.1 Energy efficiency

5.1.1 Network: Installing energy-efficient single radio access network ('SRAN') equipment, which enables a single item of radio hardware to run multiple technologies (e.g. 2G, 3G, 4G and 5G). Activating energy-saving software features that optimise radio resources and energy consumption in real time. Other steps include the incorporation of power optimisation in design specifications for new infrastructure to ensure that each successive generation of equipment is more energy efficient. This includes the development of an innovation hub (Green Island) to showcase different technologies that promote sustainability and energy efficiency in radio access sites.

5.1.2 Energy Optimisation and Other Projects: Upgrading to more efficient power conversion equipment and continuing the installation of the dynamic thermal management control systems that use Artificial Intelligence ('AI') algorithms to dynamically control cooling. Servers receive the optimal amount of cooled air, while responding in real time to network demand and external environmental conditions. Installing free air-cooling technology as an alternative to air conditioning, and adiabatic solution in warmer markets, both reducing energy demand. Connecting more than 100,000 smart meters across 55,000 sites in 10 markets to Vodafone's central Energy Data Management ('EDM') system.

5.1.3 Internet of Things ('IoT'): Narrowband-IoT and software developments that support and provide low-power methods of connecting devices out in the field for applications such as:

Smart meters - enabling businesses, municipal authorities and households to monitor, manage and reduce their energy use.

Smart cities - networked intelligently to improve the efficiency of energy-intensive services such as public transport, public road networks and street lighting.

Smart logistics - IoT technologies embedded in vehicles to optimise route management, vehicle maintenance and driver behaviour, delivering cuts in fuel consumption of up to 30%.

5.2 Onsite renewable energy

Installation of solar or wind in seven markets to reduce electricity consumed from the grid.

5.3 Green buildings

LEED Platinum in Madrid, Spain (HQ) and Gold in Padua, Italy add to Vodafone's portfolio of Green Buildings. Other investments include building upgrades that deliver significant savings for example: LED replacements across a large number of sites.

Examples provided are a non exhaustive list of projects and further details can be found on Vodafone's Sustainable website, Annual Report & prior years of Sustainability reporting along with more details of Vodafone's CO₂e calculation methodologies.

Direct CO₂e abatement: Quantified by a mix of measured and/or calculated energy savings based off technical specifications for each individual project on a market by market basis using the local CO₂ conversion factors.

Indirect CO₂e abatements: To quantify the GHG savings enabled by our products and services, we have calculated, in conjunction with the Carbon Trust, the total quantity of emissions that we have helped our customers avoid. For each product or service, a GHG-saving mechanism has been identified and quantified based on an external study, a Vodafone study, or documented expert assumptions. The GHG abatement savings per category is then multiplied by the number of connections to provide the total saving per product or service, these are then added together to give the total GHG emissions abated by our technology.

CO₂ Conversion Factors: All kWh savings have been converted using the latest available location based emissions conversion factor provided by the IEA.



Independent assurance report to Vodafone Group Services Limited

We have performed a limited assurance engagement in relation to the allocation of proceeds to the 'Eligible Green Portfolio' (the "Subject Matter") in accordance with requirements defined and detailed in Vodafone Group Plc's Green Bond Framework (the 'Framework'), as disclosed in the Green Bond Report ("The Report").

Respective Responsibilities

Vodafone Group Services Limited ("Vodafone") management is responsible for the collection and preparation of the information within the Report. Vodafone's management is also responsible for the design, implementation and maintenance of internal controls relevant to the preparation of the Report, so that it is free from material misstatement, whether due to fraud or error.

Our responsibility, in accordance with our engagement terms, is to carry out a 'limited level' assurance engagement over the allocation of proceeds to the Subject Matter and confirm that it is presented in accordance with management's application of the International Capital Market Association's Green Bond Principles 2018 and the Framework (collectively the "Criteria"). The scope of this work covers the reporting of this information within the Report.

Our assurance engagement has been planned and performed in accordance with the International Standard for Assurance Engagements (ISAE) 3000 (Revised), *Assurance Engagements Other Than Audits or Reviews of Historical Financial Information*.

Summary of Work Performed

The procedures we performed were based on our professional judgement and included the steps outlined below:

1. Assessing policies and procedures established by Vodafone related to the issuance of the Green Bond
2. Confirming eligibility of nominated projects for inclusion in Vodafone's Green Bond program against the Use of Proceeds criteria and the objectives of the Framework.
3. Interviewed selected personnel at Vodafone with responsibility for managing funds pre-issuance as well as those responsible for validating fund allocation.
4. Reviewing a selection of management documentation and reporting tools, including guidance documents, meeting minutes and investor publications.
5. Evaluated the design of the key systems, processes and controls for managing, recording and reporting the allocation of proceeds to the eligible green projects
6. Reviewed and challenged the validation and collation processes undertaken by Vodafone management in relation to the Subject Matter Information.
7. Reviewed the Report for the appropriate presentation of the Subject Matter Information, including the discussion of limitations and assumptions relating to the data presented.

Limitations of our review

Our evidence gathering procedures were designed to obtain a 'limited level' of assurance (as set out in ISAE3000 (Revised)) on which to base our conclusions. The extent of evidence gathering procedures performed is less than that of a reasonable assurance engagement (such as a financial audit) and therefore a lower level of assurance is provided.

Completion of our testing activities has involved placing reliance on Vodafone's controls for managing and reporting Green Bond information, with the degree of reliance informed by the results of our review of the effectiveness of these controls. We have not sought to review systems and controls at Vodafone beyond those used for selected Green Bond project data (defined as the Subject Matter Information above).

The responsibility for the prevention and detection of fraud, error and non-compliance with laws or regulations rests with Vodafone management. Our work should not be relied upon to disclose all such material misstatements, frauds, errors or instances of non-compliance that may exist.

Conclusion

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Subject Matter Information was not prepared, in all material respects, in accordance with the Criteria, which were applied by management.

Our independence and competence

We have implemented measures to comply with the applicable independence and professional competence rules as articulated by the IFAC Code of Ethics for Professional Accountants and ISQC1. EY's independence policies apply to the firm, partners and professional staff. These policies prohibit any financial interests in our clients that would or might be seen to impair independence. Each year, partners and staff are required to confirm their compliance with the firm's policies.

We confirm annually to Vodafone whether there have been any events, including the provision of prohibited services, that could impair our independence or objectivity. There were no such events or services in 2020. Our assurance team has been drawn from our Climate Change and Sustainability Services Practice, which undertakes engagements similar to this with a number of significant UK and international businesses.

Restriction on Use and Distribution

Our work has been undertaken to enable us to express an assurance conclusion on the subject matter to Vodafone in accordance with our engagement terms, and for no other purpose. We do not accept or assume responsibility to any other party, for our work including this report and the conclusion.

Ernst & Young
London

14th May 2020

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