

# Impact Report for Bonds and Loans

## Barclays Green Issuances



### Impact Summary

**Evaluation Date** August 19 2024  
**Issuer Location** London, UK

Sustainalytics has calculated the estimated impact achieved by the 2020 Green Bond and the Green Notes issued between 2021 and 2022 by Barclays PLC and Barclays Bank PLC respectively. As of 31<sup>st</sup> December 2023, GBP 489 million has been allocated in the categories renewable energy and energy efficiency (buildings), with projects located in the United Kingdom and India. For a representative year during the bonds' term to maturity, Sustainalytics has calculated 56,299 US tons of carbon dioxide equivalents in avoided GHG emissions.



**£489M**  
Allocated funds



**56.3K**  
Annual emissions avoided (US tCO<sub>2</sub>e)



**9**  
Projects



**12.2K**  
Cars driven for one year



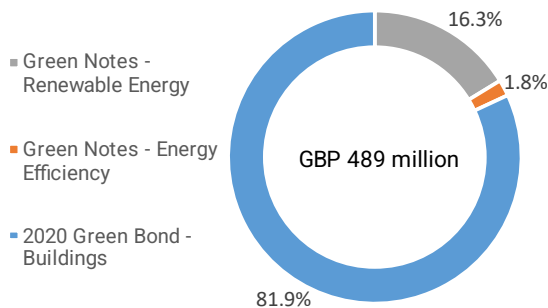
**2**  
Countries



**3.7M**  
Trees, yearly sequestration



### Allocated Amount by Use of Proceeds and Location of Projects by Country



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## Introduction

In November 2020, Barclays PLC issued a Green Bond (the “2020 Green Bond”) under the 2019 Barclays Green Bond Framework<sup>1</sup> to finance or refinance a portfolio of green mortgages for energy-efficient residential buildings. Throughout 2021 and 2022, Barclays Bank PLC also issued Green Structured Notes, collectively referred to as the “Green Notes”, under the 2021 Barclays Green Issuance Framework<sup>3,4</sup> to finance or refinance renewable energy and energy efficiency projects. For clarification, “Barclays Green Issuances” herein refers to the 2020 Green Bond and the Green Notes jointly. Barclays PLC and Barclays Bank PLC are collectively known as “Barclays” or the “Bank”.

In April 2024, Barclays engaged Sustainalytics to quantify the environmental benefits of the projects financed or refinanced with proceeds from the 2020 Green Bond and Green Notes. Using established methodologies, Sustainalytics has estimated avoided emissions from Barclays’ projects. This report presents the details of our findings, including a description of the methodology used to calculate the impacts. This report will be published on Barclays’ website pursuant to the 2019 Green Bond Framework and 2021 Barclays Green Issuance Framework.

Barclays also engaged Sustainalytics to provide an allocation review of the allocation of proceeds and its alignment with the Barclays Green Bond Framework and the Green Issuance Framework. The allocation review is published separately.

## Scope of Work and Limitations

Barclays has engaged Sustainalytics to calculate the environmental impacts of the projects financed or refinanced with proceeds from the 2020 Green Bond and Green Notes. For this work, Sustainalytics relied on the data provided by Barclays on the amount allocated and the technical data on the projects financed or refinanced. This report’s sole purpose is the transparent reporting of the projects’ impact created and emissions avoided and does not provide endorsement of projects nor their eligibility.

Sustainalytics’ impact reporting is aligned with ICMA’s June 2023 Harmonised Framework for Impact Reporting.<sup>5</sup> The methodology and assumptions made for the impact calculation are outlined in the methodology chapter.

As part of this engagement, Sustainalytics exchanged information with Barclays’ representatives to understand the sustainability impact of its projects. Through these exchanges, Barclays’ representatives have confirmed that:

- (1) They understand it is the sole responsibility of Barclays to ensure that the information provided is complete, accurate and up to date;
- (2) They have provided Sustainalytics with all relevant information;
- (3) Any provided material information has been duly disclosed in a timely manner.

Sustainalytics also reviewed relevant public documents and non-public information.

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<sup>1</sup> Barclays, “Barclays Green Bond Framework”, (2019), available at: <https://home.barclays/content/dam/home-barclays/documents/investor-relations/fixed-income-investors/20191212-Green-Bond-Framework.pdf>

<sup>2</sup> In previous impact reports, “Green Notes” were called “Green Instruments”

<sup>3</sup> Barclays, “Barclays Green Issuance Framework”, (2021) available at <https://home.barclays/content/dam/home-barclays/documents/investor-relations/debtinvestors/creditratings/20211021-Barclays-Green-Issuance-Framework-July-2021.pdf> (can be amended and replaced)

<sup>4</sup> Barclays issued a new Green and Social Notes Framework in 2023 but has not issued under it as of 31 December 2023

<sup>5</sup> ICMA, “Handbook - Harmonised Framework for Impact Reporting”, (2023), at: <https://www.icmagroup.org/assets/documents/Sustainable-finance/2023-updates/Handbook-Harmonised-framework-for-impact-reporting-June-2023-220623.pdf>

## Impact Findings

For reporting, Sustainalytics follows the ICMA Harmonised Framework for Impact Reporting,<sup>6</sup> which synthesizes market expectations and outlines recommendations for impact reporting to create a standardized reporting structure and to enhance the understanding of the impact to all stakeholders, including investors.

Table 1 below provides a summary of the impacts at the portfolio level which Sustainalytics calculated from the allocation of proceeds from Barclays' 2020 Green Bond and Green Notes. Tables 2-3 provide details for the projects financed or refinanced per use of proceeds category for the proceeds from the 2020 Green Bond and Green Notes. These metrics correspond to a representative year during the financial notes' term to maturity or reimbursement and are based on the share of project financing. Appendices 1-3 provide project-level avoided emissions.

**Table 1: Summary of Impact – Barclays Green Issuances**

Bond	Allocated amount	Bond tenor	Financed annual emissions avoided		Financed annual emissions avoided/GBP million	
			kgCO <sub>2</sub> e/year	US tCO <sub>2</sub> e/year	kgCO <sub>2</sub> e/year	US tCO <sub>2</sub> e/year
	GBP	Years				
2020 Green Bond	400,400,222	6	3,916,650	4,317	9,782	10.78
Green Notes	88,250,897	4.8 <sup>7</sup>	47,157,561	51,982	534,358	589.03

**Table 2: Summary of Impact – 2020 Green Bond**

Use of proceeds category	Allocated amount	Financed annual emissions avoided		Financed annual emissions avoided/GBP million	
		kgCO <sub>2</sub> e/year	US tCO <sub>2</sub> e/year	kgCO <sub>2</sub> e/year	US tCO <sub>2</sub> e/year
	GBP				
Residential Mortgages	400,400,222	3,916,650	4,317	9,782	10.78

**Table 3: Summary of Impact – Green Notes**

Use of proceeds Category	Allocated amount	Financed annual emissions avoided		Financed annual emissions avoided/GBP million	
		kgCO <sub>2</sub> e/year	US tCO <sub>2</sub> e/year	kgCO <sub>2</sub> e/year	US tCO <sub>2</sub> e/year
	GBP				
Renewable Energy	79,508,400	47,061,981	51,877	591,912	652.47
Energy Efficiency (Buildings)	8,742,497	95,580	105	10,933	12.05

<sup>6</sup> ICMA, "Handbook - Harmonised Framework for Impact Reporting", (2023), at: <https://www.icmagroup.org/assets/documents/Sustainable-finance/2023-updates/Handbook-Harmonised-framework-for-impact-reporting-June-2023-220623.pdf>

<sup>7</sup> Weighted average of bond tenor for each Green Note based on bond size.

## Methodology

Sustainalytics developed its own methodologies for quantifying GHG avoidance and other metrics, including leveraging publicly available best-in-class methodologies, protocols and frameworks that are currently industry best practice. Our estimation practices and general principles rely on the GHG Protocol.<sup>8</sup> Our methodologies are based on guidance provided by the International Financial Institutions<sup>9</sup> on calculation methodology and global emissions. In addition, we rely on the Partnership for Carbon Accounting Financials' Global Accounting Standard<sup>10</sup> for guidance on estimation where data is not readily available and assumptions must be made. Finally, the UN's Clean Development Mechanism<sup>11</sup> provides guidance and information, serving as the foundation for these and other methodologies, including those implemented in this report.

## Renewable Energy

It is assumed that energy generated by the projects crowd out a mix of current and upcoming planned generation capacity, and therefore associated emissions. The approach taken to derive the greenhouse gas emissions avoidance uses:

- a) The emissions of the renewable energy projects, which is often (but not always) zero; and
- b) The baseline emissions or emissions occurring in the absence of the project. For electricity generation, these emissions are based on the energy mix used to supply electricity to the local grid.
- c) Financed project avoided emissions are calculated by using the share of project financing of the total project emissions avoided from the above calculations.

## Data Sources and Assumptions

- For the projects included in this report, installed capacity (measured in MW) data was provided by Barclays. Sustainalytics estimated the energy generated per project leveraging the provided project capacity and capacity factors based on technology type and location using data provided by IRENA.<sup>12</sup>
- The baseline emissions factors for the countries where projects are located were sourced from IFI.<sup>13</sup> To account for emissions from upstream activities, Sustainalytics has calculated an additional, indirect emissions factor, based on data from DEFRA and the IEA.<sup>14,15</sup>
- For zero-carbon technologies, such as solar and wind energy, the emissions per unit of generation are assumed to be 0 kgCO<sub>2</sub>e/kWh.

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<sup>8</sup> Greenhouse Gas Protocol, "About Us", (2023), at: <https://ghgprotocol.org/>

<sup>9</sup> International Financial Institutions (IFI), "Members of the International Financial Institutions on Greenhouse Gas Accounting", at: [https://unfccc.int/sites/default/files/resource/IFIs\\_membership\\_for\\_UNFCCC\\_%27white\\_pages%27\\_0.pdf](https://unfccc.int/sites/default/files/resource/IFIs_membership_for_UNFCCC_%27white_pages%27_0.pdf)

<sup>10</sup> Partnership for Carbon Accounting Financials (PCAF), "About", (2023) at: <https://carbonaccountingfinancials.com/>

<sup>11</sup> UNFCCC, "CDM Methodologies Booklet – Fourteenth edition", (2022), at: <https://cdm.unfccc.int/methodologies/documentation/index.html>

<sup>12</sup> International Renewable Energy Agency (IRENA), "Statistics Data", (2024) at: <https://www.irena.org/Data>

<sup>13</sup> UNFCCC, "The IFI Dataset of Default Grid Factors", available at: <https://unfccc.int/climate-action/sectoral-engagement/ifis-harmonization-of-standards-for-ghg-accounting/ifi-twg-list-of-methodologies>

<sup>14</sup> Government of the UK, "Government conversion factors for company reporting of greenhouse gas emissions", (2023), at: <https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting>

<sup>15</sup> International Energy Agency (IEA), "Energy Statistics Data Browser", (2024) at: <https://www.iea.org/data-and-statistics>

## Energy Efficiency (Buildings)

It is assumed that green buildings consume less energy than a mix of existing buildings and new construction. The avoidance of greenhouse gas emissions is then calculated using:

- a) The emissions of the green building projects. To the extent available, the reporting is based on metered energy consumption. If such information is not available, estimates for the relevant projects are based on the building certificates, standards or country-level averages.
- b) The baseline emissions, or emissions occurring in the absence of the projects. This figure is based on the estimated energy intensity of comparable buildings, or in the case of refurbishments, the prior emissions.
- c) Financed project avoided emissions are calculated by using the share of project financing of the total project emissions avoided from the above calculations.

## Data Sources and Assumptions

- For the projects included in this report, building data including gross building area, location, emission intensities and relevant building certificates were provided by Barclays and used as inputs for the calculations.
- Where relevant, Sustainalytics modelled the energy intensity for buildings based on a representative sample of EPC certifications and grades of the respective buildings.
- Based on location and building characteristics such as type and size, the energy intensity of a baseline building is estimated using a combination of country averages and publicly available statistical models.<sup>16</sup>
- The emissions factors for the project and baseline properties are based on the average energy mix for buildings in the relevant country.
- The baseline emissions factors for the countries where projects are located were sourced from IFI.<sup>17</sup> To account for emissions from upstream activities, Sustainalytics has calculated an additional, indirect emissions factor, based on data from DEFRA and the IEA.<sup>18,19</sup>

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<sup>16</sup> IFC's EDGE model is used for statistical modelling of buildings.

<sup>17</sup> UNFCCC, "The IFI Dataset of Default Grid Factors", available at: <https://unfccc.int/climate-action/sectoral-engagement/ifis-harmonization-of-standards-for-ghg-accounting/ifi-twg-list-of-methodologies>

<sup>18</sup> Government of the UK, "Government conversion factors for company reporting of greenhouse gas emissions", (2023), at: <https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting>

<sup>19</sup> International Energy Agency (IEA), "Energy Statistics Data Browser", (2024) at: <https://www.iea.org/data-and-statistics>

## Appendix 1: 2020 Green Bond – project level impact of buildings by building type

Building type	Number of loans	Gross building area	Allocated amount	Share of total project financing	Average energy intensity	Annual energy reduction	Financed annual direct emissions <sup>20</sup>	Financed annual indirect emissions <sup>21</sup>	Financed annual emissions avoided <sup>22</sup>		Financed annual emissions avoided/GBP million	
									kgCO <sub>2</sub> e/year	US tCO <sub>2</sub> e/year	kgCO <sub>2</sub> e/year	US tCO <sub>2</sub> e/year
		m <sup>2</sup>	GBP	%	kWh/m <sup>2</sup>	MWh/year	kgCO <sub>2</sub> e/year	kgCO <sub>2</sub> e/year	kgCO <sub>2</sub> e/year	US tCO <sub>2</sub> e/year	kgCO <sub>2</sub> e/year	US tCO <sub>2</sub> e/year
Bungalow	3	200	321,129	100	60	30	2,162	413	6,912	8	21,526	23.73
Detached	725	83,074	178,450,643	100	73	6,799	1,167,686	223,087	1,584,831	1,747	8,881	9.79
Maisonette	128	8,174	22,940,626	100	61	1,220	96,347	18,407	284,300	313	12,393	13.66
Semi	758	67,389	151,002,451	100	70	6,949	913,268	174,481	1,619,708	1,785	10,726	11.82
Terrace	234	20,932	47,685,372	100	68	2,196	273,254	52,205	511,742	564	10,732	11.83

## Appendix 2: Green Notes – project level impact of renewable energy projects

Project name	Project type	Country	Allocated amount	Share of total project financing	Annual project generation	Annual Financed generation	Project capacity	Financed capacity	Financed annual emissions avoided		Financed annual emissions avoided/GBP million	
									kgCO <sub>2</sub> e/year	US tCO <sub>2</sub> e/year	kgCO <sub>2</sub> e/year	US tCO <sub>2</sub> e/year
			GBP	%	MWh	MWh	MW	MW	kgCO <sub>2</sub> e/year	US tCO <sub>2</sub> e/year	kgCO <sub>2</sub> e/year	US tCO <sub>2</sub> e/year
Project 1	Solar photovoltaic	India	801,591	0.07	907,278	667	910	0.67	1,430,136	1,576	1,784,122	1,967
	Onshore wind energy				1,029,716	757	762	0.56				
Project 2	Offshore wind energy	United Kingdom	17,966,921	0.67	3,776,156	25,461	1,200	8.0	10,216,625	11,262	568,635	627
Project 3	Offshore wind energy	United Kingdom	13,901,565	0.64	3,776,156	24,195	1,200	7.6	9,708,935	10,702	698,406	770
Project 4	Offshore wind energy	United Kingdom	5,767,563	0.39	3,776,156	14,800	1,200	4.7	5,938,695	6,546	1,029,671	1,135
Project 5	Offshore wind energy	United Kingdom	16,660,359	0.74	3,587,348	26,549	1,140	8.44	10,653,418	11,743	639,447	705
Project 6	Offshore wind energy	United Kingdom	12,423,855	0.58	1,409,765	8,163	448	2.5	3,275,472	3,611	263,644	291
Project 7	Onshore wind energy <sup>23</sup>	United Kingdom	3,986,904	1.25	446,845	5,572	142	1.77	2,236,050	2,465	560,849	618
Project 8	Solar photovoltaic	United Kingdom	7,999,642	1.86	482,052	8,978	566	10.54	3,602,651	3,971	450,351	496

<sup>20</sup> Direct Emissions are the emissions from the energy consumed directly on the premises.

<sup>21</sup> Indirect Emissions are the emissions resulting from the extraction, refining and transportation of primary fuels, including transmission and distribution losses, before their use in the generation of electricity.

<sup>22</sup> Due to rounding, the project level avoidance might not sum up to the total avoidance in the appendices.

<sup>23</sup> Corrected March 5 2025, previously "Offshore wind energy"

### Appendix 3: Green Notes – project level impact of buildings

Project name	Number of units	Gross building area	Allocated amount	Share of total project financing	Energy intensity	Annual energy reduction	Financed annual direct emissions	Financed annual indirect emissions	Financed annual emissions avoided		Financed annual emissions avoided/GBP million	
							<sup>24</sup>	<sup>25</sup>	kgCO <sub>2</sub> e/year	US tCO <sub>2</sub> e/year	kgCO <sub>2</sub> e/year	US tCO <sub>2</sub> e/year
Project 9	360	19,407	8,742,497	22.72	91	1,690	83,445	16,779	95,580	105	10,933	12.05

<sup>24</sup> Direct Emissions are the emissions from the energy consumed directly on the premises.

<sup>25</sup> Indirect Emissions are the emissions resulting from the extraction, refining and transportation of primary fuels, including transmission and distribution losses, before their use in the generation of electricity.

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Sustainalytics has also been engaged to deliver a CBI post-issuance report, which has been prepared by a distinct, separate team.

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