Impact Report for Bonds and Loans

OTP Group Sustainable Finance Framework

IMPACT REPORTING

Impact Summary

Evaluation Date July 15, 2025

Issuer Location Budapest, Hungary

Sustainalytics has calculated the estimated impact achieved by the OTP Group Green Loan Portfolio, which comprises loans that meet the criteria defined in the OTP Group Sustainable Finance Framework (the "Framework"). OTP Group used the proceeds from the green bonds issued in 2022 and 2024 (the "Green Bonds") to extend loans for projects under the Green Buildings, Renewable Energy and Clean Transportation categories in various European countries. As of 31 December 2024, OTP Group's total Green Loan Portfolio amounted to EUR 1,431,571,519. For a representative year during the lifetime of the projects, Sustainalytics has calculated 1,398,716 tonnes of avoided GHG emissions (in tCO_2e).

1.43B
Reviewed allocation, EUR

1,399K
Annual emissions avoided (tCO_2e)

=

175
Projects

304K
Cars driven for one year

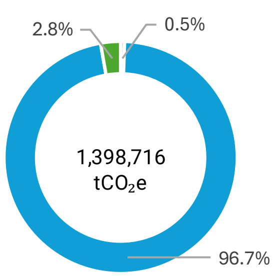
=

7
Countries

92M
Trees, yearly sequestration

Avoided CO_2e emissions by Use of Proceeds and Location of Projects by Country

- Green Buildings
- Renewable Energy
- Clean Transportation



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Introduction

OTP Group ("OTP" or the "Issuer") is a banking and financial institution operating in Hungary, and other countries in Central and Eastern Europe, as well as Central Asia. It provides various financial services, including fund management, leasing and factoring for its 17 million private and corporate clients in 11 countries. It has more than 40,000 employees.[1]

OTP engaged Sustainalytics to quantify the environmental benefits of the projects in OTP's Green Loan Portfolio financed with the proceeds from the Green Bonds issued under the Framework.[2] Using established methodologies, Sustainalytics has estimated avoided emissions from OTP's renewable energy, clean transportation and green buildings projects. This report presents the details of our findings, including a description of the methodology used to calculate the impacts.

Scope of Work and Limitations

OTP has engaged Sustainalytics to calculate the environmental impacts of the projects financed through the Green Bonds. For this work, Sustainalytics relied on the data provided by OTP on the amount allocated and the technical data on the projects financed.

Sustainalytics' impact reporting is aligned with ICMA's June 2024 Handbook - Harmonised Framework for Impact Reporting.[3] The methodology and assumptions made for the impact calculation are outlined in the methodology chapter.

As part of this engagement, Sustainalytics exchanged information with various members of OTP's management team to understand the sustainability impact of its projects. Through these exchanges, OTP's representatives have confirmed that:

(1) They understand it is the sole responsibility of OTP to ensure that the information provided is complete, accurate and up to date.

(2) They have provided Sustainalytics with all relevant information.

(3) Any material information provided has been duly disclosed in a timely manner.

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

[1] OTP, "OTP Bank – History", at: https://www.otpbank.hu/portal/en/AboutUs/History
[2] OTP, "Sustainable Finance Framework", (2024), at: https://www.otpgroup.info/static/sw/file/Sustainable_Finance_Framework_ENG.pdf
[3] ICMA, "Handbook - Harmonised Framework for Impact Reporting", 2024, at: https://www.icmagroup.org/assets/documents/Sustainable-finance/2024-updates/Handbook-Harmonised-Framework-for-Impact-Reporting-June-2024.pdf

Impact Findings

For reporting, Sustainalytics follows the ICMA Harmonised Framework for Impact Reporting, which synthesizes market expectations and outlines recommendations for impact reporting to create a standardized reporting structure and enhance the understanding of the impact for all stakeholders, including investors. [4]

Table 1 below provides a summary of the projects for which Sustainalytics has calculated the impacts at the portfolio level. Tables 2-5 provide project-level details by use of proceeds categories. Appendices 1-3 provide impact data at the project level. These metrics correspond to a representative year during the lifetime of the projects and are based on the share of project financing.[5]

Table 1: Summary of Impact – Portfolio Level[6]

Allocated Amount	Weighted Average Remaining Maturity	Financed Emissions Avoided	Financed Emissions Avoided/EUR million
EUR	Years	tCO_2e/year	tCO_2e/year/EUR million
1,431,571,519	7.49	1,398,716	977.05

Table 2: Summary of Impact – Use of Proceeds Category

Use of Proceed	Allocated Amount	Financed Emissions Avoided	Financed Emissions Avoided/EUR million
	EUR	tCO_2e/year	tCO_2e/year/EUR million
Renewable Energy	690,826,222	1,352,513	1,957.82
Green Buildings	652,032,968	7,553	11.58
Clean Transportation	88,712,329	38,650	435.68

Table 3: Impact of Renewable Energy Projects by Technology

Technology Type	Allocated Amount	Financed Generation	Financed Capacity	Financed Emissions Avoided	Financed Emissions Avoided/EUR million
	EUR	MWh	MW	tCO_2e /year	tCO_2e/year/EUR million
Hydropower	52,012,404	178,451	58	21,461	412.61
Solar photovoltaic	407,386,157	872,054	687	755,924	1,855.55
Onshore wind energy	231,427,660	670,882	353	575,129	2,485.14

[4] ICMA , "Handbook - Harmonised Framework for Impact Reporting", (2024), at: https://www.icmagroup.org/assets/documents/Sustainable-finance/2024-updates/Handbook-Harmonised-Framework-for-Impact-Reporting-June-2024.pdf
[5] The OTP Group calculates its share of project financing by allocating its total loan amount based on the proportion of the total project cost for new projects or by the total loan amount for refinancing. This means that the financing ratio is constant despite repayments.
[6] Due to rounding, the summarized amounts might not match the exact amounts in other tables.

Table 4: Impact of Green Building Projects by Building Type

Building Type	Allocated Amount	Gross Building Area	Average Energy Reduction	Financed Emissions Avoided	Financed Emissions Avoided/EUR million
	EUR	m^2	%	tCO_2e/year	tCO_2e/year/EUR million
Distribution warehouse warm	95,524,896	186,730	29%	798	8.35
Mixed	844,548	7,685	33%	92	109.50
Office	353,110,358	449,500	32%	4,121	11.67
Shopping centre	202,553,166	316,030	22%	2,542	12.55

Table 5: Impact of Clean Transportation by Project

Project Type	Allocated Amount	Financed Passenger-Kilometres Travelled	Financed Tonne-Kilometres Travelled	Financed Emissions Avoided	Financed Emissions Avoided/EUR million
		pkm/year	tkm/year	tCO_2e/year	tCO_2e/year/EUR million
Interurban passenger transport by rail	32,117,172	309,600,000	-	37,296	1,161.25
Railway transport infrastructure – Electrification of existing railway	56,595,157	11,885,627	10,013,654	1,354	23.93

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. First, our estimation practices and general principles rely on the GHG Protocol.[7] Our methodologies are based on guidance provided by International Financial Institutions' (IFIs)[8] Approach to GHG Accounting for Renewable Energy Projects,[9] notably on calculation methodology and global emissions. In addition, we rely on the Partnership for Carbon Accounting Financials' (PCAF) Global Accounting Standard[10] for guidance on estimation where data is not readily available and assumptions must be made. Finally, the UN's Clean Development Mechanism[11] 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 are often (but not always) zero.
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, the expected annual generation (measured in MWh) was provided by OTP. In cases for which the annual generation was not available, the project capacity (measured in MW) was provided.
- For projects without data on the expected annual generation, Sustainalytics estimated this value by leveraging the project capacity provided by OTP and capacity factors based on technology type and location using data provided by IRENA.[12]
- The baseline emissions factors for the countries where projects are located were sourced from IFIs.[13] To account for emissions from upstream activities, Sustainalytics applies an additional, indirect emissions factor.[14]
- One exception is the grid emissions factor from Albania, which was sourced from the EBRD.[15]
- For zero-carbon technologies, such as solar and wind energy, the emissions per unit of generation are assumed to be 0 $kgCO_2e/kWh$.
- For hydropower projects' emissions, emissions factors were sourced from ipcc.ch.[16]

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[7] The Greenhouse Gas Protocol provides standards, guidance, tools and training for business and government to measure and manage climate-warming emissions, at: https://ghgprotocol.org/

[8] Close to 25 institutions are currently members of the IFI Technical Working Group, and include multilateral development banks, such as the Asian Development Bank, African Development Bank, European Bank for Reconstruction and Development, European Investment Bank, Inter-American Development Bank and the World Bank Group. The UNFCCC secretariat has been a member of the IFI TWG since 2015.

[9] The IFI Approach to GHG Accounting for Renewable Energy is in accordance with the International Approach to Greenhouse Gas Accounting. A technical working group of IFI's have agreed to a common methodology and set of emissions factors for GHG accounting of electricity production from renewable energy projects.

[10] PCAF is a group of leading international financial institutions that launched a global initiative to develop a global GHG accounting standard to increase the number of financial institutions applying the standard and ultimately make GHG accounting common practice within the financial industry, at: https://carbonaccountingfinancials.com/

[11] CDM, "Methodologies Booklet", at: https://cdm.unfccc.int/methodologies/documentation/index.html

[12] International Renewable Energy Agency (IRENA), "Statistics Time Series", (2023), at: https://www.irena.org/Data/View-data-by-topic/Capacity-and-Generation/Statistics-Time-Series

[13] 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

[14] 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

[15] European Bank for Reconstruction and Development, "Electricity Emission Factors Review", https://www.ebrd.com/downloads/about/sustainability/cef.pdf. The source is from an earlier period (2009), however, according to the IEA (www.iea.org/countries/albania), the energy mix has not changed significantly. According to the European Bank for Reconstruction and Development, the emission factor used is 0.074.

[16] International Hydropower Association (IHA), "Hydropower's carbon footprint", (2024), at: www.hydropower.org/factsheets/greenhouse-gas-emissions

Green Buildings

It is assumed that green buildings consume less energy than a mix of existing buildings and new construction. The avoidance of GHG 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 prior emissions in the case of refurbishments.
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 and relevant green building certificates, was provided by OTP and used as inputs for the calculations. Where relevant and available, Sustainalytics performed calculations based on the most recently available green building certificates or energy performance certificates for each property.
- 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.[17,18,19]
- The emissions factors for the project and baseline properties are based on the average energy mix for buildings in the relevant country and building type.
- The grid emissions factors for the country in which the projects are located were sourced from IFIs.[20] To account for emissions from upstream activities, Sustainalytics applies an additional, indirect emissions factor.[21]
- For the mixed-use property in Slovenia, the project's energy intensity was calculated by taking the average of the energy intensity of offices and retail high street property types with an EPC A label.

[17] IFC's EDGE model is used for statistical modelling of buildings, at: http://www.edgebuildings.com
[18] CRREM, "Global Decarbonization Pathways", at: https://www.crrem.org/pathways/
[19] For projects located in Serbia, an eastern European average was used.
[20] UNFCCC, "IFI TWG – List of methodologies", at: https://unfccc.int/climate-action/sectoral-engagement/ifis-harmonization-of-standards-for-ghg-accounting/ifi-twg-list-of-methodologies
21 UK Government, Department for Business, Energy & Industrial Strategy, "Government conversion factors for company reporting of greenhouse gas emissions", at: https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting

Clean Transportation

Clean transportation is assumed to displace a mix of existing and future transportation along the same travel distance. The GHG emissions avoided are calculated using:

a) The emissions of the clean transportation projects based on the best available data from OTP. To the extent available, calculations are based on fuel consumption or pkm or tkm data. In the absence of such information, estimates are made based on mode of transportation, fuel type and average passengers or tonnes transported per vehicle.
b) The baseline emissions, which are the emissions associated with a basket of vehicles or modes of transport being replaced currently and in the future lifetime of the project.
c) Financed project avoided emissions, which 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, data on the trains, such as the distance travelled and propulsion technology, was provided by OTP.
- It is assumed that the financed passenger train in Slovenia displaces a mix of other transportation modes which consists of rails, cars and buses. For the railway infrastructure project in Serbia, it is assumed that the electrification of existing railway displaces diesel freight and passenger trains.
- Project-level emissions associated with electricity consumption were calculated using a national grid emissions factor sourced from IFIs.[22] To account for emissions from upstream activities, such as electricity transmission losses and the extraction and refining of primary fuels, Sustainalytics applies an additional, indirect emissions factor to the emissions directly emitted by the project and baseline vehicles.[23] For all other fuel types, emissions factors were calculated using data from the UK's Department for Environment, Food and Rural Affairs, or DEFRA.[24]
- The baseline emissions factors for diesel freight trains were sourced from the European Association for Forwarding, Transport, Logistics and Customs Services[25] and Climatiq.[26]

[22] UNFCCC, "The IFI Dataset of Default Grid Factors", (2016), at: https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Funfccc.int%2Fsites%2Fdefault%2Ffiles%2Fresource%2FHarmonized_IFI_Default_Grid_Factors_2021_v3.2_0.xlsx&wdOrigin=BROWSELINK
[23] UK Government, Department for Business, Energy & Industrial strategy, "Government conversion factors for company reporting of greenhouse gas emissions", at: https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting. In the case of Serbia, where the emission factor had to be estimated based on a global comparison of direct and indirect emission factors.
[24] Ibid.
[25] European Association for Forwarding, Transport, Logistics and Customs Services, "Calculating GHG emissions for freight forwarding and logistics services in accordance with EN 16258", at: https://www.clecat.org/media/CLECAT_Guide_on_Calculating_GHG_emissions_for_freight_forwarding_and_logistics_services.pdf
[26] Climatiq, "Emission Factor - Rail freight (diesel traction)", at: https://www.climatiq.io/data/emission-factor/a1014d32-0417-4353-a8fe-b95010c964f3

Appendix 1: Impacts of Renewable Energy by Project

Project Type	Country	Technology	Allocated Amount	Project Generation	Financed Generation	Project Capacity	Financed Capacity	Direct Emissions Avoided[27]	Indirect Emissions Avoided[28]	Financed Emissions Avoided[29]	Financed Emissions Avoided/EUR million
			EUR	MWh	MWh	MW	MW	tCO_2e/year	tCO_2e/year	tCO_2e/year	tCO_2e/year/ EUR million
Hydropower (total)			**52,012,404**	**355,285**	**178,451**	**119**	**58**	**34,263**	**1,824**	**21,461**	**412.61**
	Albania	Hydropower	48,024,384	340,062	165,279	112	52	25,165	102	12,280	255.71
	Bulgaria	Hydropower	1,688,318	6,678	6,678	4	4	3,307	678	3,985	2,360.49
	Serbia	Hydropower	2,299,703	8,545	6,494	2	2	5,791	1,045	5,195	2,259.09
Wind (total)			**231,427,660**	**1,379,443**	**670,882**	**742**	**353**	**825,568**	**197,354**	**575,129**	**2,485.14**
	Bulgaria	Onshore wind energy	106,312,632	603,494	497,883	300	248	455,883	115,515	471,403	4,434.12
	Croatia	Onshore wind energy	33,534,106	200,630	66,140	92	30	49,535	10,326	19,734	588.48
	Romania	Onshore wind energy	13,565,060	417,644	59,556	192	27	173,096	39,781	30,356	2,237.83
	Serbia	Onshore wind energy	78,015,863	157,675	47,302	158	47	147,053	31,732	53,636	687.50
Solar (total)			**407,386,157**	**1,710,268**	**872,054**	**1,333**	**687**	**1,208,474**	**305,828**	**755,924**	**1,855.55**
	Albania	Solar photovoltaic	3,279,313	10,500	5,902	7	4	777	255	580	176.92
	Bulgaria	Solar photovoltaic	327,454,055	1,511,638	750,062	1,150	570	1,141,899	289,343	710,170	2,168.76
	Croatia	Solar photovoltaic	10,779,674	22,325	17,616	19	15	5,512	1,149	5,256	487.60
	Hungary	Solar photovoltaic	54,188,919	88,792	63,219	99	70	22,782	6,569	20,897	385.64
	Romania	Solar photovoltaic	9,858,023	64,313	32,156	48	24	26,655	6,126	16,390	1,662.65
	Serbia	Solar photovoltaic	677,962	10,430	1,377	9	1	9,727	2,099	1,561	2,302.56
	Slovenia	Solar photovoltaic	1,148,211	2,271	1,722	2	1	1,122	287	1,069	930.94

[27] Direct emissions refer to emissions directly avoided by displacing electricity from the grid.
[28] Indirect emissions are emissions resulting from the extraction, refining and transportation of primary fuels, including transmission and distribution losses, before their use in the generation of electricity.
[29] Aggregated country-level emissions might differ marginally from totals due to rounding.

Appendix 2: Impacts of Green Building Projects by Building Type

Building Type	Country	Number of Projects	Gross Building Area	Allocated Amount	Energy Intensity	Average Energy Reduction[30]	Financed Direct Emissions	Financed Indirect Emissions	Financed Emissions Avoided	Financed Emissions Avoided/EUR million
			m²	EUR	kWh/m²/year	%	tCO_2e/year	tCO_2e/year	tCO_2e/year	tCO_2e/year/EUR million
Distribution warehouse warm (total)		**2**	**186,730**	**95,524,896**	**87**	**29%**	**1,500**	**316**	**798**	**8.35**
	Croatia	1	68,549	42,543,809	51	15%	703	138	149	3.49
	Hungary	1	118,181	52,981,087	36	40%	796	178	649	12.25
Mixed (total)		**1**	**7,685**	**844,548**	**95**	**33%**	**150**	**36**	**92**	**109.50**
	Slovenia	1	7,685	844,548	95	33%	150	36	92	109.50
Office (total)		**16**	**449,500**	**353,110,358**	**1,535**	**32%**	**7,168**	**1,549**	**4,121**	**11.67**
	Bulgaria	6	115,415	54,684,725	386	30%	2,667	596	1,568	28.68
	Croatia	2	58,465	31,061,560	293	5%	656	129	41	1.32
	Hungary	5	164,000	185,759,363	559	28%	1,866	416	1,099	5.92
	Romania	1	47,572	22,389,489	94	45%	377	78	372	16.61
	Serbia	2	64,048	59,215,221	202	35%	1,602	330	1,040	17.56
Shopping centre (total)		**4**	**316,030**	**202,553,166**	**464**	**22%**	**10,272**	**2,299**	**2,542**	**12.55**
	Bulgaria	2	235,656	123,101,794	247	15%	9,038	2,020	1,951	15.85
	Serbia	1	49,200	54,912,117	97	40%	547	113	440	8.01
	Slovenia	1	31,174	24,539,255	120	15%	686	167	151	6.14

Appendix 3: Impacts of Clean Transportation by Project

Project Type	Country	Technology	Allocated Amount	Share of Total Project Financing	Financed Passenger-Kilometres Travelled	Financed Tonne-Kilometres Travelled	Financed Direct Emissions	Financed Indirect Emissions	Financed Emissions Avoided	Financed Emissions Avoided/EUR million
			EUR	%	pkm/year	tkm/year	tCO_2e/year	tCO_2e/year	tCO_2e/year	tCO_2e/year/ EUR million
Railways (total)			**88,712,329**		**321,485,627**	**10,013,654**	**2,187**	**572**	**38,650**	**435.68**
Electric trains	Slovenia	Interurban passenger transport by rail	32,117,172	38.7%	309,600,000		1,748	452	37,296	1,161.25
Electric railways	Serbia	Railway transport infrastructure – Electrification of existing railway	56,595,157	80.0%	11,885,627	10,013,654	439	120	1,354	23.93

[30] This metric represents energy savings by comparing the project's energy consumption to a modeled baseline scenario with buildings of the same type, size and geographic location.

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