

# Information on Vanguard's Greenhouse Gas Emissions and Goals Methodology

Vanguard's corporate strategy regarding the sustainability of our business practices includes a focus on reducing the firm's own climate impact, pursuing sustainable business operations, and engaging Vanguard crew members. The methodology behind the corporate sustainability goals referenced in Vanguard's [2024 TCFD report](#) are described below.

## Methodology

Vanguard's greenhouse gas (GHG) emissions reporting follows the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard (GHG Protocol). By the end of 2024, Vanguard met its multiyear goal of reaching carbon neutrality throughout its global operations by 2025. Vanguard achieved this goal by reducing Scope 1, 2, and select Scope 3 GHG emissions by at least 20% as compared to 2019, and by offsetting remaining emissions in those categories. Scopes 1, 2, and 3 are as defined by the GHG Protocol in the following manner:

- Scope 1 refers to all direct GHG emissions.
- Scope 2 refers to indirect GHG emissions from consumption of purchased electricity, heat, or steam.
- Scope 3 refers to other indirect emissions not covered in Scope 2 that occur in a company's value chain, including both upstream and downstream emissions.

The Scope 3 categories included in Vanguard's carbon neutrality goal are limited to the following categories:

- 3.3** Fuel and energy-related activities
- 3.4** Upstream transportation and distribution
- 3.5** Waste generated in operations
- 3.6** Business travel
- 3.7** Employee commuting
- 3.8** Upstream leased assets

Scope 3 data in Vanguard's carbon neutrality goal does not include any other Scope 3 categories beyond those listed above.

Vanguard measured interim progress made toward its goal by assessing (1) annual GHG emissions, and (2) carbon offset and renewable energy certificate purchases.

## Carbon offset projects

Vanguard's total GHG emissions for 2022, 2023, and 2024, as disclosed in its TCFD report, reflect reductions from purchased renewable energy certificates and carbon offsets.

### Vanguard's carbon offset projects, 2021–2024

The following carbon offset projects are reflected in Vanguard's total carbon emissions reductions for 2021, 2022, 2023, and 2024:

Inventory year	Name of project	Project ID number	Seller	Verification program	Protocol	Type	Country	State
2021	Greenville County Landfill Gas Utilization Project	CAR495	3Degrees Group, Inc.	Climate Action Reserve	CAR Landfill Project Protocol, Version 3.0	Avoided Emissions - Landfill Gas	United States	South Carolina
2021	GS1247 VPA 164 EcoZoom Improved Stove Programme, Uganda	GS7153	3Degrees Group, Inc.	Gold Standard VER	Gold Standard Methodology Technologies and Practices to Displace Decentralized Thermal Energy Consumption Version 1	Avoided Emissions - Clean Cookstoves	Uganda	N/A
2021	Guanare Forest Plantations on Degraded Grasslands under Extensive Grazing	VCS959	3Degrees Group, Inc.	Verified Carbon Standard	AR-ACM0001 Version 5.2.0	Removals - Afforestation	Uruguay	N/A
2022	Davidson County Landfill Gas Destruction Project	VCS2414	3Degrees Group, Inc.	Verified Carbon Standard	CAR U.S. Landfill Project Protocol, Version 5.0	Avoided Emissions - Landfill Gas	United States	North Carolina
2022	Clinton Landfill Gas Collection and Combustion Project	VCS318	3Degrees Group, Inc.	Verified Carbon Standard	ACM0001, "Flaring or use of landfill gas", Version 19	Avoided Emissions - Landfill Gas	United States	Illinois
2022	Paradigm, Kenya Clean Cookstove Project	VCS1918	3Degrees Group, Inc.	Verified Carbon Standard	AMS-II.G., "Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass", Version 10	Avoided Emissions - Energy Efficiency, Clean Cookstoves	Kenya	N/A
2023	Clinton Landfill Gas Collection and Combustion Project	VCS318	3Degrees Group, Inc.	Verified Carbon Standard	ACM0001, "Flaring or use of landfill gas", Version 19	Avoided Emissions - Landfill Gas	United States	Illinois
2023	BioLite Improved Cookstoves Programme, Kenya	GS11193	3Degrees Group, Inc.	Gold Standard VER	AMS-II.G., "Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass", Version 3.0	Energy Efficiency, Avoided Emissions	Kenya	N/A
2023	Greater Lebanon Refuse Authority Landfill Gas Collection	VCS5	3Degrees Group, Inc.	Verified Carbon Standard	ACM0001, "Flaring or use of landfill gas", Version 18.1	Avoided Emissions - Landfill Gas	United States	Pennsylvania
2023	BioLite Improved Cookstoves Programme, Kenya	GS11194	3Degrees Group, Inc.	Gold Standard VER	AMS-II.G., "Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass", Version 3.0	Energy Efficiency, Avoided Emissions	Kenya	N/A

Inventory year	Name of project	Project ID number	Seller	Verification program	Protocol	Type	Country	State
2024	BioLite Improved Cookstoves Programme, Kenya	GS11194	3Degrees Group, Inc.	Gold Standard VER	AMS-II.G., "Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass", Version 3.0	Energy Efficiency, Avoided Emissions	Kenya	N/A
2024	Clinton Landfill Gas Collection and Combustion Project	VCS318	3Degrees Group, Inc.	Verified Carbon Standard	ACM0001, "Flaring or use of landfill gas", Version 19	Avoided Emissions - Landfill Gas	United States	Illinois
2024	15 MW Nam Hinboun Downstream Hydropower Project	VCS3662	3Degrees Group, Inc.	Verified Carbon Standard	AMS-I.D.: "Grid connected renewable electricity generation", Version 18.0	Small scale hydro, Avoided emissions	Laos	N/A

## Renewable energy

In 2024, Vanguard continued to use 100% renewable electricity globally in owned and leased properties where Vanguard has operational control, an outcome first achieved in 2021. Where possible, buildings are powered by on-site renewable electricity or direct renewable electricity from the utility supplier.

Vanguard offers programs for crew to encourage their use of low-carbon transportation, including 239 free electric vehicle charging ports adjacent to U.S. buildings, shuttles between campuses and to and from public transit, and pre-tax deductions for public transit costs. Additionally, Vanguard has begun to add electric vehicles to its U.S. maintenance fleet.

## Assurance

Vanguard's Scope 1, 2, and 3 GHG emissions for 2021, 2022, 2023, and 2024, have been assured by a third-party provider. This assurance is based on the International Standard on Assurance Engagements ISAE 3000 (revised).

Vanguard purchased carbon offsets exclusively from providers that require independent third-party verification of projects and corresponding emission reductions or removals achieved.

Vanguard does not have separate and additional third-party assurance for its carbon offset purchases for its 2025 carbon neutrality goal or for its statement as achievement of carbon neutrality by year-end 2024.

## Information on Vanguard ESG funds actively managed by third-party advisors with net zero goals

As an asset manager, Vanguard is committed to providing investors with the information and products they need to make sound investment choices to help them meet their financial goals and reflect their personal preferences.

Certain Vanguard funds engage independent third-party investment advisors (external advisors) to provide investment advisory services. These external advisors retain the investment discretion for determining the funds' investment strategies

and for managing the investment and reinvestment of assets within these funds, pursuant to an arms-length agreement. Certain of these external advisors have identified and published goals to manage their portfolios in line with a goal of net zero emissions by 2050, which may include investing a portion of their advised funds' assets in companies pursuing net zero targets.

The following table outlines the Vanguard ESG (environmental, social, and governance) funds whose external managers pursue these net zero goals as part of the ESG funds' investment strategies. The table includes a link to each fund's prospectus and other relevant information that discloses the advisor's net zero goals, including the science-based targets associated with them. The external managers maintain responsibility for identifying and assessing progress toward these goals. Vanguard is not a signatory to any net zero initiatives and does not pursue net zero goals for any Vanguard-advised funds.

**Vanguard ESG funds**

Fund name	External advisor	Net zero goals description
Vanguard Baillie Gifford Global Positive Impact Stock Fund	Baillie Gifford Overseas Limited	<a href="#">Fund Literature</a>
Vanguard Global Environmental Opportunities Stock Fund	Ninety One North America, Inc.	<a href="#">Fund Literature</a>
Vanguard Global ESG Select Stock Fund	Wellington Management Company LLP	<a href="#">Fund Literature</a>

**Information on Vanguard ESG index funds**

Vanguard offers four U.S.-domiciled ESG index funds: Vanguard ESG International Stock ETF, Vanguard ESG U.S. Corporate Bond ETF, Vanguard ESG U.S. Stock ETF, and Vanguard FTSE Social Index Fund. Each fund employs an indexing investment approach designed to track the performance of its respective benchmark index. Each fund's benchmark index excludes companies that the independent index provider determines do not meet certain ESG criteria. These funds do not pursue net zero goals.

Vanguard reports information on certain Vanguard ESG index funds' asset-weighted average of holdings with Scope 1 and 2 emissions data from MSCI ESG Research LLC (MSCI). Vanguard also reports information on certain ESG index funds' total carbon footprint and weighted average carbon intensity from MSCI. MSCI collects publicly available emissions and intensity data from company-reported sources, government agencies, nongovernmental organizations, and media sources. To Vanguard's knowledge, MSCI does not receive third-party assurances regarding the accuracy of the underlying information. Vanguard relies on the accuracy of the data provided by MSCI. Vanguard does not independently review the accuracy of MSCI's data and does not retain independent third-party verification services to review that data.

**For more information about Vanguard funds and ETFs, visit [vanguard.com](https://www.vanguard.com) to obtain a prospectus or, if available, a summary prospectus. Investment objectives, risks, charges, expenses, and other important information about a fund are contained in the prospectus; read and consider it carefully before investing.**

**Vanguard ETF Shares are not redeemable with the issuing Fund other than in very large aggregations worth millions of dollars. Instead, investors must buy and sell Vanguard ETF Shares in the secondary market and hold those shares in a brokerage account. In doing so, the investor may incur brokerage commissions and may pay more than net asset value when buying and receive less than net asset value when selling.**

All investing is subject to risk, including the possible loss of the money you invest.

ESG funds are subject to ESG investment risk, which is the chance that the stocks or bonds screened by the index provider or advisor, as applicable, for ESG criteria generally will underperform the market as a whole or, in the aggregate, will trail returns of other funds screened for ESG criteria. The index provider or advisor's assessment of a company, based on the company's level of involvement in a particular industry or their own ESG criteria, may differ from that of other funds or an investor's assessment of such company. As a result, the companies deemed eligible by the index provider or advisor may not reflect the beliefs and values of any particular investor and may not exhibit positive or favorable ESG characteristics. The evaluation of companies for ESG screening or integration is dependent on the timely and accurate reporting of ESG data by the companies. Successful application of the screens will depend on the index provider or advisor's proper identification and analysis of ESG data. The advisor may not be successful in assessing and identifying companies that have or will have a positive impact or support a given position. In some circumstances, companies could ultimately have a negative or no impact or support of a given position.

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