



**VERIFICATION OPINION DECLARATION
GREENHOUSE GAS EMISSIONS AND RENEWABLE ENERGY**

To: Stakeholders of Goldman Sachs & Co.

Apex Companies LLC, (Apex) was engaged to conduct an independent verification of the greenhouse gas (GHG) emissions, Energy Consumption, Green Power, and GHG offsets reported by Goldman Sachs & Co. (Goldman Sachs) for the period stated below. This Verification Opinion Declaration applies to the related information included within the scope of work described below.

The determination of the GHG emissions is the sole responsibility of Goldman Sachs. Goldman Sachs is responsible for the preparation and fair presentation of the GHG emissions statement in accordance with the criteria. Apex's sole responsibility was to provide independent verification on the accuracy of the GHG emissions, Energy Consumption, Green Power, and GHG offsets reported, and on the underlying systems and processes used to collect, analyze and review the information. Apex is responsible for expressing an opinion on the GHG emissions statement based on the verification. Verification activities applied in a limited level of assurance verification are less extensive in nature, timing and extent than in a reasonable level of assurance verification.

Boundaries of the reporting company GHG emissions covered by the verification:

- Operational Control
- Worldwide

Types of GHGs: CO₂, N₂O, CH₄, HFCs,

GHG Emissions Statement:

Data Verified	2021*	2022	2021→2022 Net Change	2021→2022 % Change
ENERGY				
Total Energy Consumption - Megawatt hours (MWH)	484,865	510,184	25,320	5%
Electricity Consumption – MWH	423,089	448,939	25,850	6%
Green Power (MWh)	416,660	448,939	32,279	8%
GROSS EMISSIONS				
Scope 1 Emissions – Metric tonnes of CO ₂ -equivalent (tCO ₂ e)	11,847	11,980	133	1%
Scope 2 Emissions (Location-based) (tCO ₂ e)	145,264	158,151	12,888	9%
Scope 2 Emissions (Market-based) (tCO ₂ e)	12,635	9,840	-2,795	-22%
Scope 3 Emissions – Business Travel (tCO ₂ e)	23,802	57,233	33,431	140%

Data Verified	2021*	2022	2021→2022 Net Change	2021→2022 % Change
Total Scope 1, 2 (Market-Based), 3 (Business Travel) Emissions (tCO₂e)	48,284	79,053	30,769	64%
NET EMISSIONS				
Purchased GHG Offsets (tCO ₂ e)	46,116	79,053	32,937	71%
NET EMISSIONS (tCO₂e) Scope 1 + Scope 2 (Market-Based) + Scope 3 Emission - Total Offsets	0	0	0	0%

* 2021 values adjusted from originally-verified values based on updated data received post-verification.

Data and information supporting the Scope 1 and Scope 2 GHG emissions statement were mostly historical in nature and were in some cases estimated. The Green Power and GHG Offsets assertions were based on information regarding actual purchases. Data and information supporting the Scope 3 GHG emissions statement were in some cases estimated rather than historical in nature.

Period covered by GHG emissions verification:

- January 1, 2022 to December 31, 2022

Criteria against which verification conducted:

- World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) Greenhouse Gas (GHG) Protocol Corporate Accounting and Reporting Standard (Scope 1 and 2)
- WRI/WBCSD Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard (Scope 3)

Reference Standard:

- ISO 14064-3 Second Edition 2019-04: Greenhouse gases -- Part 3: Specification with guidance for the verification and validation of greenhouse gas statements

Level of Assurance and Qualifications:

- Limited
- This verification used a materiality threshold of 5% for aggregate errors in sampled data for each of the above indicators

GHG Verification Methodology:

Evidence-gathering procedures included but were not limited to:

- Interviews with relevant personnel of Goldman Sachs and their consultant;
- Review of documentary evidence produced by Goldman Sachs;
- Review of Goldman Sachs data and information systems and methodology for collection, aggregation, analysis and review of information used to determine GHG emissions; and
- Audit of sample of data used by Goldman Sachs to determine GHG emissions.



Verification Opinion:

Based on the process and procedures conducted, there is no evidence that the GHG emissions statement shown above:

- is not materially correct and is not a fair representation of the GHG emissions data and information; and
- has not been prepared in accordance with the WRI/WBCSD GHG Protocol Corporate Accounting and Reporting Standard (**Scope 1 and 2**), and WRI/WBCSD Greenhouse Gas Protocol Corporate Value Chain Accounting and Reporting Standard (**Scope 3**).

It is our opinion that Goldman Sachs has established appropriate systems for the collection, aggregation and analysis of quantitative data for determination of these GHG emissions for the stated period and boundaries.

Statement of independence, impartiality and competence

Apex is an independent professional services company that specializes in Health, Safety, Social and Environmental management services including assurance with over 30 years history in providing these services.

No member of the verification team has a business relationship with Goldman Sachs, its Directors or Managers beyond that required of this assignment. We conducted this verification independently and to our knowledge there has been no conflict of interest.

Apex has implemented a Code of Ethics across the business to maintain high ethical standards among staff in their day-to-day business activities.

The verification team has extensive experience in conducting assurance over environmental, social, ethical and health and safety information, systems and processes, has over 20 years combined experience in this field and an excellent understanding of Apex's standard methodology for the verification of greenhouse gas emissions data.

Attestation:

A handwritten signature in blue ink, appearing to read 'Trevor A. Donaghu'.

Trevor A. Donaghu, Lead Verifier
Program Manager
Apex Companies, LLC
Pleasant Hill, California

A handwritten signature in blue ink, appearing to read 'John A. Rohde'.

John A. Rohde, Technical Reviewer
Principal Consultant
Apex Companies, LLC
Lakewood, Colorado

March 24, 2023

This verification opinion declaration, including the opinion expressed herein, is provided to Goldman Sachs and is solely for the benefit of Goldman Sachs in accordance with the terms of our agreement. We consent to the release of this statement to the public or other organizations but without accepting or assuming any responsibility or liability on our part to any other party who may have access to this statement.