



Greenhouse Gas Emissions Report 2024

ESPEC CORP.

ESPEC has obtained third-party assurance by KPMG AZSA Sustainability Co., Ltd. for our FY2023 results. The scope of the assurance covered SCOPE 1 and SCOPE 2 emissions(Market-based, Location-based), SCOPE 3 - category 1 "Purchased goods and services", category 11 "Use of sold products" and category 12 "End-of-life treatment of sold products".

Third-party assured


Scopes/Categories		FY2023 Actual (t-CO ₂ e)	Basis for calculation
			If no scope statement is provided, the scope of calculation covers 13* consolidated companies in Japan, the U.S., China, Korea, Thailand, and Germany.
SCOPE 1		3,622	<p>Calculation method: Calculated based on the "Greenhouse Gas Emissions Calculating and Reporting Manual (Ver. 5.0)" (Ministry of the Environment and Ministry of Economy, Trade and Industry, Government of Japan (MOE and METI)).</p> <p>Emission coefficients: For fuel-derived CO₂, coefficients from the "List of Calculation Methods and Emission Coefficients in the Calculation, Reporting, and Publication System (Updated on December 12, 2023 (Revised on January 16, 2024))" (MOE and METI) were used. For GHG emissions from Fluorinated gases (F-gases) leakage, the Global Warming Potentials (GWPs) of the "Sixth Assessment Report" (Intergovernmental Panel on Climate Change (IPCC)) were used.</p> <p>Scope 1 was calculated as the sum of [1] and [2] below.</p> <p>[1] CO₂ emissions from fuel use.</p> <p>[2] F-gases emissions leaked from manufacturing processes and owned facilities^{※1}.</p> <p>※1: 1) Leakage of F-gases due to operation of facilities owned by Espec and its subsidiaries in Japan (Japanese Group Companies). 2) Leakage of F-gases due to operation and disposal of test equipment owned by Group companies outside of Japan (Leakages of F-gases due to disposal of test equipment were calculated for countries with underdeveloped F-gases recovery and destruction systems).</p>
SCOPE 2	Market-based	4,285	<p>CO₂ emissions from electricity use</p> <p>Calculation method: Calculated based on the "GHG Emissions Calculating and Reporting Manual (Ver. 5.0)" (MOE and METI).</p> <p>Emission coefficients: For Japanese Group Companies, the "List of Emission Factors by Electric Utility (for submission in 2024)" (MOE and METI) was used. For Group companies outside Japan, the coefficients from the International Energy Agency's (IEA) "Emissions Factors 2023" for 2021 were used.</p>
	Location-based	13,138	<p>Emission coefficients: For Japanese Group Companies, "National Average Factors for General electricity transmission and distribution utility" from the "List of Emission Factors by Electric Utility (for submission in 2024)" (MOE and METI) were used. For Group companies outside Japan, the coefficients from the IEA's "Emissions Factors 2023" for 2021 were used.</p>
SCOPE 3		1,040,425	<p>Calculation method: Calculated based on the "Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (Ver.2.6)" (MOE and METI).</p> <p>Emission coefficients: "Emission Intensity Database for Calculating Greenhouse Gas Emissions of Organizations through Supply Chains (Ver. 3.4)" (MOE) and the "LCI Database IDEA Ver.2.3" (National Institute of Advanced Industrial Science and Technology, Japan) were used.</p>
1	Purchased goods and services	117,497	Calculated by the raw materials, parts, etc. procured amount for manufacturing.
2	Capital goods	4,813	Calculated based on the fixed assets cost amount.
3	Fuel- and energy-related activities (Excluding SCOPE 1-2)	2,211	Calculated using energy consumption, "Emission intensity per unit of electricity and heat consumption" and "LCI Database IDEA ver. 2.3".
4	Upstream transportation and distribution	461	Calculated only for ESPEC, using the fuel efficiency method for transportation in Japan where ESPEC is the consigner. Transportation where the consigners are customers was calculated at Category 9.
5	Waste generated in operations	151	Calculated based on the weight of waste generated from their business operations. Excluding ESPEC ENVIRONMENTAL EQUIPMENT (SHANGHAI) CO., LTD.
6	Business travel	626	ESPEC CORP., ESPEC TEST SYSTEM CORP. and ESPEC ASSIST CORP.: Calculated based on the business travel cost. Other Group Companies: Calculated based on the number of employees using "Emission intensity per employee".
7	Employee commuting	1,563	For Japanese Group companies, calculated based on commuting cost. For Group companies outside of Japan, calculated based on the number of employees and the number of working days using the "emissions intensity per number of employees and working days".
8	Upstream leased assets	—	Not applicable.
9	Downstream transportation and distribution	552	Calculated only for ESPEC, using the fuel efficiency method for transportation in Japan where the customer is the consigner. Transportation where the consigner was ESPEC was calculated at Category 4.
10	Processing of sold products	—	Not applicable.
11	Use of sold products	881,030	<p>Calculated based on the energy consumption of the sold products in use at customer sites, using the following formula.</p> <p>number of units sold^{※1} x power consumption (kW) by product group x 24 hours x 365 days x operating years^{※2} x operating rate^{※1} x CO₂ emission coefficient of electricity^{※2}.</p> <p>※1: Operating years and operating rate were assumed to be 7 years and 80% based on the "Design for Environment Guidelines (7th Edition)" established by ESPEC CORP.. The target products were all major products sold by the top 80% of ESPEC's sales and all products sold by group companies.</p> <p>※2: The emission factor by destination region (national average factor for Japan and IEA country-specific factor for other countries. Destination regions are divided into the Americas, Europe, China, Korea, and Asia (excluding Japan, China, and Korea), and IEA country-specific coefficients are used for each. For the Americas, Europe, and Asia, the country coefficients for the U.S., Germany, and Thailand are used, respectively.) was used for Japanese Group Companies, and the IEA country-specific factor of the country where the company is located was used for Group companies outside of Japan.</p>
12	End-of-life treatment of sold products	31,520	<p>Calculated as the sum of [1] and [2] below.</p> <p>[1] Assuming that the number of units discarded from the market is the same as the number of units sold during the fiscal year. Calculated based on the weight of the equipment, using the material composition ratio of the equipment, and dividing it by type and disposal method. ESPEC CORP. calculated based on the main products in the top 80% of sales, ESPEC MIC CORP. and group companies outside of Japan calculated for all products sold based on the results of ESPEC CORP.'s calculation for each product group.</p> <p>[2] Calculated the F-gases leakage amount released into the atmosphere at the time of product disposal for countries with underdeveloped F-gases recovery and destruction systems. For Group companies outside Japan, calculated assuming that the country where it is located as the delivery destination (GWP values stated the IPCC Sixth Assessment Report were used). The following (1) and (2) are excluded from the calculation. (1) ESPEC THERMAL TECH SYSTEM CORP. [1][2] (2) F-gases leakage in some special products for which detailed specification information was not collected. [2]</p>
13	Downstream leased assets	—	Not applicable.
14	Franchises	—	Not applicable.
15	Investments	—	Not applicable.
SCOPE 1, 2, 3 Total		1,048,332	SCOPE 2 is calculated using the market-base.

*COSMOPIA HIGHTECH CORP. was consolidated from August 2023 due to an acquisition. However, it is not included in the calculation for this fiscal year. Because the data accuracy is not sufficient due to the company is based in the acquired company.



Independent Assurance Report

To the Representative Director and President of ESPEC CORP.

We were engaged by ESPEC CORP. (the “Company”) to undertake a limited assurance engagement of the environmental performance indicators marked with  (the “Indicators”) for the period from April 1, 2023 to March 31, 2024 included in its Greenhouse Gas Emissions Report 2024 (the “Report”) for the fiscal year ended March 31, 2024.

The Company’s Responsibility

The Company is responsible for the preparation of the Indicators in accordance with its own reporting criteria (the “Company’s reporting criteria”), as described in the Report.

Our Responsibility

Our responsibility is to express a limited assurance conclusion on the Indicators based on the procedures we have performed. We conducted our engagement in accordance with the ‘International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements other than Audits or Reviews of Historical Financial Information’ and the ‘ISAE 3410, Assurance Engagements on Greenhouse Gas Statements’ issued by the International Auditing and Assurance Standards Board. The limited assurance engagement consisted of making inquiries, primarily of persons responsible for the preparation of information presented in the Report, and applying analytical and other procedures, and the procedures performed vary in nature from, and are less in extent than for, a reasonable assurance engagement. The level of assurance provided is thus not as high as that provided by a reasonable assurance engagement. Our assurance procedures included:

- Interviewing the Company’s responsible personnel to obtain an understanding of its policy for preparing the Report and reviewing the Company’s reporting criteria.
- Inquiring about the design of the systems and methods used to collect and process the Indicators.
- Performing analytical procedures on the Indicators.
- Examining, on a test basis, evidence supporting the generation, aggregation and reporting of the Indicators in conformity with the Company’s reporting criteria, and recalculating the Indicators.
- Visiting two of the Company’s overseas subsidiaries selected on the basis of a risk analysis.
- Evaluating the overall presentation of the Indicators.

Conclusion

Based on the procedures performed, as described above, nothing has come to our attention that causes us to believe that the Indicators in the Report are not prepared, in all material respects, in accordance with the Company’s reporting criteria as described in the Report.

Our Independence and Quality Management

We have complied with the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which includes independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. In accordance with International Standard on Quality Management 1, we design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.



Keisuke Inoue, Director
KPMG AZSA Sustainability Co., Ltd.
Osaka, Japan
July 19, 2024