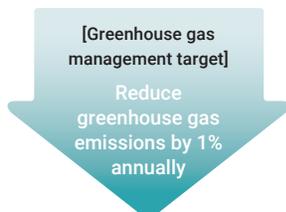


## 5.2 Greenhouse Gas Emission Management

Lotus introduced ISO 14064-1:2018 carbon emission inventory in 2024, checked the greenhouse gas emissions for its main operating sites in 2023, and obtained a third-party assurance report in 2024. The Company's internal energy consumption and carbon emissions are identified through standardization processes to further control the energy consumption and carbon emissions of major equipment and facilities. To further understand the carbon emissions from global sites, we increased the greenhouse gas emission inventory of our operating sites in India and Singapore in 2024.



Items	Scope
GHG inventory	<ul style="list-style-type: none"> <li>Taiwan: Lotus Pharmaceutical Co., Ltd. (Nantou Plant, Taipei Headquarters Office, Taichung Office, and Kaohsiung Office)</li> <li>South Korea: Alvogen Korea Holdings Ltd., Alvogen Korea Co., Ltd. (Kongju Plant, Hsiangnan Plant, South Korea Headquarters Office, Seoul Office, Wonju Office, Busan Office, Daegu Office, Jeonju Office, Gwangju Office, Daejeon Office, and Jeju Office)</li> <li>Singapore: Lotus International Pte. Ltd.</li> <li>India: Alvogen Pharma India Private Limited, Meishi Pharma Services Private Limited, Norwich Clinical Services Private Limited</li> </ul>
GHG Third-Party Assurance	<ul style="list-style-type: none"> <li>Taiwan: Lotus Pharmaceutical Co., Ltd. (Nantou Plant, Taipei Headquarters Office, Taichung Office, and Kaohsiung Office)</li> <li>South Korea: Alvogen Korea Holdings Ltd., Alvogen Korea Co., Ltd. (Kongju Plant, Hsiangnan Plant, South Korea Headquarters Office, Seoul Office, Wonju Office, Busan Office, Daegu Office, Jeonju Office, Gwangju Office, Daejeon Office, and Jeju Office)</li> <li>Singapore: Lotus International Pte. Ltd.</li> <li>India: Alvogen Pharma India Private Limited, Meishi Pharma Services Private Limited</li> </ul>

▼ 2024 GHG Emissions (Unit: ton CO<sub>2</sub>e)

Scope	Description	Taiwan	South Korea	India	Singapore	Total
Scope 1 (Direct GHG emission)	Stationary Combustion	921.6855	867.9933	NA	NA	1,789.6788
	Mobile Combustion	9.8980	21.2285	NA	5.3245	36.4510
	Direct Fugitive Emissions	362.4494	482.2164	NA	1.2582	845.9240
Scope 1 emissions (ton CO <sub>2</sub> e) in total		1,294.0329	1,371.4381	NA	6.5827	2,672.0538
Scope 2 (Indirect Energy Emissions)	Purchased electricity	9,636.6764	3,177.8508	24.5693	3.8934	12,842.9899
Total carbon emission (ton CO <sub>2</sub> e)		10,930.709	4,549.289	24.569	10.4761	15,515.044
GHG emission intensity (Scope 1 + Scope 2) (ton CO <sub>2</sub> e / Revenue in the millions)		0.588	0.245	0.001	0.001	0.835
Data coverage rate						89%

Notes: 1. Scope 1: The main emission sources are the combustion of natural gas, diesel, and gasoline, as well as energy consumption generated due to the diffusion of sewage septic tanks and refrigerant equipment.  
 2. Scope 2: The main source of emission is the external purchase of electricity.  
 3. The Global Warming Potential (GWP) ratio is cited for the greenhouse gas emission coefficient of carbon dioxide equivalent, mainly based on the "Greenhouse Gas Emission Coefficient Management Table 6.0.4 Edition" announced by the Environmental Protection Agency of the Executive Yuan.  
 4. GHG emission intensity (ton CO<sub>2</sub>e / revenue) = Scope 1 + Scope 2 / Operating revenue NT\$ 18,584 million in 2024.  
 5. The data coverage rate is calculated as the number of employees in operating sites with carbon emissions calculated(1,432)/ the total number of employees of Lotus (1,609 in 2024).

▼ Greenhouse Gases Emission in the last 3 years (Unit: Tons CO<sub>2</sub>e)

Total Greenhouse Gases Emission	2022	2023	2024
Scope 1	10,662	3,310.3169	2,665.4710
Scope 2	10,647	12,129.5761	12,814.5272
Total Greenhouse Gases Emission	21,309	15,439.8930	15,479.998
Annual Revenue (NTD Millions)	14,633	16,958	18,584
GHG emission intensity (Scope 1 + Scope 2) (ton CO <sub>2</sub> e / Revenue in the millions)	1.46	0.91	0.83

Note: In order to ensure the comparability of annual data, the emission inventory data for the past three years covers the main operating bases in Taiwan and South Korea.

## 5.2.1 2024 Energy and Carbon Reduction Project

In 2024, the Company reduced its energy consumption by adopting the following three energy-saving action plans.

Action plan	Type of emission reduction	Description of reduction effectiveness	Calculation formula of carbon reduction	Reduction of carbon emissions (compared to 2023)
Replacement of oil firing boilers with natural gas boilers	Diesel	In Taiwan, two diesel boilers were replaced in Taiwan, and the boiler efficiency improved from 90% to 93% and 96% respectively.	Emissions from boiler combustion = Fuel consumption rate * daily boiler combustion duration (1.2h) * 365 (days/year) * Fuel CO <sub>2</sub> emissions coefficient (Note 1)	Reduction of the carbon emissions by 80t CO <sub>2</sub> e
HVAC energy-saving	Electric energy and Liquefied Natural Gas (LNG)	In South Korea, the consumption of liquefied petroleum and electricity for HVAC was reduced through the seasonal adjustment of indoor humidity and maintenance of the humidity within the allowable range in South Korea. Approximately 222,357kWh of electricity and 141,154m <sup>3</sup> of liquefied natural gas are saved annually.	Reduced electricity emissions = electricity saved * electricity emission coefficient (Note 2) Reduced fuel emissions = reduced fuel consumption * emission coefficient (Note 2)	Reduction of carbon emissions by 483t CO <sub>2</sub> e
Adoption of high-performance temperature-controlled packaging (Va-Q-pal) in transportation	Emissions from transportation	The traditional active cold chain equipment (Envirotainer RKN-e1) relies on electricity, resulting in an increase in energy consumption and carbon emissions. To reduce the environmental impact of the supply chain, Lotus used Va-Q-pal in 2024. Vacuum insulation panels and phase-change materials are used for this product, with a lighter weight, thus effectively reducing energy consumption and fuel consumption during air transportation.	The carbon emissions per EUR pallet for the RKN-e1 container are approximately 61.5t CO <sub>2</sub> e; the carbon emissions per EUR pallet for the Va-Q-Pal container are approximately 16.0t CO <sub>2</sub> e; therefore, the use of each Va-Q-Pal can reduce emissions by 45.5t CO <sub>2</sub> e per pallet. Based on an assessment of the Taipei-Dubai-Malta (TPE-DXB-MLA) one-way route, a total of 21 pallets were used in 2024; therefore a total of 955t CO <sub>2</sub> e was reduced (45.5tCO <sub>2</sub> × 21).	Reduction of the carbon emissions by 955t CO <sub>2</sub> e

Notes: 1. The fuel consumption rate of the two diesel boilers was 128L/hr and 55/hr respectively, while that of natural gas boilers was 113.6Nm<sup>3</sup>/hr and 43.9Nm<sup>3</sup>/hr respectively.

The emission coefficients of diesel and natural gas are 2.606kgCO<sub>2</sub>/L and 1.879kgCO<sub>2</sub>/m<sup>3</sup> respectively with reference to the Greenhouse Gas Emission Coefficient Management Table 6.0.4 issued by the Ministry of the Environment.

2. The local emission coefficients of South Korea are adopted, with the emission coefficient of electricity and the emission coefficient of liquefied natural gas as 0.424kgCO<sub>2</sub>/kWh and 2.75kgCO<sub>2</sub>/m<sup>3</sup> respectively.

3. Only applicable for single EUR pallet-stacked goods. Besides, the recyclability of RKN-e1 containers is not considered in the reduction assessment.

