# Environmental Impact throughout the Daigas Group Value Chain in FY2024.3

The Daigas Group calculated the amount of greenhouse gas (GHG) emissions from companies that constitute the Daigas Group's value chain network, based on the GHG Protocol, an international emission accounting standards. The methodology of the calculation and its results have been certified by an independent organization to verify their reliability and accuracy.
Described below are GHG emissions in FY2024.3.

Combined GHG emissions by the Daigas Group and value chain companies **25.63** million t-$CO_2$e

- Scopes 1 and 2 ····· **4.77** million t-$CO_2$e (19% of the total emissions)
- Scope 3 ····· **20.87** million t-$CO_2$e (81% of the total emissions)

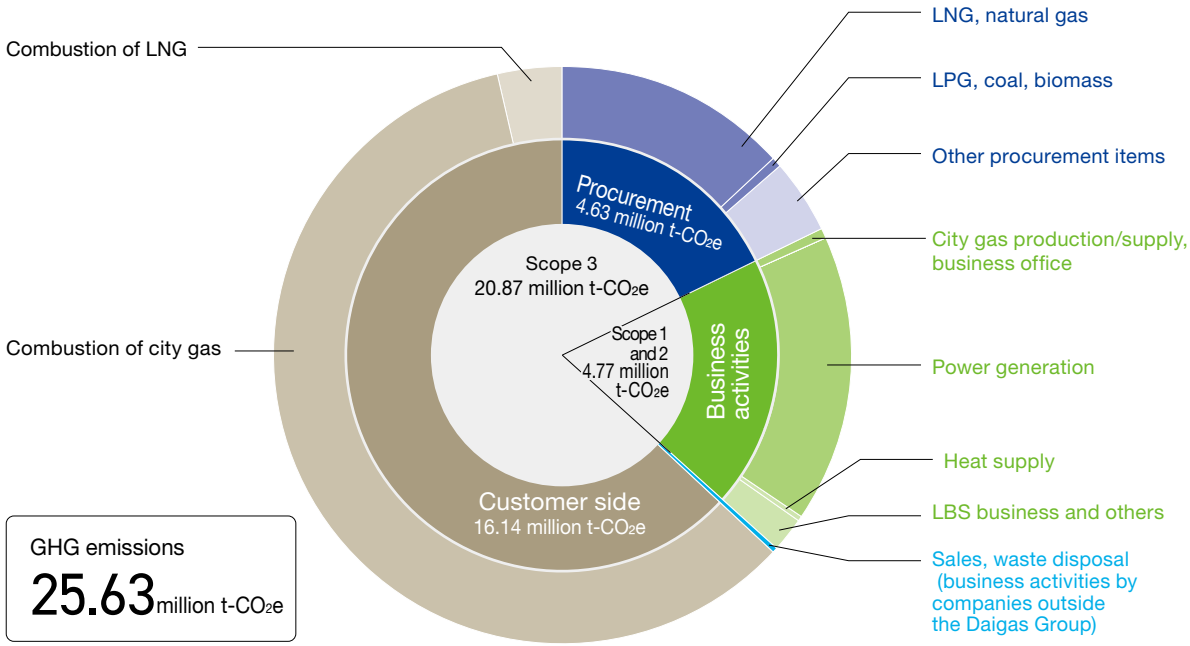
## Major causes of emissions

- GHG emissions from city gas and LNG combustion on the customer side amounted to 16.14 million t-$CO_2$e tons in the reporting year in terms of $CO_2$, accounting for about 63% of the total.
- GHG emissions through electricity generation, as measured in terms of $CO_2$ in the year, amounted to 4.03 million t-$CO_2$e, accounting for about 16% of the total emissions, which represented the majority of GHG emissions from the Group's own business activities.
- GHG emissions associated with material and fuel procurement totaled 4.63 million t-$CO_2$e, as measured in terms of $CO_2$ in the year, accounting for about 18% of the total emissions. The procurement of energy sources, especially LNG, accounted for over 70% of that amount.

## Environmental impact reduction initiatives

- As a way of reducing GHG emissions, we will continue to actively introduce highly advanced energy-efficient power generation facilities and renewable energy sources to customers.
- We will continue our efforts to improve fuel efficiency regarding the operation of LNG tankers in collaboration with resource suppliers in material procurement.

## GHG emissions throughout the Daigas Group value chain in FY2024.3 (actual results)




Companies subject to the calculation of GHG emissions : 69 companies in total, including Osaka Gas Co., Ltd., 2 overseas subsidiaries and 66 companies among 159 consolidated subsidiaries, are subject to calculation of GHG emissions. Those housed in office buildings as tenants and whose environmental data are difficult to grasp and whose environmental effects are minimal and overseas companies, except two companies, are not subject to such calculation.

**$CO_2$ emission factors used (GHG scopes 1 and 2)**

- Electricity: 0.65 kg-$CO_2$/kWh (Average emission factor of thermal power plants in FY2014.3, stipulated in the Plan for Global Warming Countermeasures issued by the government in 2021.)
- City gas: 2.29 kg-$CO_2$/m³ (based on Osaka Gas data)
- Others: Factors listed under the Law Concerning the Promotion of Measures to Cope with Global Warming

**Sources of emission factors used for calculating $CO_2$ emissions (GHG scope 3)**

- Production and transmission of city gas: "Life cycle evaluation of city gas" on the website of the Japan Gas Association
- Production and shipment of LNG: Calculation of life cycle greenhouse gas emissions of LNG and City Gas 13A (papers presented at research presentation meetings of the 35th Meeting of the Japan Society of Energy and Resources, June 2016)
- Production and shipment of LPG and coal: Future forecast for life cycle greenhouse gas emissions of LNG and City Gas 13A (Energy and Resources, Vol. 28, No. 2, March 2007)
- Other main emission factors: Emission factors for calculating supply-chain greenhouse gas emissions, etc. (Database Ver. 3.3) published in March 2023 by the Ministry of Environment