

Appendix 5. Greenhouse Gas (GHG) Emission Calculation Method

The calculation of GHG emissions follows the GHG Protocol Corporate Accounting & Reporting Standard. The consolidation process is based on operational control approach.

GHG Emissions	Method	Exception
Scope 1	Emissions include: a. Fuel for genset b. Fuel of the company's operational vehicles c. Sewage Treatment Plant d. Refrigerant used e. CO ₂ fire extinguisher	-
Scope 2	Indirect emissions from electricity purchased from the State Electricity Company (PLN) are calculated using the location-based method.	-
Scope 3		
Categories 1 and 2	Emissions related to products and services purchased and calculated using the following methods: a. Average-based method b. Spend-based method	
Category 3	Emissions from other fuel purchases recorded in the internal business management system	
Category 5	Emissions from waste generated by the company's operational activities are calculated using the waste-type specific method	
Category 6	Emissions from business travel are calculated using the distance-based method	
Categories 8 and 13	Emissions from asset leasing (upstream and downstream) are calculated using the average-data method	
Category 11	Emissions from total electricity consumption from the use of the product produced	
Category 15	Emissions from investors, calculated based on investor emissions data or emissions based on economic activity	

Reference sources:

Source of emission factors:

- [IPCC Guidelines for National Greenhouse Gas Inventories \(2006\)](#) (Intergovernmental Panel on Climate Change)
- [IPCC Sixth Assessment Report \(AR6\)](#) (Intergovernmental Panel on Climate Change)
- [DEFRA \(2023\)](#) (UK Department for Environment, Food & Rural Affairs)
- [Annex 4 Guidelines for Calculating and Reporting Greenhouse Gas Inventories of the Directorate General of Electricity in the Energy Sector - Sub-Sector of Electricity \(2018\)](#) (Ministry of Energy and Mineral Resources)
- [Inventory of GHG Emissions in the Energy Sector \(2020\)](#) (Ministry of Energy and Mineral Resources)
- [Electricity Emission Factors of the Ministry of Energy and Mineral Resources \(2019\)](#) (Ministry of Energy and Mineral Resources)
- [Fuel Oil and Coal Emission Factors of the Ministry of Energy and Mineral Resources \(2023\)](#) (Ministry of Energy and Mineral Resources)
- [Exiobase](#) and [Climatiq](#) (Consortium proxies and Artificial Intelligence-driven data providers)