

Appendix 7. GHG Emission Calculation Method

[GRI 102-5, 102-6, 102-7, 305-1, 305-2, 305-3]

The calculation of GHG emissions Scope 1, 2, and 3 follows the GHG Protocol Corporate Accounting & Reporting Standard. The consolidation process is based on an operational control approach.

GHG emissions	Method	Exception
Scope 1	Emissions include: - Fuel for the genset - Fuel for the company's operational vehicles - Sewage Treatment Plant - Refrigerants used in air conditioning systems in office buildings, facilities, and motor vehicles - CO₂ 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 purchased products and services are calculated using the following methods: - Average-based method - Spend-based method	
Category 3	Emissions from other fuel purchases are recorded in the internal business management system	
Categories 4 and 9	Emissions generated from transportation and distribution in upstream and downstream processes by third parties	
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	
Category 7	Emissions from employee commuting between homes and worksites	
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 12	Emissions from waste disposal and the treatment of sold products	
Category 15	Emissions from investments, calculated based on investment 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)

Source of Global Warming Potential (GWP):

- [IPCC Sixth Assessment Report \(AR6\)](#) (Intergovernmental Panel on Climate Change)

Source of Net Calorific Value (NCV):

- [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)
- [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)
- [IPCC Guidelines for National Greenhouse Gas Inventories \(2006\)](#) (Intergovernmental Panel on Climate Change)

Sources of Methane Producing Capacity and Methane Correction Factor (MCF):

- [2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories \(2019\)](#) (Intergovernmental Panel on Climate Change)
- [Methodology for Calculating GHG Emissions in the Waste Treatment Sector of the Ministry of Environment and Forestry \(2012\)](#) (Ministry of Environment and Forestry)