

# **Carbon Footprint of the Large Scale Gold Mining Industry of Ghana**

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## **Abstract**

Mining has been an important economic activity accounting for a substantial part of foreign exchange and government revenue. The gold mining sector has undergone considerable expansion due to liberalization with more foreign mining companies investing in the sector in particular large-scale open pit gold mining. Resultant expansion in mining has led to heightened environmental concerns and significant challenges due to key activities used in the mining operations hence contributing to greenhouse gas emissions. Investigations were conducted to assess the sources and key activities in large scale gold open pit mining operations in Ghana giving rise to greenhouse gas generation. The study adopted the Intergovernmental Panel on Climate Change (IPCC) guideline for estimating greenhouse gas inventory. The operational boundary as against the organizational boundary was considered for the study. The operational boundary was drawn around the physical mining site. Within this boundary, the emissions were quantified and reported under direct emission due to company activities (Scope 1) and indirect emissions from secondary use or activity (Scope 2). The study found that activities due to land use, blasting, fuel use to power mobile equipment and stationary combustion sources, electricity use and waste management were the contributing greenhouse gas emission sources in a large scale gold mining operation with electricity use and fuel used in transportation accounting for 92.46% of the total emissions. Average contribution of the large scale gold mining industry in Ghana to the total national greenhouse gas emission inventory for the country was established to be 11.08%.