



### 3.5.8 Greenhouse Gases

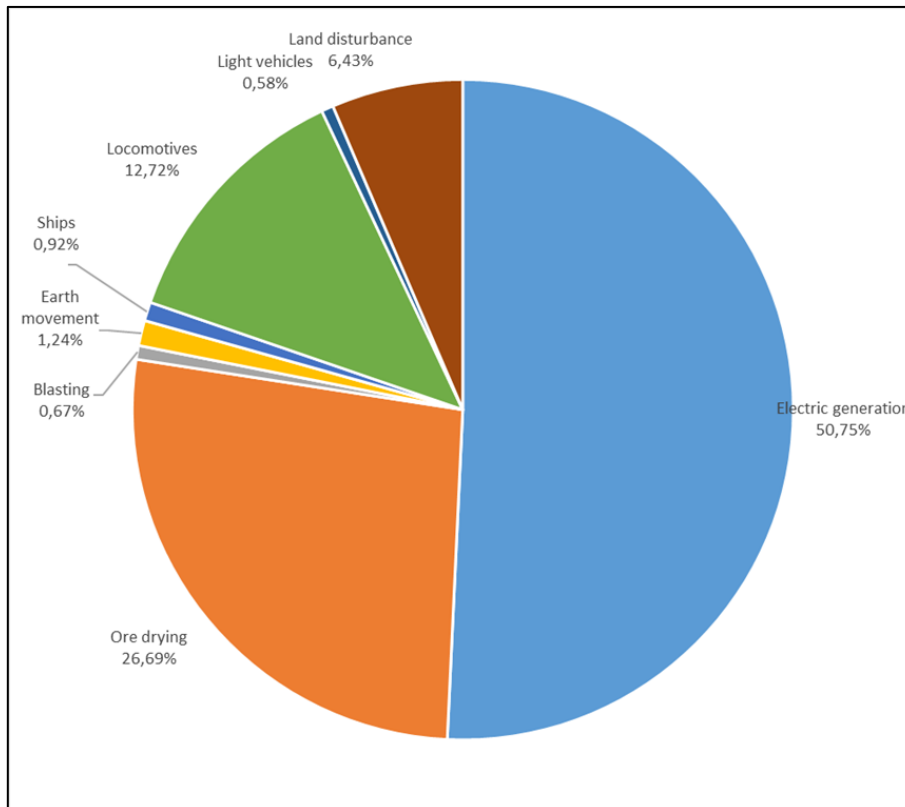
Table 3.5.8 below shows the inventory of GHG for the year 2020. An estimated 331 222 tons of CO<sub>2</sub> eq. were released in 2020 by the CBG operations.

The calculations are based on IPCC (2006) Tier 1, default emission factors. They include directly generated emissions only, specifically those related to the burning of fuels and changes in land vegetation cover. Though it may not be a comprehensive inventory, given the amounts of fuels consumed at the site, this represents by large the major source of GHG emissions.

The percentage distribution of the emissions is shown in Figure 3.5.8 below. This reveals that electric generation constitutes by far the major source of GHG, representing 50% of the total GHG emissions, followed by ore drying (26.7%), and locomotives (10.89%), which altogether represent 90% of the emissions.



**Figure 3.5.8 – Percentage distribution of GHG emissions in 2020**

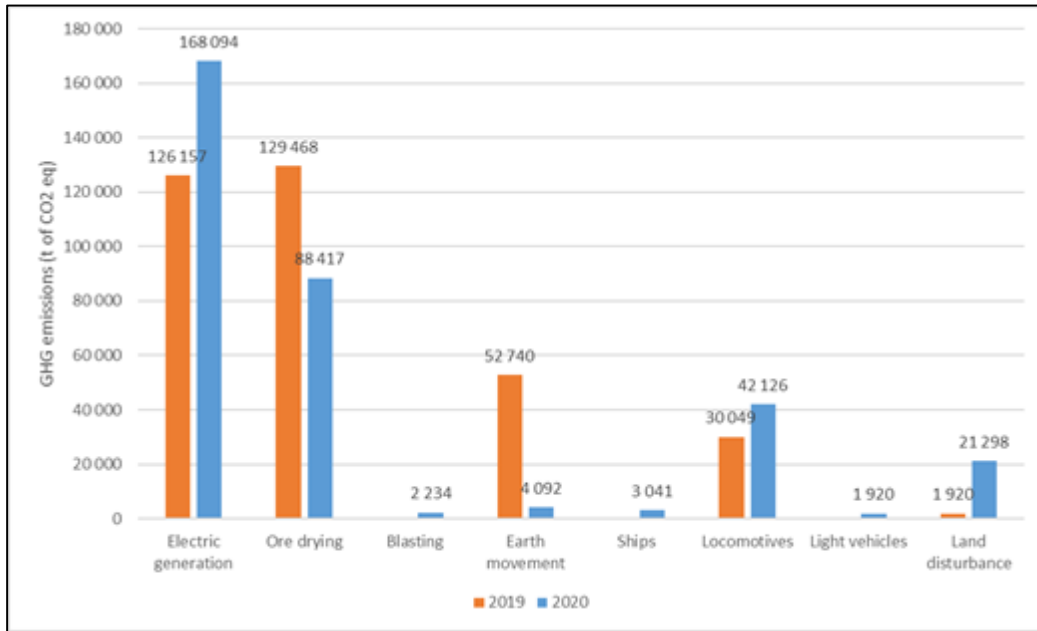


These results, however, should be taken with certain precaution for the following reasons:

- The calculations are based on Tier 1, default emission factors, which represent first approach calculations. No country specific factors are yet available to further refine the calculations.
- The estimate of land disturbance needs to be more carefully reviewed. For this approach, it has been assumed that all disturbed land is made up of forests and that, upon clearance, all organic matter ends up as CO<sub>2</sub>, which might not be the case. A more detailed approach is required to take account of the specific pre-mining vegetation cover and the fate of that vegetation cover. Actual emissions might be much less than what is reported here..
- Emissions from blasting consider only the CO<sub>2</sub> originated from the combustion of the fuel added to the explosive. It does not take into consideration the N<sub>2</sub>O emissions originating from the ammonium nitrate component of the explosive.
- The ships component considers only the fleet directly operated by CBG for the service of the port. It does not include the actual marine transportation of the ore.
- Emissions from waste disposal and sewage treatment were not included in the calculations.

A more detailed and accurate procedure for tracking CBG's GHG emissions is being prepared and should be in place by 2021.

In comparison with the GHG emissions reported for 2019 (340 334 t CO<sub>2</sub> eq), a reduction in 9 112 t is observed. Though a direct comparison is not possible due to certain differences in the accounting methodology, Figure 3.5-4 below shows the composition of the 2020 GHG emissions together with that of 2019.



**Composition of the GHG emissions in 2020 compared to those of 2019**

As it can be seen, the GHG emissions related to electric generation show a significant increase, while the ore drying component has decreased. This is due to an increase on Diesel consumption at the various power generation units and the lower demand for ore drying.

The apparently significant reduction in emissions from earth movement might be due to accounting differences, as in the 2019 report does not mention the consumptions for explosives, light vehicles and ships, which are probably included into the earth movement category (reported as transport routier).

The increase in the land disturbance emissions is mainly due to the fact that in 2020 the cleared land represents three times that of 2019 (305 ha vs 62,5 ha), as well as some adjustments in the methodology.

The whole methodology for land disturbance GHG emissions will be reviewed and a retrospective rapport will be produced shortly.

