



## Greenhouse Gases

Table below shows the calculation of GHG emissions during 2021. The overall calculated emission of GHG is 414 355 t of CO<sub>2</sub> equivalent.

This calculation is subject to the following premises:

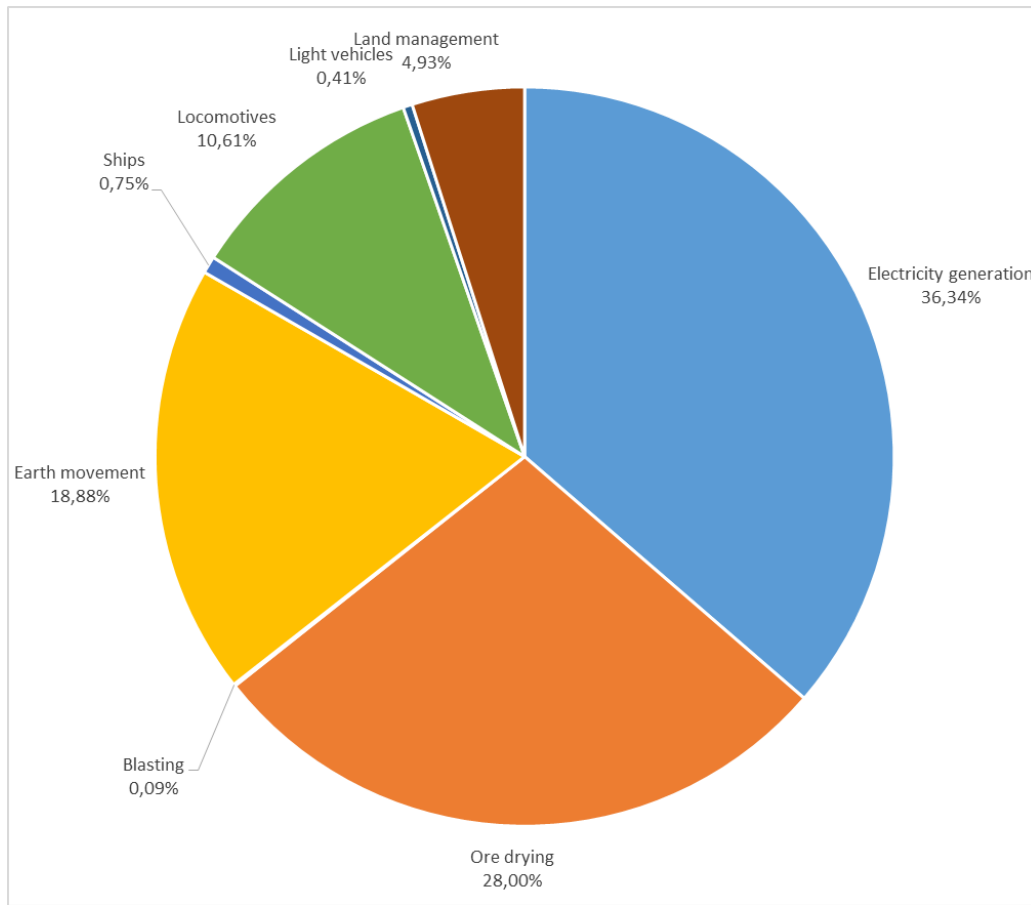
- It represents only direct emissions related to fossil fuel combustion and carbon capture or loss of capture by land clearing or rehabilitation. These two categories represent by far the major sources of GHG emissions. Other sources, like waste management, are considered minor and not included in this calculation. Likewise all indirect emissions like those associated to supplies, ore transportation, etc., are not included.
- This is a Tier 1 approach, according to IPCC (2006), i.e., estimations are based on default emissions factors taken from IPCC tables.
- Fuel consumption is estimated by the records of distribution provided by the Hydrocarbons Superintendence, i.e., the amount distributed to a unit for a certain use within a year is supposed to be completely used within the same year and for the same use.
- Emission factors are chosen according to the type of fuel and the type of use. HFO is considered as residual fuel oil, diesel and DDO are considered as Gas/Diesel oil, and gasoline is considered as Motor gasoline (see Tables 2.2, 3.2.1, 3.2.2., 3.3.1 and 3.4.1 on IPCC 2006, vol. 2).
- For the choice of land management factors it has been assumed that the corresponding ecological zone is Tropical dry forest (TAWb), with to 8 months dry during the winter (see table 4.1 on IPCC 2006, vol. 4).

Figure below shows how the emissions are distributed by activity. Electricity generation represents more than one third of the total emission and electricity generation, ore drying, earth movement and locomotives represent ensemble the 93,8 of emissions.

From the land management component it can be observed that the loss of biomass associated to land clearance largely overpass the gain in biomass related to the newly rehabilitated land and the net carbon capture associated to the land rehabilitated in the previous 20 ears. It should be noticed that this calculation does not consider the loss of biomass in rehabilitated land due to bushfires caused by communities.



Figure Distribution of GHG emissions by activity



## REFERENCES

IPCC (2006). Guidelines for National Greenhouse Gas Inventories. Hayama, Intergovernmental Panel on Climate Change, 2006.