

Pioneers in measuring and reducing the Carbon Footprint of small mining organizations

The carbon footprint is the amount of greenhouse gases - GHGs we emit, mainly carbon dioxide (CO₂). In small-scale mining, it refers to gases emitted during mineral extraction and processing activities.

In ASM the carbon footprint can be as low as 3 TonCO₂ per kg of gold, an amount up to 12 times less than that emitted by industrial mining (36.4 TCO₂ per kg of gold).*

Artisanal and Small-scale Mining (ASM) employs nearly **50 million people worldwide** and is **key to the transition to a low-carbon economy**. ASM can contribute to the challenges of climate change through the adoption of best practices, such as carbon footprint reduction or decarbonization.

**Source: World Gold Council (2019). Gold and climate change: Current and future impacts.*



How to reduce the Carbon Footprint in ASM?

ARM has developed a methodology to measure and facilitate carbon footprint reduction in ASM organizations. We have specific plans for mines to minimize their impact and move towards responsible mining.

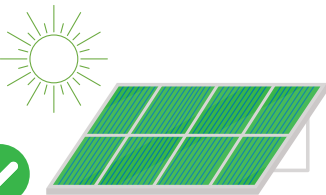
Every action counts! Start with these tips:

ACTION



✓ Energy Efficiency

- ▶ Evaluates the energy needs, according to the equipment used, reviews processes and equipment usage times.
- ▶ Implement new processes, optimizing equipment usage time or improving equipment production.



✓ Clean energy generation

- ▶ Uses systems such as **solar, wind, thermal energy panels**, etc.
- ▶ Implements clean energy generation technologies.
- ▶ Uses **biofuels**.

BENEFIT



- ▶ Costs are reduced or production is improved.
- ▶ Improvement and optimization of processes and resources.
- ▶ Adoption of efficient technologies.
- ▶ Energy consumption savings up to 20%.



- ▶ Own energy supply.
- ▶ Energy consumption savings.
- ▶ Reduction of environmental impacts.
- ▶ Access to tax incentives.
- ▶ Cost reduction in energy consumption.

What generates GHGs in ASM?



- ✗ Deforestation or the use of wood from forests



- ✗ The use of fuels for compressors, engines, and power generation.



- ✗ The use of conventional energy.



- ✗ Use of transportation powered by fossil fuels (e.g., diesel).

Tips for reducing the Carbon Footprint in ASM

ACTION



Soil Restoration and Reforestation

- ▶ Adapts sites designated for waste rock and/or tailings disposal.
- ▶ Places a vegetation layer of native plants in reforestation areas.
- ▶ Offsets the CO2 footprint that cannot be reduced within the mining organization by **implementing reforestation** in other areas.



Waste management

- ▶ **Classifies the types of waste generated in the OMAPE.**
- ▶ **Conducts campaigns for reuse, reduction, recycling, and anaerobic composting of organic waste.**
- ▶ **Carries out proper disposal of contaminating waste.**

BENEFIT

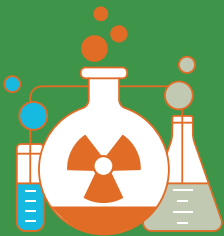


- ▶ Fewer areas affected by mining activity.
- ▶ Greater carbon capture. Regulatory compliance.
- ▶ Control of eroded areas and soil recovery.
- ▶ Compensation for CO2 emissions not avoided by other actions.



- ▶ Reduced waste generation and disposal.
- ▶ Cost reduction through proper disposal of hazardous and contaminating waste.
- ▶ Compliance with environmental regulations.
- ▶ Ecosystem protection.
- ▶ Adoption of circular economy practices such as reuse of materials.

What generates GHGs in ASM?



Use of chemical substances in mining operations



Use of equipment or machinery in poor condition



Waste burning



Inadequate separation and disposal of waste

MAKE THE DECISION TODAY

If you want to be a leader in sustainability and are interested in measuring and reducing the carbon footprint of your mining operation, **contact us!**

Contact



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www.responsiblemines.org/contacto



Alliance for Responsible Mining



“ARM: 20 years transforming ASM for a better future”.