

What are the different benefits/costs of technology transfer for low-emissions mining in Zambia?

The adoption of green technologies by mines in Zambia is a critical policy concern that intersects economic growth, environmental sustainability, and regulatory compliance. Zambia's mining sector contributes significantly to the economy, and it is likely to expand with industrial development policies. Still, there is need to balance this with environmental responsibility. This is motivated by both the global call for sustainable development and the domestic support for carbon emissions reductions, all while ensuring the safety and wellbeing of communities surrounding mining areas. Additionally, Zambia is aiming to strengthen its domestic mining sector for the energy transition, capitalising on the potential premium attached to minerals from green value chains. Zambia faces the challenge of modernising its mining practices to align with international environmental standards while ensuring continued economic progress.

Policy challenge

Most mines in Zambia, especially older ones, are often inefficient, leading to local air and water pollution that impacts health, environment, and the value of minerals. Policymakers are urgently seeking to reduce mining's environmental impact but keep production levels sustained. This inefficiency is also associated with increased costs of compliance to environmental regulations. Adopting low emission or pollution prevention technology could not only position Zambia favourably on the global stage but also address environmental concerns, enhancing the wellbeing of mining communities. The government can ensure the long-term viability of the mining sector and build public trust by demonstrating a commitment to responsible and forward-looking practices, although currently no policies have been developed at scale.

Data

Relevant data sources for addressing this question include:

- Historical production and operational data from mining companies is available at the Ministry of Mines.
- Environmental impact assessments and compliance records are compiled by the Ministry of mines.
- Energy consumption and emissions data. Energy consumption is available while there could be need to collect data on emissions.
- Government policies and regulations on mining and environmental protection are publicly available.
- Case studies of successful green technology adoption in other mining contexts.

The collection of data on the economic, environmental, and social aspects of mining operations could also be crucial to understand the dynamics at play.

Stakeholders

- Presidential Delivery Unit (PDU)
- Ministry of Mines and Minerals Development (MoMMD)
- Ministry of Finance and National Planning (MoFNP)
- Ministry of Energy (MOE)
- Ministry of Green Economy and Environment (MoGEE)
- Zambia Environmental Management Agency (ZEMA)
- Mining companies and industry associations

