GEF-8 CHILD PROJECT CONCEPT

GENERAL CHILD PROJECT INFORMATION

Child Project Title:	Global elimination of mercury in non-ferrous metals initiative, Zambia		
Country(ies):	Zambia	GEF Child Project ID:	
		Type of Child Project	Full-sized Child Project
GEF Agency(ies):	UNIDO	GEF Agency Child Project ID:	
Anticipated Executing Entity(s) and Type:	ZAMBIA Environmental Management Agency	Government	
GEF Focal Area(s):	Chemicals and Waste	Submission Date:	
Type of Trust Fund:	GEF Trust Fund	Child Project Duration (Months)	72
GEF Child Project Grant: *(a)*	5,060,000.00 USD	GEF Child Project Non-Grant *(b)*	n/a
Agency Fee(s) Grant: *(c)*	455,400.00 USD	Agency Fee(s) Non-Grant: *(d)*	n/a
Total GEF Financing: *(a+b+c+d)*	5,515,400.00 USD	Total Co-financing:	40,000,000.00 USD
PPG Amount *(e):*	150,000.00 USD	PPG Agency Fee(s) *(f)*:	13,500.00 USD
Total GEF Resources (a+b+c+d+e+f)	5,678,900.00 USD		
Project Sector (CCM only)	(select)		
Program	Ellimination Hazardous Chemicals Global elimination of mercury in non-ferrous metals initiative, global		

CHILD PROJECT FINANCING TABLES

GEF Financing Table

Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in $)		
					GEF Project Financing	Agency Fee	Total GEF Financing
UNIDO	GEF TF		Chemicals and Waste	**Mercury (select)**	**5,060,000**	**455,400**	**5,515,400**
Total GEF Resources					**5,060,000**	**455,400**	**5,515,400**

Project Preparation Grant (PPG)

Is Project Preparation Grant requested? ☒ Yes ☐ No

If yes: fill in PPG table (incl. PPG fee)

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in $)		
					PPG	Agency Fee	Total PPG Funding
UNIDO	GEF TF		Chemicals and Waste	**(select) Mercury (select)**	150,000	13,500	163,500
Total PPG Amount					150,000	13,500	163,500

Sources of Funds for Country STAR Allocation

GFEF Agency	Trust Fund	Country/ Regional/Global	Focal Area	Source of Funds	Total
(select)	GEF TF		(select)	(select as applicable)	
Total GEF Resources					

Indicative Focal Area Elements

Programming Directions	Trust Fund	(in $)	
		GEF Project Financing	Co-financing
(select) CW-1	GEFTF	**5,060,000**	40,000,000
Total Project Cost		**5,060,000**	40,000,000

Indicative Co-financing

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount ($)

Recipient Country Government	Ministry of mines and mineral development Ministry of Green Economy and Environment	In-kind	Recurrent expenditures	4,500,000
Beneficiaries	Non-ferrous metal Companies (Zn, Pb, Cu)	In-kind	Recurrent expenditures	20,500,000
Beneficiaries	Non-ferrous metal Companies (Zn, Pb, Cu)	Equity Investment	Investment mobilized	15,000,000
Total Co-financing				40,000,000

TABLE ON CORE INDICATORS
Core Indicators

Project Core Indicators		**Expected at PFD**
1	**Terrestrial protected areas** created or under improved management (hectare)	
2	**Marine protected areas** created or under improved management (hectare)	
3	Area of **land and ecosystems under restoration** (hectare)	
4	Area of **landscapes under improved practices** (hectare)	
5	Area of **marine habitat under improved practices** (hectare)	
6	**Greenhouse Gas Emissions Mitigated** (metric ton of CO_2e)	
7	**Shared water ecosystems** under new or improved cooperative management (count)	
8	Globally over-exploited **marine fisheries** moved to more sustainable levels (metric ton)	
9	Chemicals of global concern and their waste reduced (metric ton of toxic chemicals reduced)	2.33 tonns Hg/y
10	Persistent organic pollutants to air reduced (gram of toxic equivalent gTEQ)	
11	People benefiting from GEF-financed investments **disaggregated by sex** (count)	Direct and indirect employment: 265,000 people (172,250 men 92,750 women)

Explain the methodological approach and underlying logic to justify target levels for Core and Sub-Indicators *(max. 250 words, approximately 1/2 page)*

The methodological approach for quantifying and reducing mercury emissions in Zambia's copper sector is based on UN Environment's Toolkit for Identification and Quantification of Mercury Releases (Inventory Level 2). This toolkit provides a standardized framework for estimating mercury emissions from industrial processes, ensuring consistency and accuracy in calculations (UNEP Toolkit). The baseline year for this project is 2021, when Zambia's copper production reached 800,696 metric tonnes, with 23,958.8 metric tonnes exported as copper ores and concentrates. Based on this data, we estimate that 3% of the ore is exported as concentrates, while 97% is refined domestically, aligning with the processing capacity of Zambia's copper smelters (WITS, 2023).

Using the UNEP toolkit, we calculated that 776,737.20 metric tonnes of concentrate were processed domestically in 2021, resulting in 23,302.12 kg of mercury emissions per year (Kg Hg/y). This calculation is based on the mercury content in copper concentrates and the emission factors associated with pyrometallurgical smelting processes, which are the primary methods used in Zambia.

The project aims to achieve an 10% reduction in mercury emissions through the implementation of Best Available Technologies (BAT) and Best Environmental Practices (BEP), such as advanced mercury capture systems, improved process controls, and increased recycling of copper. This reduction target is aligned with the Global Elimination of Mercury in Non-ferrous metals Initiative (GEMINI) and is consistent with global best practices. It also aligns with Zambia's commitments under the Minamata Convention on Mercury. By achieving an 10% reduction, the project will mitigate 2.33 tonns of mercury emissions annually (2330 kg), significantly improving environmental and public health outcomes. This target is both ambitious and realistic, reflecting the potential of modern technologies and the project's comprehensive approach to addressing systemic challenges in Zambia's copper sector.

It is expected that the project will benefit approximately 265,000 people, comprising both direct and indirect employment in the copper mining and smelting sector. This estimate is based on the following breakdown:

1. Direct Employment:
   The copper mining and smelting sector in Zambia employs approximately 60,000–70,000 people directly (Energy Capital & Power, 2024). This includes:
   - Men: ~42,000–56,000 (70-80% of the workforce, reflecting the male-dominated nature of the sector).
   - Women: ~12,000–21,000 (20-30% of the workforce, often in administrative or support roles).
2. Indirect Employment:
   The sector supports an additional ~200,000 people in indirect roles, such as contractors, suppliers, and service providers (Zambia Chamber of Mines, 2023). This includes:
   - Men**:** ~120,000–140,000 (60-70% of indirect employment, including roles in transportation, construction, and equipment maintenance).
   - Women: ~60,000–80,000 (30-40% of indirect employment, particularly in small-scale trading, food services, and other support industries).

Combining direct and indirect employment, the total estimated beneficiaries are approximately 265,000 people. This figure reflects the project's broader impact on livelihoods and economic opportunities in the copper sector. The gender distribution is approximately 65% men and 35% women, highlighting the project's potential to improve gender equity by creating opportunities for women in both direct and indirect roles.

Project concept
PROJECT DESCRIPTION

Country Context (*maximum 500 words*)

- *Describe the nonferrous sector share, relevance, and impact in the country and the relevant environmental challenges, barriers, and strategic positioning relative to the systems transformation proposed for the program, including relevant existing policies, multilateral environmental agreements MEA, commitments, and investment frameworks. How are these aligned with the proposed approach to foster impactful outcomes with global environmental benefits?*
- *Describe the current institutional setup at national level for the management of the nonferrous metallurgy sector and main stakeholders expected to engage.*

Zambia, a landlocked country in Sub-Saharan Africa, covers 752,612 square kilometers. The mining sector plays a crucial role in Zambia's economy, contributing 11.1% to the Gross Domestic Product (GDP) and 79.5% of exports in 2022. Despite this, the sector accounts for only 2% of total employment (Ministry of Mines and Minerals Development, 2024). Copper mining is central to the economy, with production reaching 868,707 tons in 2018. In 2021, Zambia was the world's seventh-largest copper producer, exporting copper worth USD 8.3 billion. In 2022, mining companies contributed approximately USD 390 million in taxes (GIZ, 2023). A recent discovery by KoBold Metals in 2024 further strengthens Zambia's strategic position in the global copper market.

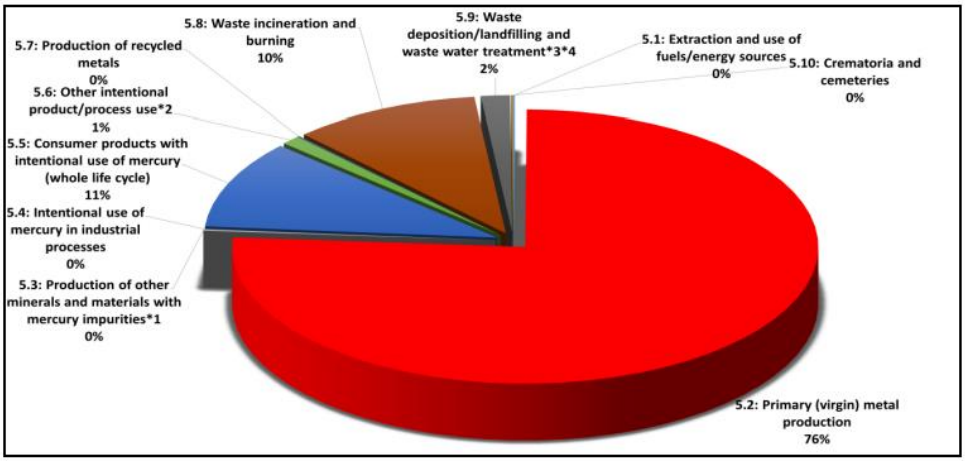
The Ministry of Mines and Minerals Development aims to increase copper production from 800,000 tonnes to three million tonnes annually by 2031, aligning with the 2022 National Mineral Resources Development Policy and the Eighth National Development Plan (8NDP). However, challenges such as power shortages have impacted operations, necessitating solutions to optimize smelting capacities (Ministry of Mines and Minerals Development, 2024). Zambia also has significant deposits of cobalt, nickel, and manganese and produces 20% of the world's emeralds.

Environmental Challenges and Strategic Positioning

Zambia's copper production relies on pyrometallurgical processes, contributing to mercury emissions. Without intervention, atmospheric mercury emissions from copper smelting could rise by 36% by 2050. Implementing mercury removal technologies and promoting copper recycling could reduce emissions by 99.3% (Yamamoto et al., 2023). In 2012, Zambia released 123 tonnes of mercury, with 78.2 tonnes from copper production, 15.5 tonnes from gold extraction, and 12.7 tonnes from waste burning. Primary metal production contributed 46% of atmospheric mercury emissions (Zambia's Minamata Initial Assessment Report, 2017).

Table 2.1: Summary of source categories and their calculated mercury output

Source No.	Source category	Calculated Hg output, Kg/y						
		Air	Water	Land	By-products and impurities	General waste	Sector specific treatment/disposal	Total releases by source category
1	Extraction and use of fuels/energy sources	99	0	-	-	1	5	105
2	Primary (virgin) metal production	14,705	1,719	13,976	30,196	-	33,174	93,770
3	Production other minerals and materials*1	166	-	-	71	-	-	237
4	Intentional Hg in industrial processes	-	-	-	-	-	-	-
5	Consumer products (whole lifecycle)	3,164	288	3,219	-	6,190	0	12,861
6	Other product/process use*2	68	459	3	-	394	389	1,314
7	Production of recycled metals	36	-	37	-	36	-	109
8	Waste incineration and burning	12,815	-	-	-	-	-	12,815
9	Waste deposition + waste water treatm.*3*4	813	1,165	6,258	-	121	121	8,477
10	Crematoria and cemetaries	0	-	141	-	-	-	141
	SUM OF QUANTIFIED RELEASES*3*4	31,865	3,229	17,537	30,267	6,742	33,689	123,330



Airborne mercury emissions are the most critical focus of this project due to their immediate and far-reaching impacts on human health and the environment. Mercury released into the air can travel long distances, depositing into water bodies and soil, where it transforms into methylmercury—a highly toxic compound that bioaccumulates in the food chain, particularly in fish. This poses significant risks to local communities, especially those relying on fishing for sustenance and livelihoods. Additionally, airborne mercury contributes to global mercury pollution, making it a transboundary environmental issue that aligns with Zambia's commitments under the Minamata Convention on Mercury.

By targeting air releases, the project addresses the most direct and harmful pathway of mercury exposure, ensuring both local and global environmental benefits. This strategic focus on reducing airborne mercury emissions is essential for safeguarding public health, protecting ecosystems, and fulfilling Zambia's international obligations, while also supporting the sustainable growth of its copper industry.

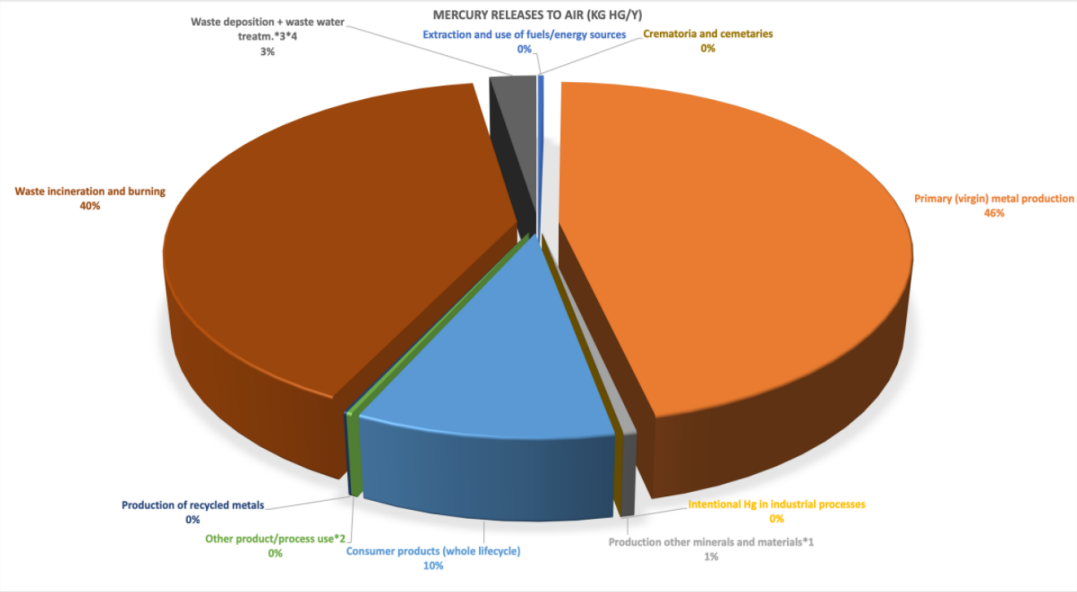


Figure 2.2: Mercury Releases to Air

Legal and Policy Framework

Zambia's legal framework includes the Mines and Minerals Development Act, the Environmental Management Act (2011), and the Forests Act (2015). However, gaps remain in policies specifically addressing green mineral supply chains and responsible copper smelting. The Mines and Minerals Development Act focuses on mining rights but lacks explicit regulations on mercury emissions (GIZ, 2023). The 2024 National Critical Minerals Strategy emphasizes sustainable mineral management, including geological mapping, value addition, and local participation (Ministry of Mines and Minerals Development, 2024).

Zambia's participation in the Minamata Convention on Mercury signifies its commitment to addressing mercury pollution. The proposed project will support the Zambian government in developing green mineral supply chains and sustainable copper processing practices, aligning with global environmental benefits.

Institutional Setup and Stakeholders

In Zambia the Ministry of Mines and Minerals Development, the Environmental Management Agency (ZEMA), and the Zambia Chamber of Mines are responsible for managing the nonferrous metallurgy sector. Other key stakeholders expected to engage in the project include mining companies, technology providers, financial institutions (e.g., African Development Bank), relevant ministries, and academia. These stakeholders will play a critical role in implementing the project's objectives and ensuring its sustainability.

Project Overview and Approach (*maximum 1500 words*)

a) *Provide a brief description of the pyroprocessing plants(s) to be addressed by the project, including details of systemic challenges, and the specific environmental threats and associated drivers that must be addressed for introducing mercury free metal production and supply;*

b) *Describe the existing or planned baseline investments, including current institutional framework and processes for stakeholder engagement and gender integration;*

1. *Describe how the integrated approach proposed for the child project responds to and reflects the Program's Theory of Change, and as such is an appropriate and suitable option for tackling the systemic challenges, and to achieve the desired transformation with global environmental benefits;*
2. *Describe the local supply chains that will be addressed in the program.*
3. *Describe the project's incremental reasoning for GEF financing under the program, including the results framework and components.*

Zambia has set an ambitious goal to increase its annual copper production to 3 million tonnes by 2031, up from the current level of approximately 800,000 tonnes. This reflects the country's strategic vision to leverage its vast copper reserves, including recent high-grade discoveries such as the Mingomba deposit, to drive economic growth, create jobs, and strengthen its global position in the copper sector. However, achieving this target must be balanced with environmental responsibility, particularly in addressing mercury emissions from copper smelting processes.

In this context, the GEMINI Child Project in Zambia aims to support public and private smelting plants in implementing sustainable and responsible copper production practices. A crucial first step will involve conducting comprehensive baseline assessments under Component 3 of the project, which will provide critical data for targeted actions. The project will also contribute to establishing common standards and regulatory frameworks that will benefit all copper smelting facilities while minimizing environmental and health impacts. Strengthening policies and legal frameworks (Component 1) will be essential to ensure that Zambia's expanding copper sector aligns with global best practices, avoiding adverse environmental and health consequences.

To reduce mercury emissions, the project will promote cleaner technologies, improved industrial processes, and increased investment in environmentally sustainable practices (Component 3). These efforts will focus on implementing Best Available Technologies (BAT) and Best Environmental Practices (BEP), such as advanced mercury capture systems, optimized process controls, and enhanced copper recycling techniques. By integrating these solutions, the project will help Zambia transition towards a mercury-free copper production supply chain while meeting its economic expansion goals.

The initiative will also support value addition in local supply chains, improving refining capacity and enhancing the environmental performance of copper smelting processes. Encouraging downstream industries will not only foster job creation and local economic development but also help mitigate the broader environmental footprint of copper production. During the preparatory phase, key data will be gathered from sources such as the Ministry of Mines and Minerals Development, the Zambia Environmental Management Agency (ZEMA), and the Minamata Initial Assessment Report (2017) to guide the design and implementation of project interventions.

The project will focus on Zambia's four major copper smelters—Kansanshi, Nchanga, Chambishi, and Mopani—which collectively produce over 1.2 million tonnes of finished copper per year. These smelters contribute to more than 75% of Zambia's national export value but also represent the largest sources of

mercury emissions in the country. Targeting these facilities will be critical to ensuring that Zambia's copper production expansion aligns with sustainability objectives and international environmental commitments.

A key challenge in Zambia's copper sector is the absence of specific regulations on mercury emissions from copper smelting. Additionally, the country lacks sufficient technical capacity and resources to effectively monitor and control these emissions. The high cost of adopting green technologies presents another barrier to progress. To address these systemic challenges, the project will build on existing baseline investments, including the modernization of the Kansanshi Copper Smelter (commissioned in 2015 at a cost of $900 million) and the recently launched Three Million Tonnes Copper Production Strategy (2024). These initiatives provide a strong foundation for the project's activities, particularly in terms of infrastructure and institutional support.

The GEMINI Child Project aligns with the broader GEMINI Integrated Program's Theory of Change by addressing regulatory, financial, and technological barriers to sustainable copper production. The project will adopt an integrated approach that includes:

- Strengthening policy and regulatory frameworks to enhance monitoring and control of mercury emissions.
- Building technical capacity among industry stakeholders and regulatory authorities.
- Facilitating the transfer and demonstration of mercury-free smelting technologies.
- Promoting green investment opportunities and financial incentives to encourage the adoption of sustainable practices in the copper sector.

The overarching objective is to support Zambia's government and industry in fulfilling their environmental commitments under the Minamata Convention, specifically by reducing mercury emissions from copper production. The project will contribute to an environmentally sustainable and socially responsible copper industry by fostering innovative practices, supporting technology demonstrations, and encouraging knowledge sharing to minimize harmful impacts.

In terms of governance, the project will involve key national authorities and stakeholders, including government agencies, financial institutions, industry associations, and research organizations. Effective coordination and collaboration among these entities will be essential for ensuring the successful implementation of project activities. During the project preparation phase, detailed stakeholder mapping will be conducted to engage all relevant actors in the decision-making process.

Gender considerations will also be integrated into project implementation. Women's participation in Zambia's mining sector remains low, similar to other jurisdictions where the industry has traditionally been male-dominated. Recognizing this gap, the GEMINI Child Project will collect gender-disaggregated data, actively involve female stakeholders in mercury reduction efforts, and promote equal participation in training and capacity-building initiatives. Where possible, the project will also create job opportunities for women, youth, and marginalized groups while ensuring that workers' rights are upheld.

By establishing a framework for sustainable mercury management and cleaner copper production, the project will contribute to Zambia's long-term economic and environmental sustainability. This includes developing a sustainable financing strategy that connects international finance institutions, national development banks, commercial banks, and other financial actors to support green investments in the copper sector. Additionally, the project will assess the impact of existing financing mechanisms and explore new avenues for integrating environmental, trade, and economic priorities.

In light of regional cooperation, the project will explore the opportunity of collaborating with Zambia's neighboring copper-producing countries, considering the possibility to share best practices, technological

solutions, and regulatory insights. This could help Zambia to accelerate its transition to a more sustainable and efficient copper industry while contributing to broader regional environmental and economic goals.

In conclusion, strengthening Zambia's smelting and refining capacity is essential to achieving the country's ambitious copper production targets. The GEMINI Child Project will play a pivotal role in ensuring that this growth is environmentally responsible, technologically advanced, and socially inclusive. By addressing key challenges in governance, investment, and technology, the project will support Zambia in meeting its environmental commitments while advancing a green, resilient, and competitive mining sector.

Monitoring and Evaluation (M&E) Framework

The Child Project in Zambia will implement a robust Monitoring and Evaluation (M&E) framework to ensure effective tracking of progress, accountability, and learning throughout the project lifecycle. The M&E framework will align with the GEMINI Integrated Program's results framework and adhere to GEF policies and requirements, including the environmental and social safeguards policy and gender action plan, which will be developed during the PPG phase.

The Project will position itself within the broader GEMINI Program's monitoring and knowledge framework by:

- **Frequent Progress Monitoring:** Regular progress reports will be prepared and shared with the Global Child Project's coordination team to ensure alignment with program-level objectives and outcomes. This will include both quantitative and qualitative indicators, such as reductions in mercury emissions, improvements in community health, and advancements in biodiversity conservation.
- **Financial Monitoring:** Financial reporting will be conducted to ensure transparency and accountability in the use of project funds. This will include tracking expenditures against the project budget and identifying any financial risks or challenges.
- **Knowledge Sharing:** The project will contribute to the program's knowledge-sharing platform by documenting lessons learned, best practices, and case studies. This will facilitate the dissemination of successful interventions and support the scaling up of mercury-free practices in other regions.

Additionally, the project will establish a reporting and communication mechanism to ensure that monitoring findings and progress are effectively and timely communicated to all stakeholders. This will include:

- **Progress Reports:** Regular progress reports will be prepared and shared with the Global Child Project's coordination team, government agencies, and other stakeholders. These reports will highlight achievements, challenges, and lessons learned.
- **Stakeholder Engagement**: The project will engage with local communities, industry stakeholders, and government agencies to ensure that monitoring findings are acted upon and project milestones are well communicated. This will include organizing workshops, training sessions, and public consultations.
- **Knowledge Dissemination**: The project will maintain close coordination with the Global Child Project and other GEMINI Child Projects to share updates, challenges, and best practices. This will ensure alignment with the program's overall objectives and facilitate adaptive management. Additionally, the project will disseminate knowledge to a broader audience, including government agencies, industry stakeholders, academia, and local communities. This will be achieved through publications and case studies, workshops and webinars and digital platforms.

Execution Arrangements

The Project Executing Entity (PEE) for the Child Project in Zambia will be potentially the Zambia Environmental Management Agency, in consultation with relevant ministries, including the Ministry of Mines and Minerals Development (MMMD), and will be subject to a thorough institutional capacity assessment. This assessment will ensure that the selected entity has the technical, financial, and administrative capacity to effectively implement the project and achieve its objectives. The final decision on the PEE will be made during the project preparation phase, with a focus on ensuring strong governance, stakeholder engagement, and alignment with national priorities.

Engagement and Sustainability for an integrated approach with the Global Framework

(*maximum 500 words*)

Describe how the project will align with the global framework for the program to foster knowledge sharing, learning, and synthesis of experiences. How will the proposed approach scale-up from the local and national level to maximize engagement by all relevant stakeholders and/or actors?

The child project will align with the GEMINI global framework by fostering knowledge sharing, learning, and synthesis of experiences. It will scale up from the local and national level by engaging all relevant stakeholders, including government agencies, mining companies, technology providers, and international organizations present in Zambia. The proposed approach will maximize engagement through regular forums, capacity-building activities, and pilot projects, ensuring long-term sustainability and global environmental benefits.

The academia and research institutions will also be crucial in awareness-raising, training, and skill development. Their engagement in the project is expected to shape the future national curricula and training programs focused on mercury free copper production. The project's outputs will be achieved through a participatory and collaborative approach, engaging government stakeholders, industry representatives, international banking institutions, and certification bodies. These outputs will directly contribute to the broader GEMINI program by developing supporting data for international guidelines and publications. The involvement of international banking is expected to provide tailored financial products.

Additionally, participation in high-level meetings and events organized by the Global Child Project will allow the international community to offer advice and consultation. This engagement aims to achieve the greatest impact, disseminate results and lessons learned, and explore economic growth opportunities. It will also highlight best practices and technologies for similar initiatives, promoting informed decision-making, information sharing, enhanced training, and capacity building alignment.

Moreover, in line with the "National Critical Minerals Strategy" and the "National Three Million Tonns Copper Production Strategy", published in 2024 by the Ministry of Mines and Minerals Development, the project will drive job creation, foster productive international linkages, and add value to the national nonferrous industry while aligning mercury free copper production growth with international renewable energy and technology promotion. As a result, mercury free copper production will support the country's sustainability targets, accelerate energy transition, resulting in a more environmentally and socially responsible industry with significant international encouraging implications.

Scaling Up and Sustainability

The project will scale up by leveraging existing platforms such as the Zambia Chamber of Mines and ZEMA to disseminate results and lessons learned. The policy and regulatory actions will further ensure that the planned copper output increase will be mercury free.

Gender and Social Inclusion

The project will integrate gender considerations by promoting inclusive participation and capacity-building opportunities for women in the mining sector. It will also ensure that local communities, including disadvantaged groups, benefit from job creation and economic opportunities generated by the project.

ANNEX 1: Child Project Framework Overview

Project Objective:	The GEMINI Child Project in Zambia aims to reduce mercury emissions from copper smelting by promoting sustainable practices, adopting advanced technologies, and strengthening regulatory frameworks, thereby supporting Zambia's goal of increasing copper production to 3 million tonnes by 2031 while ensuring environmental sustainability, improved community health, and inclusive economic growth.					
Child Project Components	Component Type	Child Project Outcomes	Child Project Outputs	Trust Fund	(in $)	
					GEF Project Financing	Co-financing
Component 1: Policy and Regulations	**Technical assistance**	**Outcome 1.1**: An enabling policy and regulatory framework support the copper processing sector's transition towards mercury reduction technologies and approaches.	**Output 1.1.1:** Carry out assessments to identify existing gaps and needs of policy and regulations to enhance the framework for Best Available Technologies and reducing copper smelting-related mercury emissions. **Output 1.1.2:** Develop or update national regulatory policies and frameworks to monitor and control mercury emissions. **Output 1.1.3:** Provide policy advice and support for defining national strategy for mercury emissions reduction from the non-ferrous metals sector as a framework for the necessary legislation and regulations. **Output 1.1.4:** Develop guidelines for mercury emissions in copper smelting processes, to provide comprehensive frameworks for effective monitoring and regulation of mercury emissions, tailored to the characteristics of the copper processing processes.		700,000.00 USD	5,600,000.00 USD
Component 2: Finance and Investment	**Technical assistance**	**Outcome 2.1**: Access to enhanced financial instruments is increased, and technology transfer is available for introducing Hg emissions reductions in	**Output 2.1.1:** Engage with financial institutions, including the AfDB, for investment opportunities in green metal processing technologies and practices. A national forum will be organized, serving the purpose of regular showcasing of successful pilot projects, business cases with demonstrated economic viability and green technology upgrades with attractive return on investment.		350,000.00 USD	2,800,000.00 USD

		the copper smelting processes.	**Output 2.1.2:** Organize business to business event, linking international technology and equipment suppliers, and national copper processing industries. **Output 2.1.3:** Promote policy incentives that encourage green investments and financial incentives in the copper sector for companies adopting sustainable technologies.			
Component 3: Technical assistance, capacity building and introduction of BEPs/BATs and alternative business models	**Technical Assistance/Investment**	**Outcome 3.1:** Capacity and awareness and strengthened **Outcome 3.2:** Monitoring and measurement capacity is strengthened **Outcome 3.3:**	**Output 3.1.1:** Feasibility study on the emission reduction strategy, with due consideration on the social and environmental cost of mercury emissions. **Output 3.1.2:** Conduct knowledge exchange events for selected stakeholders with study tour (to IP countries). **Output 3.1.3:** Conduct capacity building activities and awareness development events. Primarily intended for Governmental and institutional stakeholders. **Output 3.1.4:** Develop and disseminate outreach materials through various channels such as websites, the media, publications, and other platforms. **Output 3.2.1**: Develop and conduct training workshops for governmental agencies and copper industry personnel on mercury emissions control, focusing on regulatory frameworks, monitoring methodologies, and BAT/BEPs, to improve enforcement and compliance with environmental standards. **Output 3.2.2:** Establish and equip mercury testing laboratories to enable regular and effective measurement of mercury levels in copper processing plants. **Output 3.2.3:** Strengthen regulatory frameworks and enforcement mechanisms by developing specific guidelines for monitoring mercury emissions, supported by a database to ensure transparency and accountability. **Output 3.2.4:** Collaborate with international experts to organize knowledge-sharing forums and workshops to facilitate the exchange of best practices. **Output 3.3.1:** Conduct detailed assessments to identify		3,094,569.68 USD	23,600,000 .00 USD

		Responsible copper smelting practices through technology transfer are demonstrated, including the introduction of BEPs/BATs and Hg emissions control, monitoring, reduction, and storage.	technological gaps and opportunities for improving the efficiency and the environmental performance of copper smelting processes, including for monitoring of the emissions. **Output 3.3.2:** Implement pilot projects to demonstrate innovative approaches and advanced technologies that enable superior mercury emissions control in copper smelting, as discussed in the technological feasibility study. **Output 3.3.3:** Collaborate with industry stakeholders and technology providers to pilot test smelting technologies for mercury emissions control and reduction, integrating international best practices.			
Component 4: Knowledge Management, Communication and Coordination	**Technical assistance**	**Outcome 4.1:** Global access to knowledge, best practices, and benefit-sharing interactions are scaled up, and awareness-raising is implemented	**Output 4.1.1:** Establish a coordination mechanism to regularly update technical standards. **Output 4.1.2:** Promote awareness and training through collaborative efforts. **Output 4.1.3:** Develop new regulations and enhanced standards to prevent and monitor pollution.		530,000.00 USD	4,000,000.00 USD
M&E	Monitoring and Evaluation		**Output 5.1.1** Project results and progress is followed-up and reported. **Output 5.1.2** Mid-term Review is executed. **Output 5.1.3** Independent Terminal Evaluation is performed.		144,574.32 USD	2,000,000.00 USD
Subtotal					4,819,144.00 USD	38,000,000
Project Management Cost (PMC)					240,856.00 USD	2,000,000
Total Project Cost					5,060,000.00 USD	40,000,000

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