

Ministry of Foreign Affairs of Denmark

Promoting Value Chains for Critical Raw Materials and Green Hydrogen in South Africa

P360 number 25/48891

Project document

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List of Abbreviations

ANC	African National Congress
CRM	Critical Raw Materials
DAC	Development Assistance Committee
DAC-CRS	Development Assistance Committee – Creditor Reporting System
DEE	Department of Electricity and Energy
DFI	Development Finance Institution
DK	Denmark
DKK	Danish Krone
DMRE	Department of Mineral Resources and Energy
DTIC	Department of Trade, Industry and Competition
DWS	Department of Water and Sanitation
ESG	Environmental, Social and Governance
EU	European Union
FBW	Free Basic Water
FMG	Financial Management Guidelines
GH2	Green Hydrogen
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
HRBA	Human Rights-Based Approach
HR	Human Resources
JETP	Just Energy Transition Partnership
MFA	Ministry of Foreign Affairs
MIG	Municipal Infrastructure Grant
MTSRP	Metro Trading Services Reform Programme
NDC	Nationally Determined Contribution
ND-GAIN	Notre Dame Global Adaptation Initiative
NGO	Non-Governmental Organisation
NRW	Non-Revenue Water
OAU	Organisation of African Unity
PtX	Power-to-X
SADC	Southern African Development Community
SANEDI	South African National Energy Development Institute
SAREM	South African Renewable Energy Masterplan
SCM	Supply Chain Management
SDG	Sustainable Development Goal
SWSA	Strategic Water Source Area
WSA	Water Services Authority
WRPS	Water Resource Programme Support (as used in the annex)

1. Introduction

The present project document describes the Danish development cooperation contribution to the Multi-Donor Initiative (MDI) "Promoting value chains for critical raw materials and green hydrogen and derivatives in South Africa" implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) under a Team Europe Global Gateway programme led by the European Union (EU). The overall programme period spans from November 2025 to 2030, with the Danish contribution from November 2026 to October 2030. The Danish Ministry of Foreign Affairs (MFA) responsible unit for the project is the Danish Embassy in Pretoria, South Africa.

The Danish contribution to the project takes the form of a Multi-Donor Initiative with a grant agreement with GIZ for a project that is managed by the EU where the overall supervision and governance is a delegated partnership with the EU.

This project document and its annexes including partner documentation are in accordance with the EU Team Europe Action Document and the GIZ Description of Action documents that guide the partnership.

2. Project objective and key features

The Overall Objective is: "To strengthen South Africa's Critical Raw Materials (CRM) and green hydrogen and derivatives value-chains through holistic support to foster an enabling environment through policy reform, trade and investment facilitation, and increasing capacities and capabilities in skills, research, innovation and sustainability activities".

The Specific Objectives (outcomes) of the project are: "To support the dynamics of the private sector-led take off of the value chain of green hydrogen", and "To strengthen the development of an integrated, local CRM/battery value chain".

The total budget of the underlying Global Gateway projects is 55 million EUR with the GIZ implemented project having a budget of 34.85 million EUR of which 23.5 million EUR is financed by the EU, 6 million EUR by Germany (BMZ), and around 5.35 million EUR by Denmark (40 million DKK). An additional 2.5 million EUR is expected to be funded by the Netherlands which awaits final confirmation.

The geographic scope is South Africa with a focus on provinces along the North-South Corridor (KwaZulu-Natal, Mpumalanga, Gauteng, and Limpopo). The main partners are the Department of Electricity and Energy (DEE), the South African National Energy Development Institute (SANEDI), and the Department of Trade, Industry and Competition (DTIC) as well as development banks, technical research bodies and others.

A detailed description of the project with budget and log frame forms the basis for a contribution agreement between the EU and GIZ (dated 2025). The project is under a

wider EU action document for Sustainable Development of Strategic Value chains: Critical Raw Materials, and Green Hydrogen and its derivatives¹.

3. Project context

The project is implemented in South Africa and focuses on the development of green hydrogen (GH₂) and critical raw materials (CRM)/battery value chains. These sectors are central to supporting the country's transition towards a low-carbon, industrialised economy and to strengthening its integration into emerging global clean energy and manufacturing value chains. The intervention is aligned with both national priorities such as green industrialisation and job creation — and international partnerships, particularly with the EU.

The project responds to a set of interrelated challenges that currently constrain the development of these value chains. While South Africa has strong resource potential and an emerging project pipeline, progress has been slow due to market uncertainties, insufficiently developed regulatory and institutional frameworks, and limited coordination among stakeholders. In addition, many private sector initiatives face difficulties in achieving commercial viability, including lack of access to finance, high upfront investment costs, infrastructure gaps, and shortages of appropriately skilled labour.

To address these issues, the project adopts a set of targeted entry points focused on strengthening the enabling environment and accelerating private sector participation. This includes support to governance and policy frameworks, development of bankable business models, facilitation of investment and financing, and strengthening of skills development, applied research, and innovation systems. Cross-cutting efforts also promote environmentally sustainable and gender-responsive approaches, including the integration of Environmental, Social and Governance (ESG) standards and improved mechanisms for community engagement and local benefit-sharing.

The primary target groups include public institutions at national and provincial level, private sector actors such as project developers and financiers, research and academic institutions, and civil society organisations. While the intervention is national in scope, particular attention is given to key industrial regions and provinces (KwaZulu-Natal, Mpumalanga, Gauteng, and Limpopo) with strong potential for green hydrogen and CRM/battery value chain development, as well as to regional cooperation within Southern Africa.

Poverty orientation and rights-based principles are embedded throughout the project design. The intervention aims to contribute to inclusive economic growth through job creation, skills development, and support to disadvantaged groups, including women and youth. It promotes human rights by emphasising decent work, social inclusion, and participatory approaches involving local communities, while also ensuring that

¹ European Commission. 2025. *Action Document for the Sustainable Development of Strategic Value Chains: Critical Raw Materials, and Green Hydrogen and its Derivatives*.

environmental safeguards and conflict-sensitive approaches are applied to mitigate potential negative impacts of the energy transition.

4. Rationale and justification of support

This project aligns closely with Danish development policy, where development cooperation is explicitly framed as both a tool for poverty reduction and sustainable development as well as a strategic instrument for promoting Danish economic and geopolitical interests. Denmark's Strategy for Development Cooperation from 2025 emphasises an "interest-based" approach, where development assistance and economic diplomacy work together to create mutual benefits — supporting sustainable growth in partner countries while opening markets, strengthening trade relations, and positioning Danish companies internationally. In this context, engagement in green hydrogen and CRM/battery reflects Denmark's priority focus on a just, sustainable, and green transition, while also leveraging Danish strengths in clean energy technologies and value-chain development.

The project is responsive to partner country and regional priorities. It aligns closely with South Africa's Just Energy Transition Partnership, industrialisation ambitions, and green hydrogen strategy, while also supporting broader African and EU priorities related to resilient value chains, green energy access, and industrial development. Danish policy explicitly highlights Africa as a key region for engagement and recognises the continent's potential in green energy and raw materials as central to both local development and Europe's energy transition. By supporting governance, ESG standards, and inclusive value chains, the project also reflects partner priorities on sustainable resource management, job creation, and social inclusion.

The intervention complements a wide range of Danish instruments and approaches. It potentially builds on Strategic Sector Cooperation and especially the long cooperation within energy, business instruments, and financing mechanisms such as Impact Fund Denmark, which are respectively designed to support framework conditions, mobilise private capital, reduce investment risks, and scale green investments in developing markets. This integrated approach — combining policy dialogue, capacity building, and investment facilitation — reflects Denmark's emphasis on catalytic development assistance that leverages significantly larger volumes of public and private finance. At the same time, it ensures coherence with EU instruments such as Global Gateway and Team Europe, which Denmark sees as key platforms for achieving scale, visibility, and geopolitical impact.

The project contributes to coordinated European engagement by aligning with EU priorities and strengthening Denmark's role within Team Europe, thereby enhancing collective impact while maintaining a distinct Danish profile. The focus on ESG governance, community engagement, and responsible value chains further differentiates the intervention and responds to gaps not always fully addressed by purely investment-driven initiatives.

The choice of this specific project is justified by its high strategic relevance compared to alternatives, particularly within the EU framework. It targets sectors — green hydrogen

and critical raw materials/batteries — that are all development priorities and of direct strategic importance to Denmark and Europe, including for energy security, supply chain resilience, and industrial competitiveness. The selected modality — combining technical assistance, policy support, and catalytic financing — is appropriate given the early-stage nature of these markets, where regulatory clarity, institutional capacity, and risk mitigation are critical preconditions for private investment.

Finally, the project qualifies for climate tagging with a Rio marker and is marked by the EU as significant for climate mitigation. By promoting renewable energy value chains, reducing emissions, and enabling a just energy transition, the project directly contributes to global climate goals while also delivering broader development and economic benefits.

5. Theory of change and key assumptions

The project is based on the recognition that, although South Africa holds significant potential in the green hydrogen and CRM/battery sectors, the development of these value chains is constrained by regulatory gaps, limited institutional capacity, high investment risks, and insufficient coordination among stakeholders. The theory of change underpinning the intervention is that, if these systemic barriers are addressed through a combination of policy support, capacity development, and investment facilitation, then viable and bankable projects will emerge. This, in turn, will catalyse private sector investment and enable the development of competitive, sustainable, and inclusive value chains, contributing to a just energy transition, economic growth, and strengthened EU–South Africa partnerships. At the same time, by improving framework conditions, reducing risks, and developing concrete project pipelines, the programme will create possible entry points for Danish companies and investors, thereby linking development outcomes with Danish economic diplomacy and business engagement.

To achieve this, the programme adopts an integrated approach that combines policy dialogue and regulatory strengthening with technical assistance, skills development, and support to research and innovation systems. It also places emphasis on project preparation and investment facilitation, including the use of blended finance and de-risking mechanisms to crowd in private capital. These efforts are complemented by activities that strengthen partnerships and market linkages, including with European and Danish stakeholders, thereby helping to translate improved framework conditions into concrete commercial opportunities. This “360-degree approach” reflects the understanding that progress in emerging green value chains requires simultaneous action across policy, capacity, finance, and market access — and that early engagement can position Danish actors advantageously in developing markets.

The realisation of this theory of change depends on several key assumptions. It is assumed that there will be sustained political commitment and policy coherence in South Africa to advance the just energy transition, including reforms related to green hydrogen, mining, and environmental governance, and that relevant public and private stakeholders have both the interest and capacity to actively engage in and implement these reforms and strategies. It is further assumed that global and European demand for green hydrogen and responsibly sourced raw materials will continue to grow,

supported by continued international and EU policy frameworks that incentivise green and low-carbon value chains, and that private investors — including Danish companies — will respond positively if appropriate risk mitigation measures, partnerships, and financing instruments are in place.

The intervention also assumes that effective coordination can be maintained among the many actors involved — including government institutions, development finance institutions, EU partners, and private sector stakeholders — and that the programme’s governance structure will be able to manage the complexity of a large, multi-component initiative. It further assumes that South Africa remains competitive in emerging global markets for green hydrogen and CRM/battery value chains, and that external factors such as trade conditions and technological developments do not significantly undermine this competitiveness.

In addition, the programme assumes that financial mechanisms, including blended finance structures, will function as intended and that suitable financial partners can be identified and engaged in a timely manner. It also relies on the assumption that capacity-building efforts will translate into improved institutional performance and that project preparation support will lead to tangible investment decisions and commercial uptake. Finally, the theory of change assumes that social and environmental risks can be effectively managed through strong ESG standards, inclusive stakeholder engagement, and transparent consultation processes. This includes the expectation that local communities will be meaningfully involved and that the benefits of value chain development — such as jobs and economic opportunities — will be distributed in a way that supports social acceptance and contributes to reducing inequality.

Overall, the intervention logic is that by addressing policy, institutional, financial, and social constraints in an integrated manner, the programme can reduce the risks that currently inhibit investment and unlock the potential of green hydrogen and CRM/battery value chains. In doing so, it not only contributes to sustainable and inclusive development in South Africa but also creates concrete opportunities for Danish business engagement, reinforcing the mutually beneficial link between development cooperation and economic diplomacy.

6. Summary of results framework

This results framework with indicators and targets will be revised once the support of the Netherlands is finally confirmed.

Project Title 1	Promoting value chains for critical raw materials and green hydrogen and derivatives in South Africa (H2.SA II/BVC)
Project objective	To strengthen South Africa’s critical raw materials and green hydrogen value chains through improved framework conditions, capacity development and investment facilitation.
Outcome 1	To support the dynamics of the private sector-led take off of the value chain of green hydrogen.

Outcome indicator		Number of private project developers who have provided evidence that a significant improvement has been achieved in an area of the supporting ecosystem of the green hydrogen value chain. [GIZ indicator 1.2]	
Baseline	Year	2025	0
Target	Year	2030	10

Output 1.1		Public-sector governance for the development of a green hydrogen and derivatives economy has been strengthened with a focus on promoting the implementation of projects.	
Output indicator		Number of new or adapted strategies, legal regulations, codes and standards agreed between specialised public institutions to strengthen private sector investment in the green hydrogen and derivatives value-chain. [GIZ indicator 1.1.1]	
Baseline	Year	2025	0
Target	Year 1	2026	
Target	Year 2	2027	
Target	Year 3	2028	
Target	Year 4	2029	
Target	Year	2030	6

Output 1.2		Technical and specialist support services for the implementation of green hydrogen projects have been strengthened.	
Output indicator		Number of green hydrogen project developers who have significantly ² improved their bankability. [GIZ indicator 1.2.2]	
Baseline	Year	2025	0
Target	Year 1	2026	
Target	Year 2	2027	
Target	Year 3	2028	
Target	Year 4	2029	
Target	Year	2030	6

Output 1.3		Formats for skills development and applied research for green hydrogen and derivatives value chain development are sustainably anchored.	
Output indicator		a) Number of established initiatives for applied research supporting the application and scaling of technologies for green hydrogen/power to x projects [GIZ indicator 1.3.2] b) Number of development measures agreed between GH2 project developers, local authorities and civil society that leverage technical approaches to sustainability and gender responsiveness [GIZ indicator 1.3.3]	
Baseline	Year	2025	0 (a); 0 (b)

² A significant improvement is achieved when two additional requirements for financial readiness ('bankability') are met. The requirements for bankability include, for example, secured land-use rights, access to water of the required purity, a comprehensive assessment of renewable energy potential, competitive electricity generation costs, existing regulatory and environmental approvals or a strategy for offtake agreements (offtake strategy). The development is assessed by analyzing the the documentation provided by project developers.

Target	Year 1	2026	
Target	Year 2	2027	
Target	Year 3	2028	
Target	Year 4	2029	
Target	Year	2030	12 (a); 23 (b)

Outcome 2		To strengthen the development of an integrated, local critical raw materials/battery value chain.	
Outcome indicator		a) Number of innovations transferred or cocreated through cooperation between European and South African actors that have been used by the private sector to further develop the critical raw materials/battery value chain. [GIZ indicator 2.2] b) Number of governance instruments used by public institutions to further develop sustainable and equitable frameworks for private sector projects in the CRM/battery value chain. [GIZ indicator 2.1]	
Baseline	Year	2025	0 (a, b)
Target	Year	2030	3 (a, b)

Output 2.1		Institutional framework conditions for the development of the critical raw materials/battery value chain have been strengthened.	
Output indicator		a) Number of certification systems newly set up or improved for the critical raw materials/battery value chain. [GIZ indicator 2.1.2] b) Number of approaches developed for the promotion of a sustainable and gender responsive CRM/battery value chain development. [GIZ indicator 2.1.3]	
Baseline	Year	2025	0 (a, b)
Target	Year 1	2026	
Target	Year 2	2027	
Target	Year 3	2028	
Target	Year 4	2029	
Target	Year	2030	1(a); 2 (b)

Output 2.2		Sustainable Business models and related skills development and research formats as well as partnerships for the development of the critical raw materials/battery value chain have been established.	
Output indicator		Number of companies in the critical raw materials/battery value chain that have developed technically and economically feasible business models in the frame of strategic partnerships (incl. recycling of batteries). [GIZ indicator 2.2.1]	
Baseline	Year	2025	0
Target	Year 1	2026	
Target	Year 2	2027	
Target	Year 3	2028	
Target	Year 4	2029	
Target	Year	2030	5

7. Project budget and financial management

Under the approach of a Multi-Donor Initiative, all donor contributions are pooled and implemented based on one unified project design, one overall budget, and one consolidated results framework (Log frame). The principle of uniformity applies not only

to project design and financial planning but also reporting. It is, however, possible to incorporate donor specific requirements. As such the output-based budget and financial reporting requirements requested by Denmark was accepted by the EU). Pooling funds means that individual donor contributions are not earmarked to specific activities or outputs, and costs, are not separated by donor, but managed and reported at project level. This model prioritises effectiveness and harmonisation over parallel funding structures.

Table 7.1 Budget lines

Budget lines		Euro	
Outcome 1	Output 1.1	4,287,60	20,126,345.79
	Output 1.2	8,225,30	
	Output 1.3	7,613,30	
Outcome 2	Output 2.1	4,823,30	9,650,172.79
	Output 2.2	4,826,80	
Crosscutting		638,90	5,073,481.42
Admin fees		4,364,60	
Vat due in Germany		69,90	
Total		34,850,00	34,850,000.00

The detailed breakdown of the budget lines is provided in Annex A and summarised in Annex D. The budget will be updated to include costs for a project-specific audit.

8. Project management, monitoring and reporting

At the operational level, GIZ is responsible for day-to-day implementation, supported by technical working groups and coordination mechanisms with relevant stakeholders, including public institutions, private sector actors, and research organisations. The structure is designed to ensure both strong national ownership and coordinated donor engagement.

The organisational set-up of the programme is based on a multi-layered governance structure typical of large Team Europe initiatives. At the strategic level, an overarching Steering Committee will be established, comprising key South African government counterparts, the EU Delegation, implementing partners (including GIZ), and contributing Member States such as Denmark, Germany, and likely the Netherlands. This body provides strategic guidance, ensures alignment with national priorities and donor objectives, and reviews overall progress and results.

The Danish Embassy will be actively involved in the governance structure through participation in the Steering Committee and relevant coordination fora under the Team Europe framework and in continuous dialogue with the EU Delegation and GIZ. This provides Denmark with a platform to influence strategic direction, priority-setting, and key decisions related to implementation, including adjustments to activities, budgets,

and results frameworks. The Danish Embassy will seek a policy agenda of ensuring that Danish priorities are reflected in programme implementation, such as:

- ESG standards, inclusive and sustainable development.
- Private sector engagement, and opportunities for Danish business.
- Value for money and transparent financial and progress reporting.

Informal bilateral engagement and technical exchanges will complement formal governance structures to maintain influence and oversight. The Danish Embassy will engage with these events and meetings where there are opportunities to advance the policy agenda outlined above.

Monitoring will combine financial and technical oversight in line with EU and GIZ guidelines and proportional to the risk profile of the programme.

- Financial monitoring will rely on EU systems and GIZ's established fiduciary procedures, including audited financial reports and budget follow-up through annual reporting.
- Technical monitoring will focus on progress against the results framework and theory of change, including assessment of outputs, outcomes, and underlying assumptions.

The Danish Embassy will actively use annual reports as a basis for dialogue with GIZ and the EU including by participation in Steering Committee meetings and complemented as noted above by engagement in relevant events/meetings, ad hoc briefings, and, where appropriate, field visits.

The Danish Embassy will also engage in broader coordination fora, including Team Europe platforms and relevant sector dialogues, to ensure coherence with other initiatives and to maximise synergies, including with Danish instruments and partnerships. Danish participation in these fora and meetings is not planned in advance but will take place, as noted above, where there are opportunities to advance the Danish policy agenda. This will support alignment with EU Global Gateway priorities and enhance the visibility and strategic positioning of Denmark within the initiative.

Reporting will follow the standard EU contractual requirements, with GIZ submitting annual narrative and financial reports, as well as a final report covering the full implementation period. These reports will provide detailed information on progress against indicators, implementation challenges, financial execution, and planned activities.

There are no anticipated deviations from MFA financial management guidelines (FMG), as reporting frequency and content are considered sufficient for oversight given the programme's scale, the use of established EU systems, and the involvement of experienced implementing partners. Additional reporting or updates may be requested if needed to address specific risks or emerging issues.

The Danish MFA reserves the right to ask for donor-initiated project-specific audit where it considers such an audit necessary, which the Danish MFA expects to do annually. In

the event of a donor-initiated audit, the cost shall be covered by the Danish grant to GIZ. Terms of Reference for the audit shall be agreed with GIZ separately.

Table of Embassy Actions

Embassy Actions	2026	2027	2028	2029	2030	2031	2032
Disbursement	X	X	X				
Report review and comment		X	X	X	X	X	
Meetings and dialogue		X	X	X	X	X	
Audit (expected)		X	X	X	X	X	X
Update MFA results framework monitoring		X	X	X	X	X	

9. Risk Management

The programme operates in a complex political, economic, and social environment, with risks that are inherent to supporting emerging green hydrogen and critical raw materials value chains. The main contextual risks relate to the political economy of the just energy transition, including potential policy incoherence, reform resistance, and societal sensitivities linked to mining expansion, environmental impacts, and coal phase-down. These are mitigated through strong alignment with South Africa's national strategies, continuous policy dialogue under the EU–South Africa partnership, and structured stakeholder engagement to ensure inclusive and transparent processes.

Economic and external risks stem from uncertainty in global markets, competitiveness of South African value chains, and evolving infrastructure, trade and regulatory frameworks. These are addressed through support to enabling conditions, skills, and innovation, as well as by strengthening market linkages—particularly with the EU—to anchor demand and investment. Social and environmental risks are mitigated through the integration of ESG principles, community engagement, and mechanisms to promote equitable local benefits.

Programmatic risks relate primarily to the complexity of the intervention and the challenge of mobilising investments in early-stage markets. These are mitigated through a clear governance structure, phased implementation, strong coordination under Team Europe, and targeted investment facilitation and de-risking measures. The programme also actively promotes private sector engagement, including opportunities for Danish companies, while recognising that uptake ultimately depends on market conditions.

Institutional and fiduciary risks are considered relatively low due to the involvement of experienced partners such as the EU, GIZ, and development finance institutions, and the use of robust financial management and oversight systems. Denmark's participation in the Steering Committee and coordination fora further strengthens governance and oversight.

Overall, the risk profile is assessed as manageable (medium), with mitigation measures embedded across programme design and implementation, and risks considered proportionate to the strategic importance and expected impact of the intervention.

Annexes

Annex A- Project description of the supported initiative or strategic plan (with annexes)

(Under separate cover)

Annex B - MFA Partner assessment

A delegated partnership with the EU is selected because Denmark wishes to engage in Team Europe and Global Gateway activities at country level. The proposed implementing partner is GIZ working under a Global Gateway project, selected by and managed by the EU. GIZ will implement the project from their project team in South Africa with the overall management provided by the EU Delegation in South Africa. GIZ will field technical assistance and contract a range of entities to implement concrete activities. GIZ is a well-established Danish partner and brings strong technical expertise and implementation experience in South Africa, including in areas relevant to CRM and green hydrogen.

Overall, the project is framed under a delegated partnership with the EU which is an established modality for the Danish MFA and does not require a case-by-case assessment of the EU's procedures and capacity. The project itself will be implemented by GIZ under an existing agreement with the EU using the Multi-Donor Initiative procedures where Denmark and later likely the Netherlands will participate, provide funding, and sign an agreement for the funds with GIZ. The cooperation and agreement between Denmark and GIZ follow the standard agreement between Denmark and GIZ. For its part, "The Commission will ensure that the EU rules and procedures for providing financing to third parties are respected including review procedures where appropriate, and compliance of the action with EU restrictive measures". ³

³ The European Union (2025) Action Document for "Sustainable Development of Strategic Value Chains" (p25)

Annex C - MFA Results framework

Project Title 1	Promoting value chains for critical raw materials and green hydrogen and derivatives in South Africa (H2.SA II/BVC).
Project objective	To strengthen South Africa's critical raw materials and green hydrogen value chains through improved framework conditions, capacity development, and investment facilitation.

Outcome 1		To support the dynamics of the private sector-led take off of the value chain of green hydrogen.	
Outcome indicator		Number of private project developers who have provided evidence that a significant improvement has been achieved in an area of the supporting ecosystem of the green hydrogen value chain. [GIZ indicator 1.2]	
Baseline	Year	2025	0
Target	Year	2030	10

Output 1.1		Public-sector governance for the development of a green hydrogen and derivatives economy has been strengthened with a focus on promoting the implementation of projects.	
Output indicator		Number of new or adapted strategies, legal regulations, codes and standards agreed between specialised public institutions to strengthen private sector investment in the green hydrogen and derivatives value-chain. [GIZ indicator 1.1.1]	
Baseline	Year	2025	0
Target	Year 1	2026	
Target	Year 2	2027	
Target	Year 3	2028	
Target	Year 4	2029	
Target	Year	2030	6

Output 1.2		Technical and specialist support services for the implementation of green hydrogen projects have been strengthened.	
Output indicator		Number of green hydrogen project developers who have significantly ⁴ improved their bankability. [GIZ indicator 1.2.2]	
Baseline	Year	2025	0
Target	Year 1	2026	
Target	Year 2	2027	
Target	Year 3	2028	
Target	Year 4	2029	
Target	Year	2030	6

⁴ A significant improvement is achieved when two additional requirements for financial readiness ('bankability') are met. The requirements for bankability include, for example, secured land-use rights, access to water of the required purity, a comprehensive assessment of renewable energy potential, competitive electricity generation costs, existing regulatory and environmental approvals or a strategy for offtake agreements (offtake strategy). The development is assessed by analyzing the the documentation provided by project developers.

Output 1.3		Formats for skills development and applied research for green hydrogen and derivatives value chain development are sustainably anchored.	
Output indicator		a) Number of established initiatives for applied research supporting the application and scaling of technologies for green hydrogen/Power-to-X projects. [GIZ indicator 1.3.2] b) Number of development measures agreed between GH2 project developers, local authorities and civil society that leverage technical approaches to sustainability and gender responsiveness [GIZ indicator 1.3.3]	
Baseline	Year	2025	0 (a); 0 (b)
Target	Year 1	2026	
Target	Year 2	2027	
Target	Year 3	2028	
Target	Year 4	2029	
Target	Year	2030	12 (a); 23 (b)

Outcome 2		To strengthen the development of an integrated, local critical raw materials/battery value chain.	
Outcome indicator		a) Number of innovations transferred or cocreated through cooperation between European and South African actors that have been used by the private sector to further develop the critical raw materials/battery value chain. [GIZ indicator 2.1] b) Number of governance instruments used by public institutions to further develop sustainable and equitable frameworks for private sector projects in the CRM/battery value chain. [GIZ indicator 2.1]	
Baseline	Year	2025	0 (a,b)
Target	Year	2030	3 (a,b)

Output 2.1		Institutional framework conditions for the development of the critical raw materials/battery value chain have been strengthened.	
Output indicator		a) Number of certification systems newly set up or improved for the critical raw materials/battery value chain. [GIZ indicator 2.1.2] b) Number of approaches developed for the promotion of a sustainable and gender-responsive CRM/battery value chain development. [GIZ indicator 2.1.3]	
Baseline	Year	2025	0 (a, b)
Target	Year 1	2026	
Target	Year 2	2027	
Target	Year 3	2028	
Target	Year 4	2029	
Target	Year	2030	1(a); 2(b)

Output 2.2		Sustainable business models and related skills development and research formats as well as partnerships for the development of the critical raw materials/battery value chain have been established.	
Output indicator		Number of companies in the critical raw materials/battery value chain that have developed technically and economically feasible business models in the frame of strategic partnerships (incl. recycling of batteries). [GIZ indicator 2.2.1]	
Baseline	Year	2025	0
Target	Year 1	2026	
Target	Year 2	2027	
Target	Year 3	2028	
Target	Year 4	2029	
Target	Year	2030	5

Annex D - Budget details ⁵

GIZ Budget for the Action (EURO)		EU/BMZ			DK MFA
Budget for the Action (EURO)	Total MDI Budget for the Action	Total Budget EU + BMZ	SCO included in Total Budget	Costs not fulfilling Art. 16.1 GC and eligible as remuneration	Total Budget ⁵⁾
1 GIZ experts *)	21,042,900.02 €	17,808,378.96 €	#REFERENCE!	8,343.56 €	3,234,521.06 €
1.1 Personnel assigned to the Action	11,356,464.30 €	9,717,448.05 €			1,639,016.25 €
1.1.1 International personnel	5,105,712.34 €	4,359,773.35 €			745,938.99 €
1.1.2 National personnel	6,250,751.96 €	5,357,674.70 €			893,077.26 €
1.2 Internal technical/ admin. services directly attributable to the Action	1,666,546.90 €	1,414,826.64 €			251,720.26 €
1.2.1 Internal technical/ admin. services in a GIZ country project office	1,175,464.90 €	998,044.67 €			177,420.23 €
1.2.2 Internal technical/ admin. services of the project's unit	236,958.50 €	201,120.34 €			35,838.16 €
1.2.3 Internal technical/ admin. services of other units	254,123.50 €	215,661.63 €			38,461.87 €
1.2.4 Internal technical/ admin. services of other projects working for this project		0.00 €			0.00 €
1.3 External expertise incl. travel expenses	8,019,888.82 €	6,676,104.27 €			1,343,784.55 €
1.3.1 External expertise procured via HQ	6,254,888.82 €	5,204,482.32 €			1,050,406.50 €
1.3.2 External expertise for training of partners procured via HQ	1,765,000.00 €	1,471,621.95 €			293,378.05 €
1.3.3 External expertise procured locally		0.00 €			0.00 €
1.3.4 External expertise for training of partners procured locally		0.00 €			0.00 €
2 Travel expenses *)	2,241,356.23 €	1,914,822.53 €		0.00 €	326,533.70 €
2.1 Travel expenses, international/ expatriate personnel	858,886.23 €	728,759.67 €			129,926.56 €
2.2 Travel expenses, national personnel	1,382,670.00 €	1,186,062.86 €			196,607.14 €
2.3 Travel expenses, project personnel in Germany		0.00 €			0.00 €
2.4 Travel expenses, development workers		0.00 €			0.00 €
2.5 Travel expenses, integrated experts		0.00 €			0.00 €
2.6 Travel expenses, returning experts		0.00 €			0.00 €
2.7 Other travel expenses related to projects		0.00 €			0.00 €
3 Procurement of materials and equipment incl. Construction *)	128,026.96 €	108,640.55 €	#REFERENCE!	103.08 €	19,386.41 €
3.1 Procurement of goods and equipment, incl. Consumables	128,026.96 €	108,640.55 €			19,386.41 €
3.1.1 Procurement via HQ	44,446.96 €	38,646.99 €			5,799.97 €
3.1.2 Local procurement	83,580.00 €	69,993.56 €			13,586.44 €
3.2 Construction contracts and procurement of construction materials	0.00 €	0.00 €			0.00 €
3.2.1 Procurement for construction materials via HQ		0.00 €			0.00 €
3.2.2 Construction contracts via HQ		0.00 €			0.00 €
3.2.3 Procurement for construction materials procured locally		0.00 €			0.00 €
3.2.4 Local construction contracts		0.00 €			0.00 €
4 Financing *)	5,745,719.00 €	4,516,209.77 €		0.00 €	1,229,509.23 €
4.1 Grants to partners	300,000.00 €	266,278.38 €			33,721.62 €
4.2 Local subsidies	0.00 €	0.00 €			0.00 €
4.3 Grants to other donors	0.00 €	0.00 €			0.00 €
4.4 Grants and subsidies (European and international)	5,445,719.00 €	4,249,931.39 €			1,195,787.61 €
4.5 Scholarship to participants	0.00 €	0.00 €			0.00 €
5 Training of partners *)	0.00 €	0.00 €		0.00 €	0.00 €
6 Other costs *)	1,257,426.49 €	1,067,376.89 €	#REFERENCE!	228,048.89 €	190,049.60 €
6.1 Head Office costs	26,272.00 €	23,065.58 €			3,206.42 €
6.2 Preliminary costs for proposal preparation		0.00 €			0.00 €
6.3 Operating costs in country of assignment	607,974.50 €	520,809.01 €			87,165.49 €
6.4 Other external services purchased	347,926.93 €	291,619.16 €			56,307.77 €
6.5 Other expenses and revenues	275,253.06 €	231,883.14 €			43,369.92 €
7 Total	30,415,428.70 €	25,415,428.70 €	#REFERENCE!	236,495.53 €	5,000,000.00 €
Total administrative overheads ²⁾	4,364,614.19 €	3,682,010.90 €		3,682,010.90 €	682,603.29 €
Estimated Budget	34,780,042.89 €	29,097,439.60 €		3,918,506.43 €	5,682,603.29 €
VAT due in Germany ³⁾	69,957.11 €	57,393.93 €		57,393.93 €	12,563.18 €
Estimated Budget - incl. VAT	34,850,000.00 €	29,154,833.53 €		3,975,900.36 €	5,695,166.47 €

Distribution of Donor Contributions		EU/BMZ		DK MFA
Donor	EUR	EUR		EUR
Total direct eligible costs by EU	21,962,616.82 €	21,962,616.82 €		
7% flatrate for indirect costs (remuneration as per Art. 16.4 GC, respectively 16.8 GC for GIZ)	1,537,383.18 €	1,537,383.18 €		
Total Contribution by the EU	23,500,000.00 €	23,500,000.00 €		
Total direct costs by Donors without Audits	5,000,000.00 €			5,000,000.00 €
Audits by Donors	0.00 €			0.00 €
Total direct eligible costs by Donors	5,000,000.00 €			5,000,000.00 €
Indirect Costs by Donors ⁴⁾	350,000.00 €			350,000.00 €
Total Contribution by the Donors	5,350,000.00 €			5,350,000.00 €
DKK (Exchange rate (INFOEUR) on the date of preparation, 18/08/2026): 1 EUR = 7.4749 DKK				
Total Third Party Contribution by BMZ	6,000,000.00 €	5,654,833.53 €		345,166.47 €

⁵ The budget will be updated to include costs for a project-specific audit.

[illegible]

) with reference to Art. 10.3 GC this represents a budget heading. Sub-divisions under a budget heading are for reporting purposes only and not subject to the 25% rule stipulated in Art. 10.3 GC.

Assumption for the budget planning: only staff not working exclusively for the action have been considered.

3) German VAT stemming from the commissioning contract between GIZ and the German Ministry is not considered eligible for EU financing. It will be covered by the German Ministry for XY contribution.

5) for information purposes, allocated by share of total direct eligible costs

Annex E - Risk management matrix

1. Contextual risks

Risk Factor	Likelihood	Impact	Risk response	Residual risk	Background to assessment
Political economy and reform risks in the just energy transition - Political reluctance, policy incoherence, and societal resistance related to reforms in mining, green hydrogen, environmental governance, and the just energy transition.	Likely	Major	The programme mitigates these risks through strong alignment with national frameworks (JETP, hydrogen strategy, industrial policy), ensuring national ownership and political anchoring. Continuous high-level policy dialogue via the EU–South Africa partnership and Team Europe structures provide leverage to support reform processes. In addition, structured stakeholder engagement — including civil society and affected communities — helps address distributional concerns and build legitimacy for reforms. Communication efforts further support a shared narrative around the benefits of a just and inclusive transition.	Minor - Despite mitigation measures, reform processes remain politically sensitive and subject to shifts in priorities and public opinion. Risks are reduced but cannot be fully eliminated due to their structural nature.	South Africa's transition involves significant trade-offs between economic, environmental, and social objectives. Resistance from affected sectors and communities is likely, particularly around mining expansion and coal phase-down. However, strong donor coordination and alignment with national priorities provide a solid basis for managing these risks.
Market, competitiveness, and external dependency risks - Uncertainty related to global demand, competitiveness of South African value chains,	Likely	Major	The programme addresses these risks by strengthening the enabling environment, supporting value chain development, and enhancing skills and innovation to improve competitiveness. It also actively	Minor - External market and policy developments remain beyond programme control.	For green hydrogen and critical raw materials, the markets are still emerging and subject to rapid technological and

infrastructure development, trade conditions, and evolving international sustainability frameworks.			promotes market linkages, particularly with the EU, including potential offtake arrangements that help anchor demand. Alignment with EU sustainability standards and Global Gateway priorities further reduces regulatory uncertainty. However, the programme recognises that global market dynamics and trade conditions are only partially within its influence.	While risks are mitigated through positioning and partnerships, they persist as structural uncertainties.	regulatory change. South Africa's competitiveness will depend on factors such as infrastructure (including renewable energy, electrolyzers and transport), costs, and global demand, which introduces inherent uncertainty.
Social and environmental sustainability risks - Risks related to environmental impacts, unequal benefit-sharing, and insufficient community inclusion.	Likely	Major	The programme integrates ESG principles throughout its design, including environmental safeguards, gender-responsive approaches, and community engagement mechanisms. It supports the development of frameworks and agreements that promote local benefits, such as job creation and community development initiatives. By embedding these elements into both policy and project-level interventions, the programme aims to ensure that value chain development contributes to inclusive and sustainable outcomes.	Minor - While ESG frameworks and engagement mechanisms significantly reduce risks, implementation gaps or local grievances may still arise, particularly in large-scale infrastructure and mining contexts.	South Africa's socio-economic inequalities and environmental sensitivities make inclusive development essential for project success. Failure to ensure fair distribution of benefits could undermine social acceptance and long-term sustainability.

2. Programmatic risks

Risk Factor	Likelihood	Impact	Risk response	Residual risk	Background to assessment
Programme complexity and coordination risks - High complexity due to multiple components (policy, capacity, investment), sectors (GH2 and CRM), and actors (EU, GIZ, DFIs, government, private sector).	Likely	Major	The programme is designed with a clear governance structure, including a Steering Committee and technical coordination mechanisms, to ensure alignment and oversight. GIZ, as an experienced implementing partner, provides operational coordination, while Team Europe structures facilitate donor alignment. The phased and adaptive implementation approach allows for adjustments based on lessons learned and evolving conditions. Continuous dialogue between stakeholders supports coherence across components.	Minor - Coordination challenges are inherent in large, multi-actor programmes. While governance structures reduce risks, they require sustained effort and engagement to remain effective.	The integrated approach increases potential impact but also introduces complexity. Effective coordination is critical to avoid fragmentation and ensure synergies across interventions. The multi-donor initiative approach reduces the complexity of having many donors as reporting and decision making is streamlined.
Investment and implementation risks - Delays or failure in developing bankable projects and mobilising investments.	Likely	Major	The programme places strong emphasis on project preparation, investment facilitation, and de-risking mechanisms, including blended finance. By supporting feasibility studies, business models, and regulatory clarity, it aims to reduce barriers to investment. Engagement with DFIs and EU partners further strengthens access to finance and market opportunities. This	Minor - Investment decisions ultimately depend on market conditions and investor confidence. While risks are reduced through targeted support, delays or lower-than-expected investment levels remain possible.	Green hydrogen and critical raw materials investments are capital-intensive and subject to uncertainty. Early-stage market development inherently carries higher risks of delay or non-realisation.

			approach addresses key bottlenecks in early-stage markets.		
Private sector engagement risks (incl. Danish interests) - Insufficient engagement of private sector actors, including Danish and European companies.	Unlikely	Major	The programme actively promotes business engagement through partnerships, matchmaking, and improved framework conditions. It leverages EU platforms and market linkages to create concrete opportunities for private sector participation. Early engagement and visibility of project pipelines aim to position Danish and European companies advantageously. Coordination with Danish instruments further supports this objective.	Minor - Private sector engagement depends on commercial viability and risk perception. While the programme creates opportunities, it cannot guarantee uptake.	Private sector participation is critical to achieving outcomes but is driven by market incentives. External factors such as profitability and global competition influence engagement levels.

3. Institutional risks

Risk Factor	Likelihood	Impact	Risk response	Residual risk	Background to assessment
Governance and oversight capacity risks - High demands on coordination, oversight, and decision-making across multiple actors and levels.	Unlikely	Major	A clear governance structure, including a Steering Committee with Denmark and other donors, ensures strategic oversight and decision-making. Active MFA participation allows for influence and follow-up. Established EU coordination mechanisms and GIZ's implementation capacity further support effective	Minor - While coordination demands remain high, strong institutional frameworks and partner capacity significantly reduce risks.	The scale and duration of the programme increase oversight requirements. However, the involvement of experienced partners and structured governance mitigates institutional strain.

			management. Regular reporting and dialogue provide additional oversight.		
Fiduciary and financial management risks - Risks related to financial management, delays, or misuse of funds.	Unlikely	Major	The programme relies on robust EU financial systems, including audits, controls, and pillar assessments of entrusted entities. GIZ and DFIs have strong fiduciary standards, and financial monitoring is integrated into reporting processes. This significantly reduces the likelihood of financial irregularities.	Minor - Given the strength of EU systems and partner capacity, residual fiduciary risks are minimal.	EU-managed programmes benefit from well-established financial control frameworks, making this a comparatively low-risk area.
Reputational risks for Denmark and partners - Reputational risks linked to ESG issues, partner performance, or political sensitivities.	Unlikely	Major	The programme incorporates strong ESG safeguards, transparency, and stakeholder engagement to reduce reputational risks. Denmark's participation in governance structures allows for proactive management and communication. Alignment with EU and national priorities further strengthens legitimacy. Also, Denmark is not the main funder of the project.	Minor - Given the visibility and sensitivity of sectors such as mining and energy, reputational risks cannot be fully eliminated.	Engagement in politically and environmentally sensitive sectors inherently carries reputational exposure, particularly in the context of global climate and resource debates.

Annex F - MFA context analysis

1. Political Economy Analysis

South Africa is well positioned to benefit from the growing global demand for critical raw materials (CRM) required for batteries, electric vehicles, renewable energy technologies and hydrogen applications. The country holds globally significant reserves of platinum group metals, manganese, chromium and vanadium, while also possessing relatively advanced mining, refining and manufacturing capabilities compared to many other resource-producing countries (European Commission, 2025). At the same time, South Africa faces persistent challenges of unemployment, inequality, and slow industrial growth. The key development challenge is therefore not the availability of mineral resources, but the limited ability to translate resource wealth into higher-value industrial activities, decent jobs, and inclusive economic development.

Historically, South Africa's mining sector has been integrated into global markets primarily as a supplier of raw and semi-processed commodities. While government policy increasingly promotes beneficiation and industrialisation, much of the value associated with battery production, advanced manufacturing, and clean technology supply chains continues to be captured outside the country. This reflects structural constraints including energy insecurity, logistics bottlenecks, infrastructure deficits, skills shortages, and limited investment in downstream processing and manufacturing. In addition, uncertainty regarding future technologies, battery chemistries, and global trade patterns creates investment risks for both public and private actors (European Commission, 2025).

The development of a domestic green hydrogen CRM/battery value chain is shaped by a diverse set of actors with partly aligned interests. Government seeks to leverage the energy transition to support industrialisation, economic growth, and employment creation, while the private sector prioritises regulatory certainty, reliable infrastructure, and market access. Research institutions and universities play an important role in developing the skills, technologies, and innovation required for industrial upgrading. International partners, including the European Union, are increasingly interested in securing diversified and resilient critical mineral supply chains while supporting South Africa's green industrialisation agenda (European Commission, 2025). These shared interests create opportunities for cooperation, although tensions may emerge around local content requirements, environmental standards, market access, and the distribution of economic benefits.

Governance and coordination challenges remain important constraints. The capacity gaps, weak coordination between stakeholders, underdeveloped business models, and barriers to investment remain as key obstacles to the development of CRM, green hydrogen and battery value chains (European Commission, 2025). Without stronger coordination between government, industry, financiers, research institutions and communities, there is a risk that South Africa remains primarily

an exporter of mineral resources rather than becoming a competitive participant in emerging global battery and clean technology supply chains.

At the same time, significant opportunities for a change exist. Growing international demand for responsibly sourced critical minerals, combined with South Africa's industrial capabilities and policy commitment to a just energy transition, creates favourable conditions for value-chain development. Recent South African policy initiatives, including the Green Hydrogen Commercialisation Strategy (The DTIC, 2022) that builds on the Hydrogen Society Roadmap (DSTI, 2021), later followed by the Critical Minerals and Metals Strategy (DMRE, 2024)), the South African Renewable Energy Masterplan (DMRE, 2025), and the New Energy Vehicle White Paper (DTIC, 2023), signal increasing political support for beneficiation, manufacturing, and green industrialisation. Strengthening policy coordination, improving investment conditions, supporting research and skills development, and fostering partnerships between government, industry, and research institutions represent important entry points for the programme. These interventions can help position South Africa as a regional hub for green hydrogen, CRM processing and battery value chains while contributing to employment creation, industrial competitiveness and a just energy transition (European Commission, 2025).

2. Matching with Danish strength, engaging Danish actors, and seeking synergy

The EU Global Gateway CRM and battery value chain programme is aligned with Denmark's foreign, development, and economic diplomacy priorities. The programme supports the objectives of Denmark's Foreign and Security Policy Strategy (Ministry of Foreign Affairs of Denmark, 2023) and Africa's Century: Denmark's Strategy for Strengthened Engagement with African Countries (Ministry of Foreign Affairs of Denmark, 2024) by deepening Denmark's engagement with South Africa as a key regional partner and by contributing to resilient, sustainable, and diversified supply chains for critical raw materials that are essential for the global green transition. In a context of increasing geopolitical competition over access to critical minerals, the programme contributes to economic security, sustainable industrial development, and stronger partnerships between Denmark, the EU, and Africa. Through support to local beneficiation, battery value chains, and green industrialisation, the programme advances the Africa Strategy's ambition to promote mutually beneficial partnerships based on trade, investment, innovation, and sustainable growth.

The programme is also aligned with Denmark's Strategy for Development Cooperation (Ministry of Foreign Affairs of Denmark, 2025), which emphasises partnerships, sustainable economic development, climate action, and inclusive growth. By supporting the development of an integrated critical raw materials and battery value chain, the programme seeks to create economic opportunities, strengthen industrial capabilities, and contribute to job creation, particularly for women and young people. The programme's focus on skills development,

innovation, research collaboration, and institutional capacity-building reflects Denmark's commitment to supporting locally owned and sustainable development pathways. Furthermore, the programme contributes to a just energy transition by promoting value addition and industrial development in South Africa rather than limiting participation to the extraction and export of raw materials.

The programme further supports the objectives of Denmark's Action Plan for Active and Effective Economic Diplomacy (Ministry of Foreign Affairs of Denmark, 2025) by creating opportunities for collaboration between Danish and South African public and private actors in strategically important green industries. Denmark possesses internationally recognised expertise in renewable energy, sustainable industrial development, circular economy solutions, responsible business practices, and green technologies that are directly relevant to the development of competitive and sustainable critical mineral value chains. The programme therefore provides a platform for engagement by Danish companies, investors, research institutions, and sector authorities while supporting South Africa's industrialisation ambitions. Opportunities for this may emerge e.g., within the sector of maritime transport, port logistics, and electrolyzers where Danish companies are global leaders and where South Africa's role as a regional export hub for critical minerals and battery materials is likely to increase. Furthermore, the programme's emphasis on innovation, research cooperation, and skills development creates possibilities for partnerships between Danish and South African universities, research institutions, and businesses.

Implementation through a broader Team Europe and Global Gateway framework further strengthens coherence between Danish priorities and European strategic objectives related to sustainable supply chains, green industrialisation, and economic partnerships with Africa. By combining development cooperation, economic diplomacy, and strategic partnership building, the programme represents an opportunity to advance both South African development objectives and Danish interests in promoting sustainable growth, resilient supply chains, and an inclusive global green transition.

3. Poverty Orientation and Rights-Based Principles

South Africa remains one of the most unequal countries in the world, with high levels of unemployment, poverty, and spatial inequality persisting despite its upper-middle-income status (World Bank, 2022). These challenges are particularly pronounced among women, youth, and communities in historically disadvantaged and mining-dependent regions, including parts of Limpopo, Northern Cape, Northwest, and Mpumalanga. While the CRM sector contributes significantly to exports and economic output, many communities located near mining operations continue to face limited economic opportunities, environmental risks, and inadequate access to quality public services. The transition towards CRM beneficiation, battery manufacturing, and related green industries therefore presents both an economic opportunity and a risk of reinforcing existing inequalities if benefits are not distributed inclusively.

Barriers to inclusion are linked to both structural inequalities and sector-specific dynamics. South Africa's mining and industrial sectors remain characterised by skills shortages, unequal access to technical education and limited participation of historically disadvantaged groups in higher-value segments of mineral value chains. Women remain underrepresented in mining, engineering, and manufacturing occupations, despite legal and policy commitments to gender equality. Social norms, occupational segregation and unequal care responsibilities continue to constrain women's participation in technical and leadership positions. At the same time, youth unemployment is high, with many young people lacking the skills, work experience and networks required to access opportunities in emerging industries (Statistics South Africa, 2024). Without targeted interventions, there is a risk that new investments in green hydrogen, CRM and battery value chains primarily benefit already established firms and skilled workers.

South Africa has a strong constitutional and legislative framework protecting equality, participation, and socio-economic rights. The Constitution guarantees access to information, administrative justice, and public participation in decisions affecting communities, while legislation such as the Mineral and Petroleum Resources Development Act (Republic of South Africa, 2002)) requires consultation with affected stakeholders. However, implementation remains uneven. Communities affected by mining projects often face information asymmetries, limited technical capacity, and unequal bargaining power when engaging with companies and government institutions. Although grievance and accountability mechanisms exist through courts, regulatory bodies, and civil society organisations, access to these mechanisms can be constrained by financial, geographic, and technical barriers. As a result, participation is not always meaningful, particularly for marginalised groups.

Nevertheless, there are potential risks that require careful management. Rapid expansion of mining, processing, and industrial activities could increase environmental pressures, land-use conflicts, and inequalities if community interests are not adequately considered. Programme interventions should therefore apply a "do no harm" approach, ensure meaningful stakeholder engagement, and promote equitable access to opportunities created through the development of South Africa's green hydrogen, CRM and battery value chain. In doing so, the programme can contribute not only to industrial development but also to a more inclusive and just energy transition.

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