

GEF-8 REQUEST FOR CEO ENDORSEMENT/APPROVAL

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General Project Information

Project Title

Supporting the just energy transition in South Africa by strengthening local value chains and enhancing quality assurance for electric vehicle batteries

Region

Africa

GEF Project ID

11822

Country(ies)

South Africa

Type of Project

MSP

GEF Agency(ies):

UNIDO

GEF Agency Project ID

230229

Project Executing Entity(s)

South African National Energy Development Institute (SANEDI)

Project Executing Type

Government

GEF Focal Area (s)

Climate Change

Submission Date

1/23/2026

Type of Trust Fund

GET

Project Duration (Months)

60

GEF Project Grant: (a)

863,242.00

GEF Project Non-Grant: (b)

0.00

Agency Fee(s) Grant: (c)

82,008.00

Agency Fee(s) Non-Grant (d)

0.00

Total GEF Financing: (a+b+c+d)

945,250.00

Total Co-financing

5,434,000.00

PPG Amount: (e)

50,000.00

PPG Agency Fee(s): (f)

4,750.00

Total GEF Resources: (a+b+c+d+e+f)

1,000,000.00

Project Tags

CBIT: No NGI: No SGP: No Innovation: No Competitive Window: No

Project Sector (CCM Only)

Transport/Urban

Taxonomy

Focal Areas, Climate Change Mitigation, Climate Change, Consultation, Type of Engagement, Stakeholders, Participation, Civil Society, Academia, Non-Governmental Organization, Gender Mainstreaming, Gender Equality, Capacity, Knowledge and Research, Knowledge Generation, Course, Knowledge Exchange, Innovation

Rio Markers

Climate Change Mitigation	Climate Change Adaptation	Biodiversity	Land Degradation
Principal Objective 2	No Contribution 0	No Contribution 0	No Contribution 0

Project Summary

Provide a brief summary description of the project, including: (i) what is the problem and issues to be addressed? (ii) what are the project objectives, and if the project is intended to be transformative, how will this be achieved? (iii), how will this be achieved (approach to deliver on objectives), and (iv) what are the GEBs and/or adaptation benefits, and other key expected results. The purpose of the summary is to provide a short, coherent summary for readers. (max. 250 words, approximately 1/2 page)

South Africa's transport sector is a major and growing source of greenhouse gas emissions, largely driven by road-based vehicles dependent on fossil fuels. While global EV markets are expanding rapidly, domestic EV uptake remains low, and the country has limited enabling policies and quality infrastructure to support local EV and battery value chains. Structural challenges include limited testing infrastructure, fragmented policy frameworks, and insufficient technical capacity. Without targeted intervention, South Africa risks missing both climate mitigation opportunities and the broader socio-economic benefits of industrial diversification and job creation linked to the e-mobility transition. The proposed project 'Supporting the Just Energy Transition in South Africa by Strengthening Local Value Chains and Enhancing Quality Assurance for Electric Vehicle (EV) Batteries' will address these critical barriers.

The project seeks to reduce greenhouse gas emissions (GHG) and promote inclusive green industrialization through the development of a sustainable electric mobility sector. The project aims to mitigate GHG emissions by establishing coherent policy and quality infrastructure to accelerate the domestic EV market, strengthen local battery value chains, and promote environmentally sound end-of-life management. Its transformative ambition lies in embedding circular economy principles, fostering gender-responsive skills development, and catalyzing investment-ready industrial projects that position South Africa competitively within global EV value chains.

The project is organized around four components:

- Component 1: Supporting policies and quality infrastructure to enable accelerated development of low-carbon electric mobility market
- Component 2: Upskilling, knowledge management, awareness raising and effective communication to promote local EV manufacturing and infrastructure for low carbon e-mobility
- Component 3: Promoting the uptake of low-carbon EV market through technical assistance.
- Component 4: Monitoring and Evaluation (M&E)

Through these integrated components, the project will foster an enabling environment for e-mobility, support industrial diversification, and advance South Africa's Just Energy Transition. It is expected to contribute to indirect emission reductions if a conservative causality factor of 20%¹ is assumed, this leads to approx.

744,000 tCO₂e attributable to the project within 10 years after the project. Co-benefits include green skills development and decent jobs, industrial diversification and export competitiveness in EV/battery value chains, improved safety and environmental outcomes via accredited testing and circular end-of-life management, and gender-responsive inclusion of women and youth. Main beneficiaries are national authorities and regulators (the dtic, DEE, DFFE, DoT) and SANEDI; local manufacturers and SMEs across EV components, testing and recycling; Nelson Mandela University/uYilo and training institutions; workers transitioning from ICE supply chains (with a focus on women); and communities and end-users benefiting from cleaner, safer mobility.

Project Description Overview

Project Objective

Reduce transport GHGs by strengthening policy and quality infrastructure to accelerate South Africa's e-mobility value chains, enabling local EV component manufacturing, responsible battery end-of-life, and just-transition skills and jobs.

Project Components

Component 1: Supporting policies and quality infrastructure to enable accelerated development of low-carbon electric mobility market.

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing (\$)	Co-financing (\$)
275,500.00	1,630,000.00

Outcome:

Outcome 1: Strengthened policy framework and quality infrastructure to support e-mobility local industrialization with a focus on batteries and their end-of-life management.

Output:

Output 1.1 - Enabling policy framework and quality infrastructure for EV components (e.g., the development of the lithium-ion batteries value chain) is supported to promote private sector investment, market development and ensure socio-economic and gender inclusion.

Output 1.2 - A pilot testing and certification facility for battery packs is developed for performance, stability, and safety checks at the Nelson Mandela University.

Output 1.3 - A roadmap and guidelines on management of end-of-life batteries are endorsed by the Government of South Africa.

Component 2: Upskilling, knowledge management, awareness raising and effective communication to promote local EV manufacturing and infrastructure for low carbon e-mobility.

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing (\$)	Co-financing (\$)

229,550.00	1,800,000.00
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Outcome:

Outcome 2 – Local stakeholders, including manufacturers, policymakers, and technical experts, start to scale-up uptake of low carbon e-mobility based on enhanced capacities and partnership.

Output:

Output 2.1 – Gender-responsive skills development programme delivered to support workforce transition toward low-carbon e-mobility with a special focus on training for women promoting equal opportunities and encourage active participation.

Output 2.2 – Knowledge resources, training workshops and study tours delivered to decision- and policy-makers to support EV Battery Manufacturing and EoL Management policy and strategies.

Output 2.3 – Knowledge management systems, communication platforms and awareness-raising tools established to strengthen stakeholder coordination and understanding of low-carbon e-mobility.

Component 3: Promoting the uptake of low-carbon EV market through technical assistance.

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing (\$)	Co-financing (\$)
236,192.00	1,180,000.00

Outcome:

Outcome 3 – Industry sector and policy makers accelerate the development of electric vehicle market through technical assistance and assessment of opportunities in EV component manufacturing and value chain development.

Output:

Output 3.1 – Comprehensive assessment and analysis of EV component manufacturing value chains and investment opportunities produced to inform local manufacturing strategies with a focus on batteries.

Output 3.2 – Tailored technical assistance package and feasibility studies developed to generate a pipeline of investment-ready EV component manufacturing projects.

M&E

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing (\$)	Co-financing (\$)
43,750.00	324,000.00

Outcome:

Outcome 4 - Monitoring and Evaluation

Output:

Output 4.1 – Monitoring and reporting

Output 4.2 – Project terminal evaluation

Component Balances

Project Components	GEF Project Financing (\$)	Co-financing (\$)
Component 1: Supporting policies and quality infrastructure to enable accelerated development of low-carbon electric mobility market.	275,500.00	1,630,000.00
Component 2: Upskilling, knowledge management, awareness raising and effective communication to promote local EV manufacturing and infrastructure for low carbon e-mobility.	229,550.00	1,800,000.00
Component 3: Promoting the uptake of low-carbon EV market through technical assistance.	236,192.00	1,180,000.00
M&E	43,750.00	324,000.00
Subtotal	784,992.00	4,934,000.00
Project Management Cost	78,250.00	500,000.00
Total Project Cost (\$)	863,242.00	5,434,000.00

Please provide Justification

PROJECT OUTLINE

A. PROJECT RATIONALE

Describe the current situation: the global environmental problems and/or climate vulnerabilities that the project will address, the key elements of the system, and underlying drivers of environmental change in the project context, such as population growth, economic development, climate change, sociocultural and political factors, including conflicts, or technological changes. Describe the objective of the project, and the justification for it. (Approximately 3-5 pages) see guidance here

A1. Global Environmental Problem

The global transportation sector remains one of the most carbon-intensive end-use sectors, accounting for 37% of total CO₂ emissions in 2021 and growing faster than any other end-use sector at an annual average rate of 1.7% since 1990 ([IEA, 2023](#); [UNEP FI, 2024](#)). Road transport dominates, representing 74% of global transport emissions in 2022, followed by shipping (11%), aviation (10%), pipelines (4%), and rail (1%). This reliance on fossil fuels, 95% of the sector's energy is still derived from oil, demonstrates the structural dependence on high-carbon energy systems ([EEA, 2022](#)). Demand for transport is projected to surge as passenger travel nearly triples and freight movements expand substantially between 2019 and 2050, particularly in emerging and developing economies. This growth will intensify emissions unless transformative changes are made in vehicle technologies, fuels, and mobility systems. ([UNEP FI, 2024](#))

In South Africa, the transport sector is a major contributor to greenhouse gas (GHG) emissions, producing 48,193 Gg CO₂-eq in 2020, or 12.7% of the country's energy-related emissions ([DFFE, 2022](#)). It is the third-largest emitting sector, with over 90% of emissions from road transport, primarily from petrol and diesel combustion. Direct emissions are linked to the consumption of about 850 PJ (25 billion liters) of fuel each year by an estimated 8 million passenger cars, 300,000 minibus taxis, 60,000 buses, and 3 million light- to heavy-freight vehicles. Although emissions temporarily declined in 2020 due to COVID-19 restrictions, long-term growth in urbanization, economic activity, and mobility demand will continue to drive higher reliance on internal combustion engine (ICE) vehicles. The government has introduced several policy instruments to address these challenges, including the National Land Transport Act, the National Transport Master Plan 2050, the Revised White Paper on National Transport Policy ([2023](#)), the Electric Vehicle White Paper (2023) and the Green Transport Strategy ([2018](#)), which sets a goal of reducing transport-related emissions by 5% by 2050. However, the sector's current trajectory remains inconsistent with South Africa's Nationally Determined Contribution (NDC) target of 350–420 Mt CO₂e by 2030 and its commitment to achieve net-zero by 2050. ([RSA, 2024](#))

According to the latest IPCC Assessment Report, electromobility represents the single largest transformation in transport since AR5, with the potential to deliver deep decarbonization across land-based transport modes (including cars, buses, trucks, motorbikes, and micromobility solutions) when powered by low-emission electricity. The decarbonization potential of electric vehicles (EVs) is closely tied to the availability of clean power, yet EVs can already be paired with distributed renewable energy generation, while also contributing to grid stability through smart charging applications. The IPCC highlights that lithium-ion batteries (LIBs) remain the dominant and most efficient storage technology, with further improvements in cost, energy density, and lifespan expected to reinforce their market position. However, this reliance raises critical issues around sustainable sourcing, recycling, and end-of-life management of battery materials. Addressing these concerns requires policy frameworks that encourage investment in battery value chains, promote recycling and circular economy approaches, and ensure that recharging infrastructure is accessible and integrated with renewable energy systems. Together, these measures provide the enabling conditions for EV adoption at scale, underscoring why targeted support for battery solutions and market availability is essential for accelerating South Africa's transition to low-carbon mobility. ([IPCC, 2022](#))

The proposed project brings together a coalition of public, private, and research actors that will be critical to achieving its outcomes. As the GEF Agency, UNIDO will provide overall supervision and ensure alignment with GEF standards, while South African National Energy Development Institute (SANEDI), as the lead executing agency, will coordinate implementation and engage local partners. Key government departments will ensure policy coherence and sectoral alignment: the Department of Trade, Industry and Competition (the dtic) will support policy and regulatory frameworks linked to industrial development and energy planning; the Department of Forestry, Fisheries and Environment (DFFE), as GEF Focal Point, will ensure environmental integrity and support end-of-life battery

management; and the Department of Transport (DoT) will steer project activities to align with national transport strategies. The private sector, represented by the National Association of Automobile Manufacturers of South Africa (NAAMSA), National Association of Automotive Component & Allied Manufacturers (NAACAM) and local automotive value chain actors, will be essential for scaling e-mobility uptake, piloting business models, and mobilizing co-financing. Nelson Mandela University (uYilo Programme) will provide technical expertise through its accredited battery testing facility, while Trade and Industrial Policy Strategies (TIPS) will contribute applied research and capacity building to support evidence-based policy.

The proposed project concept builds on the results and key recommendations from the GEF-5-funded Low Carbon Transport –South Africa (LCT-SA) project ([GEFID 5737](#)) including the recommendations in the Terminal Evaluation of the project. The LCT-SA project was implemented by UNIDO in collaboration with the dtic and the SANEDI between 2016 and 2021. The project has forged engagement between government at national, provincial and local levels. Several tangible benefits have been achieved, ranging from the facilitation of standards for electric vehicle charging plugs, to the installation of Solar PV charging stations in various parts of the country. In terms of impact on policymaking, the LCT-SA project contributed to the Green Transport Strategy (GTS) approved by the government. The LCT-SA project laid the ground for the uptake of low-carbon transport to start to be addressed in South Africa. There is a need to build on the developed work and continue to accelerate the shift towards low-carbon mobility in the country.

A2. Baseline

Electric vehicles currently have a very small market share in South Africa. In 2024, 1,257 units were sold, up from 929 in 2023 and 502 in 2022, reflecting steady but still modest growth. During the first quarter of 2025, 276 BEVs were sold, following 330 units in the same period of 2024. Despite this upward trend, BEVs remain a small portion of the market, representing less than 0.3% of total new vehicle sales and only a fraction of the broader new energy vehicle (NEV) segment, which reached 15,611 units (3.0% market share) in 2024. Overall, petrol and diesel vehicles still dominate more than 90% of the fleet ([NAAMSA, 2025](#)).

South Africa's electricity mix is still dominated by coal, which affects both the real and perceived climate benefits of EVs. Coal provides roughly three-quarters of installed generation capacity, so charging on today's grid delivers smaller lifecycle emission reductions than in countries with cleaner power systems. This context fuels public and fleet skepticism that EVs merely shift emissions from tailpipes to power plants, and it reinforces concerns about reliability given the grid's history of constraints and load-shedding. As renewable procurement expands under the JET pathway, the emissions performance and credibility of e-mobility will improve over time alongside grid decarbonisation. ([GreenCape, 2025](#))

The automotive industry remains relevant to South Africa's economy, contributing 2.4% of GDP in manufacturing and 1.9% in retail, employing over 110,000 people, and representing 18.1% of total exports ([RSA, 2024](#)). Around one-third of manufacturing value addition stems from vehicle and component production. However, the sector is still largely focused on ICE vehicles. With 66% of auto output exported, and 75% of exports going to European markets that are rapidly transitioning to EVs, South Africa risks losing competitiveness if it lags in EV component manufacturing and localisation ([NAAMSA, 2025](#)).

A number of national policies and strategies provide the enabling framework for South Africa's e-mobility transition. Table 1 summarises the key policies and legislation relevant to the proposed project.

TABLE 1 - POLICIES AND LEGISLATION IN SOUTH AFRICA

Motor Industry Development Programme (MIDP)	Increased investments, integration into global value chains, higher exports and imports, economies of scale, improved competitiveness.	Supports increased investment and integration in the EV sector, aiding the development of local manufacturing and export capabilities.
Automotive Production Development Programme (APDP) & Automotive Production Development Programme (APDP2)	The APDP (2013) and APDP2 (2021–2035) provide production-linked incentives for local vehicle and component manufacturing, focusing on competitiveness and localisation.	The project complements APDP2 by promoting investment in EV components and battery assembly, helping manufacturers access incentives while integrating low-carbon technologies.
Green Transport Strategy (GTS) 2050	The GTS aims to reduce transport emissions by 5% by 2050 through modal shifts, cleaner fuels, and adoption of EVs and alternative energy vehicles.	The project advances GTS targets by accelerating EV uptake, promoting clean battery technologies, and supporting low-carbon mobility infrastructure.
South Africa's Just Energy Transition Framework and Investment Plan (JET IP)	The JET IP outlines South Africa's investment framework for a low-carbon, inclusive transition, prioritising electricity, new energy vehicles (NEVs), and green hydrogen sectors.	The project directly contributes to JET IP's NEV component, supporting decarbonisation, green industrialisation, and just transition financing in the mobility sector - considering the fair distribution of risks and opportunities, cognizant of gender, race, and class inequalities.
Carbon Tax Act (Act No. 15 of 2019)	Implements a tax on greenhouse gas emissions, encouraging industry to adopt cleaner technologies and improve energy efficiency.	The project indirectly aligns by reducing industrial and transport emissions, providing mitigation co-benefits and helping

		manufacturers offset future carbon tax liabilities.
National Development Plan (NDP) 2030	The NDP provides South Africa's overarching framework for sustainable and inclusive growth by 2030. It calls for a low-carbon, resource-efficient economy, technological innovation, and industrial diversification.	The project aligns with NDP goals on inclusive industrialisation, green economy transition, and technological capability building, contributing to sustainable, inclusive growth, employment, and innovation in advanced manufacturing while promoting women's empowerment.
Electric Vehicle White Paper (2023)	The EV White Paper sets the roadmap to transition the South African auto sector from ICE to EV production by 2035, with goals for domestic manufacturing, battery value chain development, and export competitiveness.	This is the core policy alignment. The project directly supports White Paper goals on domestic EV and battery manufacturing, supply chain localisation, and skills development for EV technologies.
South African Automotive Masterplan (SAAM) 2021-2035	SAAM 2035 aims to grow local vehicle production to 1% of global output, increase local content to 60%, double employment, and deepen localisation and technology adoption.	The project supports SAAM's objectives by developing local EV and battery manufacturing capacity, enhancing supplier competitiveness, and stimulating new green jobs in the automotive value chain.
Global EV and Green Transition Policy	Facilitate the transition to zero-emissions, improve fuel efficiency, prepare power systems, and reduce dependency on passenger vehicles.	Aligns with the project's goals of scaling up low-carbon e-mobility, enhancing infrastructure, and promoting local manufacturing and value chains.

South Africa currently applies an emissions-related tax on vehicle purchases as well as a cross-sectoral carbon tax, and the Green Transport Strategy ([2018](#)) outlined measures to promote low-emission vehicles and introduce vehicle emissions standards but implementation remained limited due to the absence of a coherent national e-mobility policy, creating uncertainty for investors and manufacturers ([RSA, 2018](#)). The adoption of the Just Transition Framework (JTF) in 2022 marked a significant shift, focusing on jobs, skills, local economies, and governance. Under the JTF, South Africa developed an action plan for a “shift to cleaner energy for transport,” prioritising the transition of the domestic automotive industry to clean-energy vehicles and stakeholder alignment in phasing out petrochemicals. The framework foresees accelerated EV adoption between 2025 and 2030 and envisions a transport sector no longer dependent on petrochemicals by 2040–2050. ([RSA, 2022](#))

Several ongoing initiatives complement these policy efforts, including the national uYilo eMobility Programme, which focuses on awareness raising, pilot projects, capacity development, enterprise support, and industry engagement.

South Africa's automotive sector remains one of its most industrially developed, with strong export performance and integration into global value chains. However, it remains primarily ICE-focused, creating a structural risk of lagging behind global markets transitioning to EVs. The 2023 Electric Vehicle White Paper provides the country's first comprehensive framework for transitioning from a fossil fuel-based transport system to a low-carbon, competitive, and inclusive e-mobility economy. It sets out a phased roadmap to 2035 built on principles of urgency, technology neutrality, cost-effectiveness, investment support, localisation, and a just transition. From March 2026, manufacturers will benefit from a 150% investment tax deduction on qualifying EV and hydrogen vehicle production assets, alongside reforms to the Automotive Production and Development Programme (APDP2) and the introduction of Production Rebate Certificates (PRCs) that link customs duty reductions to local value addition ([GreenCape, 2025](#)).

The White Paper ([2023](#)) outlines sixteen priority actions to stimulate both supply and demand for new energy vehicles, including APDP2 reforms, incentives for battery mineral beneficiation and recycling, expansion of charging infrastructure, and phased introduction of consumer and fleet incentives. It positions the EV transition as an opportunity to reindustrialise the automotive sector, safeguard export competitiveness, and promote green skills and employment in battery manufacturing, electronics, and clean energy systems. It also emphasises regional integration under the African Continental Free Trade Area (AfCFTA) to strengthen value chains and ensure the transition contributes to inclusive growth.

The Automotive Production and Development Programme Phase 2 ([2022](#)) remains the cornerstone of South Africa's industrial support policy for the automotive sector. It incentivises local manufacturing and global competitiveness through mechanisms such as PRCs, which provide customs duty rebates based on local value addition, and the Value-Added Localisation Allowance (VALA). Although originally designed for ICE vehicles, APDP2 is being reformed to integrate NEVs, aligning with the EV White Paper to create pathways for EV component incentives, localisation, and phased import duty reductions.

Table 2 below provides an overview of the most important on-going and planned baseline projects for the proposed GEF project is presented.

TABLE 2 – INITIATIVES SUPPORTING ELECTRIC MOBILITY AND BATTERY VALUE CHAIN LOCALIZATION IN SOUTH AFRICA

Accelerating the shift towards electric mobility in South Africa	Demonstrating and upscaling electric mobility in the public transport sector in South	The proposed project complements this initiative by strengthening the enabling
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	Africa. (GEF ID: 10898 / USD 4,713,224)	environment for local EV and battery manufacturing, developing quality infrastructure and testing capacity, and delivering skills development and awareness programmes. Coordination will occur through SANEDI and joint communication and policy platforms to ensure alignment and knowledge exchange.
Global Programme to Support Countries to Upscale Integrated Electric Mobility Systems	Support countries with scaling-up investment in integrated e-mobility systems through the provision of global knowledge, technical assistance and a global partnership on Used EVs, Battery End-of-Life and Circularity in low and middle-income countries (GEF ID: 11075 / USD 7,221,101)	The project will draw on and contribute to the Global Programme's resources and platforms (e.g., eMobility.Tools), sharing lessons learned and case studies from South Africa. This linkage ensures consistency with international best practices and facilitates cross-country learning and replication of effective e-mobility approaches.
Battery Value Chain and Critical Minerals Policy Actions	Critical Minerals Policy Actions (dtic, 2025) The dtic, in collaboration with the UK Growth Gateway, is implementing measures to strengthen South Africa's battery value chain. Key actions include the ITAC directive (Gazette 3233/2025) to expand APDP2 to cover minerals essential for battery production; consideration of fiscal incentives such as Sections 12i and 12V for green manufacturing; and potential import-duty adjustments for EV components. Expansion of the uYilo Battery Testing Facility is under review to support domestic certification and recycling.	The proposed project aligns closely by strengthening testing and quality-infrastructure systems, promoting localization and skills development, and supporting policy coherence across the EV and battery value chains.

Just Energy Transition (JET)	South Africa's Just Energy Transition Investment Plan is a five-year roadmap to decarbonize the economy while protecting workers and communities. It mobilizes about USD 98 billion for three priority sectors, electricity, new energy vehicles (NEVs), and green hydrogen, plus cross-cutting skills and municipal capacity. Current funding lasts until 2027, but a continuation is expected.	The project directly advances the JET IP's NEV pillar by building South Africa's EV battery value chain and circular end-of-life system. It supports JET NEV governance, develops a battery manufacturing investment strategy, upgrades testing/certification infrastructure at NMU, delivers gender-responsive skills and policymaker capacity building, and creates an investment pipeline through feasibility studies and investor matchmaking.
GIZ EV Battery Value Chain Manufacturing Project	The project focus on implementing aim to support value chain development for critical raw materials and green hydrogen and derivatives in South Africa. The programme has five components: 1. Strategy, policy & regulatory framework 2. Private sector cooperation 3. Capacity building, research & innovation 4. Sustainability & just transition 5. Battery value chains	The project has several synergies with the GIZ project by complementing the activities developed by the GIZ with technical and policy studies that promote the development of electric vehicle battery value chain. Future alignment will be done throughout inception and implementation phase.
South Africa & Southern Africa Battery Market & Value Chain Assessment Report	The World Bank's report identifies major opportunities for South Africa to develop a local battery industry, forecasting rapid market growth driven by EV demand and outlining staged pathways from mineral beneficiation to full battery manufacturing.	The project builds directly on these findings by developing a comprehensive meta-analysis and policy roadmap, strengthening policy frameworks, creating testing and certification facilities, and developing skills and investment pipelines for EV batteries.
Opportunities to Develop Lithium-Ion Battery Value Chain in South Africa	This study provides a detailed analysis of South Africa's position in the lithium-ion battery (LIB) value	The project builds on this study by conducting a meta-analysis and policy roadmap that consolidates such

	chain, highlighting opportunities to expand local participation through mineral beneficiation, component manufacturing, and skills development. It identifies energy, infrastructure, and financing gaps, and recommends policy actions to strengthen competitiveness, promote clean energy for refining, and integrate local industry into regional and global supply chains	findings, advancing policy and investment frameworks, supporting battery testing and certification infrastructure, and addressing skills and financing barriers identified in the study to operationalize a just and inclusive EV-battery value chain in South Africa.
Value Chain Mapping: Local Manufacturing Capability in the Transmission & Distribution Sector	This study, commissioned by the Localisation Support Fund (LSF) provides a comprehensive mapping of South Africa's T&D value chain, identifying products, subsystems, and services required for expanding electricity networks. It assesses local manufacturing capabilities, highlights import and production gaps, and recommends interventions to strengthen industrial capacity, localisation, and supply-chain integration in the power sector	The GEF-8 project complements this by enhancing localisation and technical capacity in South Africa's clean energy value chains. The project promotes EV battery manufacturing, the project extends the localisation and industrial-strengthening objectives of the LSF study

A3. Barriers

The baseline assessment shows that South Africa has begun laying the groundwork for a transition towards low-carbon transport. These frameworks signal a growing political commitment to e-mobility and the establishment of local EV battery value chains. Nevertheless, moving from policy ambition to large-scale transformation will demand substantial shifts in investment flows, industrial restructuring, institutional alignment, and infrastructure development. While important progress has been achieved, a series of structural and systemic barriers continue to hinder the pace and depth of South Africa's transition to electric mobility.

A3.1. Barrier 1 – Socio-economic constraints limiting large-scale uptake of EVs and battery technologies

3.1.1 Limited public awareness and entrenched consumer preferences

Although the international automotive industry is shifting rapidly towards electrification, public knowledge in South Africa about the benefits of EVs remains narrow and uneven. Consumer surveys and anecdotal evidence suggest that most households are unaware of the long-term cost savings from lower fuel use and reduced maintenance. Instead, perceptions are dominated by fears about charging availability, battery performance, and resale value. Moreover, decades of reliance on internal combustion engine (ICE) vehicles have created a strong cultural bias in favor of petrol and diesel cars, which are seen as tried-and-tested, reliable, and easier to maintain. Limited outreach campaigns and insufficiently visible pilot programs have done little to shift these perceptions.

3.1.2 High cost of EVs and limited affordability for consumers

Affordability remains one of the most significant barriers to EV uptake. In South Africa, electric vehicles are often priced 20–50% higher than their ICE equivalents, largely due to high import duties, reliance on expensive foreign components (especially lithium-ion batteries), and the absence of economies of scale in local manufacturing. Unlike in other regions, the domestic market is too small at present to drive competitive pricing, while public incentives and subsidies are still limited. As a result, EVs are currently accessible only to high-income consumers and fleet operators, leaving behind the vast majority of households, particularly those most vulnerable to rising fuel costs. This price differential not only slows adoption but also reinforces the perception that EVs are luxury goods rather than mainstream options.

3.1.3 Skills gap and risk of disruption in the automotive workforce

The South African automotive industry has long been a cornerstone of the national economy, with thousands of jobs linked to component production and vehicle assembly. However, most of these jobs are tied to ICE-specific technologies such as engine manufacturing, exhaust systems, and transmissions, all of which are expected to decline sharply as the EV transition accelerates globally. The shift to electric drivetrains and battery production requires a very different set of technical skills: electrochemistry, battery management, high-voltage systems, recycling, and advanced electronics. Currently, local training institutions and vocational programs are only partially aligned with these emerging needs. Without systematic reskilling and upskilling programs, workers face the dual risk of unemployment and exclusion from new opportunities in the green economy. This skills gap is also a deterrent to investors, who are concerned about the availability of qualified labor to operate new facilities.

A3.2. Barrier 2 – Policy uncertainty and institutional misalignment hinder investment

3.2.1 Policy uncertainty and inconsistency

South Africa has taken significant strides in strengthening its policy framework for electric mobility, setting a clear strategic direction for new energy vehicles (NEVs), local manufacturing, and value chain development. However, the regulatory environment remains transitional and fragmented, as key implementing regulations and fiscal mechanisms are still under development. The absence of a dedicated National Battery Manufacturing Policy has created uncertainty in the emerging EV value chain.

Recent progress includes the introduction of a 150% tax deduction incentive for EV and hydrogen vehicle manufacturing, effective from 2026, and an allocation of R1 billion under the Industrial Development Support Programme to accelerate NEV and battery production. These measures reflect the government's growing commitment to localization and industrial diversification. Nevertheless, policy and regulatory gaps persist in several critical areas, most notably around import duties, charging infrastructure standards, battery recycling and safety frameworks, and the integration of

renewable energy into charging networks. Furthermore, the alignment between EV-related incentives and the broader APDP2 industrial support framework is still evolving. Manufacturers remain uncertain about the treatment of EVs under existing production and investment allowances, while potential investors seek greater clarity on eligibility criteria, local content thresholds, and export credit arrangements.

3.2.2 Stakeholder misalignment and lack of coordination

South Africa's transition to electric mobility cuts across multiple sectors, but institutional alignment among them remains weak. Although the Just Energy Transition Investment Plan (2023–2027) and EV White Paper call for a “whole-of-government” approach, no dedicated coordination platform has yet been established, leading to overlapping mandates and fragmented implementation. As a result, responsibilities and initiatives remain scattered across institutions, leading to overlapping mandates, inconsistent policy signals, and slow execution. Divergent priorities, such as balancing industrial competitiveness, energy security, and climate goals, further complicate alignment.

3.2.3 Misaligned fiscal incentives and continued support to fossil fuel

Despite growing policy support for electric mobility, South Africa's fiscal framework continues to include measures that lower the cost of fossil fuel consumption, including the value-added tax (VAT) exemption for petrol, diesel, and illuminating paraffin, refunds of the General Fuel Levy and Road Accident Fund (RAF) levy for diesel in specific sectors, and temporary fuel levy freezes or reductions. These measures reduce operating costs for fossil fuel-dependent vehicles and can weaken the relative cost advantage of electric vehicles, particularly in the early stages of market development when upfront EV costs remain higher. This may moderate the pace of consumer and fleet transition away from conventional petrol and diesel vehicles.

However, these fiscal measures are not expected to materially hinder project implementation, as the project focuses on upstream enabling conditions rather than immediate demand substitution. In addition, key target segments such as industrial applications, high-mileage fleets, and battery manufacturing and testing remain viable entry points for electrification even under existing fuel price conditions.

A3.3. Barrier 3 – Cultural attachment to ICE vehicles

Cultural preferences for internal combustion engine (ICE) vehicles are reinforced by economic rationality and institutional neglect. The resistance to EVs among consumers and transport operators is not only a matter of familiarity but also of perceived risk and operational reliability. Without inclusive engagement with the taxi industry and demonstration pilots for fleet electrification, this barrier will persist regardless of infrastructure or cost improvements.

3.3.1 Concerns over reliability and practicality

There is widespread skepticism about EV durability in South African conditions. Concerns include the availability of charging infrastructure on long-distance routes, battery lifespan in hot climates, and the suitability of EVs for rugged terrains. These worries persist even when evidence from other countries demonstrates the reliability of EVs. Misinformation, limited consumer education, and a lack of visible, functioning local pilot projects reinforce these doubts.

3.3.2 The social and economic weight of the minibus taxi sector

The minibus taxi industry, which carries the majority of South Africa's commuting population, has a powerful influence on mobility trends and public perceptions. Operators prioritize affordability, reliability, and quick turnaround times, and currently see little incentive to shift to EVs given the higher upfront costs and limited charging networks. Without the engagement of this sector, broader cultural acceptance of EVs will remain constrained.

3.3.3 Risk of lagging adoption despite infrastructure and cost improvements

Even if infrastructure expansion and cost reductions are achieved, cultural inertia could slow adoption. Consumers may continue to default to ICE vehicles due to familiarity, ease of servicing, and long-standing habits. This highlights the need for targeted behavioral interventions, including awareness campaigns, pilot projects showcasing EV viability, and engagement with influential groups such as taxi operators and fleet managers, to shift perceptions over time.

A3.4. Barrier 4 – Environmental constraints reduce the climate benefits of EVs

3.4.1 Regulatory and market barriers hindering end-of-life (EoL) battery management

While South Africa currently lacks a comprehensive regulatory and institutional framework for managing end-of-life (EoL) EV batteries, the underlying barrier lies in the regulatory, technical, and market conditions that make such systems difficult to establish. The absence of clear roles, producer-responsibility obligations, and financial mechanisms for recycling or repurposing discourages private investment in circular battery value chains. Existing waste legislation does not yet differentiate between lithium-ion batteries used in mobility and other electronic waste, creating uncertainty for recyclers and investors. Furthermore, the limited domestic market for secondary materials and the lack of certified facilities for collection, testing, and repurposing constrain the emergence of viable business models. As a result, potentially valuable materials risk being discarded or exported for reprocessing abroad, leading to both environmental and economic losses.

3.4.2 Vulnerability of supply chains to environmental pressures

Battery production is resource-intensive, requiring significant amounts of water and energy. South Africa already faces water scarcity and environmental stress in mining regions, where extraction of critical minerals like manganese or platinum occurs. Expanding EV battery production without safeguards could exacerbate local environmental pressures and provoke resistance from communities. These safeguards must be coupled with water management and environmental impact control.

A3.5. Barrier 5 – Industrial and economic challenges to local value chain development

3.5.1 Limited mineral processing and beneficiation capacity

South Africa and the Southern African region are endowed with abundant deposits of battery-critical minerals such as lithium, manganese, cobalt, and platinum. However, most of these resources are exported in raw form to be refined and processed in Asia, Europe, or North America. This results in lost opportunities for domestic value addition, job creation, and technology transfer. The absence of large-scale local refining facilities and industrial clustering around battery production means that South Africa captures only a fraction of the potential economic benefits of its mineral wealth. Moreover, without domestic processing capacity, the country remains dependent on volatile global supply chains, exposing it to price shocks and trade restrictions. This gap undermines efforts to

develop a vertically integrated EV battery industry and reduces South Africa's ability to compete as a manufacturing hub.

3.5.2 High upfront investment requirements and financial risk perception

Transitioning from ICE-based production to EV components requires substantial capital investment to retool factories, build new assembly lines, establish gigafactories, and expand charging infrastructure. These investments are capital-intensive, with long payback periods and high technology risks. Domestic banks and investors are often reluctant to finance such projects given the perceived uncertainty of demand, limited policy incentives, and lack of local track record. International investors, while interested, seek clear guarantees and co-financing mechanisms before committing. While recent incentives under APDP2 and the Industrial Development Support Programme are positive, further mechanisms, such as blended finance facilities and risk-sharing instruments, will be required to catalyze large-scale investment.

3.5.3 Slow pace of industrial transformation and competitiveness risks

The South African automotive industry has historically specialized in ICE-related components such as engines, exhaust systems, and transmissions. These components account for a large share of employment and export revenues. Yet as global markets, particularly the European Union and United Kingdom, move to ban new ICE vehicle sales by 2035, demand for these products will decline sharply. South African firms have been slow to pivot towards EV-related components, constrained by skills shortages, limited R&D, and uncertainty over long-term competitiveness.

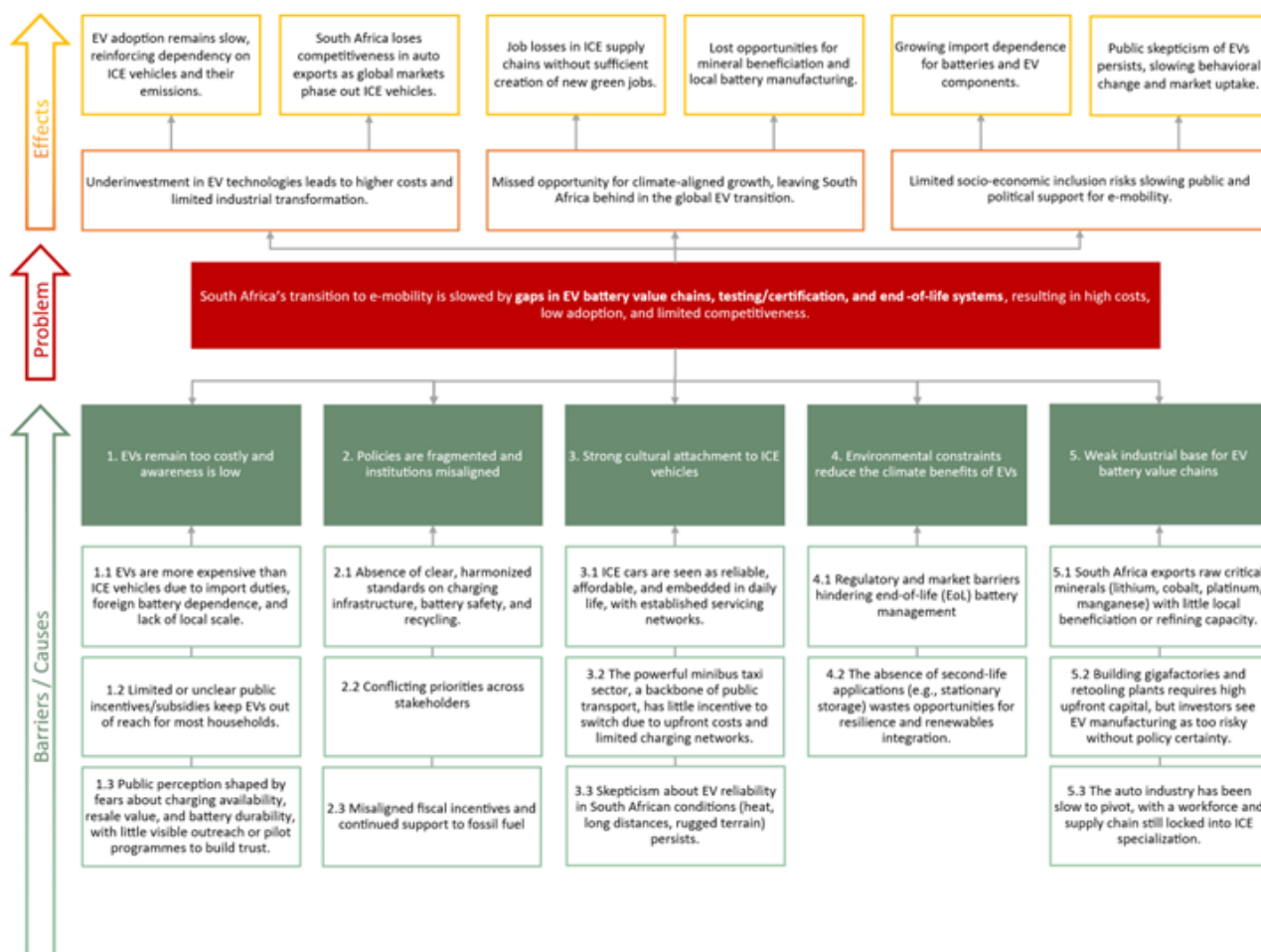
A4. Problem Tree

South Africa's transition to e-mobility is constrained by systemic gaps in EV battery value chains, testing and certification capacity, and end-of-life management systems. These challenges are compounded by high vehicle costs, limited affordability, fragmented and inconsistent policy frameworks, and weak institutional alignment. At the same time, cultural attachment to internal combustion engine (ICE) vehicles, a coal-based grid, and an underdeveloped industrial base for battery production hinder the creation of competitive local supply chains. Together, these constraints reinforce dependence on imported technologies, slow down the pace of EV adoption, and weaken South Africa's competitiveness in the rapidly transforming global automotive market.

The barriers and root causes behind these problems are deeply interconnected. High EV costs and limited consumer awareness are linked to missing incentives, reliance on imports, and weak economies of scale. Policy fragmentation and institutional misalignment create uncertainty for investors, while entrenched ICE preferences reflect both cultural norms and limited availability of affordable EV options. Environmental constraints, including coal-based electricity and absent end-of-life systems, reduce the perceived climate benefits of EVs, while the lack of industrial capacity prevents South Africa from capturing value from its mineral endowment. To tackle this, meaningful progress requires a coordinated approach that strengthens enabling frameworks, builds skills and awareness, mobilizes finance, and supports domestic value-chain development. These interdependencies are represented in the problem tree, which illustrates how root causes cascade into systemic barriers, reinforce the central problem, and lead to broader socio-economic and environmental impacts.

FIGURE 1 – PROBLEM TREE DIAGRAM

Problem tree:



A5. Project Object

In the absence of the project, South Africa's shift to low-carbon mobility manufacturing would remain slow and fragmented. Despite the EV White Paper (2023), APDP2, and the Just Energy Transition Investment Plan, there are limitations that continue to deter investment and delay localization of EV and battery manufacturing. Without clear quality standards and end-of-life management frameworks, the sector would struggle to meet global market requirements, risking further loss of competitiveness and missing opportunities for industrial diversification and green jobs.

The project takes a practical, enabling approach suited to South Africa's current coal-based energy context, where large-scale EV deployment offers limited near-term emission benefits. Instead of direct roll-outs, it focuses on closing critical policy, regulatory, and technical gaps that hinder investment and innovation. By supporting coherent frameworks, establishing testing and certification functions, and promoting workforce and institutional capacity, the project lays the groundwork for a credible and sustainable transition once the power system decarbonizes. Its additionality lies in creating the conditions for future mitigation and market development; outcomes that would not emerge under business-as-usual or stand-alone pilot initiatives.

The project's objective is to mitigate GHG emissions by enhancing quality infrastructure to accelerate the development of South Africa's low-carbon electric mobility market and value chains. It will support policy frameworks and establish testing, certification, and regulatory systems to promote local manufacturing of EV components such as batteries and improve end-of-life management. Beyond emissions reduction, the project will foster green skills and promote the creation of new jobs consistent with the just energy transition policy. To ensure resilience, it will embed coherent standards and incentives to reduce EV ownership costs, safeguard export competitiveness through accredited certification and monitoring, diversify technology pathways including recycling and second-life applications, and leverage finance partnerships to de-risk investment. Workforce transition will be addressed through gender-responsive reskilling and upskilling, while environmental risks will be mitigated via circularity strategies and safeguards. Although external economic or geopolitical shifts may remain outside direct control, adaptive governance and knowledge-sharing mechanisms will help sustain progress and build long-term resilience.

The initiative will initially prioritize the EV battery value chain, given its decisive share in EV value addition, the immediate need for accredited testing/certification, and the role of battery EoL management in a circular economy. By focusing on batteries first the project will deliver near-term competitiveness and mitigation gains and support compliance with emerging market access rules (e.g., EU duty-free thresholds and ICE phase-out trajectories). The project targets 1.02 million tCO₂e in indirect emission reductions by developing the EV market and related enabling conditions.

South Africa will benefit from targeted technical assistance, quality-infrastructure support, and structured knowledge exchange to address the baseline barriers through the project's four components. The project will convene government counterparts (dtic, DFFE, DEE, DSTI, DMPR, DoT, the Presidency/JET NEV PMO), SANEDI as lead executor, industry bodies and value-chain actors (NAAMSA, NAACAM, SMEs), finance partners (IDC, DFIs, private investors), and research/policy institutions (Nelson Mandela University/uYilo, TIPS, GIZ) to: (i) provide coordination and technical inputs to the JET NEV PMO and working groups and deliver an EV Battery Manufacturing Investment Strategy with regulatory impact assessment and policy briefs (Outputs 1.1.1–1.1.2); (ii) upgrade and operationalize a pilot high-voltage battery pack testing and certification facility at uYilo/NMU, including standards uptake, validated protocols, and a co-financing framework (Output 1.2.1); (iii) produce a gender-responsive Roadmap and Technical Guidelines for End-of-Life EV Battery Management covering EPR options, second-life pathways, recycling value-chain mapping, and safety/traceability requirements (Output 1.3.1); and (iv) accelerate market and workforce readiness through skills mapping, a co-designed gender-responsive training curriculum, policy-maker workshops and study tour, a dissemination package, a knowledge platform, and an investment pipeline including opportunity studies, a special call for project ideas, feasibility studies, and investor matchmaking (Outputs 2.1–2.3 and 3.1–3.2). Knowledge products will be disseminated nationally and embedded in existing hubs as a lasting public good for South Africa and the region.

The project will face challenges in ensuring resilience to future drivers. These include:

- Rising mobility demand and cost pressures, which may entrench ICE usage if affordability gaps persist;

- Evolving international standards and trade rules for product carbon intensity, safety, and recycling, affecting export access and compliance costs;
- Technological and infrastructure uncertainty, including grid decarbonization pace, charging rollout, and dependency on still-maturing solutions across the battery lifecycle;
- Workforce transition risks in ICE-oriented supply chains and concerns from organized labor; and
- Environmental externalities from mineral processing and battery EoL if safeguards lag deployment.

The project will address affordability and growth risks by embedding gender-responsive policy incentives, coherent standards, and robust quality infrastructure to lower EV ownership costs and promote local production. It will safeguard South Africa's competitiveness in changing global markets through harmonized standards, accredited testing and certification, and strong monitoring tools, while managing technological uncertainties by diversifying into battery manufacturing, second-life use, and recycling, supported by de-risked finance partnerships. Workforce impacts will be mitigated through gender-responsive reskilling and upskilling to protect and expand employment, and environmental concerns will be tackled via end-of-life roadmaps, circularity measures, and integrated safeguards. Although wider economic or geopolitical shifts may remain outside direct control, the project's adaptive governance and knowledge-sharing systems will help ensure resilience and sustained progress.

Incremental cost reasoning

Under business-as-usual, South Africa's battery value-chain localisation is slowed by a transitional and fragmented policy environment, weak cross-institutional coordination, limited accredited testing capacity, and the absence of a clear, investment-ready end-of-life system—conditions that keep risk high and deter private capital. The project uses GEF resources to finance the missing public-good functions that convert this domestic effort into one with global environmental benefits: (i) consolidated technical support to New Energy Vehicle/Just Energy Transition governance (briefs, dialogues) and an Electric-Vehicle Battery Manufacturing Investment Strategy to align policy and investment signals; (ii) the upgrade and operationalisation of a pilot high-voltage battery-pack testing and certification facility at Nelson Mandela University/uYilo with internationally referenced protocols and a co-financing pathway - establishing credible routes to conformity; (iii) a gender responsive national roadmap and technical guidelines for end-of-life batteries that set out extended-producer-responsibility options, traceability, and safe reuse/second-life/recycling; (iv) a gender-responsive skills package (skills mapping, co-designed curriculum including high-voltage safety for technicians/engineers/first-responders) plus peer-learning workshops and a targeted study tour for policy makers; (v) a strategic dissemination package and permanent knowledge-sharing platform; and (vi) an investment-readiness pathway - an opportunities and enabling-infrastructure study, an open call that produces investor-ready project profiles, two techno-economic feasibility studies, and investor matchmaking - to crowd-in capital for local manufacturing and circular solutions. Together, these additional measures reduce regulatory and technical uncertainty, lower transaction costs, and accelerate localisation and circularity in ways not funded under the baseline, thereby catalysing private participation and delivering measurable global benefits via faster indirect greenhouse-gas mitigation and reduced hazardous waste.

This section asks for a theory of change as part of a joined-up description of the project as a whole. The project description is expected to cover the key elements of good project design in an integrated way. It is also expected to meet the GEF's policy requirements on gender, stakeholders, private sector, and knowledge management and learning (see section D). This section should be a narrative that reads like a joined-up story and not independent elements that answer the guiding questions contained in the guidance document. (Approximately 3-5 pages) see guidance here

B1. Overview

The proposed project responds to South Africa's e-mobility transition challenges by strengthening the enabling conditions for accelerated uptake of low-carbon electric mobility, with a particular focus on building a competitive and circular EV battery value chain. Rather than financing vehicle deployment directly, the project delivers an integrated package of policy and institutional support, quality-infrastructure upgrades, skills and knowledge development, and investment-pipeline preparation. Together, these measures will underpin a domestic battery ecosystem that supports national industrialization priorities and a just transition and contributes to South Africa's climate and development goals.

The project rests on three interlinked technical components and a monitoring and evaluation framework:

- **Component 1** strengthens the gender responsive policy framework and quality infrastructure needed for battery industrialization and safe end-of-life management. It supports national coordination on new energy vehicles through the JET governance structures and targeted stakeholder dialogues, ensuring that evidence from the project informs ongoing policy processes. It then delivers an EV Battery Manufacturing Investment Strategy grounded in a synthesis of existing analyses, complemented by regulatory impact assessment and concise policy briefs to guide localization, critical-materials management, and inclusive industrial growth. To build market confidence and compliance capacity, the project upgrades and operationalizes a pilot high-voltage battery pack testing and certification facility at Nelson Mandela University/uYilo, including internationally referenced testing protocols and a co-financing pathway for advanced equipment. Finally, it produces a national roadmap and technical guidelines for end-of-life EV batteries, setting out extended producer responsibility options, second-life and recycling pathways, value-chain roles, and safety/traceability requirements aligned with circular-economy principles.
- **Component 2** builds the human capital and institutional capabilities required for a just and inclusive battery transition. It starts with a skills mapping and gap assessment to forecast labour needs across battery manufacturing, testing, recycling, and related services, explicitly integrating gender and inclusion perspectives. Based on this, the project co-designs a tiered training curriculum with industry and academia, spanning entry-level to advanced modules and training-of-trainers, and including internships and high-voltage safety content to expand women's participation and support workforce transition from ICE industries. For decision- and policy-makers, it delivers a series of international/regional peer-learning workshops and a targeted study tour focused on battery policy, safety, recycling, standards, and implementation practice. To sustain learning and coordination, the project implements a gender-responsive dissemination package and establishes a knowledge-sharing platform and repository integrated into existing national hubs.
- **Component 3** converts policy and capacity gains into investable action by identifying and de-risking local battery value-chain opportunities. It produces a comprehensive gender

responsive assessment of EV component and battery manufacturing prospects, including viable business models, supplier and SME mapping, and comparative international lessons, and evaluates Special Economic Zones and Industrial Parks as strategic hosts for battery-related manufacturing clusters. Building on this analysis, the project launches (or aligns with) a special call for project ideas to select priority manufacturing and end-of-life investments, prepares techno-economic feasibility studies and designs for shortlisted ventures, and convenes investor outreach and matchmaking events to mobilize domestic and international co-financing and accelerate implementation. Special attention will be given to women-owned SMEs for these matchmaking and co-financing opportunities.

B2. Theory of Change

The project's design is based on the following goal statement:

IF South Africa's regulatory coherence, institutional capacity, and technical infrastructure for e-mobility and battery management are gradually strengthened through targeted policy support and capacity building, **THEN** government agencies, industry actors, and investors will be better positioned and more confident to develop and scale low-carbon mobility solutions, **BECAUSE** clearer rules, credible standards, and improved institutional coordination will reduce uncertainty and investment risk, creating the conditions for future incentives, private-sector participation, and sustained progress toward the Just Energy Transition.

The project also supports South Africa's emerging EV battery manufacturing agenda in a targeted way: it helps establish clearer localisation pathways, strengthens quality-assurance and testing systems needed by manufacturers, and builds skills aligned with battery production and end-of-life services. These measures do not by themselves deliver industrial transformation, but they address key enabling barriers that currently discourage firms from shifting away from ICE-linked production. In this way, the project helps reduce the risk of deindustrialisation by supporting a feasible pivot toward EV-battery value chains.

The project's results are designed to be sustainable through the institutionalization of coordination mechanisms, policy frameworks, and technical standards that remain in force beyond the project's duration. By embedding these structures within government systems and industry practices, the project ensures continued policy enforcement, innovation, and investment in the e-mobility and battery sectors. Sustainability is further reinforced by leaving behind practical tools, standards, and upgraded testing capacity that can continue to de-risk local battery manufacturing and recycling decisions after the project ends.

Scale-up is supported through the demonstration of viable business models and investment-ready projects that attract private sector participation and financing. As confidence grows in the regulatory and market environment, replication of successful models, such as battery recycling, second-life applications, and local component manufacturing, can expand across regions and market segments. The project's studies and investor matchmaking are intended to help convert high-potential battery manufacturing and circular-economy concepts into near-term investable opportunities.

Replicability is further enhanced through the project's emphasis on knowledge management, training, and policy learning. Lessons from testing and certification pilot and regulatory experiences will be shared nationally and regionally, enabling other African countries to adapt the approaches for their own low-carbon and circular e-mobility transitions.

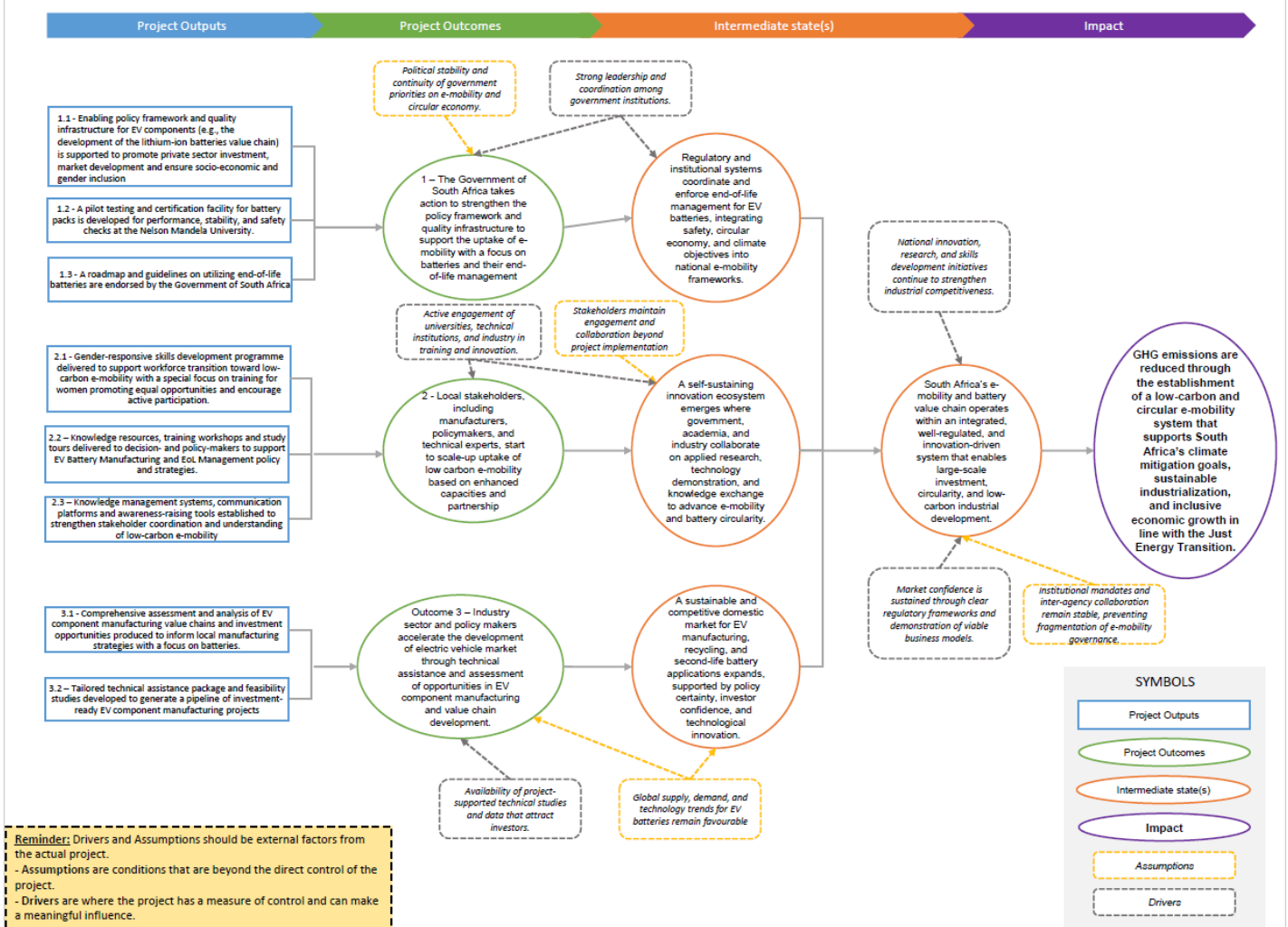
Theory of Change Diagram

The project aims to enable an integrated, low-carbon, and circular EV battery value chain in South Africa as a foundation for the broader e-mobility transition. It does so through three complementary causal pathways, policy and institutional strengthening, capacity development and partnerships, and industry readiness and investment mobilization, supported by key drivers and dependent on critical assumptions for sustainability.

1. The first causal pathway focuses on strengthening the policy, regulatory, and institutional framework for e-mobility and battery management, including end-of-life applications. Through coordinated technical inputs to NEV/JET governance, an investment-oriented battery industrialization strategy, standards-aligned battery testing and certification capacity, and national guidance on recycling and second-life uses, the Government of South Africa is enabled to regulate and steer the battery lifecycle within industrial, climate, and circular-economy priorities. Special attention will be given that all activities are gender responsive.
2. The second causal pathway enhances national capacities, knowledge systems, and partnerships among government, academia, and the private sector to foster applied research, innovation, and gender-responsive skills development. Skills mapping and co-designed training curricula equip technicians, engineers, and first responders for battery manufacturing, testing, maintenance, repurposing, and recycling, while peer-learning workshops and a study tour strengthen policy and regulatory capability. A knowledge platform and dissemination tools institutionalize stakeholder learning and coordination.
3. The third causal pathway promotes industry readiness and investment by developing value-chain assessments, business models, supplier and SME mapping, and feasibility studies that identify and de-risk priority manufacturing and circular-economy opportunities. It places particular emphasis on the strategic role of Special Economic Zones and Industrial Parks for clustering EV- and battery-related manufacturing and investment partnerships and uses investor outreach and matchmaking to connect feasible opportunities to finance.
4. Finally, these pathways converge in a more coherent, standards-based, and innovation-driven battery ecosystem with credible circular end-of-life arrangements and a skilled workforce. This strengthened system enables public and private actors to scale e-mobility and battery investments over time, supporting South Africa's climate-mitigation and industrial-development objectives and inclusive growth in line with the Just Energy Transition.

FIGURE 2 – THEORY OF CHANGE DIAGRAM

Theory of change:



B3. Project Elements

South Africa's transition to a low-carbon economy hinges on transforming its transport and energy systems, both still dominated by fossil fuels. Electric mobility (e-mobility), particularly through the development of local electric vehicle (EV) and battery value chains, offers a strategic opportunity to advance the country's Just Energy Transition (JET) while promoting green industrialization and job creation. The project contributes to this transition by addressing key institutional, regulatory, and capacity gaps that currently constrain large-scale adoption of e-mobility solutions.

Component 1 focuses on establishing the enabling policy, regulatory, and technical foundations for e-mobility. It will support the JET Working Group on EVs, prepare an integrated policy roadmap on component manufacturing and critical materials, establish a pilot battery testing and certification facility at Nelson Mandela University, and develop end-of-life management guidelines. Component 2 complements this by strengthening human and institutional capacities through gender-responsive training, policy tools, knowledge platforms, and awareness activities. Component 3 provides targeted technical assistance to generate a pipeline of bankable EV manufacturing and recycling projects,

conducting feasibility studies and investor matchmaking to attract private co-financing. Component 4 ensures continuous monitoring, learning, and adaptive management.

Component 1: Supporting policies and quality infrastructure to enable accelerated development of low-carbon electric mobility market

Barrier addressed: 3.1.2, 3.2.1, 3.2.2, 3.3.1, 3.4.1, 3.5.3

Component 1, led by SANEDI, strengthens the policy, regulatory, and quality-infrastructure foundations of South Africa's e-mobility battery transition. It reduces fragmentation and investment risk by supporting national NEV/JET coordination structures and producing an Integrated Policy and Quality-Infrastructure Roadmap for battery and component manufacturing, including critical materials and inclusive industrialization priorities. It builds credible domestic conformity-assessment capability through the upgraded high-voltage battery pack testing and certification facility at Nelson Mandela University's uYilo Programme, aligned with national and international standards, helping local firms meet OEM and export requirements and improving market trust in battery performance and safety. Finally, it anchors circularity by delivering a national end-of-life battery roadmap and technical guidelines that define EPR options, second-life and recycling pathways, actor roles, and safety/traceability requirements to unlock private participation in a sustainable battery lifecycle.

This component will work closely with key national institutions, including the Department of Trade, Industry and Competition (the dtic), the Industrial Development Corporation (IDC), Trade & Industrial Policy Strategies (TIPS), the South African National Energy Development Institute (SANEDI), and Nelson Mandela University's uYilo e-Mobility Programme.

Outcome 1 – Strengthened policy framework and quality infrastructure to support e-mobility local industrialization with a focus on batteries and their end-of-life management

Outcome 1 results in a more coherent and investment-enabling national environment for e-mobility localization. By improving inter-institutional coordination, providing targeted analytical inputs, and translating priorities into implementable policy and standards instruments, it reduces uncertainty that currently slows industrial investment in EV batteries and components. The outcome is evidenced through an integrated policy and quality-infrastructure roadmap, functioning domestic high-voltage battery testing and certification capability, and nationally anchored guidance for safe and circular end-of-life battery management.

Output 1.1 - Enabling policy framework and quality infrastructure for EV components (e.g., the development of the lithium-ion batteries value chain) is supported to promote private sector investment, market development and ensure socio-economic and gender inclusion

Output 1.1 provides the analytical base and coordination support needed for a coherent, inclusive, and investment-ready enabling environment for South Africa's EV battery and component industries. Through sustained technical participation in NEV/JET governance structures, the project will contribute evidence briefs, analytical inputs, and targeted support to ensure national policy processes on EVs, batteries, and critical materials are informed by the project's findings and aligned across workstreams. Two structured stakeholder dialogue and exchange events will convene government, industry, research institutions, and community representatives to surface implementation challenges and agree on practical solutions for battery manufacturing, charging and energy integration, logistics, and end-of-life (EoL) systems.

Building on this coordination platform, the project will deliver an EV Battery Manufacturing Investment Strategy. The strategy will synthesize existing studies into an integrated meta-analysis, identify gaps

and opportunities across the battery value chain, and set out gender responsive policy and investment recommendations aligned with industrialization plans and just-transition priorities. It will include a regulatory impact assessment that integrates socio-economic and gender dimensions, and a concise set of policy briefs and thematic knowledge products for senior decision-makers.

Code	Deliverable short title	Minimum indicative content	Responsible for deliverable	Key Partners
1.1.1	Coordination, participation and technical support for the JET NEV PMO	Ongoing analytical contributions and evidence briefs to NEV/JET working groups; technical linkage to workstreams; two stakeholder dialogue and exchange events on EV/battery manufacturing and EoL implementation challenges and solutions.	SANEDI	• the dtic • the IDC • Presidency PMU
1.1.2	Proposal for EV Battery Manufacturing Investment Strategy (incl. integrated meta-analysis, policy & investment recommendations and policy briefs)	Integrated meta-analysis; policy and investment recommendations for battery/component localization and critical materials; regulatory impact assessment with gender and socio-economic lenses; suite of policy briefs/knowledge products for dissemination through government and industry channels.	Trade & Industrial Policy Strategies (TIPS)	• the dtic • IDC • JET NEV PMO • NAAMSA • GIZ • DSTI • LSF

Output 1.2 - A pilot testing and certification facility for battery packs is developed for performance, stability, and safety checks at the Nelson Mandela University.

Output 1.2 strengthens South Africa's technical and quality infrastructure for e-mobility by upgrading a pilot high-voltage battery pack testing and certification facility within Nelson Mandela University's uYilo e-Mobility Programme. The upgraded facility will provide the certification and testing capacity needed for local and international markets, enabling comprehensive performance, stability, and safety assessment of cells, modules, and packs in line with relevant national and international standards. The facility upgrades will accommodate the different needs of both men and women, ensuring safety for all, including PPE provided to fit both genders, separate changing rooms, and safe transport to and from the facilities. The output will deliver a quality-infrastructure action plan that sets out standards uptake, testing requirements, conformance pathways, equipment specifications and upgrade steps, and validated testing protocols and operating procedures. In addition, it will develop a co-financing framework to mobilize resources for advanced equipment and reach full EV-scale pack testing capability, thereby improving supplier readiness, compliance, and market confidence in locally produced battery systems.

Code	Deliverable short title	Minimum indicative content	Responsible for deliverable	Key Partners
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1.2.1	Laboratory Upgrade and Testing Package for high voltage Battery Packs	Certification/testing upgrade package for cells, modules, and packs; quality-infrastructure action plan covering standards uptake, testing requirements and conformance routes; equipment specifications and upgrade pathway; validated testing protocols and operating procedures; co-financing framework for acquisition of advanced equipment and/or infrastructure upgrades to achieve EV-scale pack testing capability.	uYilo / Nelson Mandela University	• Nelson Mandela University (uYilo) • GIZ • JET NEV PMO • DSTI
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Output 1.3 - A roadmap and guidelines on management of end-of-life batteries are endorsed by the Government of South Africa

Output 1.3 delivers a national Roadmap and Technical Guidelines for End-of-Life (EoL) EV Battery Management to enable safe, circular, and investment-ready battery lifecycle systems in South Africa. Building on uYilo's ongoing work on battery reuse and recycling, the roadmap will compile regional and international good practices (drawing on the Global Programme on E-Mobility), map South Africa's emerging EoL value chain and existing pilot initiatives and identify regulatory and market gaps. It will set out policy options to strengthen the national framework for EoL battery governance, including extended producer responsibility (EPR) approaches, material-flow management, institutional roles, safety and environmental risk controls, regulatory touchpoints, and incentives to catalyse private investment in recycling and second-life applications such as stationary energy storage. The accompanying technical guidelines will provide standardized procedures for repurposing and remanufacturing across lithium-ion chemistries, covering safety protocols, traceability requirements, and warranty considerations.

Code	Deliverable short title	Minimum indicative content	Responsible for deliverable	Key Partners
1.3.1	Roadmap and Technical Guidelines for End-of-Life (EoL) EV Battery Management	Based on uYilo reuse/recycling initiatives; overview of regional/international good practices; South Africa EoL value-chain and pilot mapping; policy options for EPR, roles, material flows, safety/environmental risks, regulatory touchpoints and private-sector participation; technical repurposing/remanufacturing guidelines across lithium-ion chemistries including safety, traceability and warranty requirements.	uYilo / Nelson Mandela University	• DFFE • DTIC • DMPR • DSTI • Nelson Mandela University (uYilo) • GIZ

Component 2: Upskilling, knowledge management, awareness raising and effective communication to promote local EV manufacturing and infrastructure for low carbon e-mobility

Barrier addressed: 3.1.1, 3.1.3, 3.2.2, 3.3.1, 3.3.2, 3.5.3

Component 2 strengthens South Africa's human and institutional capacity for an inclusive, knowledge-driven e-mobility transition. It addresses workforce and skills gaps by undertaking national skills

mapping and forecasting, then delivering gender-responsive training and co-designed curricula with industry and academia so technicians, engineers, trainers, and first responders are prepared for battery and EV technologies and for a just transition from ICE-linked jobs. It also reduces institutional misalignment by building policy and regulatory capability through peer learning, workshops, and practical guidance for government and industry stakeholders.

To counter low awareness and reliability concerns and to engage influential actors, Component 2 deploys a strategic dissemination package and a national knowledge-sharing platform that provide credible, locally grounded information on battery safety, standards, end-of-life practices, and market opportunities.

Outcome 2 - Local stakeholders, including manufacturers, policymakers, and technical experts, start to scale-up uptake of low carbon e-mobility based on enhanced capacities and partnership

Outcome 2 results in a stronger national capacity base for accelerating e-mobility uptake and localisation. It is achieved through validated labour-market insights, industry-aligned training pathways, and applied learning products that equip current and future workers (with a deliberate focus on women) to participate in EV battery manufacturing, maintenance, testing, and end-of-life systems. The outcome also reflects improved decision-making capability among public institutions via structured knowledge resources, peer exchange, and cross-sector learning that translate technical evidence into implementable policy and regulatory action.

Output 2.1 - Gender-responsive skills development programme delivered to support workforce transition toward low-carbon e-mobility with a special focus on training for women promoting equal opportunities and encourage active participation.

Output 2.1 strengthens South Africa's human-capital base for the emerging EV battery and e-mobility value chain through a gender-responsive skills development programme grounded in real labour-market needs. It will begin with a national skills mapping and consolidation exercise that synthesizes existing initiatives and studies to identify workforce gaps, forecast demand across EV battery manufacturing and end-of-life management, and recommend updates to vocational pathways and curricula, explicitly integrating gender and inclusion perspectives. Based on these findings, the project will co-design a modular training curriculum with industry and academia, spanning entry-level, advanced, and training-of-trainers tracks. The curriculum will cover battery pack design, cell assembly, recycling and second-life applications, testing/certification, EV maintenance, and high-voltage safety for technicians, engineers, and first responders. Internship pathways with manufacturers, recyclers, and service providers will be incorporated to ensure practical experience and employability. Across all training content and delivery, targeted outreach and gender-sensitive design will promote women's participation and progression into technical and leadership roles, supporting a just and inclusive workforce transition.

Code	Deliverable short title	Minimum indicative content	Responsible for deliverable	Key Partners
2.1.1	Skills Mapping and Consolidation Report for EV Battery Manufacturing and EoL Management	Synthesis of national initiatives and studies; identification of workforce gaps and training needs; labour-market demand forecasting; gender/inclusion analysis; recommendations for updating and creating curricula and vocational	Consultancy on EV Policy, Socio-Economic, Gender and Equity (Just Transition)	• NAACAM • NAAMSA • IDC • DOT • GIZ

		pathways aligned with industry demand and policy priorities.		• TIA
2.1.2	Proposal for a Training Curriculum on EV Battery and E-Mobility Technologies co-designed with industry and academia	Co-designed modular curriculum with entry-level, advanced and training-of-trainers tracks; modules on battery design/assembly, recycling/second-life, testing/certification and EV maintenance; specialized safety modules for technicians, engineers and first responders; internship pathways; gender-sensitive content and measures to promote women's participation.	• uYilo / Nelson Mandela University	• NMU • NAACAM • Other universities and TVET colleges • Industries and manufacturer • GIZ • DSTI • TIA

Output 2.2 – Knowledge resources, training workshops and study tours delivered to decision- and policy-makers to support EV Battery Manufacturing and EoL Management policy and strategies.

Output 2.2 builds the capacity of South African policymakers, regulators, and technical bodies to implement effective EV battery manufacturing and end-of-life (EoL) strategies aligned with just-transition priorities. It delivers three international/regional peer-learning workshops on battery industrialization, safety and standards, recycling/second-life regulation, testing/certification, and renewable-transport integration, including scenario exercises and practical case studies that are documented for ongoing use. A targeted one-week study tour (up to 12 participants) then exposes key institutions to established EV/battery plants, accredited testing facilities, and operating recycling/second-life systems abroad, translating lessons into actionable inputs for South Africa's policy and investment planning.

Code	Deliverable short title	Minimum indicative content	Responsible for deliverable	Key Partners
2.2.1	Capacity-Development Workshops and Peer-Learning Sessions with decision-makers, regulators, and technical bodies	Three international/regional workshops with simulations, policy-scenario planning, and peer exchange on battery manufacturing, safety, recycling/EoL frameworks, testing/certification, renewable-transport integration, socio-economic/environmental impacts, municipal planning, and gender-responsive policy; case-study documentation for sustained use; coordinated with GEF-7 Global Programme (ID 10114) and national initiatives.	Consultancy on EV Policy, Socio-Economic, Gender and Equity (Just Transition)	• the dtic • DEE • DOT • DFFE • DSTI • TIA
2.2.2	Targeted Study Tour for policy makers, technical experts and academia	One-week study tour (up to 12 participants) to visit established EV/battery manufacturing sites, testing and certification facilities, and second-life/recycling operations; structured learning agenda and post-tour synthesis to inform South Africa's policy and institutional approaches.	Consultancy on EV Policy, Socio-Economic, Gender and Equity (Just Transition)	• the dtic • DEE • DOT • DFFE • DSTI • NMU • TIA

Output 2.3 – Knowledge management systems, communication platforms and awareness-raising tools established to strengthen stakeholder coordination and understanding of low-carbon e-mobility

Output 2.3 strengthens stakeholder coordination and public understanding of low-carbon e-mobility by establishing durable knowledge-management and communication systems. It delivers a Gender-Responsive Strategic Dissemination Package that tailors messages and outreach to key audiences, industry (including SMEs), policymakers, SEZ/IP actors, municipalities, insurers, and technical institutions, while ensuring women's contributions and leadership are visible across all knowledge products. In parallel, it creates a Knowledge-Sharing Platform and Repository, integrated into existing hubs (such as the uYilo Knowledge Hub or the JET NEV platform), serving as a long-term digital library for policy documents, training modules, technical guidelines, and market studies on EV batteries and e-mobility.

Code	Deliverable short title	Minimum indicative content	Responsible for deliverable	Key Partners
2.3.1	Gender-Responsive Strategic Dissemination Package	Targeted communication strategy and dissemination plan for project outputs through government, industry, and partner channels; gender-responsive approach highlighting women's participation and leadership.	SANEDI	• Global Programme (ID 10114) • IDC • NAACAM • TIA
2.3.2	Knowledge-Sharing Platform and Repository (integrated in existing hub / website)	Digital knowledge hub integrated in existing platforms, providing long-term access to EV/battery policy, standards, tools, training materials, guidelines, and market studies with gender-sensitive content.	uYilo / Nelson Mandela University (incorporate into the knowledge hub for the E-Bus project with SANEDI)	• UNEP Global Programme (ID 10114) • uYilo • IDC • NAACAM • TIA

Component 3: Promoting the uptake of low-carbon EV market through technical assistance.

Barriers addressed: 3.1.2, 3.2.1, 3.4.1, 3.4.2, 3.5.1, 3.5.2, 3.5.3

Component 3 tackles the industrial, financial, and investment constraints holding back South Africa's EV battery value chains. It reduces policy- and market-related investment uncertainty by producing rigorous value-chain and opportunity assessments that translate national priorities into clear, investment-relevant evidence for manufacturers and financiers. To address high costs and risk perception, it develops viable business models and conducts techno-economic feasibility studies for priority battery manufacturing, second-life, and recycling opportunities, turning them into investment-ready projects.

By mapping critical-materials and component value chains, supplier potential, and the readiness of Special Economic Zones and Industrial Parks, Component 3 supports a faster industrial pivot and improves competitiveness in global EV markets. It embeds circular-economy considerations by explicitly including end-of-life flows and second-life/recycling pathways in the opportunity analysis and project pipeline, ensuring that emerging investments are environmentally sound and aligned with a sustainable battery lifecycle. Investor outreach and matchmaking then connect these de-risked

opportunities to domestic and international capital, accelerating movement from strategy to implementation.

Outcome 3 – Industry sector and policy makers accelerate the development of electric vehicle market through technical assistance and assessment of opportunities in EV component manufacturing and value chain development.

Outcome 3 enables faster, better-informed industrial and investment decisions for South Africa's EV battery ecosystem. It is achieved by providing stakeholders with validated market intelligence, localisation pathways, and feasibility-backed project options that reduce uncertainty around technology choice, commercial viability, and environmental and social performance. The outcome supports a shift from fragmented initiatives to coordinated investment action, strengthening collaboration between government, DFIs, and private actors. Efforts will be made to ensure investment is done through a gender lens.

Output 3.1 - Comprehensive assessment and analysis of EV component manufacturing value chains and investment opportunities produced to inform local manufacturing strategies with a focus on batteries.

Output 3.1 produces a comprehensive Study on Investment Opportunities and EV Component Manufacturing in South Africa, focused on batteries and critical materials. The study will synthesize existing work and deliver two integrated packages. First, it will assess market and value-chain opportunities across battery cell and pack assembly, component manufacturing, second-life applications, and recycling; identify viable business models for localization and scale-up; analyse how current BESS assembly capabilities could be leveraged to supply EV batteries to OEMs (including standards, costing, and timelines); and map SMEs and suppliers with potential to enter the value chain, highlighting opportunities for women- and youth-led enterprises. Second, it will assess Special Economic Zones and Industrial Parks as potential hubs for EV component and battery manufacturing, examining infrastructure readiness, energy access, logistics, and environmental sustainability; review incentive frameworks and investment partnership options with government, DFIs, and private investors; and provide policy and governance recommendations to attract anchor investors, promote industrial clustering, and strengthen local-global supplier linkages. Special attention is on highlighting the barriers and opportunities of women along the value chain and offer solutions to reduce these barriers.

Code	Deliverable short title	Minimum indicative content	Responsible for deliverable	Key Partners
3.1.1	Study on Investment Opportunities incl. propagating strategy for EV Component Manufacturing in South Africa	Package 1: value-chain and market assessment; viable business models; BESS-to-EV battery leveraging analysis; SME/supplier mapping with inclusion lens; international case studies. Package 2: SEZ/IP readiness and feasibility; incentive and partnership assessment; policy/governance recommendations for clustering and investor attraction.	Consultancy on Economic, Financial and Business dimensions of EVs manufacturing	• dtic • IDC • NAACAM

Output 3.2 – Tailored technical assistance package and feasibility studies developed to generate a pipeline of investment-ready EV component manufacturing projects

Output 3.2 generates a ready-to-finance project pipeline for EV battery manufacturing and end-of-life (EoL) solutions. Working with the JET NEV PMO, it will identify at least two priority investment opportunities from existing calls or, if needed, run a dedicated Special Call for Project Ideas with clear themes (battery manufacturing/assembly, second-life, recycling) and transparent selection criteria including technical readiness, ESG risk, financial viability, and gender/just-transition benefits. Two shortlisted concepts will then receive full techno-economic feasibility packages (design, business case, safeguards, scaling plan), and two investor outreach/matchmaking workshops will package and connect these projects to local and global financiers, with visibility for SMEs and women-led enterprises.

Code	Deliverable short title	Minimum indicative content	Responsible for deliverable	Key Partners
3.2.1	Special Call for Project Ideas for EV Battery Manufacturing and EoL Management	Package 1: identification of 2 priority projects via JET NEV PMO call, jointly selected. Package 2 (if needed): dedicated call with ToR, thematic focus, eligibility criteria, and transparent selection/evaluation process including technical, financial, environmental, and gender/inclusion criteria.	SANEDI + Consultancy on Economic, Financial and Business dimensions of EVs manufacturing	• dtic • JET NEV PMO • NAACAM
3.2.2	Techno-Economic Feasibility Studies and designs	Full feasibility packages for shortlisted projects: technical and market analysis, cost-benefit/financial modelling, business plans, ESG and governance risk screening, incentive/finance mapping, and scaling/replication strategy with just-transition considerations.	Consultancy on Economic, Financial and Business dimensions of EVs manufacturing	• dtic • IDC • NAACAM
3.2.3	Investor Outreach and Matchmaking Workshops	Investor-oriented packaging of project profiles; targeted events linking developers with banks, DFIs, and private investors; visibility and participation for SMEs and women-led enterprises; coordinated with JET NEV PMO.	SANEDI	• dtic • JET NEV PMO • NAACAM

Component 4: Monitoring and Evaluation

Outcome 4 – Monitoring and Evaluation

Component 4 establishes a framework for systematic monitoring, evaluation, and learning throughout implementation to ensure accountability, transparency, and adaptive management. Monitoring and evaluation will be carried out in full alignment with UNIDO–GEF Policies and Procedures, following established reporting and review requirements.

A mid-term self-evaluation will be conducted to assess progress, capture lessons, and recommend adjustments without significant financial implications. A terminal independent evaluation will take place at project completion to evaluate overall performance, effectiveness, efficiency, sustainability, and contribution to national and GEF objectives, ensuring results are credible and inform future programming. The framework is designed and commits to track, report and assess gender equality and women's empowerment results both quantitatively and qualitatively. Any tracked data will be disaggregated by gender where feasible.

Output 4.1 – Monitoring and reporting

Project progress will be reviewed annually through the Project Implementation Report (PIR) to assess performance, identify challenges, and recommend corrective actions to ensure timely and effective delivery of outcomes. Interim progress updates will support adaptive management and data tracking between reporting cycles. Regular monitoring will ensure that implementation remains aligned with planned objectives, while a mid-term self-evaluation will assess efficiency, partnerships, and achievement of key outputs, with particular attention to gender equality and socio-economic inclusion.

Code	Deliverable short title	Tentative content and required activities	Responsible Parties	Indicative budget (USD)
4.1.1	PSC Inception Workshop & report	To be held within six months of project start-up. This meeting initiates the project, bringing stakeholders together to establish common goals, objectives, and roles. It sets the foundation for effective project management by outlining key deliverables, timelines, and communication channels. The meeting will be summarised by a report, to be finalised three to four weeks after the meeting, including a comprehensive report to document key insights, decisions, and action points discussed during the meeting.	UNIDO Project Director / Project Manager (PM) Support: SANEDI	GEF: 1,500 USD

4.1.1	PSC Inception Workshop & report	To be held within six months of project start-up. This meeting initiates the project, bringing stakeholders together to establish common goals, objectives, and roles. It sets the foundation for effective project management by outlining key deliverables, timelines, and communication channels. The meeting will be summarised by a report, to be finalised three to four weeks after the meeting, including a comprehensive report to document key insights, decisions, and action points discussed during the meeting.	UNIDO Project Director / Project Manager (PM) Support: SANEDI	GEF: 1,500 USD
4.1.2	Yearly progress and financial reporting	Compilation report of the yearly progress, planning and project supervision informing the preparation of the PIR. An executive document (max. 10 slides) will be prepared by the project's PM at the beginning of each calendar year, including: • Yearly knowledge management planning (including internal repositories, references, manuals, cloud storage, access to files, etc.) • Review of outputs that are going to be active during the year, for each component; • For each active output, key goals, actions, and deliverables in alignment with the project's workplan and objectives. • Key actions on gender (by component). • Key procurement processes (by component). • Key communication actions • Key partners and stakeholder engagement actions. • Key risks and challenges • Date of planned Project Steering Committee meetings.	Execution: Project Manager Support: Administrative and Financial Assistant	Part of PM tasks Administrative and Financial Assistant tasks (GEF grant: 4,500 USD)

		• Expected cash-advance requests. • Compilation co-financing showing amount of cash and in-kind co-financing realized and compared to the amount of co-financing committed • Any other key actions or information of relevance for yearly planning (e.g. expected budget revisions, travel, interaction with the Global Programme, etc.).		
4.1.3	Mid-term self-evaluation	Preparation of a mid-term self-evaluation, which entails a comprehensive assessment conducted midway through the implementation of the project to evaluate its progress, effectiveness, and efficiency.	Execution: Project Manager Support: Administrative and Financial Assistant	Part of PM / Administrative and Financial Assistant tasks
4.1.4	Expenditure reports	Development of quarterly expenditure reports using UNIDO's templates and guidelines. The financial report shall contain information that forms the basis of a periodic financial review and its timely submission is a prerequisite to the continuing funding of the project.	Execution: Project Manager Support: Administrative and Financial Assistant	Part of PM / Administrative and Financial Assistant tasks
4.1.5	PSC meetings and minutes	Organisation of PSC meetings, see section on institutional arrangements for further information. Meetings minutes will record issues raised, agreements reached and action points or follow-up as well as track participation of PSC members and will be provided two weeks after the PSC meeting.	Execution: Project Manager	Part of PM tasks
TOTAL indicative COST			GEF Grant for M&E	USD 6,000

Output 4.2 – Project terminal evaluation

The evaluation will review the project's effectiveness in achieving its objectives, the efficiency of resource use, and the lasting impact of its interventions, including gender and socio-economic dimensions. It will document key lessons learned and best practices to inform future e-mobility and climate-related initiatives in South Africa and the region.

Code	Deliverable short title	Tentative content and required activities	Responsible Parties	Indicative budget (USD)
4.2.1	Final closing Workshop and its report	Capture participation and level of satisfaction of stakeholders, lessons learnt and continuity of country efforts. Closing event: 1- 2 months before technical completion. Report: 2-3 weeks after the workshop	Execution: UNIDO Project Director / PM Support: Administrative and Financial Assistant	Part of PM tasks Administrative and Financial Assistant tasks (GEF grant: 3,000 USD)
4.2.2	Project final report	Preparation of the Project Final Report to ensure comprehensive documentation and dissemination of project outcomes. The project final report will provide: • a detailed overview of project achievements, challenges, stakeholders, and lessons learned. • revised results in all the indicators in the Project Results Framework (Annex J), including a reassessment of GHG emission reductions ex-ante calculations. • updates on safeguards and gender-related results associated with project interventions, tracking progress on	Execution: Project Manager Support: Administrative and Financial Assistant	Part of PM / Administrative and Financial Assistant tasks

		targets set in the Gender Action Plan.		
4.2.3	Independent terminal evaluation (TE)	Preparation of the TE, which entails a comprehensive performance assessment conducted after the operational completion of a project, typically initiated at that stage. It will align with the evaluation requirements of the GEF and UNIDO's Evaluation Policy. The UNIDO Evaluation Office will lead the TE. For more information, please refer to Annex J.	Execution: Independent consultants Support: UNIDO and SANEDI Commission the TE: Evaluation Office	GEF: 40,000 USD
TOTAL indicative COST			GEF Grant for M&E	43,000 USD

B4. Gender Approach and Dimension

The project's gender approach is grounded in UNIDO and GEF policies and treats gender equality as integral to achieving a just energy transition, not an add-on. A gender analysis informs design, budgeting, and monitoring, with a Gender Action Plan (GAP) that sets measurable, time-bound targets. Governance and decision-making will be gender-responsive: recruitment follows gender-sensitive TORs; women's organizations and gender experts are systematically consulted; and gender-balanced participation is pursued in the Steering Committee, standards bodies, and policy dialogues and trainings.

Policy and quality-infrastructure work embeds gender provisions in EV and battery roadmaps, standards, incentives, and EoL frameworks. Skills development prioritizes women's access to technical careers via flexible training formats, mentorship, scholarships, and targeted outreach in battery testing, recycling, EV maintenance, and certification, leveraging partners like NMU/uYilo. Knowledge and communications products apply a gender lens and highlight women role models; peer-learning and South–South exchanges include women experts. Private-sector support intentionally maps and expands opportunities for women-led SMEs across manufacturing, services, second-life and recycling, while investor outreach and pipeline development encourage gender-responsive financing with banks and DFIs.

To close persistent gaps in STEM participation, access to finance, leadership, mobility safety, and data, the project adopts clear thresholds and safeguards. At least 50% participation by the underrepresented gender is targeted across trainings and consultations; internships/apprenticeships and hiring at the testing facility prioritize women; feasibility studies include gender impact analysis; EV infrastructure guidance integrates safety, affordability, and accessibility; and communications campaigns elevate women's visibility in the sector. Continuous capacity building, routine collection of sex-disaggregated data, and budgeted gender advisory support ensure accountability.

Lessons learned and best practices in advancing women's empowerment and gender mainstreaming will be systematically captured across all project components. This will include documenting effective approaches, barriers encountered, and enabling factors related to women's participation in policy processes, technical training, quality infrastructure, and private-sector engagement. These lessons will be synthesized into knowledge products and learning notes for wide dissemination through the project's knowledge management platform, national and regional learning events, and relevant GEF knowledge-sharing channels. Progress in implementing gender-specific activities and the Gender Action Plan will be explicitly reported in Project Implementation Reports (PIRs), the Mid-Term Review (MTR), and the Terminal Evaluation (TE), in line with UNIDO and GEF monitoring and evaluation requirements.

For more information, please consult Annex L.

B5. Knowledge Management Approach

The project's knowledge management approach ensures that lessons, data, and tools generated across all components are systematically captured, shared, and applied to strengthen South Africa's low-carbon e-mobility transition. It integrates knowledge generation into all activities, policy studies, training programmes, and feasibility assessments, transforming technical outputs into accessible formats such as policy briefs, manuals, training modules, and investor-oriented learning notes. Given South Africa's role as a middle-income, fairly industrialised, auto-manufacturing economy transitioning under strong global EV competition, the project will also document transferable lessons for peer countries facing similar industrial and energy-transition challenges. Research outputs (including value-chain analyses, feasibility studies, and regulatory assessments) will therefore be packaged not only for domestic uptake but also for wider regional and global dissemination through comparative case studies and open-access briefs. A central Knowledge-Sharing Platform and Repository, developed under Component 2 and linked to an existing knowledge hub, will serve as a digital resource for long-term access to project materials.

The project's knowledge management activities will be implemented in close coordination with the GEF-7 Global Program on Integrated E-mobility Systems, ensuring alignment of knowledge products, indicators, and learning agendas across participating countries. This coordination will

facilitate harmonised reporting, cross-project learning, and the systematic contribution of South Africa's experience to the Global Program's consolidated knowledge outputs. The project budget includes provision for travel that may be used by the project management unit and relevant stakeholders, as appropriate, to attend national and regional knowledge-sharing events, technical exchanges, and learning forums under the GEF-7 Global Program on Integrated E-mobility Systems, in order to promote integration, coherence, and mutual learning across the Program's portfolio of projects.

The approach emphasizes inclusive and gender-responsive dissemination, ensuring women's participation and visibility in knowledge-sharing and communication. Strategic outreach will target government, industry, academia, and financial institutions through workshops, dialogues, and online engagement. Complementary peer-learning and exchange activities will promote regional cooperation and the sharing of best practices on EV policy, infrastructure, and investment.

This approach aligns closely with the GEF's strategic directions by advancing systemic transformation through knowledge, capacity, and innovation. It supports the GEF's objectives to promote integrated, gender-responsive solutions and strengthen enabling environments for sustainable mobility, climate mitigation, and circular economy development.

B6. Private sector engagement

Private sector engagement is at the core of the project's strategy, as the initiative seeks to catalyse the development of South Africa's EV battery value chain and stimulate sustainable industrial growth. The project positions the private sector not merely as beneficiaries but as active partners in shaping and expanding the domestic e-mobility ecosystem. By identifying market opportunities, addressing investment barriers, and strengthening technical and policy foundations, the project will create an enabling environment that encourages innovation, competitiveness, and long-term private investment. During the project preparation NAACAM and NAAMSA were consulted and involved. This collaboration and consultation will be followed during the project implementation.

Through targeted technical assistance and studies under Component 3, the project will assess business models, supply chain linkages, and investment prospects across EV component manufacturing, battery assembly, second-life applications, and recycling. These analyses will help identify viable entry points for private enterprises, particularly small and medium-sized firms, and promote their integration into emerging local and global value chains. Investor outreach events and matchmaking workshops will further connect South African firms with development finance institutions, international investors, and technology providers to foster collaboration and capital mobilization.

Institutional Arrangement and Coordination with Ongoing Initiatives and Project.

Please describe the Institutional Arrangements for the execution of this project, including financial management and procurement. If possible, please summarize the flow of funds (diagram), accountabilities for project management and financial reporting (organogram), including audit, and staffing plans. (max. 500 words, approximately 1 page)

B7. Institutional Arrangement and Coordination with Ongoing Initiatives and Project.

The South African National Energy Development Institute (SANEDI) will serve as the lead Executing Agency. SANEDI will host the Project Management Unit (PMU), which will be responsible for day-to-day coordination, financial management, procurement, and reporting to UNIDO. The PMU will prepare annual workplans and budgets, manage disbursements to project partners, and ensure compliance with financial management and audit requirements. In preparation for this role, UNIDO has commissioned an independent external auditor to conduct a Harmonized Approach to Cash Transfer (HACT) assessment for SANEDI, which proved capabilities and yielded an overall low risk rating. Staffing of the PMU will include a Project Manager, Finance and Procurement Officer, and technical specialists, complemented by short-term consultants as required.

Roles of National Partners:

Department of Trade, Industry and Competition (the dtic): Responsible for supporting Component 1 activities on improving the policy and regulatory framework and supporting quality infrastructure for EV value chains, contributing to Output 1.1 (policy and regulatory framework) and Output 1.2 (quality infrastructure and standards).

Department of Electricity and Energy (DEE): Ensures alignment with the South African Renewable Energy Master Plan (SAREM) and collaborate on industrial development measures linked to EV component manufacturing, supporting Component 1, particularly Output 1.1 on policy coherence and system integration.

Department of Forestry, Fisheries and Environment (DFFE): As the GEF Focal Point, will ensure environmental safeguards. It will also have an important role as the focal point for the End-of-Life roadmap, contributing to Component 1, Output 1.3 (EoL battery management and circular economy).

Department of Transport (DoT): Provides support activities related to policy alignment under the Green Transport Strategy (2018–2050), particularly for regulatory frameworks and infrastructure, contributing to Component 1, Output 1.1, and to stakeholder consultations under Component 2.

Department of Science, Technology and Innovation (DSTI): Supports the innovation and R&D dimensions of the EV battery value chain under Components 1 and 2. It will also help ensure that skills development, knowledge products, and investment pipelines reflect emerging battery technologies, safety standards, and circular-economy innovation priorities, with contributions to Output 1.2 and Component 2 outputs.

Nelson Mandela University (uYilo Programme): Provides technical expertise through its nationally accredited battery testing facility and lead the establishment of the pilot certification center. Provide support for development of knowledge products, implementing Component 1, Output 1.2. Provides support for development of knowledge products under Component 2.

Trade and Industrial Policy Strategies (TIPS): Contributes research, policy analysis, and capacity-building support to Components 1, particularly supporting Output 1.1 through analytical inputs.

National Association of Automobile Manufacturers of South Africa (NAAMSA) and National Association of Automotive Component and Allied Manufacturers (NAACAM): Engages the automotive industry and ensure private sector perspectives are integrated into project design and implementation, contributing to Component 1 policy dialogue (Output 1.1) and Component 3 market uptake and investment facilitation activities.

Project Beneficiaries:

Direct beneficiaries include automotive component manufacturers, battery assemblers, and potential EV battery producers that will benefit from improved policy frameworks, quality infrastructure, and investment facilitation. Testing, certification, and standards institutions, such as the uYilo Programme at Nelson Mandela University, will directly benefit from strengthened technical capacity and upgraded facilities. Policymakers and regulators involved in the development of EV, battery, and end-of-life (EoL) frameworks will benefit from targeted technical assistance, evidence-based policy inputs, and coordinated stakeholder dialogue. In addition, workers, technicians, and trainees will benefit from skills development and reskilling programmes, with explicit targets to promote gender balance and inclusion.

Indirect beneficiaries include small and medium-sized enterprises (SMEs) integrated into EV and battery value chains through improved market conditions and investment pipelines, as well as financial institutions and investors that will gain access to a more robust pipeline of investment-ready projects. Public transport users and broader mobility system users will benefit from the longer-term impacts of safer, cleaner, and more affordable transport solutions enabled by the transition to electric mobility. Communities located near industrial facilities and recycling sites will also benefit from improved environmental standards, safeguards, and circular-economy practices associated with battery production and end-of-life management.

Stakeholder Engagement and Consultation During Implementation:

Stakeholder engagement will be continuous throughout project implementation and will build on the consultations conducted during the Project Preparation Grant (PPG) phase. Engagement will be structured through multiple, complementary mechanisms. Project Steering Committee meetings will provide a forum to guide strategic decisions, ensure cross-ministerial alignment, and address emerging coordination issues. Technical Working Groups linked to specific outputs will support detailed technical input and co-creation of project deliverables.

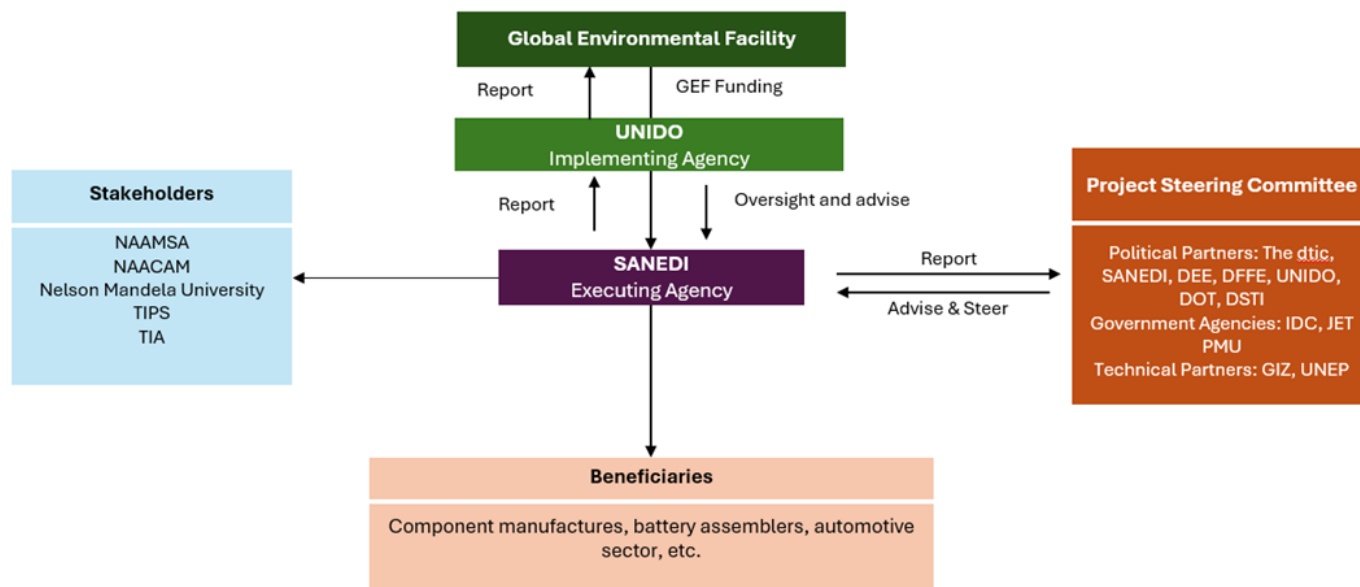
In addition, national and regional workshops, consultations, and training events will be organised under Components 1 and 2 to support policy development, capacity building, and knowledge sharing. Private-sector dialogues and investor matchmaking events under Component 3 will facilitate engagement with industry actors, financial institutions, and potential investors.

Project Steering Committee:

A Project Steering Committee (PSC) will provide overall strategic direction, ensure alignment with national policies and the Just Energy Transition (JET) priorities, and review implementation progress. As reflected in the governance structure, the PSC will bring together: (i) political partners: the dtic, DEE, DoT, DSTI, SANEDI, and UNIDO; (ii) government agencies: the IDC, and the JET NEV PMO; and (iii) technical partners such as GIZ and UNEP. Key sector and knowledge stakeholders (NAAMSA, NAACAM, Nelson Mandela University/uYilo, and TIPS) will be engaged through PSC processes and dedicated technical and stakeholder platforms to inform decisions and maintain industry and research alignment. SANEDI, as Executing Agency, will serve as PSC member and secretariat, convening meetings, presenting progress and financial reports, and implementing PSC guidance through the PMU.

The flow of funds and accountabilities follows the same chain shown in Figure 1. The Global Environment Facility (GEF) provides grant financing to SANEDI as Executing Agency through UNIDO as a GEF implementing agency. UNIDO exercises oversight and provides technical and fiduciary guidance, and transfers resources to SANEDI as the Executing Agency. SANEDI hosts and manages the Project Management Unit (PMU), which coordinates day-to-day delivery with stakeholders and partners, and reports to UNIDO and the PSC. Project support is ultimately directed to beneficiaries, including component manufacturers, battery assemblers, and broader automotive and e-mobility value-chain actors, to enable investment-ready industrialisation, skills development, and sustainable end-of-life battery management.

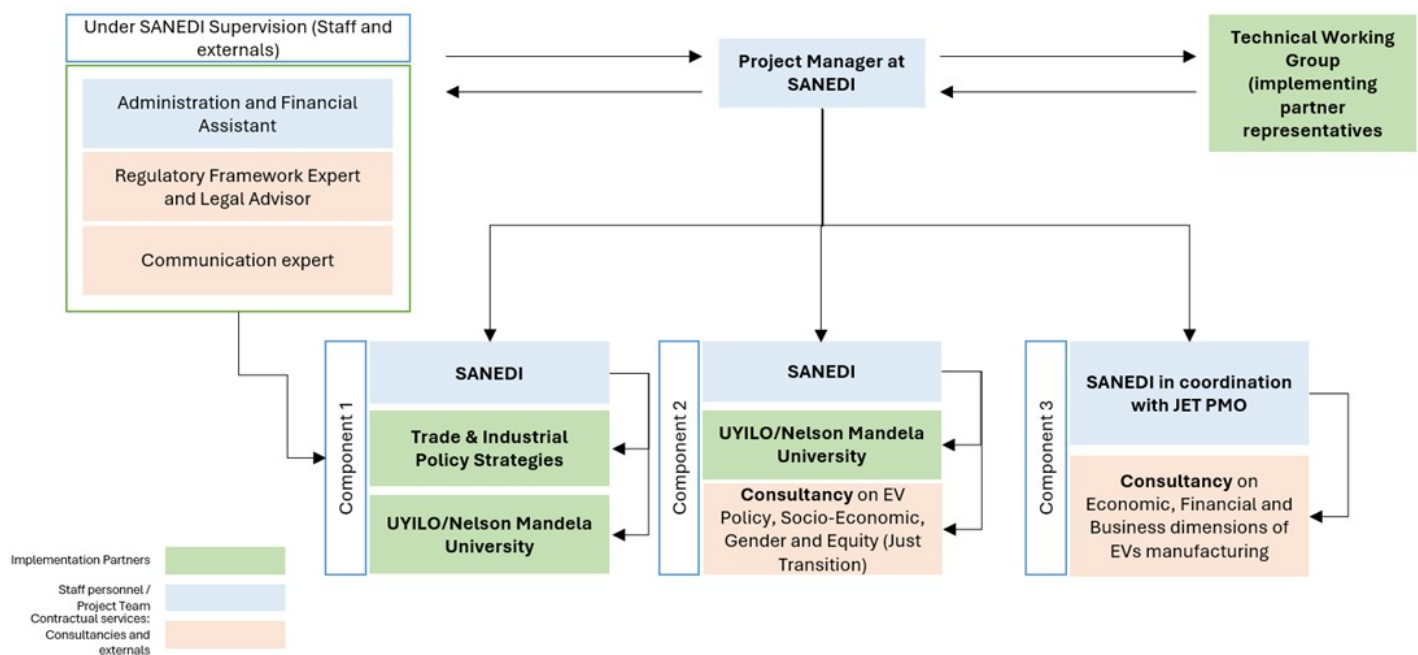
FIGURE 3 - MACRO INSTITUTIONAL ARRANGEMENT



The project is run day-to-day by a SANEDI-based Project Manager who coordinates all three components and is the main link to a Technical Working Group of implementing-partner representatives. A small SANEDI-supervised support team provides cross-cutting services to every component: an admin/finance assistant (operations and procurement), a regulatory/legal expert (policy and standards work), and a communications expert (stakeholder engagement and visibility).

Implementation is organized by component. Component 1 is led by SANEDI with TIPS delivering policy/industrial strategy work and uYilo/Nelson Mandela University executing technical quality-infrastructure tasks. Component 2 is jointly implemented by SANEDI and uYilo/NMU, supported by a just-transition/gender/equity consultancy for skills mapping, curricula, and policymaker capacity. Component 3 is implemented by SANEDI with support from the JET PMO and an economic/financial/business consultancy that builds the investment pipeline (value-chain studies, feasibility work), which SANEDI then takes to investors through outreach and matchmaking.

FIGURE 4 - MICRO INSTITUTIONAL ARRANGEMENT



Flow of the Funds and Procurement

The flow of funds and accountabilities follows the chain shown in Figure 3, from the GEF as donor, through UNIDO as Implementing Agency, to SANEDI as Executing Agency. SANEDI will serve as primary executor of the project. All GEF grant resources will be channelled directly to SANEDI as tranche lump sum payments, except for the budget allocated to the independent terminal evaluation, which will be managed and procured directly by UNIDO. In doing so, UNIDO follows its Direct grant award procedure (referring to Article 2.3.2 of the Grants Manual). SANEDI, through the Project Management Unit (PMU) it hosts, is responsible for the day-to-day financial management of project resources, including the disbursement of funds to national implementing partners and service providers in line with signed agreements and contracts, accounting and reporting. SANEDI conducts procurement related to the procurement plan (see Annex J) for goods, works and services required to deliver project outputs, using its established procurement policies and procedures, which are consistent with national regulations and aligned with UNIDO and GEF fiduciary standards. Procurement will follow transparent, competitive processes to ensure value for money and equal opportunity for eligible suppliers. In preparation for this role, UNIDO has commissioned an independent external auditor to conduct a Harmonized Approach to Cash Transfer (HACT) assessment for SANEDI, which proved capabilities and yielded an overall low risk rating.

UNIDO will act as the GEF Implementing Agency, providing strategic oversight and ensuring that project delivery complies with GEF policies, and agreed safeguards and quality standards. UNIDO's role is limited to supervision, results verification, and review of financial and progress reports. UNIDO will support adaptive management through participation in governance structures, provide guidance where needed to maintain alignment with the approved project document and theory of change, and ensure independent assurance to GEF that resources are used appropriately and expected outcomes are on track.

The Government of the Republic of South Africa agrees to apply to the present project, mutatis mutandis, the provisions of the Standard Basic Assistance Agreement between the United Nations Development Programme and the Government, signed on 3 October 1994.

UNIDO, as the GEF Implementing Agency, will assume overall responsibility for project implementation, financial oversight, and compliance with GEF requirements. UNIDO will report to the GEF Secretariat, oversee monitoring and evaluation (terminal evaluation), and ensure that higher-level global environmental objectives are achieved. All inquiries related to project progress, financial reporting, and procurement will be coordinated through UNIDO in line with GEF fiduciary standards.

Will the GEF Agency play an execution role on this project?

If so, please describe that role here and the justification.

Also, please add a short explanation to describe cooperation with ongoing initiatives and projects, including potential for co-location and/or sharing of expertise/staffing (max. 500 words, approximately 1 page)

The project will be implemented in close cooperation with ongoing national and global initiatives to ensure complementarity and faster uptake. It aligns with the GEF “Accelerating the shift towards electric mobility in South Africa,” which targets public-transport EV deployment, by strengthening upstream enablers for local EV and battery manufacturing, policy, standards, testing capacity, and skills. Coordination will be via SANEDI through shared steering, stakeholder platforms, and joint communications.

The project will also draw on and contribute to the GEF Global Programme on Integrated E-Mobility Systems, using global tools and sharing South African lessons on battery value chains and circularity. It supports dtic’s 2025 battery and critical-minerals policy actions and the JET Investment Plan (NEV pillar) by upgrading testing/certification (uYilo/NMU), developing an investment pipeline, and delivering inclusive capacity building. Synergies with the GIZ EV Battery Value Chain project will be ensured through continuous dialogue and alignment.

Core Indicators

Indicate expected results in each relevant indicator using methodologies indicated in the GEF-8 Results Measurement Framework Guidelines. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Indicator 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO₂e (direct)	0	0	0	0

Expected metric tons of CO ₂ e (indirect)	1140000	744000	0	0
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Indicator 6.1 Carbon Sequestered or Emissions Avoided in the AFOLU (Agriculture, Forestry and Other Land Use) sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)				
Expected metric tons of CO ₂ e (indirect)				
Anticipated start year of accounting				
Duration of accounting				

Indicator 6.2 Emissions Avoided Outside AFOLU (Agriculture, Forestry and Other Land Use) Sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)	0			
Expected metric tons of CO ₂ e (indirect)	1,140,000	744,000		
Anticipated start year of accounting	2025	2026		
Duration of accounting	20	15		

Indicator 6.3 Energy Saved (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
Target Energy Saved (MJ)				

Indicator 6.4 Increase in Installed Renewable Energy Capacity per Technology (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Technology	Capacity (MW) (Expected at PIF)	Capacity (MW) (Expected at CEO Endorsement)	Capacity (MW) (Achieved at MTR)	Capacity (MW) (Achieved at TE)
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Indicator 11 People benefiting from GEF-financed investments

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	445	225		
Male	445	275		
Total	890	500	0	0

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

Core Indicator 6 - Greenhouse Gas Emissions Mitigated / Indirect mitigation approach and results: The project's policy, quality-infrastructure, skills and investment enabling interventions are designed to remove market and institutional barriers, coordinate transport-energy policy, and catalyse local EV value chains - thereby accelerating EV adoption and yielding indirect GHG reductions (no direct hardware counted). Contextually, South Africa's transport sector emits approx. 54.7 MtCO₂e/year (ca. 91% from road); the road fleet comprises around 8 million private cars, ca. 60 000 buses, approx. 300 000 minibuses and 3 million freight vehicles, with less than 8,000 EVs in stock and 1,257 EVs sold in 2024 (0.35% of 351,302 passenger sales in 2024). The emission reduction estimation considers the accelerated adoption of EVs until 2030 supported by the project (5 years project duration):

- Only additional EVs registered until 2030 compared to the BAU addition have been taken into consideration. The scenario set reflects an accelerated market aligned with achieving 19% EV share of new car sales by end-2030 (vs. 3% BAU). Under these inputs, the estimation yields approx. 165,800 additional EVs in stock by end-2030 (cumulative difference vs BAU). For the period 10 years after the project for conservativeness the EV market share of 19% reached in 2030 has been assumed to be constant, as the project's influence for a further uptake is limited beyond the project duration.

- Additional key assumptions are: conservatively market growth of vehicles sales of 1% until 2030; annual 15,000 km/vehicle-year; ICE efficiency 9 l/100 km with 2.2637 kgCO₂e/l; EV electricity use 0.20 kWh/km; grid EF declining during implementation from 0.964 to 0.882 tCO₂e/MWh due to increased share of RE in the national grid (20% by 35); 10-year technology lifetime; exclusion of buses/heavy freight from the EV count; and a conservative 20% causality factor to reflect the project's enabling role.

Following the top-down approach for estimating the indirect impacts, a conservative causality factor of 20% is assumed, leading to approx. 744,000 tCO₂e attributable within 10 years after the project. The difference compared to the PIF (1,140,000 tCO₂e) mainly relates to the amended assumption on the grid emission factor and the extension of the assessment period to 10 years after the project completion, which was not applied at the initial estimation at PIF stage.

Core Indicator 11 - Direct people benefiting (sex-disaggregated): This estimate counts only interactive, in-person activities specified in the log frame: three international/regional capacity-development workshops for decision-makers and technical bodies (Output 2.2.1); one targeted study tour capped at up to 12 participants (Output 2.2.2); two JET/NEV stakeholder dialogue and exchange events (Output 1.1.1); two investor outreach and matchmaking workshops (Output 3.2.3); and one capacity-building package for laboratory and industry engineers (Output 1.2.2).

A conservative bottom-up roll-up is applied: ~60 participants per policy workshop (~180), study tour (12), ~100 per stakeholder dialogue (~200), ~100 per investor workshop (~200), and ~30 external trainees under the lab/industry package (~30), yielding a gross reach ~ 622. To report unique individuals, a 20% de-duplication factor is applied to reflect cross-attendance among officials and experts, resulting in ~498; rounded to 500 for CI-11. Gender disaggregation targets 45% women, supported by gender-responsive design embedded in the training and capacity-building approach (targeted outreach, inclusive scheduling, and gender-sensitive content).

Counting rules follow CI-11 practice: only verified participants (sign-in/registration) in the activities above are included. Knowledge dissemination products and the web-based repository under Output 2.3 (strategic dissemination package and knowledge-sharing platform) are tracked separately and not counted toward direct beneficiaries.

Key Risks

	Rating	Explanation of risk and mitigation measures
CONTEXT		
Climate	Low	Risk: Extreme weather events such as flooding, drought, or heat waves could disrupt timelines for infrastructure upgrades, training workshops and study

		tours, delaying deployment of pilot facilities and stakeholder engagement. Project execution mitigation strategy: Flexible scheduling and remote engagement will be applied. Climate-resilient design standards will be integrated.
Environmental and Social	Moderate	Risk: Although the project is primarily advisory/TA, the expansion of EV battery production and end-of-life processes could lead to moderate environmental and social impacts if not properly managed. Potential risks include pollution from hazardous materials, increased freshwater demand, waste management challenges, and health or safety concerns for nearby communities. Without safeguards, vulnerable populations and local ecosystems may face adverse effects. Project execution mitigation strategy: Output 1.3 provides a national EoL battery roadmap and technical guidelines defining safety, traceability, EPR options, and environmentally sound recycling/second-life pathways. Component 2 embeds gender-responsive and inclusion measures; all stakeholder engagements will include vulnerable-group considerations.
Political and Governance	Low	Risk: Given South Africa's established democratic institutions and JET policy architecture, risks from political instability or policy reversal are low. However, delays or weak cross-ministerial coordination could slow adoption of EV battery policy reforms and quality-infrastructure decisions, potentially reducing project leverage. Project execution mitigation strategy: Output 1.1's continuous technical participation in JET NEV PMO, evidence briefs, and dialogue events sustain alignment across dtic, IDC, line ministries and industry. Decision-ready policy inputs to sustain alignment across dtic, DoT, IDC, and relevant line ministries; and use PSC oversight to address coordination bottlenecks early.
INNOVATION		
Institutional and Policy	Moderate	Risk: Policy frameworks may fail to fully integrate battery safety, recycling/EoL standards, and E&S safeguards. If reforms are not gender-inclusive or socially accessible, there is risk of social exclusion and reduced legitimacy of the emerging EV battery ecosystem. Weak enforcement could delay EV uptake and constrain competitiveness. Project execution mitigation strategy: Output 1.1 delivers a consolidated meta-analysis, regulatory impact assessment (with gender/SE lenses), and an EV Battery Manufacturing Investment Strategy. JET NEV PMO support reduces coordination gaps and promote policy coherence.
Technological	Moderate	Risk: Rapid evolution of battery chemistries, safety standards, and testing protocols could outpace local capacity, risking mismatch of the NMU/uYilo testing facility with OEM/export requirements. Project execution mitigation strategy: Output 1.2 upgrades uYilo's HV pack testing and certification capability and validates protocols aligned with national/international standards. Continuous engagement with OEMs, standards bodies, and international peers via Component 2 workshops/study tour will keep protocols current.

Financial and Business Model	Moderate	Risk: Electric mobility and battery manufacturing face financial risks, including revenue uncertainty, cost overruns, cash flow challenges, and competitive pressures that could affect investor confidence and market uptake. Existing fiscal measures that lower the cost of fossil fuel and internal combustion engine (ICE) vehicle use may modestly weaken the total cost of ownership advantage of electric vehicles, potentially moderating near-term demand for EV- and battery-related services. Project execution mitigation strategy: The project mitigates this risk by focusing on market segments where EVs already demonstrate strong operational and economic potential and by delivering value-chain assessments, feasibility studies, and targeted investor outreach under Component 3 to de-risk investment opportunities. Policy dialogue and technical inputs under Output 1.1 support greater coherence between e-mobility objectives and fiscal policy signals. All supported concepts are subject to ESSPP screening, and proposals triggering exclusion criteria are not advanced.
EXECUTION		
Capacity	Low	Risk: SANEDI and partners may face challenges coordinating across multiple institutions and technical partners, which could delay delivery of outputs (e.g., training curricula, roadmaps, technical studies). Project execution mitigation strategy: A Project Management Unit (PMU) hosted at SANEDI, with UNIDO oversight, will coordinate implementation. Responsibilities are clearly assigned in the log-frame, and training-of-trainers programs will expand local delivery capacity.
Fiduciary	Low	Risk: Fiduciary risks are limited, as the project does not involve direct asset management or client fund handling. Project execution mitigation strategy: UNIDO fiduciary standards, transparent reporting, and independent mid-term and terminal evaluations are built into the project design.
Stakeholder	Low	Risk: Private sector actors, local communities, or training institutions may show limited engagement if benefits are not clearly communicated. Project execution mitigation strategy: Use Output 2.3 communications to clarify project scope, timelines, and roles; position feasibility studies and roadmaps as pipeline/enabler tools, not guaranteed investment commitments.
Other		
Overall Risk Rating	Moderate	The overall project risk remains Moderate, consistent with safeguard rating B. Direct environmental/social impacts are limited by the project's advisory nature, but moderate indirect risks may arise through downstream investments in battery manufacturing and EoL systems. These are mitigated through policy/quality-infrastructure outputs (1.1–1.3), ESG-screened feasibility work and investment pipeline support (3.1–3.2), and strong gender-responsive capacity building and communication systems (2.1–2.3). Continuous

coordination via JET NEW structures and adaptive PMU management further contain implementation and stakeholder risks.

C. ALIGNMENT WITH GEF-8 PROGRAMMING STRATEGIES AND COUNTRY/REGIONAL PRIORITIES

Explain how the proposed interventions are aligned with GEF- 8 programming strategies and country and regional priorities, including how these country strategies and plans relate to the multilateral environmental agreements.

For projects aiming to generate biodiversity benefits (regardless of what the source of the resources is - i.e., BD, CC or LD), please identify which of the 23 targets of the Kunming-Montreal Global Biodiversity Framework the project contributes to and explain how.

Confirm if any country policies that might contradict with intended outcomes of the project have been identified, and how the project will address this. (max. 500 words, approximately 1 page)

GEF-8 Alignment

The proposed project aligns directly with the GEF-8 Climate Change Mitigation Focal Area, particularly under Pillar I: Promote innovation, technology development and transfer, and enabling policies for mitigation options with systemic impacts. It contributes to three core objectives: (i) accelerating the efficient use of energy and materials, (ii) enabling the transition to decarbonized power systems, and (iii) promoting low-carbon transport. By fostering the development of a domestic e-mobility market and strengthening the policy and industrial ecosystem for electric vehicles and batteries, the project will contribute to both direct and indirect GHG emission reductions through the replacement of fossil-fuel-based transport systems.

At the national level, the project supports South Africa's Nationally Determined Contribution (NDC), Just Energy Transition (JET) Framework, and National Transport Master Plan (NATMAP) by advancing sustainable mobility, industrial competitiveness, and socio-economic inclusion. Regionally, it complements SADC's Industrialization Strategy and Roadmap through value addition in clean technologies and battery manufacturing. No policies contradicting the intended outcomes have been identified. The project is aligned with GEF Knowledge Management and Communication Policies. With its approach the project supports policy coherence in the country and aims to generate socio-economic benefits beyond the scope of the project.

The project is also aligned with the GEF Knowledge Management and Communication Policies, emphasizing open access, gender-responsive communication, and stakeholder learning. Through its digital knowledge-sharing platform, dissemination tools, and capacity-building activities, the project contributes to systematic knowledge generation and exchange, supports policy coherence, and promotes socio-economic benefits beyond the project's duration, including enhanced employment opportunities, industrial diversification, and sustainable innovation in the e-mobility value chain.

Country Alignment

The proposed project is fully aligned with South Africa's national climate, industrialization, and transport priorities, demonstrating strong government ownership and institutional commitment. It supports the implementation of the [Nationally Determined Contribution \(NDC\)](#) and the [Just Energy Transition \(JET\)](#) Investment Plan, which emphasize decarbonization of the transport sector, creation of green jobs, and development of local clean-technology value chains. The project is also consistent with the [Green Transport Strategy \(2018–2050\)](#) and the [EV White Paper](#) led by the Department of

Trade, Industry and Competition (the dtic), which outline measures to stimulate EV manufacturing, charging infrastructure, and market readiness. Implementation will be led by SANEDI in partnership with UNIDO, with close collaboration from DTIC, DOT, and Industrial Development Corporation (IDC), ensuring alignment with national policy frameworks and coordination among key stakeholders. The strong involvement of government ministries, academia, and industry partners reflects clear national ownership and ensures that the project's outcomes are integrated into ongoing policy, regulatory, and investment processes driving South Africa's sustainable transport transition.

D. POLICY REQUIREMENTS

Gender Equality and Women's Empowerment

We confirm that gender dimensions relevant to the project have been addressed during Project Preparation as per GEF Policy and are clearly articulated in the Project Description (Section B).

Yes

1) Does the project expect to include any gender-responsive-measures to address gender gaps or promote gender equality and women's empowerment?

Yes

If the project expects to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment, please indicate in which results area(s) the project is expected to contribute to gender equality:

Closing gender gaps in access to and control over natural resources;

Yes

Improving women's participation and decision-making; and/or

Yes

Generating socio-economic benefits or services for women.

2) Does the project's results framework or logical framework include gender-sensitive indicators?

Yes

Stakeholder Engagement

We confirm that key stakeholders were consulted during Project Preparation as required per GEF policy, their relevant roles to project outcomes has been clearly articulated in the Project Description (Section B) and that a Stakeholder Engagement Plan has been developed before CEO endorsement.

Yes

Select what role civil society will play in the Project

Consulted only;

Member of Advisory Body; Contractor; **Yes**

Co-financier;

Member of project steering committee or equivalent decision-making body ;

Executor or co-executor;

Other (Please explain)

Private Sector

Will there be private sector engagement in the project?

Yes

And if so, has its role been described and justified in section B project description?

Yes

Environmental and Social Safeguards

We confirm that we have provided information regarding Environmental and Social risks associated with the proposed project or program, including risk screenings/ assessments and, if applicable, management plans or other measures to address identified risks and impacts (this information should be presented in Annex E).

Yes

Please provide overall Project/Program Risk Classification

Overall Project/Program Risk Classification

PIF	CEO Endorsement/Approval	MTR	TE
Medium/Moderate	Medium/Moderate		

E. OTHER REQUIREMENTS

Knowledge management

We confirm that an approach to Knowledge Management and Learning has been clearly described during Project Preparation in the Project Description and that these activities have been budgeted and an anticipated timeline for delivery of relevant outputs has been provided.

Yes

Socio-economic Benefits

We confirm that the project design has considered socio-economic benefits to be delivered by the project and these have been clearly described in the Project Description and will be monitored and reported on during project implementation (at MTR and TER).

Yes.

ANNEX A: FINANCING TABLES

GEF Financing Table

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	Grant / Non-Grant	GEF Project Grant(\$)	Agency Fee(\$)	Total GEF Financing (\$)
UNIDO	GET	South Africa	Climate Change	CC STAR Allocation: CCM-1-3	Grant	863,242.00	82,008.00	945,250.00
Total GEF Resources (\$)						863,242.00	82,008.00	945,250.00

Project Preparation Grant (PPG)

Was a Project Preparation Grant requested?

true

PPG Amount (\$)

50000

PPG Agency Fee (\$)

4750

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	PPG(\$)	Agency Fee(\$)	Total PPG Funding(\$)
UNIDO	GET	South Africa	Climate Change	CC STAR Allocation: CCM-1-3	50,000.00	4,750.00	54,750.00
Total PPG Amount (\$)					50,000.00	4,750.00	54,750.00

Please provide Justification

Sources of Funds for Country Star Allocation

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Sources of Funds	Total(\$)
UNIDO	GET	South Africa	Climate Change	CC STAR Allocation	1,000,000.00
Total GEF Resources					1,000,000.00

Focal Area Elements

Programming Directions	Trust Fund	GEF Project Financing(\$)	Co-financing(\$)
CCM-1-3	GET	863,242.00	5434000
Total Project Cost		863,242.00	5,434,000.00

Confirmed Co-financing for the project, by name and type

Please include evidence for each co-financing source for this project in the tab of the portal

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
Recipient Country Government	SANEDI	In-kind	Recurrent expenditures	120000
Beneficiaries	Nelson Mandela University	In-kind	Recurrent expenditures	100000
GEF Agency	UNIDO	Grant	Investment mobilized	49500
Recipient Country Government	the DEE	In-kind	Recurrent expenditures	39500
Recipient Country Government	TIA (Technology Innovation Agency)	In-kind	Recurrent expenditures	4425000
Others	GIZ	In-kind	Recurrent expenditures	700000
Total Co-financing				5,434,000.00

Please describe the investment mobilized portion of the co-financing

Difference in Co-Financing (PIF vs. CEO Endorsement):

The adjustment from USD 6.32m (PIF) to USD 5.43m (CEO Endorsement) reflects the refinement of commitments to ensure all pledges are fully secured and verifiable. The project prioritized high-value, reliable commitments from key institutional partners central to the national innovation system (TIA, DEE, SANEDI, and Nelson Mandela University). This resulted in a consolidated package that is robust and directly linked to specific technical outputs.

Justification for In-Kind Co-Financing:

The predominance of 'in-kind' co-financing aligns with the project's nature as Technical Assistance rather than hard infrastructure investment. The project builds necessary "soft" infrastructure—regulatory frameworks, skills curricula, and testing protocols—to de-risk the sector. Partner contributions (facilities, expert staff, operational budgets) are the essential assets required to deliver these enabling outputs.

Plan to Mobilize Funds During Implementation:

The project utilizes a multiple angles to convert the enabling environment into tangible private investment:

JET Funding Platform (Launched Oct 2024): The project will channel its pipeline of investment-ready projects (from Component 3) through the newly launched JET Funding Platform. This mechanism, operationalized by the JET PMU in the Presidency, matches projects with grants and concessional finance, ensuring alignment with the Industrial Development Corporation's (IDC) New Energy Vehicles portfolio.

Industry-Led Pipeline (NAAMSA & NAACAM): As formal partners on the Steering Committee, industry associations NAAMSA (OEMs) and NAACAM (manufacturers) validate project outputs (e.g., Investment Strategy). They will use their networks to "crowd in" private capital for the opportunities identified by the project.

Targeted Investor Matchmaking (Output 3.2): The project will produce techno-economic feasibility studies to generate a bankable pipeline. These culminate in Investor Matchmaking Workshops, now aligned with JET Funding Platform events to maximize exposure to DFIs and private investors.

Laboratory Upgrade Framework (Output 1.2): A specific co-financing framework will be developed to mobilize resources (public/private) for advanced equipment at the uYilo testing facility, scaling it to full EV-pack capacity once initial protocols are established.

ANNEX B: ENDORSEMENTS

GEF Agency(ies) Certification

GEF Agency Type	Date	Project Contact Person	Phone	Email
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GEF Agency Coordinator	11/28/2025	Ganna Onysko, Senior External Relations Officer	00431260263647	G.Onysko@unido.org
Project Coordinator	12/17/2025	Karin Reiss-Haimbala, Industrial Development Officer	00436607612132	K.REISS@unido.org

Record of Endorsement of GEF Operational Focal Point (s) on Behalf of the Government(s):

Please attach the Operational Focal Point endorsement letter(s) with this template.

Name of GEF OFP	Position	Ministry	Date (MM/DD/YYYY)
MS SHAHKIRA PARKER	GEF OPERATIONAL FOCAL POINT FOR SOUTH AFRICA	DEPARTMENT OF FORESTRY, FISHERIES AND THE ENVIRONMENT	

ANNEX C: PROJECT RESULTS FRAMEWORK

Please indicate the page number in the Project Document where the project results and M&E frameworks can be found. Please also paste below the Project Results Framework from the Agency document.

Please find all information on the project results framework in the Prodoc on page 66 onwards and also copied below:

1. Core Indicators

GEF core indicator	Indicator	Baseline	Mid-term target	End of project target	Means of verification	Risks (see section B6)
6	Metric tonnes of greenhouse gas emissions avoided during the project lifetime (20 years). (UNIDO IRPF indicator: ENV.1)	0	Direct: 0 tCO ₂ e Total indirect: 8,900 tCO ₂ e - with 20% causality factor: 1,770 indirect	Direct: 0 tCO ₂ e Total indirect: 3,720,000 tCO ₂ e (duration of accounting 15 years, i.e. project duration + 10 years after the project) – with GEF causality	- Relevant performance indicators disclosed in Project Implementation Review (PIR) annual reports. - Share of EVs on annual vehicles sales; total share of EV on vehicles stock - National GHG inventory	Political and governance risk Capacity for Implementation risk Fiduciary risks

				factor of 20%: 744,000 tCO ₂ e		
11	Number of direct beneficiaries disaggregated by gender. (UNIDO IRPF indicator: KASA.1)	0	200 unique people - 90 women (45%) and 110 men (55%).	500 unique people — 225 women (45%) and 275 men (55%). (only verified participants (sign-in/registration) included. Knowledge dissemination products and the web-based repository under Output 2.3 tracked separately and not counted toward direct beneficiaries.	- Relevant performance indicators on beneficiaries disclosed in Project Implementation Review (PIR) annual reports. - Workshop reports, capacity-building reports, community engagement reports.	Environmental and social risk Stakeholder engagement risk

2. Outcome Indicators

Objective	Indicator	Baseline	Mid-term target	End of project target	Means of verification	Risks (see section B6)
Outcome 1 – Strengthened policy framework and quality infrastructure to support e-mobility local industrialization with a focus on batteries and their end-of-life management	1. # of new / adopted policy, regulation or investment strategy proposal, i.e. an EV Battery Manufacturing Investment Strategy aligned with Just Energy Transition. (UNIDO IRPF indicator: PAO.1)	0	0	1	- Official government publications, policy documents and desk research. - Consultation of experts, policymakers, and stakeholders. - Public consultation reports. - Attendance records and other consultation related documentation	Political and governance risk Institutional and policy risk Stakeholder engagement risk

Outcome 2 - Local stakeholders, including manufacturers, policymakers, and technical experts, start to scale-up uptake of low carbon e-mobility based on enhanced capacities and partnership	2. # of workforce working in new EV manufacturing and its value chain including battery manufacturing	0	100	500	- Official government publications, policy documents and desk research. - Labour market statistics - Media coverage and official public statements.	Political and governance risk Financial and business model risk
Outcome 3 – Industry sector and policy makers accelerate the development of electric vehicle market through technical assistance and assessment of opportunities in EV component manufacturing and value chain development.	3. USD volume of investment capital that is committed to EV component and battery manufacturing by private investors, institutional investors and public funding agencies (in million USD) (UNIDO IRPF indicator: INV.3)	0	0	3 million	- Investment records, financial reports - Results of Matchmaking Workshops	Political and governance risk Financial and business model risk Fiduciary risk

3. Output Indicators

Objective	Indicator	Baseline	Mid-term target	End of project target	Means of verification	Risks (see section B6)
Output 1.1 - Enabling policy framework and quality infrastructure for EV components (e.g., the development of the lithium-ion batteries value chain) is supported to promote	# of meetings / roundtables held under the JET NEV working group with project's participation	0	2	5 (out of which 3 gender-responsive)	- Minutes of meetings. - Attendance records and other consultation related documentation	Political and governance risk
	# of Stakeholder Dialogue and Exchange Events conducted	0	1	2	- Public consultation reports. - Attendance records and other consultation	Stakeholder risk

private sector investment, market development and ensure socio-economic and gender inclusion	(UNIDO IRPF indicator: CPO.1)				related documentation	
	# of developed / updated draft policy, regulation or investment strategy proposal, i.e. an EV Battery Manufacturing Investment Strategy aligned with Just Energy Transition.	0	1	1 (out of which 1 gender-responsive)	- Draft strategy document versions, submission proof. - Stakeholder feedback	Political and governance risk
	# of Policy Briefs and Knowledge Products for Decision Makers (UNIDO IRPF indicator: PAO.2)	0	1	3	- PIR reports, documents and reports developed - Stakeholders feedback - Downloads / views from webpage	Institutional and policy risk
Output 1.2 - A pilot testing and certification facility for battery packs is developed for performance, stability, and safety checks at the Nelson Mandela University.	# of pilot testing and certification facility for battery packs for performance, stability, and safety checks	0	1	1	- Investment records - Official government / university publications, and desk research.	Technological risk
Output 1.3 - A roadmap and guidelines on management of end-of-life batteries are endorsed by the Government of South Africa	# of document (roadmap and guidelines) on utilizing end-of-life batteries (UNIDO IRPF indicator: PAO.2)	0	1	2 (1 Number of gender-responsive products)	- Draft strategy document versions, submission proof (provided by Nelson Mandela University (UYilo)). - Stakeholder feedback	Political and governance risk
Output 2.1 - Gender-responsive skills	# of proposal for a Training Curriculum on EV Battery and	0	0	1	- PIR reports, documents and reports developed	Environmental and social risk

development programme delivered to support workforce transition toward low-carbon e-mobility with a special focus on training for women promoting equal opportunities and encourage active participation.	E-Mobility Technologies			(out of which 1 gender-responsive)	- Stakeholders feedback	Stakeholder engagement risk
	# of Memorandum of Understanding between academia and industry partnerships on internship pathways with EV manufacturers, recyclers, and service providers	0	2	4 (out of which 2 gender-responsive)	- Signed agreements. - Official government publications, policy documents and desk research. - Media coverage and official public statements.	Political and governance risk
Output 2.2 – Knowledge resources, training workshops and study tours delivered to decision- and policy-makers to support EV Battery Manufacturing and EoL Management policy and strategies.	# of participants at policy/ technical workshops (UNIDO IRPF indicator: KASA.2)	0	60	180 (out of which 70 women)	- Minutes of meetings. - Attendance records	Political and governance risk Stakeholder risk
	# of participants at study tour (UNIDO IRPF indicator KASA.2)	0	12	12 (Out of 5 women participating)	- Travel records - Minutes of meetings - Attendance records	Political and governance risk Stakeholder risk
Output 2.3 – Knowledge management systems, communication platforms and awareness-raising tools established to strengthen stakeholder coordination and understanding of low-carbon e-mobility	# of unique visits to view website / sub-pages on the EV manufacturing and related value chain (UNIDO IRPF indicator: REA.1)	0	100	500 (out of 250 were women)	- Tracking and monitoring of website use	Institutional capacity risk
Output 3.1 - Comprehensive assessment and analysis of EV component manufacturing value chains and investment opportunities produced to inform local manufacturing strategies with	# study on Investment Opportunities incl. propagating strategy for EV Component Manufacturing in South Africa	0	1	1 (out of which 1 gender-responsive)	- study report	Implementation capacity risk

a focus on batteries.						
Output 3.2 – Tailored technical assistance package and feasibility studies developed to generate a pipeline of investment-ready EV component manufacturing projects	# of participants at matchmaking events	0	0	200 (out of which 90 women)	- Minutes of meetings. - Attendance / events registration records	Political and governance risk Stakeholder risk
	# of projects investment initiated (UNIDO IRPF indicator: INV.1)	0	0	2 (out of which 1 gender-responsive)	- Project initiation documents, progress reports	Climate risk Environmental and social risk Technological risk Financial and Business Model

ANNEX D: STATUS OF UTILIZATION OF PROJECT PREPARATION GRANT (PPG)

Provide detailed funding amount of the PPG activities financing status in the table below:

Project Preparation Activities Implemented	GETF/LDCF/SCCF Amount (\$)		
	Budgeted Amount	Amount Spent To date	Amount Committed
Local Travel (for conducting a validation workshop with stakeholders at SANEDIs premise in SA)	4,000.00	3,887.18	112.82
Experts / International Consultants (technical support in project preparation and design of the project, materials, GHG calculation)	42,000.00	41,222.47	777.53
Contractual Services (Conducting a Micro HACT Assessment for SANEDI with an external independent auditor)	4,000.00	3,750.00	250.00
Total	50,000.00	48,859.65	1,140.35

ANNEX E: PROJECT MAP AND COORDINATES

Please provide geo-referenced information and map where the project interventions will take place

Location Name	Latitude	Longitude	GeoName ID
Johannesburg	-26.2056	28.0337	993,800

Location Description:

Johannesburg is the largest city in South Africa and capital of the Gauteng Province

Activity Description:

Location Name	Latitude	Longitude	GeoName ID
Pretoria	-25.731340	28.218370	964,137

Location Description:

Activity Description:

Location Name	Latitude	Longitude	GeoName ID
uYilo Battery Testing Laboratory	-34.0084	25.6706	9,224,908

Location Description:

Nelson Mandela University (NMU) is a South African tertiary education institution with its main administration in the coastal city of Port Elizabeth. NMU was founded through a merger of three institutions in January 2005, but its history dates back to 1882.

Activity Description:

At uYilo, the following deliverables will take place:

Output 1.2 - A pilot testing and certification facility for battery packs is developed for performance, stability, and safety checks at the Nelson Mandela University.

Output 1.3 - A roadmap and guidelines on management of end-of-life batteries are submitted for consideration by the Government of South Africa

Please provide any further geo-referenced information and map where project interventions are taking place as appropriate.



ANNEX F: ENVIRONMENTAL AND SOCIAL SAFEGUARDS SCREEN AND RATING

Attach agency safeguard datasheet/assessment report(s), including ratings of risk types and overall project/program risk classification as well as any management plans or measures to address identified risks and impacts (as applicable).

Title

20251126_ESMP GEF 8 EV Project SA Reviewed by ESS_final_UPDATE

UNIDO Environmental and Social (E&S) Screening Template

ANNEX G: BUDGET TABLE

Please upload the budget table here.

	Detailed Description	Component (US\$eq.)		
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Expenditure Category		Component 1			Component 2			Component 3		Sub-Total	M&E	PMC	Total (US\$eq.)	Responsible Entity
		Output 1.1	Output 1.2	Output 1.3	Output 2.1	Output 2.2	Output 2.3	Output 3.1	Output 3.2					
Grants/ Sub-grants	Co-financing package for acquisition of high-level equipment		130,000										130,000	SANEDI
Sub-contract to executing partner/ entity	Trade & Industrial Policy Strategies (TIPS)	65,000											65,000	SANEDI
	Nelson Mandela University (uYilo) (Short description of work: Lead laboratory upgrading and EV-battery testing capability, develop end-of-life (EoL) policy guidance, co-design a competency-based training curriculum, and build the project's knowledge-sharing platform—aligned with national/International standards and the approved log frame and workplan)		5,000	40,000	40,000		10,000						95,000	SANEDI
Contractual Services – Company	Consultancy on EV Policy, Socio-Economic, Gender and Equity (Just Transition)				49,000	42,000							91,000	SANEDI
	Consultancy on Economic, Financial and Business dimensions of EVs manufacturing							70,000	140,000				210,000	SANEDI
	Terminal Evaluation										40,000		40,000	UNIDO
Salary and benefits / Staff costs	Project Manager	27,500			-	8,750	10,000	5,000	8,192			60,000	114,942	SANEDI
	Communication Expert	5,000					12,500		10,000				27,500	SANEDI
	Regulatory Framework Expert and Legal Advisor					7,500							7,500	SANEDI
	Administration and Financial Assistant										2,250	15,750	22,500	SANEDI
Training, Workshops, Meetings	Workshop / trainings	3,000				4,500			3,000		1,500		12,000	SANEDI
Travel	Travel / Study Tours					42,000							42,000	SANEDI
Office Supplies	Office and IT equipment											2,500	2,500	SANEDI
Other Operating Costs	Production of training material (online material, publications, printing, etc.)						800						800	SANEDI
	Production of communication/marketing material (webpage, printing, etc.)						2,500						2,500	SANEDI
Grand Total		100,500	135,000	40,000	89,000	104,750	35,800	75,000	161,192	-	43,750	78,250	863,242	

Please explain any aspects of the budget as needed here

In addition to the GEF Budget Template provided in the word file above, please also find a comprehensive Excel file with a detailed budget overview, procurement plan and a timely workplan that was created. Here, please note to use the document called UNIDIO EV_CEO_ER Budget Version 2026. **Please also look into the Procurement Plan (TORs).**

Short description of work of Nelson Mandela University

Lead laboratory upgrading and EV-battery testing capability, develop end-of-life (EoL) policy guidance, co-design a competency-based training curriculum, and build the project's knowledge-sharing platform—aligned with national/International standards and the approved log frame and workplan.

ANNEX I: RESPONSES TO PROJECT REVIEWS

From GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF.